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Board of Governors of the Federal Reserve System
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BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ADDRESS OFFICIAL CORRESPONDENCE
TO THE BOARD

September 30, 2013

By Electronic Mail

Re: *Freedom of Information Act Request 2013-270*

This is in response to your e-mail message dated April 20, 2013, and received by the Board's Freedom of Information Office on April 22. Pursuant to the Freedom of Information Act ("FOIA"), 5 U.S.C. § 552, you request the following documents:

> each written response or letter from the Federal Board of Governors to a Congressional Committee (not a congressional office) (or Committee Chair) in calendar years 2012 and 2013 to date. By this, I mean one-time type responses to Committee inquiries. You may exclude from the scope of this request regular periodic reports .... [and] constituent responses to a congressional office.

Staff searched Board records and located documents responsive to your request. The Board's Freedom of Information office will provide you with the documents you seek under separate cover. Your request, therefore, is granted in full.

Very truly yours,

Margaret McShanks

Margaret McCloskey Shanks
Deputy Secretary of the Board

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

January 19, 2010

BEN S. BERNANKE
CHAIRMAN

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

The Honorable Spencer Bachus
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Chairman Frank and Ranking Member Bachus:

We are happy to work with you as the Chairman and Ranking Member of the Committee to provide the Committee access to various documents related to the American International Group, Inc., at the same level of access to those documents as is being provided to the Senate Committee on Banking, Housing, and Urban Affairs. I have directed my staff to contact each of your staffs to make appropriate and complete arrangements.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

January 19, 2010

The Honorable Christopher J. Dodd
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Chairman Dodd and Ranking Member Shelby:

Enclosed are responses to the questions that you submitted by letter dated December 11, 2009. All or part of several of the questions request documents. Responsive documents are being made available to your staffs.

Sincerely,

(Signed) Ben Bernanke

Enclosure

Responses submitted to questions received from Chairman Dodd and Ranking Member Shelby on December 11, 2009. Documents responsive to questions 7, 8, 9, 10, 22, 24, 25, and 26 (which are not reproduced below), and the bracketed portions of questions 2, 4, 5, 6, 12 and 21 below, are being made available in accordance with the December 11, 2009, letter.

1. How was the Federal Reserve notified about AIG's financial problems? Had the Treasury Department, any regulator or any market participant contacted the Federal Reserve with concerns about AIG prior to September 2008? If so, when and what was the nature of the contact?

The Federal Reserve was first notified of the extent of the impending liquidity crisis at American International Group ("AIG") on Friday, September 12, 2008, by officials of AIG. On that date, AIG officials met with senior officials of the Federal Reserve Bank of New York ("FRBNY") and the Board to discuss the company's then-current liquidity position and the significant liquidity events the company expected in the immediate future due to, among other things, its inability to roll-over maturing commercial paper, ongoing collateral calls associated with the derivative exposures of AIG Financial Products Corp. ("AIGFP"), the withdrawal of securities lending counterparties from the securities lending program operated by the company's regulated insurance subsidiaries, and a potential downgrade of the company's credit ratings.

Before September 12, 2008, the Federal Reserve was aware of general concerns regarding the financial health of AIG through our ongoing interaction with market participants and banking organizations we supervise, as well as press reports and other public materials. However, prior to this date, the Federal Reserve did not have access to the type of proprietary, confidential company information needed to understand the true severity and immediacy of AIG's liquidity needs, nor had any person (including AIG) requested that the Federal Reserve provide emergency credit to AIG under section 13(3) of the Federal Reserve Act. As you know, the Federal Reserve did not and does not have supervisory authority over AIG or any of its subsidiaries.

2. Please describe the efforts of the Federal Reserve to facilitate a private sector rescue of AIG before the Federal Reserve ultimately decided to provide assistance to AIG. Please describe the nature of the private sector rescue plans that were considered and the reasons why those plans proved inadequate. [Please provide all emails, correspondence, and other communications between the Federal Reserve and private banks related to efforts to devise a private sector rescue plan for AIG.]

AIG is a holding company that controls a number of large insurance companies supervised by state insurance departments as well as a number of other regulated and unregulated subsidiaries. By mid-September 2008, AIG had already held discussions with a number of investment banking firms to discuss possible ways for raising capital and liquidity to address its financial difficulties. For example, as reported in AIG's public filings, in late August, AIG had engaged J.P. Morgan Securities, Inc. ("J.P. Morgan") to assist in developing alternatives, including a potential additional capital raise.

The company's efforts to find a private-sector solution accelerated after S&P, on Friday, September 12, 2008, placed AIG on CreditWatch with negative implications and noted that, upon completion of its review, the agency could affirm AIG parent's then-current rating of AA- or lower the rating by one to three notches. As part of these efforts, AIG discussed potential capital injections, asset sales, and other liquidity measures with private equity firms, sovereign wealth funds, and other potential investors. AIG also retained Blackstone Advisory Services LP to provide assistance in connection with a potential capital raise or other financial transaction to address the company's liquidity needs. In addition, AIG met with representatives of Goldman, Sachs & Co., J.P. Morgan, and other financial institutions in an effort to obtain a $75 billion secured lending facility to be syndicated among a number of large financial institutions. This private-sector secured lending facility was intended to act as a bridge loan to meet AIG's liquidity needs until AIG could sell sufficient assets to stabilize and enhance its liquidity position. At this time, AIG also had discussions with the New York State Insurance Department ("NYSID") about ways that AIG's insurance subsidiaries, with appropriate regulatory approval, could potentially provide assistance to AIG as part of a private sector solution to its financial needs. The NYSID, in conjunction with other state insurance authorities, was considering a proposal under which certain of AIG's property and casualty insurance subsidiaries would transfer a portfolio of high quality assets to the parent company in exchange for equity interests in certain of AIG's life insurance subsidiaries.

After being informed by the company on September 12, 2008, of the extent of its financial pressures, the Federal Reserve strongly encouraged the company to pursue private solutions to its problems. We also monitored the efforts of the company to achieve a workable and timely private sector solution in conjunction with its financial advisors, potential investors or lenders, and the NYSID. The FRBNY also provided "good offices" to facilitate discussions among AIG, the NYSID, and potential private sector investors and lenders. In particular, at the request of AIG and participants in a potential industry consortium, the FRBNY hosted a meeting on September 15, 2008, at its offices in conjunction with NYSID to facilitate negotiations between the company, the NYSID, and representatives towards a potential private sector package of supports for the company. The Federal Reserve was not willing to provide credit to AIG under section 13(3) of the Federal Reserve Act while a viable private sector solution remained potentially available.

On September 15, 2008, Lehman Brothers Holdings Inc. ("Lehman") filed for bankruptcy. Later that evening, S&P downgraded AIG's long-term debt rating by three notches, and Moody's and Fitch downgraded AIG's long-term debt rating by two notches. These events resulted in substantial and immediate liquidity demands on AIG.[1] Concurrently, private investors terminated their negotiations and no private sector solution for AIG, either in the form of a syndicated lending facility or a substantial capital raise, was reached.

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[1] For example, as a consequence of the rating actions, AIGFP estimated that it would need in excess of $20 billion in order to fund additional collateral demands and transaction termination payments in a short period of time. Also, on September 15, 2008, AIG experienced returns under the securities lending program conducted by its regulated insurance subsidiaries, which led to cash payments of $5.2 billion to securities lending counterparties, and AIG became unable to access the commercial paper market for its primary commercial paper programs.

These pressures posed an immediate threat to AIG's ability to operate as a going concern. A disorderly failure of AIG during that time of global financial fragility posed considerable systemic risks in various ways as a consequence of the company's significant and wide-ranging operations. A disorderly failure would also have further undermined business and household confidence and contributed to higher borrowing costs, reduced wealth, and general additional weakening of the economy. To address this immediate threat to financial stability and the broader economy, and in light of the absence of any feasible alternative solution, the Federal Reserve, with the full support of the Treasury Department, on September 16, 2008, agreed to lend up to $85 billion to AIG on a fully secured basis to meet the company's liquidity needs while it unwound and sold its operations.

3. Before determining that Federal assistance was necessary, did the Federal Reserve consider alternative rescue plans that were being discussed by AIG and the New York State Insurance Department?

Yes, the Federal Reserve discussed with AIG and the NYSID the plans that they were developing to find liquidity to meet AIG's needs, and monitored and encouraged these efforts. These efforts are described in response to Question 2 above.

4. According to news reports, the New York State Insurance Department considered allowing AIG to transfer assets from its property and casualty insurance companies to its holding company as part of an effort to stabilize the company. Why was this plan abandoned? [Please provide any documents and analysis that the Federal Reserve prepared or received concerning this plan.]

The proposed arrangement under which certain of AIG's insurance subsidiaries would have transferred (subject to regulatory approval) assets to AIG in exchange for equity interests in certain of AIG's life insurance subsidiaries was one part of a potential comprehensive private sector solution for AIG. After the Lehman bankruptcy and additional credit rating downgrades of AIG on September 15, 2008, this comprehensive private sector solution was no longer possible. The NYSID would be best able to provide an explanation and analysis of its proposal and decision.

5. How did the Federal Reserve determine how much money it needed to loan to AIG? [Please provide all documents and analysis the Board of Governors used to make this decision.]

In establishing the $85 billion maximum authorized size of the revolving credit facility in September 2008, the Federal Reserve considered a number of factors.

As a general matter, the size of the facility was established based on estimates of the amount of liquidity the firm would need to stabilize the company, meet its obligations as they came due, and allow AIG sufficient time to find alternative sources of funding and sell certain of its businesses in an orderly manner, the proceeds of which could be used to repay borrowings under the facility. In estimating these needs, we considered information developed by or for the consortium of private sector financial institutions that in the days preceding the Board's authorization had been in discussions with AIG concerning a potential $75 billion private-sector lending facility. In addition, we considered additional information provided by AIG, as well as information obtained through discussions and contacts with the Treasury Department and the NYSID. The information considered included estimates of liquidity needs associated with collateral calls from credit default swaps ("CDS") and other derivatives contracts written by AIGFP; maturing AIG commercial paper and other short-term maturing obligations that AIG likely would be unable to fund elsewhere; the liquidity needs associated with the securities lending program operated for AIG's domestic insurance company subsidiaries; and other material funding requirements of AIG and its subsidiaries. We also considered the potential that AIG and its subsidiaries might need additional liquidity to meet unexpected liquidity needs that might arise due to the bankruptcy of Lehman just the day before and the continuing deterioration of conditions in the financial markets.

Importantly, we also considered the collateral available to secure the credit facility. The credit facility was fully secured by assets that AIG was able to pledge under the associated Guarantee and Pledge Agreement and that had an estimated value in excess of the maximum size of the credit facility.

6. Please describe the efforts of the Federal Reserve and the Treasury Department to devise a government rescue plan for AIG, including when the Treasury Department began working with the Federal Reserve, and when and why it was decided that TARP funds should be invested by the Treasury Department in AIG? [Please provide all documents and analysis that the Board of Governors used to determine that TARP funds should be part of the rescue plan for AIG.]

As discussed in response to Question 2 above, after the Federal Reserve was informed by AIG of its severe liquidity pressures on September 12, 2008, the Federal Reserve strongly urged the company to find a private sector solution to its financial difficulties. This posture was supported and echoed by senior officials of the Treasury Department. Federal Reserve staff also began to analyze the causes and extent of the company's financial problems, as well as the potential risks that a disorderly failure of AIG would present to the financial system and the broader economy, using information obtained from the company and other sources. As the company worked with investors, financial institutions, and the NYSID over the next few days to develop a solution to its problems, the Federal Reserve and the Treasury Department monitored developments, and senior officials of the Federal Reserve and Treasury Department remained in ongoing contact. On September 16, 2008, when no private sector solution remained available and AIG's liquidity needs became urgent, the Federal Reserve acted with the full support of the Treasury Department to provide AIG up to $85 billion in secured credit to prevent the company's disorderly failure. The Emergency Economic Stabilization Act of 2008 ("EESA") was not proposed or enacted at this point. Consequently, neither the Treasury Department nor any other federal agency had the authority to provide capital to AIG.

The loans provided by the Federal Reserve to AIG under the revolving credit facility authorized in September 2008, and the securities borrowing facility authorized in October 2008, helped stabilize the company by addressing the immediate liquidity needs of the company. However, credit markets continued to be severely stressed for all firms and liquidity pressures on AIG in particular did not abate even with access to these Federal Reserve liquidity facilities. For example, the company continued to be negatively affected by the decline in market value of many assets owned by AIG entities or to which AIG entities were exposed through derivatives. As a result, the company reported a $24.5 billion loss for the third quarter of 2008, approximately $19 billion of which was attributable to fair value adjustments on the residential mortgage-backed securities ("RMBS") held in connection with the securities lending program conducted by its insurance subsidiaries and on CDS that AIGFP had written on multi-sector collateralized debt obligations ("CDOs").

The severe market turbulence also made it difficult for the company to quickly sell its subsidiaries or business units to raise funds. At the same time, the liquidity needs of AIG, which helped determine the size of the emergency credit, as well as the terms of the emergency credit provided under the revolving credit facility, which were based on the terms offered by the private sector to AIG, increased the company's leverage and lowered the company's interest coverage ratio,[2] two key metrics used by the credit rating agencies in assessing the financial strength of an issuer. These and other factors placed the company's credit ratings in jeopardy. Further downgrades in the company's credit ratings would have resulted in substantial new liquidity demands on the company, due in part to collateral calls and contractual obligations based on the credit ratings of AIG. These greater liquidity demands and other potential consequences of a ratings downgrade placed the stability of the company and the financial system at risk.

Through the fall of 2008, the Federal Reserve and the Treasury Department worked to develop a restructuring of the government's assistance to AIG that would facilitate AIG's execution of its plan to sell certain of its businesses in an orderly manner, address the continuing capital and liquidity issues facing the company, promote market stability, and protect the interests of the U.S. government and taxpayers. On November 10, 2008, the Federal Reserve and the Treasury Department jointly announced a package of actions designed to achieve these goals. As part of that package of actions, the Treasury Department agreed to invest $40 billion in Series D senior preferred stock of AIG under the authority recently granted by the EESA. This investment constituted an important part of the restructuring actions by providing new equity capital to AIG, a tool not available to the U.S. government at the time the revolving credit facility was authorized in September 2008. The proceeds of this investment were used by AIG to repay outstanding borrowings under the revolving credit facility and, in connection with this repayment, the maximum amount available under the facility was reduced from $85 billion to $60 billion. Accordingly, the Treasury Department's investment both increased AIG's capital and reduced its leverage.

In connection with the November 2008 restructuring, the Federal Reserve provided liquidity to two special purpose vehicles to permanently address the liquidity pressures caused by the securities lending program of AIG's domestic insurance subsidiaries and by the CDS exposure of AIGFP to multi-sector CDOs. Specifically, the Federal Reserve provided $19.5 billion in senior secured financing to Maiden Lane II LLC ("Maiden Lane II"). AIG's

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[2] A company's interest coverage ratio typically is calculated by dividing the company's earnings before interest and taxes by the company's interest expenses. This ratio is one measure of how well a company can meet its interest-payment obligations.

insurance subsidiaries also provided $1 billion in subordinated funding to Maiden Lane II, which is available to absorb first any loss that may be realized by the entity. Maiden Lane II then used the proceeds from these fundings to purchase the RMBS held by AIG's domestic insurance subsidiaries in connection with their securities lending program. Maiden Lane II acquired the RMBS, which had an aggregate par value of approximately $39.3 billion, at market prices for an aggregate amount of approximately $20.5 billion. This facility allowed the domestic insurance subsidiaries to terminate their securities lending program.

In addition, the Federal Reserve provided $24.3 billion in senior secured financing to Maiden Lane III LLC ("Maiden Lane III"). AIG also provided a $5 billion subordinated equity contribution to Maiden Lane III, which is available to absorb first any realized loss that may be incurred by Maiden Lane III. Maiden Lane III used the proceeds of these fundings to purchase the multi-sector CDOs on which AIGFP had written credit protection from the counterparties of AIGFP and the counterparties terminated the associated credit derivative transactions with AIGFP. Maiden Lane III acquired these multi-sector CDOs, which had an aggregate par value of approximately $62.1 billion, at market prices for an aggregate amount of approximately $29.3 billion. Additional information concerning Maiden Lane II and Maiden Lane III is provided in response to Question 11 below.

Financial and economic conditions, however, continued to worsen during the fourth quarter of 2008 and AIG continued to face strong liquidity and capital pressures. On March 2, 2009, AIG announced a loss of approximately $62 billion for the fourth quarter of 2008, ending a year in which AIG suffered approximately $99 billion in total net losses. These losses weakened the company's financial condition. The extreme financial and economic conditions that existed during the fourth quarter also greatly complicated AIG's plans to divest significant parts of the company in order to repay the U.S. government for its previous support.

In the context of this backdrop, on March 2, 2009, the Treasury Department and the Federal Reserve announced a further restructuring of the government's assistance to AIG. The restructuring actions announced in early March 2009 were the result of extensive discussions among officials of the Federal Reserve and the Treasury Department, in consultation with management of AIG and outside advisors retained by the Federal Reserve, that began in January 2009, as initial estimates of the potential size of the company's loss for the fourth quarter of 2008 began to be developed. A key component of the restructuring involved the creation by the Treasury Department of a Series F preferred equity capital facility for AIG that can be drawn up to a maximum amount of $29.835 billion[3] and the exchange by the Treasury Department of the $40 billion of Series D cumulative perpetual preferred shares that it acquired in November 2008 for new Series E preferred shares with revised terms that more closely resemble common equity.

In conjunction with these actions, the Federal Reserve also agreed to take a variety of actions. Among other things, the Federal Reserve agreed to accept, in satisfaction and reduction of an equivalent amount in the amount outstanding and the maximum amount available under the

[3] As explained in response to Question 16, as of December 31, 2009, AIG had drawn approximately $5.34 billion from this new Series F capital facility.

revolving credit facility, up to $26 billion in preferred interests in two special purpose vehicles ("SPVs") that would hold all of the outstanding common stock of two life insurance holding company subsidiaries of AIG, American Life Insurance Company ("ALICO") and American International Assurance Company Ltd. ("AIA"). These transactions closed on December 1, 2009, and, based on independent valuations obtained by the Federal Reserve, resulted in a $25 billion reduction in the amount outstanding under the revolving credit facility and a reduction from $60 billion to $35 billion in the maximum amount available to AIG under the revolving credit facility at any one time. These transactions position AIA and ALICO for initial public offerings or sale in the near future. For example, AIG has chosen global coordinators for a potential IPO of AIA. Depending on market conditions and subject to customary regulatory approvals, the IPO may occur as early as this year. The proceeds of the IPO would be used to redeem the Federal Reserve's preferred interest.

Consistent with the goals of previous actions, the actions authorized by the Treasury Department and Federal Reserve in March 2009 were designed to help stabilize the company and the financial system, enhance the company's capital and liquidity, and facilitate the orderly completion of the company's global divestiture program. Importantly, as noted above, these restructuring actions also began to separate the company's major non-core businesses from AIG in order to facilitate the sale of these businesses and the repayment of the assistance provided by the Federal Reserve and the Treasury Department.

11. What proportion of assistance provided by the Federal Reserve to AIG was used to address problems with AIG's securities lending program and what proportion was used to address problems with AIG's Financial Products division? Please provide a detailed description of how the funds were used in each case.

The Federal Reserve tracks on a daily basis advances to, and repayments by, AIG under the revolving credit facility. In addition, the Federal Reserve receives daily reports concerning the company's cash flow and monitors the company's use of funds. Over time, AIG has used advances under the facility for a number of different purposes, including satisfying collateral calls on derivatives entered into by AIGFP, making capital contributions to the company's insurance subsidiaries, and repaying maturing debt. Because the credit facility is a revolving facility (like a credit card), repayments made by AIG (other than repayments generated by the sale of businesses)[4] provide AIG additional borrowing capacity under the revolving credit facility, subject at all times to the maximum limit on the facility and the requirement that the entire facility be repaid by September 13, 2013. By agreement with the Treasury Department and the Federal Reserve, AIG used the proceeds of the Treasury Department's November 2008 investment in $40 billion of Series D preferred shares to repay a portion of the outstanding balance on the Federal Reserve's revolving credit facility and reduce the maximum amount of credit available under that facility from $85 billion to $60 billion. Since the inception of the

[4] Under the terms of the revolving credit facility, the net proceeds from the sale of AIG's businesses (after certain deductions) not only must be used to repay the outstanding balance on the facility, but also reduce the maximum amount of credit available under the facility at any one time unless the Federal Reserve otherwise agrees.

revolving credit facility, the amount of borrowings outstanding at any one time under the facility has not exceeded the authorized maximum size of the facility in effect at that time.

Table 1 provides information concerning the amount drawn under the revolving credit facility from September 16, 2008, through December 31, 2009, for uses related to AIGFP and AIG's insurance subsidiaries after taking into account the $40 billion repayment resulting from the Treasury Department's investment in the Series D preferred shares and other repayments. The table assumes all funding provided by AIG to AIGFP and AIG's insurance subsidiaries, other than amounts drawn from the Treasury Department's Series F capital facility,[5] was fully funded through the revolving credit facility. Some of the actual funds provided by AIG to AIGFP and AIG's insurance subsidiaries may, however, have been obtained through internal sources or other external sources.

The information provided for AIGFP is net of approximately $22 billion in AIGFP-related repayments on the credit facility during the period. Funding needs within AIGFP may be met through a combination of internal and external sources. The amounts in Table 1 reflect the aggregate net daily amount of funding that AIGFP required from AIG over the period for each indicated purpose.

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[5] As discussed later in this response, as of December 31, 2009, AIG had drawn approximately $5.34 billion under the Treasury's Series F capital facility.

Table 1

Revolving Credit Facility Uses for AIGFP and Insurance Subsidiaries as of 12/31/09		
AIGFP		**50,605**
Maturing debt	9,812	
Collateral posted to secure guaranteed investment agreements (GIA) following ratings downgrade prior to 9/16/08	15,330	
Commercial Paper Programs[1]	(631)	
Collateral calls on credit derivatives	17,178	
Collateral calls on other derivatives	1,514	
Interest payments to AIG Inc.	3,758	
Asset sales	(2,393)	
Contractual payments (other than collateral calls) and other business operating expenses[2]	6,037	
Maiden Lane III equity interest		**5,000**
Insurance Companies		**28,192**
Capital contributions to insurance subsidiaries to fund to Domestic Securities Lending Program	14,660	
Capital for insurance subsidiaries to ensure regulatory minimums, including make-wholes for the insurance subsidiaries when loses from the Securities Lending Program were realized through the termination of the program and creation of Maiden Lane II	11,004	
Capital for insurance subsidiaries to fund their interest in Maiden Lane II	1,000	
Repayment of outstanding loans from insurance subsidiaries to AIG Inc. made prior to Sept. 16, 2008	1,528	
Repayment from the U.S. Treasury's Series D		**(40,000)**
Revolving credit facility uses for AIGFP and Insurance Subsidiaries		**43,797**

[1] Reflects repayment to AIGFP by Curzon, a commercial paper program operated by AIGFP, following Curzon's participation in the Commercial Paper Funding Facility (CPFF). Curzon and certain other commercial paper programs of AIGFP participate in the CPFF under the same terms and conditions, including eligibility requirements, established for all borrowers under that facility. As of December 31, 2009, AIGFP's commercial paper programs had $3.7 billion outstanding under the CPFF.

[2] Contractual payments include the difference between cash flows (e.g., coupon and premium payments) received and cash payments made with respect to interest rate swaps, credit default swaps, and foreign exchange, equity, and commodity derivative contracts; principal and interest payments received on investment securities; interest paid on issued securities and investment contracts; and net repayments received on repurchase agreements.
Other business operating expenses exclude non-cash expenses (e.g., depreciation and restructuring costs). Other business operating expenses are estimated to be $654 million for the period from September 16, 2008, through December 31, 2009.

In addition to the amounts above, in October 2008, the Board authorized the FRBNY to engage in securities borrowing transactions with AIG's domestic insurance subsidiaries under a separate securities borrowing facility. This facility was designed to address the liquidity and capital pressures facing AIG as a result of the securities lending program conducted by certain of the company's regulated insurance subsidiaries. Under this program, the insurance subsidiaries pooled together and lent out high-quality, fixed-income securities owned by the insurance companies to third parties in exchange for cash. The cash collateral received was used to purchase a portfolio of RMBS. However, as the value of RMBS declined in 2007 and 2008, and AIG's securities lending counterparties began to pull away from the company or demand additional collateral due to its weakening condition, these transactions became a significant source of liquidity strain on AIG. Although the maximum authorized size of the securities borrowing facility was $37.8 billion, the actual maximum amount of advances outstanding under this facility at any one time was $20.5 billion.

The securities borrowing facility was terminated and fully repaid in connection with the establishment of Maiden Lane II. On December 12, 2008, the Federal Reserve provided $19.5 billion in senior secured financing to Maiden Lane II to partially fund the acquisition by Maiden Lane II of the RMBS acquired by AIG's domestic insurance subsidiaries in connection with the subsidiaries' securities lending program. Maiden Lane II acquired these RMBS at their fair market value, which represented a substantial discount to the par value of the securities. Importantly, the full portfolio of RMBS held by Maiden Lane II serves as collateral for the Federal Reserve's loan to Maiden Lane II, and AIG's insurance subsidiaries also have a $1 billion subordinated position in Maiden Lane II that is available to absorb first any losses that may be realized. The proceeds received by AIG's insurance company subsidiaries from the establishment of Maiden Lane II, together with other AIG funds, were used to return all cash collateral posted by securities borrowers under the insurance subsidiaries' securities lending program and terminate the program, thereby relieving the insurance subsidiaries from continued exposure to these transactions as well as the RMBS purchased with the associated cash collateral.

In late 2008, the Federal Reserve also extended a loan to Maiden Lane III to help address the liquidity strains facing AIG as a result of the credit protection that AIGFP had written on multi-sector CDOs. Although the maximum authorized amount of the Maiden Lane III facility was $30 billion, only $24.3 billion in senior secured financing ultimately was provided. The proceeds of this loan were used by Maiden Lane III to partially fund the purchase of the underlying multi-sector CDOs from AIGFP's counterparties. Importantly, Maiden Lane III acquired these CDOs, which had an aggregate par value of approximately $62.1 billion, at the then current market value of the CDOs, which was substantially below the par value. The Federal Reserve's loan is secured by the full portfolio of CDOs acquired, as well as by a $5 billion subordinated equity contribution provided by AIG, which is available to absorb first any losses that may be realized. In connection with the purchase of these CDOs, the counterparties agreed to terminate the related CDS with AIGFP, thereby eliminating AIGFP's obligation to continue to post collateral under these contracts and AIGFP's continuing financial exposure to these CDS.

Finally, as discussed in response to Question 16 below, the Treasury Department established a separate $29.835 billion capital facility for AIG in connection with the March 2009 restructuring of the government's assistance. As described in response to Question 16 below, as of December 31, 2009, AIG had drawn approximately $5.34 billion under the Series F facility, of which approximately $5.243 billion had been used for purposes directly related to AIG's insurance subsidiaries.

12. Please describe the Federal Reserve's consultations with state insurance commissioners in determining whether and how financial assistance to address problems with AIG's securities lending program should be provided. [Provide copies of all relevant emails, correspondence, and other communications in addition to those provided in response to question 8.]

Following the initial interactions with officials of the NYSID leading up to the establishment of the revolving credit facility, Federal Reserve officials continued in regular contact with NYSID officials and officials from other state insurance departments that supervised significant insurance subsidiaries of AIG. As part of these discussions, Federal Reserve and state insurance officials discussed the financial condition of AIG and its insurance subsidiaries, the impact of market developments on the company and its insurance subsidiaries, and the continuing strains facing AIG and its subsidiaries, including the strains arising from the company's domestic securities lending program. The state insurance authorities for the insurance subsidiaries participating in the securities lending program supported the Federal Reserve's establishment of the securities borrowing facility in October 2008, and also approved the sale of the RMBS associated with the securities lending program to Maiden Lane II in December 2008.

13. Other than the problems associated with AIG's securities lending program, were there any other problems involving AIG's insurance companies that contributed to the company's overall financial problems?

Many factors contributed to the imminent liquidity crisis that faced AIG in the fall of 2008. Among these factors were limitations on the authority of the state insurance commissioners to monitor and regulate significant risks that were taken by AIG (the parent holding company) and its unregulated subsidiaries, in particular AIGFP, as well as the liquidity drains and capital losses resulting from AIG's securities lending program. In addition, AIG's insurance subsidiaries, like many other domestic and foreign financial institutions, were affected by the sharp and broad-based declines in prices for commercial and residential real estate, the substantial drop in the values of mortgages and mortgage-backed securities, and the general decline in economic activity that began in 2007. AIG has used funds from both the Federal Reserve's revolving credit facility and the Treasury Department's Series F capital facility to help address the capital and liquidity pressures facing AIG's insurance subsidiaries. These actions have helped preserve the stability of the AIG organization and also have helped preserve the value of these subsidiaries for the benefit of taxpayers.

14. Was concern about the failure of any of AIG's insurance companies a material factor in the Federal Reserve's decisions either initially or subsequently to provide financial support to AIG? If not, why did the Federal Reserve allow the proceeds of its loan to AIG to be used to recapitalize insurance companies? If so, please explain how the Federal Reserve decided that insurance companies presented sufficient risks to the financial system to justify receiving financial assistance?

The risks facing AIG imperiled the entire organization and, because of the scope, size, and interconnectedness of AIG, the financial system. A disorderly failure of AIG clearly would have placed additional pressures on, and magnified the risks facing, AIG's insurance subsidiaries. For example, AIG's insurance subsidiaries had substantial derivatives exposures to AIGFP and were interconnected with the parent company and its unregulated affiliates in a variety of other financial and operational ways. Moreover, as I have testified previously, a failure of AIG likely would have resulted in a significant intensification of an already severe financial crisis and a further worsening of global economic conditions. Conceivably, its failure could have resulted in a 1930s-style global financial and economic meltdown, with catastrophic implications for production, income, and jobs. Such consequences would have raised substantial uncertainty about the solvency of a number of financial institutions, including AIG's insurance subsidiaries. AIG's insurance subsidiaries are among the largest providers of life insurance and property and casualty insurance in the United States and have millions of individual and corporate policyholders. Problems at these insurance subsidiaries could have led to a run by policyholders and creditors on other insurance companies and, potentially, on the insurance industry as a whole.

The revolving credit facility established for AIG was intended to stabilize this systemically important firm--of which its insurance subsidiaries are an important part--and allow AIG and its subsidiaries to meet their obligations as they come due while the company pursues its global restructuring and divestiture program. Accordingly, as explained in response to Question 11, AIG used advances under the facility for a number of different purposes, including satisfying collateral calls on derivatives entered into by AIGFP, making capital contributions to the company's insurance subsidiaries, and repaying maturing debt. Moreover, the use of funding obtained under the revolving credit facility to stabilize and address the funding needs of its insurance subsidiaries helps preserve the value of these subsidiaries and, thus, facilitates AIG's ability to repay the assistance provided by U.S. government.

15. At the time the Federal Reserve was considering providing financial assistance to AIG, what did the Federal Reserve believe would have been the implications for AIG's insurance companies had the Federal Reserve not provided assistance? Did the Federal Reserve believe that one or more of AIG's insurance companies could have failed or been rendered insolvent had the Federal Reserve not provided financial assistance to AIG?

Please see the response to Question 14.

16. Which AIG insurance companies received proceeds of the financial assistance provided by the Federal Reserve or the Treasury Department to AIG and how much financial assistance did each company receive? Why was it determined that these insurance companies needed financial assistance?

As indicated in Table 1 above, between September 16, 2008, and December 31, 2009, AIG had drawn approximately $28.192 billion under the revolving credit facility for uses directly related to its insurance subsidiaries.[6] Table 2 indicates the portion of that amount that AIG

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[6] As discussed in response to Question 11, this figure assumes all funding provided by AIG to its insurance subsidiaries, other than amounts drawn from the Treasury Department's Series F

provided to its individual insurance business lines. AIG aggregates its domestic life and retirement subsidiaries and its commercial insurance subsidiaries into single business lines for operating and reporting purposes. The principal insurance subsidiaries within the Domestic Life and Retirement Services business line include American General Life Insurance Company, The United States Life Insurance Company in the City of New York, American General Life and Accident Insurance Company, The Variable Annuity Life Insurance Company, and AIG Sun America Life Assurance Company. The principal commercial insurance entities held through Chartis include American Home Assurance Company, New Hampshire Insurance Company, National Union Fire Insurance Company of Pittsburgh, Lexington Insurance Company, and AIU Insurance Company.

Table 2

Revolving Credit Facility Uses for Insurance Subsidiaries as of 12/31/09	
Domestic Life and Retirement Services	23,265
Chartis (Commercial Insurance)	1,177
Nan Shan, Star & Edison	2,087
American Life Insurance Company	900
American International Assurance Company	763
Revolving credit facility uses for Insurance Subsidiaries	28,192

In April 2009, the Treasury Department established a new equity capital facility under which AIG may draw up to $29.835 billion as needed in exchange for issuing Series F preferred stock to the Treasury Department. As of December 31, 2009, AIG had drawn an aggregate of $5.34 billion from this capital facility. As indicated in Table 3, as of December 31, 2009, AIG had drawn $5.243 billion from this facility for purposes directly related to AIG's insurance subsidiaries. As of December 31, 2009, no draws had been made from this facility for purposes directly related to AIGFP. Approximately $101 million of Series F draws had not yet been used as of that date.

Table 3

Total Series F Facility Uses as of 12/31/09	
Capital for domestic life insurance subsidiaries	1,150
Funding for a tax liability to UGC, AIG's mortgage guaranty subsidiary	234
Collateral funding for AIG Re, the reinsurer for UGC	898
Purchase of ILFC from an insurance subsidiary, NUFIC, by AIG parent	2,722
Capital for a foreign life insurance subsidiary for the losses realized with the wind-down of the Foreign Securities Lending program	239
Total Series F Facility Uses	5,243

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capital facility, was fully funded through the revolving credit facility. Some of the actual funds provided by AIG to its insurance subsidiaries may, however, have been obtained through internal or other external sources.

As discussed above, AIG's insurance subsidiaries are an important part of the overall organization, and supporting the ability of these companies to meet their obligations to policyholders and others helps maintain the stability of the company and the financial system and helps preserve the value of the subsidiaries, thereby facilitating the company's ability to repay the financial assistance it has received from the U.S. government.

17. In the Federal Reserve's view, would the state insurance guaranty fund system have been able to handle the failure of several of AIG's insurance companies? If so, why did the Federal Reserve allow a significant portion of the proceeds from the loans it made to AIG to go to AIG insurance companies?

AIG's insurance subsidiaries are among the largest in the United States and the world and operate in virtually every state. In the past, insolvent insurance companies have been effectively liquidated under state-based insolvency regimes, but they were of a much smaller size than AIG's insurance operations. There has never been a liquidation of an insurance enterprise of the size and geographic scope of AIG. The commencement of rehabilitation proceedings against AIG's domestic insurance businesses would have been a significant test of this insolvency regime during a period of tremendous uncertainty and stress in the financial markets. It likely would have resulted in some policyholders being unable to access their funds and substantial delays in the payment of some policyholder claims. It also likely would have significantly increased the uncertainty of policyholders of AIG and other insurance companies about whether their claims would be paid at a time when consumers, municipalities, pension funds, small and large businesses, and others were already experiencing financial stress from the crisis. And, because losses resulting from the liquidation or rehabilitation of a failed insurer typically are recovered through assessments on other insurers, the failure of AIG's insurance subsidiaries could have placed substantial additional strains on other insurance companies. In light of the environment then prevailing, the failure of AIG's insurance subsidiaries likely would have contributed to a further weakening of confidence in the financial system and conceivably could have led to a run on the industry generally.

18. What changes, if any, has the Federal Reserve required AIG to make in its risk management infrastructure?

In connection with the Federal Reserve's extension of credit, in September 2008, AIG's CEO was replaced and the first of several changes to the company's board of directors occurred. The Federal Reserve has actively engaged with AIG to ensure that AIG made significant improvements to its risk management and reporting processes, including the fulfillment of risk management requirements pursuant to the credit agreement governing the revolving credit facility. For example, the credit agreement includes several provisions designed to limit the ability of AIG to materially increase its risk exposures such as, for example, by restricting the ability of the company and its subsidiaries to engage in material new business activities beyond those conducted, or incidental to activities conducted, on the date of the agreement; make material investments in illiquid, complex structured products for which prices cannot be reasonably determined; or engage in a variety of derivative transactions other than those needed to hedge or mitigate the business risks of the company or its subsidiaries and that are conducted consistent with prudent business practices.

The Federal Reserve monitors AIG governance around important decision-making bodies, such as the board of directors, key steering committees, and committees established to manage material divestitures. The Federal Reserve also monitors AIG's internal processes to ensure appropriate levels of analysis and transparent reporting of key decisions. Since September 2008, the Federal Reserve has witnessed improvements in key risk management processes at AIG, including those related to liquidity monitoring, forecasting, and reporting by the AIG treasury function; weekly reporting from AIG's Enterprise-wide Risk Management function, which aggregates, monitors, and reports to management material market, credit, operational, and legal risks throughout the company and its subsidiaries; and expanded daily reporting on market and credit risks associated with the investments and derivatives portfolios at AIGFP, including new measures that track progress on the wind down of that operation.

19. How many people does the Federal Reserve have at AIG and what are their duties?

The FRBNY has a team of about 20 staff, led by senior officials, who are primarily responsible for conducting the Federal Reserve's oversight of AIG as lender under the terms of the revolving credit facility. Staff are frequently on site at the company in order to make sure that we are adequately informed on funding and cash flows, liquidity, earnings, valuation of assets of the company, risk management across the company, and progress in pursuing the company's divestiture plan. Federal Reserve monitoring extends to the general financial condition of the company on a consolidated basis as well as to reviews of separate financial information on all of the company's major subsidiaries. FRBNY staff usually meet several times a week with key corporate managers, including the Chief Executive Officer and the Chief Financial Officer, to gather information and monitor the company's financial condition, operations, and progress in pursuing its restructuring and divestiture plans. FRBNY staff observe all meetings of the board of directors of AIG, including committee meetings. The Federal Reserve also has obtained the assistance of qualified advisors to help us with the monitoring process. This work has been coordinated with the Treasury Department, as equity owner, and we will continue to coordinate with the Treasury Department.

20. What input does the Federal Reserve have in the day-to-day management of AIG?

As is usual in commercial lending transactions involving distressed borrowers, the Federal Reserve has certain limited rights as a creditor. These rights allow the Federal Reserve to monitor the financial condition of AIG and to restrict certain major decisions that might reduce the ability of AIG to repay its loan from the Federal Reserve. Through these and other interactions with the firm's senior management, we routinely make our views known on key issues affecting the company's financial condition and its ability to repay the U.S. government. However, as with other lending arrangements, these rights do not permit the Federal Reserve to participate in the ordinary business decisions of management. For example, the credit agreement requires AIG to submit to the Federal Reserve a significant number of financial statements and reports that address a broad range of topics relating to the financial condition and future prospects of the company. However, as a lender, the Federal Reserve is not empowered to review or approve all of the specific compensation or other expenditures related to the ongoing business operations of AIG and its subsidiaries. These types of decisions are within the authority of the company's senior management and board of directors, as well as, in some cases, subject to determinations of the Treasury Department as an equity owner or the TARP Special Master for Executive Compensation.

21. Please describe the Federal Reserve's plan for unwinding its investment in AIG. [Please provide any documentation and reports that the Federal Reserve has prepared or considered relating to the management and unwinding of its investment in AIG.]

Under the terms of the revolving credit facility, the net proceeds from the sale of AIG's businesses (after certain deductions) must be used to repay the outstanding balance on the facility unless the Federal Reserve otherwise agrees and all borrowings under the facility must be fully repaid by September 13, 2013. AIG develops and implements the strategy for selling its businesses and other assets. AIG's plans to divest these businesses and assets are reviewed by Federal Reserve staff with the assistance of outside advisors, as appropriate. We provide our views on these strategies to AIG senior management and consult and coordinate with the Treasury Department. The ultimate decisions with respect to the development and implementation of the plans are the responsibility of the company's senior management and board of directors. As discussed in response to Question 6, AIG recently placed its two largest foreign life insurance subsidiaries (AIA and ALICO) into separate SPVs to facilitate a sale or initial public offering of these entities in the near future.

23. News reports indicate that the Federal Reserve was informed by a French financial institution that it could not accept a haircut on obligations AIG owed it on derivatives contracts because French law prohibited it from accepting such a haircut. Are these news reports accurate? If so, is it true that French law would prohibit a French financial institution from accepting such a haircut?

That report is accurate. As part of the November 2008 restructuring of the AIG loan, the Federal Reserve extended credit to Maiden Lane III to address the increasing liquidity strains faced by AIG resulting from its obligation to post collateral with the counterparties to CDS it had written on multi-sector CDOs. In connection with this restructuring to terminate the CDS, and as confirmed in the recent report by the Special Inspector General for the Troubled Asset Relief Program ("SIGTARP"), the Federal Reserve actively undertook to obtain concessions from the CDS counterparties, but was unable to obtain such agreements.

As described in the recent SIGTARP report, as part of this effort to obtain concessions for AIG, FRBNY officials contacted the Commission Bancaire, the French bank regulator, to inform it that the FRBNY was conducting negotiations with two French banks, Societe Generale and Calyon, which were two of the counterparties to which AIG had the largest CDS exposure, and to request the Commission's support for the Federal Reserve's efforts. The Commission Bancaire informed the FRBNY that under French law, absent an AIG bankruptcy, the French banks could not voluntarily agree to less than par value for the underlying securities in exchange for terminating the CDS. The French banks informed FRBNY officials of this position as well. The Commission Bancaire is an arm of the French government that is charged with supervising French banks and administering and enforcing French banking laws. It has the power to impose administrative penalties and financial sanctions on offenders. See Article L613-1, Monetary and Financial Code. In the face of this, the Federal Reserve believes it would have been particularly inappropriate for the Federal Reserve to use its supervisory authority on behalf of AIG to obtain concessions from those domestic counterparties subject to Federal Reserve supervision and such action would have provided an advantage to AIGFP's foreign counterparties over its domestic counterparties.

27. Please describe any actions that the Federal Reserve took prior to or after its rescue of AIG regarding the risk exposure that AIG posed to entities regulated by the Federal Reserve.

The Federal Reserve has long viewed counterparty credit risk management as a key element of sound risk management. In 1999, the Federal Reserve issued supervisory guidance to reaffirm the importance of effective counterparty credit risk management and to address weaknesses that had become evident in the counterparty credit risks management practices of banking organizations we supervise. See SR letter 99-3, *Supervisory Guidance Regarding Counterparty Credit Risk Management* (Feb. 1, 1999). The Federal Reserve regularly reviews the effectiveness of the risk management systems of banking organizations as part of our risk-focused supervisory program and works with organizations to correct material deficiencies that are identified.

With respect to exposures of banking organizations to AIG, established industry practices prior to the crisis among financial institution counterparties with high credit ratings called for little exchange of initial margins on OTC derivative contracts. These industry practices and AIG's high credit rating thus inhibited the checks and balances initial margins would have placed on AIG's positions. Federal Reserve supervisory reviews of counterparty credit risk exposures at individual firms prior to the crisis did not flag AIG as posing significant counterparty credit risk for several reasons. For example, AIG was regularly able to post its variation margins on OTC derivative contracts, thus reducing the counterparties' exposures to AIG. Moreover, AIG spread its exposures across a number of different counterparties. In fact, some of AIG's largest counterparties were investment banks and foreign institutions that were not directly supervised by the Federal Reserve. In addition, because the Federal Reserve did not have supervisory authority over AIG, we did not have access to nonpublic information about the firm that may have raised questions about AIG's ability to continue to meet its collateral positing and other obligations to its counterparties.

28. Did the Federal Reserve have any communications during the fall of 2008 with credit rating agencies regarding AIG's credit rating?

FRBNY staff, together with the company, met with the credit rating agencies multiple times in the fall of 2008 to discuss and understand their assessment of AIG's current and future financial strength and prospects and to provide information regarding the U.S. government's initial and restructured support facilities. Meetings occurred with representatives of S&P, Moody's, Fitch, and AM Best. During these meetings, company, rating agency, and Federal Reserve officials discussed, among other things, the company's level of leverage and debt servicing costs (including costs under the Federal Reserve's revolving credit facility), the losses and potential ongoing liquidity drains associated with the company's securities lending program and CDS on multi-sector CDOs, progress and expected progress in divesting assets and businesses, and the financial condition and business prospects of the company's subsidiaries. Company and Federal Reserve officials also described to the rating agency representatives the actions that the U.S. government proposed to take to restructure the assistance provided to AIG to further stabilize the company and provide the company time to restructure and wind down its operations in an orderly manner. Such actions included the injection of $40 billion in equity by the Treasury Department under the Troubled Assets Relief Program, the use of such proceeds to pay down an equivalent amount of borrowing under the Federal Reserve's revolving credit facility, establishment of the credit facilities for Maiden Lane II and Maiden Lane III, and the restructuring of the terms of the revolving credit facility to, among other things, reduce the maximum amount available from $85 billion to $60 billion. Company, Federal Reserve, and rating agency officials also discussed the potential impact of these and other factors on the credit ratings of the company and its subsidiaries.

29. What factors governed the Federal Reserve's decision to address the problems posed by AIG's CDS positions by purchasing the underlying CDOs?

Financial markets and institutions were under severe stress during the fall of 2008. A failure of AIG during this period would have resulted in a significant intensification of an already severe financial crisis and a further worsening of economic conditions, causing further declines in already very dire prospects for production, income, and jobs. AIG's failure also would have placed additional pressures on AIG's insurance subsidiaries, which are among the largest in the United States and the world, and could have put at risk millions of policyholders, the retirement plans that had purchased insurance from AIG against the risk that their stable value funds would decline in value, and others that had relied on risk mitigation products provided by AIG.

Following the Federal Reserve's initial secured loan in September 2008, the ongoing stress in the financial markets continued to place substantial pressure on AIG. The CDS protection that AIGFP had written on multi-sector CDOs was a significant source of AIG's capital and liquidity strains during 2008. These contracts required AIGFP to provide its counterparties collateral as the market value of the underlying CDOs, AIG's credit rating, or the credit rating on the referenced assets declined. As of November 5, 2008, AIG had posted or agreed to post approximately $37 billion in collateral against these exposures, and these exposures contributed significantly to the $24.5 billion in losses that AIG reported for the third quarter of 2008. For example, during the third quarter of 2008, AIG incurred a $7.1 billion unrealized market valuation loss related to AIGFP's super senior CDS portfolio. AIG's continuing CDS exposure to multi-sector CDOs also was a concern to the credit rating agencies. A downgrade of AIG's credit rating by the agencies would have resulted in additional liquidity demands on AIG.[7]

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[7] For example, AIG estimated that, based on its financial derivative transactions as of the close of business on October 27, 2008, a downgrade of the company's long-term senior debt ratings to Baa2 by Moody's and BBB by S&P would trigger the right of counterparties to transactions representing $47.8 billion in notional amount to elect early termination of the contracts.

Maiden Lane III was established to ease this continued pressure on AIG and to establish a vehicle that would allow the orderly sale or disposition of the underlying CDOs over a period of time that would facilitate the realization of the full value of these instruments. On November 10, 2008, the Board of Governors authorized the FRBNY to lend up to $30 billion to Maiden Lane III to partially fund the purchase by Maiden Lane III, at current market value, of multi-sector CDOs for which AIGFP was obligated to provide credit protection. In connection with the purchase of these CDOs, the counterparties agreed to terminate the related CDS with AIG, thereby eliminating AIGFP's obligation to continue to post collateral under these contracts and AIGFP's continuing financial exposure to these CDS. As part of this restructuring of AIG's multi-sector CDO exposures, AIG made a $5 billion equity contribution to Maiden Lane III. This equity contribution is subordinated to the FRBNY's senior loan to Maiden Lane III and, thus, is available to absorb first any loss that ultimately may be incurred by Maiden Lane III.

The CDOs were purchased by Maiden Lane III at their current market value (approximately $29.3 billion), which represented a significant discount to their par value (approximately $62.1 billion). Before agreeing to this transaction, the Federal Reserve consulted independent financial advisors to assess the value of the underlying CDOs and the expectation that the value of the CDOs would be recovered. The advisers believed that the cash flow and returns on the CDOs would be sufficient, even under highly stressed conditions, to fully repay the Federal Reserve's loan to Maiden Lane III. Under the terms of the agreement negotiated with AIG, the Federal Reserve will also receive two-thirds of any proceeds received on the CDOs after the Federal Reserve's loan and AIG's subordinated equity position are repaid in full.

30. Please list all outside firms (e.g., law firms, consulting firms, accounting firms, advisory firms, etc.) engaged by the Federal Reserve to provide services in conjunction with the management of AIG's businesses, asset sales, portfolio positions, etc. Please provide details on why these firms were selected, how they were selected, and the amounts paid for their services.

The Federal Reserve has hired the following vendors to provide services to the Federal Reserve in connection with AIG. Firms were selected based on a number of criteria, including their expertise in the relevant subject area.

1. Ernst & Young LLP ("Ernst & Young"), to provide support in a number of areas such as insurance expertise, including actuarial support to value collateral, and expertise in derivatives, liquidity, risk management, and compensation;
2. Morgan Stanley & Co., Inc. ("Morgan Stanley"), to provide broad-based advice on AIG matters, including specific advice and assistance with respect to the company's ongoing restructuring and divestiture program;
3. BlackRock Financial Management, Inc. ("BlackRock"), to serve as investment manager of Maiden Lane II and Maiden Lane III;
4. The Bank of New York Mellon ("BNYM"), to provide administrative and custodial services for Maiden Lane II and Maiden Lane III;
5. Davis Polk & Wardwell LLP, to provide legal advice on matters related to the AIG loan and the establishment of Maiden Lane II and Maiden Lane III;

6. Sidley Austin LLP, to provide legal advice in connection with the proposed securitizations of life insurance cash flows that were authorized in March 2009 and in connection with certain CDOs held by Maiden Lane III;

7. Milliman, Inc. ("Milliman"), to provide consulting and actuarial services in connection with the proposed securitizations of life insurance cash flows that were authorized in March 2009;

8. Towers, Perrin, Foster & Crosby, Inc. ("Towers Perrin"), to provide consulting and actuarial services in connection with the proposed securitizations of life insurance cash flows that were authorized in March 2009;

9. Houlihan Lokey Howard & Zukin Financial Advisors, Inc. ("Houlihan Lokey"), to perform independent valuations of significant AIG subsidiaries and business lines;

10. Spencer Stuart, to provide executive search services in connection with the hiring of one or more senior experts in connection with the transactions involving AIA and ALICO that were authorized in March 2009;[8]

11. Herbert Smith, to provide legal advice in connection with the transactions involving AIA and ALICO that were authorized in March 2009;

12. Five Bridges Advisors, LLC ("Five Bridges"), to provide portfolio pricing information in connection with Maiden Lane II and Maiden Lane III;

13. Cleary Gottlieb Steen & Hamilton LLP, to provide legal services in connection with the revolving credit facility and the restructuring of the government's support for AIG;

14. Morris, Nichols, Arsht & Tunnel LLP, to provide legal services in connection with the establishment of Maiden Lane II and Maiden Lane III;

15. Cadwalader, Wickersham & Taft LLP; McKee Nelson LLP (now Bingham McCutchen LLP); Clifford Chance LLP; and Ashurst LLP, to provide legal services in connection with certain RMBS held by Maiden Lane II or CDOs held by Maiden Lane III;

16. Crowe & Dunlevy, P.C.; McCann FitzGerald; Pedersoli e Associati; De Brauw Blackstone Westbroek N.V.; Hengeler Mueller; Law Office of T.J. Koutalidis; Run Ming Law Office; and Appleby, to provide legal services in connection with various issues related to International Lease Finance Corporation, a subsidiary of AIG;

17. KPMG, to provide tax-related services in connection with Maiden Lane III; and

18. Deloitte & Touche LLP ("Deloitte"), to provide audit services with respect to the financial statements of Maiden Lane II and Maiden Lane III.

Copies of the contracts with the vendors listed in items 1 through 6 are available on the FRBNY's public website at http://www.newyorkfed.org/aboutthefed/vendor_information.html. The contracts with the remaining vendors are being made available to your staffs. The fees that the Federal Reserve has agreed to pay these vendors are specified in the contracts.

With respect to the BNYM, Milliman, Towers Perrin, Houlihan Lokey, Spencer Stuart, and Five Bridges contracts, the FRBNY administered a formal competitive proposal process to select each firm in accordance with the FRBNY's Acquisition Guidelines. Consistent with the FRBNY's internal policies on retaining outside counsel, the firms listed above that were retained

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[8] As a result of the executive search conducted by Spencer Stuart, the FRBNY hired one individual as an independent consultant to provide advice in connection with the AIA and ALICO transactions.

to provide legal advice or services were selected and approved by the FRBNY's Legal Function based on their relevant expertise and consideration of potential conflicts of interest, among other factors. Due to uniquely exigent circumstances that did not allow sufficient time for a formal competitive process, Ernst & Young, Morgan Stanley, BlackRock, and KPMG were selected based on an assessment of their expertise and the approval of an exception to the competitive proposal process by senior FRBNY management. This exception process was internally documented in accordance with the FRBNY's Acquisition Guidelines. Deloitte currently is the independent public accounting firm that audits the financial statements of the Board and the Reserve Banks and was selected through a competitive bidding process for those engagements. The Board separately engaged Deloitte to provide audit services for Maiden Lane II and Maiden Lane III, which are consolidated on the balance sheet of the FRBNY, in light of the substantial efficiencies achieved by having Deloitte also perform those services.

31. Please provide details on how the Federal Reserve unwound derivatives positions in AIG's Financial Products division and how the Federal Reserve plans to unwind AIG's remaining derivatives positions.

AIG has developed and is in the process of implementing a multi-year wind-down plan for both the CDS and non-CDS positions of AIGFP. Under this plan, AIGFP is entering into new derivative transactions only to hedge its current portfolio, reduce risk, and hedge risks for affiliated businesses. To facilitate this wind-down, AIGFP has disaggregated its portfolio of existing transactions into a number of separate books, and has developed a plan for addressing each book, including assessing each book's risks, risk mitigation options, appropriate monitoring metrics, and potential outcomes. Each plan has been reviewed by a steering committee whose membership includes senior executives of AIG and implementation of the plans is being led and managed by the company in accordance with its internal governance processes. AIGFP is following a variety of strategies to reduce and close out its positions and exposures. These strategies include: the sale, assignment or other transfer of positions or books of business; termination of positions; and the run-off of positions in accordance with their terms. As part of these efforts, in August 2009, AIGFP completed the sale of its energy and infrastructure investment assets, realizing aggregate net proceeds in excess of $1.9 billion. Moreover, as explained above, Maiden Lane III was established to help unwind the CDS protection written by AIGFP.

Between September 30, 2008, and December 31, 2009:

- The notional amount of AIGFP's derivatives portfolio was reduced by 46 percent (from $1.8 trillion to $970 billion); and
- The number of trade positions was reduced by 64 percent (from approximately 44,000 to 16,000).

As a lender, the Federal Reserve does not direct AIGFP's wind-down. The Federal Reserve does closely monitor AIGFP's progress in executing its wind-down strategy through a variety of ways. For example, the Federal Reserve receives daily risk reports on AIGFP's activities to monitor the effectiveness of the company's hedging and the impact of terminations and novations on the company's risk profile. Federal Reserve staff also has regular discussions with management of AIG and AIGFP and observe internal meetings and discussions to monitor AIGFP's progress in effecting its wind-down and the company's risk exposures. Significant changes in risk profile are discussed with AIGFP's risk management function and periodic on-site visits also are conducted.

10-910

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 27, 2010

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The Honorable Darrell Issa
Ranking Member
Committee on Oversight and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Congressman:

This is in response to your letter of January 22, 2010, asking questions about the role of the Federal Reserve in the transactions involving the American International Group, Inc. (AIG), the Federal Reserve, and certain counterparties of credit default swaps written by AIG on multi-sector collateralized debt obligations (CDOs).

In September 2008, the Federal Reserve extended emergency credit to AIG to prevent the imminent disorderly failure of the company, an event that would likely have led to a significant intensification of an already severe financial crisis and a further worsening of global economic conditions. We have provided significant information to Congress and the public on our actions with respect to AIG.. Thomas Baxter, Executive Vice President and General Counsel of the Federal Reserve Bank of New York, will testify on this matter before your Committee today.

Because of the public interest, to afford the public the most complete possible understanding of our decisions and actions in this matter, and to provide a comprehensive response to questions that have been raised by members of Congress, I have welcomed a full review by the Government Accountability Office of all aspects of our involvement in the extension of credit to AIG.

Responses to your specific questions about these transactions are enclosed.

Sincerely,

(Signed) Ben Bernanke

Enclosure

Responses to questions from Ranking Member Issa dated January 22, 2010, concerning certain counterparties of credit default swaps written by AIG on multi-sector collateralized debt obligations

Following the Federal Reserve's initial secured loan, the ongoing stress in the financial markets continued to place substantial pressure on AIG. The CDS protection that AIG had written on multi-sector CDOs was a significant source of AIG's capital and liquidity strains during 2008. These contracts require AIG to provide its counterparties collateral as the market value of the underlying CDOs, AIG credit rating, or the credit rating on the reference assets declined. As of November 5, 2008, AIG had posted or agreed to post approximately $37 billion in collateral against these exposures, and these exposures contributed significantly to the $24.5 billion in losses that AIG reported for the third quarter of 2008.

As a part of the restructuring of the government's assistance to AIG by the Treasury and the Federal Reserve in November 2008, Maiden Lane III LLC (ML III) was formed to ease this continued pressure on AIG. ML III purchased from the CDS counterparties multi-sector CDOs with the par value of $62 billion referenced in the CDS at their current market value (approximately $29 billion), a substantial discount to par value. The purchase of the CDOs was funded in part by a loan of approximately $24 billion from the Federal Reserve Bank of New York (FRBNY) to ML III and a $5 billion equity contribution to ML III by AIG. In addition, the counterparties were allowed to retain approximately $35 billion in collateral already posted with the counterparties by AIG pursuant to its obligations under the CDS contracts. In return, the counterparties agreed to terminate the CDS, relieving AIG of, among other things, the obligation to post additional collateral pursuant to the CDS.

1. In deciding on how FRBNY would pay AIG's CDS counterparties in return for tearing up their CDS contracts, did Federal Reserve officials take into consideration the financial health of the counterparties themselves?

Because of its concerns about the stability of the financial markets during this period, the Federal Reserve was monitoring the financial condition of major banking and investment banking participants in the markets, which included many firms that were not counterparties to AIG's CDS and some that were. However, the overriding motivating factor in structuring the payments to the counterparties was to relieve AIG of the destabilizing drains on its liquidity caused by the requirement to continue to post collateral as required by the CDS contracts. All counterparties were treated the same for payment purposes. Whether the individual counterparties were in relatively sound financial condition or not was not a factor in the decision regarding the amount paid to the counterparties or whether concessions should be sought from them.

2. Did you ever personally discuss the payment of AIG's counterparties with employees or representatives of AIG's counterparties?

I was not directly involved in the negotiations with the counterparties. These negotiations were handled primarily by the staff of the FRBNY on behalf of the Federal Reserve. I participated in and supported the Board's final action to authorize lending to ML III for the purpose of purchasing the CDOs in order to remove an enormous obstacle to AIG's financial stability and thereby help prevent a disorderly failure of AIG during troubled economic times.

3. Were you ever personally involved in discussions about what AIG should disclose to the public or Congress about the payments to AIG's CDS counterparties?

I was not directly involved in the discussions with AIG related to this decision. I fully supported AIG's decision to release publicly in March 2009 the identities of the AIG's CDS counterparties that received payments from ML III.

4. Did you ever recuse yourself from involvement with decisions related to the disclosure of the payments to AIG's CDS counterparties and, if so, when?

I did not recuse myself from involvement with any decisions related to the disclosure of payments made to AIG's CDS counterparties because I have no financial or other interest that would have made a recusal necessary or appropriate. However, as explained above, I was not involved in discussions with AIG regarding counterparties or the disclosure matters you raise. As I have previously indicated, I supported AIG's decision to make public the identities of the counterparties, and those names were disclosed nearly a year ago. In addition, I was actively involved in Federal Reserve initiatives to expand disclosure of information relating to various Federal Reserve credit facilities, including the *Monthly Report on Credit and Liquidity Programs and the Balance Sheet*, and the weekly H.4.1. release, which include detailed information on the status of the ML III credit facility. These and other publications of the Federal Reserve provide substantial information about all of our credit facilities, including the loans to AIG, ML III, and Maiden Lane II LLC, and the value of collateral supporting those loans.

5. What alternatives to the course FRBNY ultimately took in paying AIG's CDS counterparties were considered and why were they rejected?

The alternatives considered by the FRBNY are explained in the testimony of Thomas Baxter, Executive Vice President and General Counsel, FRBNY, before the Committee on Government Oversight and Reform.

As I and other Federal Reserve officials have made clear in congressional testimony and elsewhere, the situation faced by AIG and the Federal Reserve in the fall of 2008 with respect to AIG's CDS contracts pointedly demonstrates the urgent need for adoption of new resolution procedures for systemically important nonbank financial firms. Such a resolution authority would provide a wider range of tools for addressing the potential disorderly failure of a systemically significant firm, such as receivership or conservatorship powers, than are available to the Federal Reserve, which is limited to lending authority.

6. Did FRBNY consider assuming or guaranteeing AIG's obligations to its CDS counterparties and, if so, why was this course of action rejected?

See answer to Question 5 above.

7. If the Federal Reserve felt it lacked the statutory authority to pursue alternatives to the course FRBNY ultimately took in paying AIG's CDS counterparties, why didn't the Federal Reserve seek additional authority from Congress?

As I and other Federal Reserve officials have made clear in congressional testimony and elsewhere, the situation faced by AIG and the Federal Reserve in the fall of 2008 with respect to AIG's CDS contracts pointedly demonstrates the urgent need for adoption of new resolution procedures for systemically important nonbank financial firms. Such a resolution authority would provide a wider range of tools for addressing the potential disorderly failure of a systemically significant firm, such as receivership or conservatorship powers, than are available to the Federal Reserve, which is limited to lending authority. Given the extremely compressed time frame in which a solution to the liquidity threat to AIG posed by its CDS had to be found, obtaining additional statutory authority for additional powers was not possible.

8. How did FRBNY determine the price it paid for the CDOs it purchased through Maiden Lane III ("ML3")?

As explained in Mr. Baxter's testimony, ML III purchased the multi-sector CDOs underlying AIG's CDS at their current market value (approximately $29 billion), which represented a significant discount to their par value ($62 billion). Before agreeing to the transaction, the Federal Reserve consulted independent financial advisors to assess the value of the underlying CDOs and the expectation that the value of the CDOs would be recovered. The advisors believed that the cash flow and returns on the CDOs would be sufficient, even under highly stressed conditions, to fully repay the Federal Reserve's loan to ML III. Under the terms of the agreement negotiated with AIG, the Federal Reserve will also receive two-thirds of any profits received on the CDOs after the Federal Reserve's loan and AIG's subordinated equity position are repaid in full.

9. Do you believe that FRBNY paid a fair price for the CDOs it purchased through ML3 and, if so, what basis do you support that belief?

See answer to Question 8 above.

10. Are you aware of any attempts by Federal Reserve officials, staff or outside counsel to prevent public disclosure of information about the payment of AIG's

CDS counterparties by seeking special procedures from the Securities and Exchange Commission ("SEC")?

I was not involved in discussions with the SEC about any disclosure issues involving AIG. I understand that the Federal Reserve staff and its outside advisors supported AIG's initial application to the SEC to have the names of the CDS counterparties that sold CDOs to ML III remain confidential in public disclosures. I understand that the material sought to be kept confidential was handled under the special procedures created by the SEC for handling certain types of information for which confidential treatment has been requested. Under these procedures, the SEC keeps the confidential information in a separate safe so that the confidential version of the relevant document is not mistakenly treated as the public version. The procedures do not relate to the SEC's decision with regard to whether the information at issue warrants confidentiality under applicable standards.

Three months later AIG changed its view and decided to reveal the counterparty names. The Federal Reserve supported that decision. The counterparty names were disclosed nearly one year ago. I also understand that AIG has continued to ask the SEC to keep confidential certain commercially sensitive information, including CUSIP numbers and tranche names, that would identify the individual CDOs that ML III acquired from the counterparties. The Federal Reserve has supported this request. The FRBNY and its advisors believed that public disclosure of the identifying details concerning individual securities in ML III's portfolio, including to market participants, would undercut the ability of ML III to sell those assets for a maximum return to the detriment of taxpayers. In May 2009, the SEC independently concluded that this commercially sensitive information need not be disclosed. All other material information concerning the ML III transaction has been disclosed in AIG public filings with the SEC.

11. Are you aware of any attempts by Federal Reserve officials, staff or outside counsel to prevent Congress from obtaining information about the payment of AIG's CDS counterparties?

The Federal Reserve has made a tremendous amount of information about its actions with respect to AIG available to Congress in testimony, correspondence, and reports as well as to the public on the Federal Reserve website. I strongly support the goal of transparency with respect to the Federal Reserve's actions in connection with the creation of the ML III credit facility and the other actions we have taken regarding AIG. To further this goal, I have welcomed a full review by the Government Accountability Office of all aspects of our involvement in the extension of credit to AIG.

12. Are you aware of any attempt by Federal Reserve officials, staff or outside counsel to prevent public disclosure, either through the SEC or Congress, of any AIG employee compensation packages?

See answer to Question 11.

10-2808

March 26, 2010

The Honorable Edolphus Towns
Chairman
Committee on Oversight and
Government Reform
2157 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of March 18, 2010, regarding Stephen Friedman's service on the board of the Federal Reserve Bank of New York. I enclose a memorandum from staff responding to the questions posed in your letter. Documents responsive to your request have been provided separately.

I hope this information is helpful.

Sincerely,

(Signed) Ben Bernanke

MEMORANDUM

This responds to questions posed by Chairman Edolphus Towns and Member Stephen Lynch regarding Stephen Friedman's service on the board of directors of the Federal Reserve Bank of New York. To properly respond to the questions asked, this memorandum begins with a brief background on the statutory provisions governing the composition of Reserve Bank boards of directors and the ways in which potential conflicts of interest are addressed.

Reserve Bank Board Structure

By statute, Reserve Bank boards are composed of nine members divided into three classes of three directors each. Each class of directors has separate restrictions and qualifications set by statute and, in some cases, by Board policy. The classification scheme is set out in section 4 of the Federal Reserve Act and codified at 12 U.S.C. § 302, and the relevant Board policy, both as in effect in 2008 and as revised in 2009, has been provided to the Committee.

Under the statute, the three Class A directors are elected by the commercial banks that hold stock in (and are thereby members of) a regional Federal Reserve Bank. The Federal Reserve Act provides that these directors shall be "representative of" the stockholding banks. There are no restrictions on stock ownership or affiliations of these Class A directors, or on their transactions in bank or other stock. As contemplated by the statute, in virtually every case, Class A directors are affiliated with, and own stock in, banks or bank holding companies that are supervised by the Federal Reserve Bank on whose board they serve.

The Federal Reserve Act provides that the three Class B directors are also to be elected by the member banks, and are to "represent the public" and be elected "with due but not exclusive consideration to the interests of agriculture, commerce, industry, services, labor, and consumers." By statute, a Class B director may not be an "officer, director or employee of any bank." 12 U.S.C. § 303. In order to effectuate the statutory prohibition, the Board of Governors has by policy extended the affiliation prohibition to bank holding companies, which are companies that control banks and are subject to the Bank Holding Company Act. The Federal Reserve Act does not, however, impose any restrictions on ownership of or transactions in bank or bank holding company stock or other stock by Class B directors.

Finally, three Class C directors are designated by the Board of Governors. By statute, they too represent the public and must be selected "with due but not exclusive consideration to the interests of agriculture, commerce, industry, services, labor, and consumers." 12 U.S.C. § 302.[1] Like Class B directors, Class C directors may not be officers, directors, or employees of any bank. However, in the case of Class C directors, the prohibition also extends to being a "stockholder" of any "bank." 12 U.S.C. § 303. As in the case of affiliations, the Board of Governors has by policy extended the stockholding prohibition applicable to Class C directors to ban owning stock in firms that are bank holding companies. The statute provides that one of the Class C directors must be designated by the Board of Governors as chairman of the Reserve Bank board. 12 U.S.C. § 305. Although prohibited by statute from being a banker or owning bank stock, the Federal Reserve Act specifically requires that the Class C director chosen to be chairman of the Reserve Bank board "be a person of tested banking experience." Id.

As is evident from this structure, the framers of the Federal Reserve Act did not view involvement with banking or the ownership of bank stock per se as impairing the intended governance of the Reserve Banks or the operations of their boards. All Class A directors are by design elected by and representative of the banks in a particular Reserve Bank's region that belong to the Federal Reserve System. Those Class A directors may, and in practice always do, have affiliations that would be prohibited for Class B or Class C directors, and Class A and Class B directors are permitted to (and do) have stock ownership that would be prohibited for Class C directors. The division of the Reserve Bank boards into three separate groups of directors, with varying degrees of permitted involvement in the banking sector, was intended to ensure that various viewpoints will be brought to bear on decisions relating to the administration of Reserve Banks, as well as upon advice with respect to monetary policy and other policies. The limitation on involvement in the banking sector for Class B and C directors is thus designed to foster diversity of views rather than to address potential conflicts of interest.

The potential for conflicts of interest that might arise from this structure are addressed in separate statutory and policy provisions. Section 4 of the Federal Reserve Act provides that the board of directors "shall administer the affairs of said bank fairly and impartially and without discrimination in favor of or against any member bank or banks." 12 U.S.C. § 301. Importantly, Reserve Bank directors are explicitly included among officials subject to the federal government ethics and conflict of interest statute,

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[1] As originally enacted, the Federal Reserve Act required Class B directors to have been actively engaged, at the time of their election, in "commerce, agriculture, or some other industrial pursuit" in their district. No occupational requirements were originally applied to Class C directors. The Act was amended in 1977 to remove the occupational requirement for Class B directors and to provide instead that Class B and Class C directors be elected "without discrimination on the basis of race, creed, color, sex, or national origin, and with due but not exclusive consideration to the interests of agriculture, commerce, industry, services, labor, and consumers." Pub. L. 95-188, § 202(b), (c).

18 U.S.C. § 208. That statute imposes criminal penalties on Reserve Bank directors who participate personally and substantially as a director in any particular matter which, to the director's knowledge, will affect the director's financial interests or those of his or her spouse, minor children, or partner, or any firm or person of which the director is an officer, director, trustee, general partner, or employee, or any other firm or person with whom the director is negotiating for employment. The Board also has adopted a policy specifically prohibiting Reserve Bank directors from, among other things, using their position for private gain or giving unwarranted preferential treatment to any organization.

Reserve Banks routinely provide training for their new directors that includes specific training on section 208, and Reserve Bank corporate secretaries are trained to respond to inquiries regarding possible conflicts in order to assist directors in complying with the statute. Reserve Banks also provide training to their directors on all other matters involving their service, including the statutory and policy prohibitions on Class B and Class C directors with regard to ownership of stock in, or affiliations with, banks and bank holding companies. Indeed, Class C directors must certify upon appointment that they will not be an officer, employee, director, or stockholder of any commercial bank or bank holding company during their tenure on the Reserve Bank board.

Importantly, as a practical matter, because of the way Reserve Banks are governed, actual or potential conflicts of interest associated with stock ownership or affiliation rarely arise. Reserve Bank directors are not involved, for example, in matters relating to the supervision of particular banks or bank holding companies. The Board of Governors is responsible for bank supervision by statute, and Reserve Bank staff perform this function for the Board under authority delegated by the Board and under the general supervision of Board of Governors staff. Reserve Bank directors are not consulted regarding bank examination ratings, potential enforcement actions, or similar supervisory issues. In addition, while the Board of Governors' rules delegate to the Reserve Banks certain authorities for approval of specific types of applications and notices, Reserve Bank directors are not involved in any way in the review, consideration, or approval of those matters. Moreover, in order to avoid even the appearance of impropriety, the Board of Governors' delegation rules withdraw the Reserve Banks' authority to act on any application or notice requiring Federal Reserve approval when a senior officer or director of an involved party is also a director of a Reserve Bank or branch.[2] Directors are also not involved in decisions regarding discount window lending to any financial institution. Finally, directors are not involved in awarding most contracts by the Reserve Banks. In the rare case where a contract requires director approval, directors who might have a conflict as a result of affiliation or stock ownership routinely are required to recuse

[2] See 12 C.F.R. § 265.11(c)(5)(iv)(B), (c)(9), (d)(3), and (d)(4).

themselves from the Reserve Bank board action, and any involvement they would have in such a contract would be subject to the prohibitions in section 208 discussed above.

These policies and statutory restrictions are longstanding and were designed to address any potential conflict of interest that might arise from the requirement in the Federal Reserve Act that members of the board of directors of Reserve Banks include representatives of firms supervised by the Federal Reserve. Even with these restrictions, members of the boards of directors of the Reserve Banks serve a very valuable function. Reserve Bank directors provide valuable grass roots information about the condition of the local economy, the availability of jobs and credit to small businesses, consumers and others, and prospects for local growth. This anecdotal information provides an essential context to the national statistics and other economic data collected by the Federal Reserve. It is for these reasons that the Federal Reserve Act requires selection of directors that represent a broad spectrum of the economy, including bankers, and representatives of commercial, agricultural, services, labor, consumers, and other sectors of the economy.

Stephen Friedman's Service on the Board of the FRBNY

Stephen Friedman joined the board of directors of the Federal Reserve Bank of New York ("FRBNY") as a Class C director in January 2008. At that time, Goldman Sachs & Co. ("Goldman"), of which he was also a stockholder and director, was not a bank holding company. Accordingly, neither Mr. Friedman's position as a director of Goldman nor his ownership of stock of Goldman was prohibited either by statute (which bars interlocks with and ownership of stock of a "bank") or by the Board's broader policy barring interlocks with and ownership of stock of companies that are bank holding companies.

At the end of September 2008, as a result of the financial crisis then underway, Goldman's subsidiary industrial loan company converted to a state bank charter, and Goldman became a bank holding company. While this conversion did not cause Mr. Friedman's service as a Class C director to violate any statutory provisions (because he was not an officer, director, employee, or stockholder of a bank), the conversion did cause his service to be inconsistent with the Board's policy for Class C directors. On October 6, 2008, the president of the FRBNY requested that the Board of Governors waive its policy to permit Mr. Friedman to continue his service as a Class C director and as Chairman of the FRBNY board. The FRBNY believed that Mr. Friedman's continued service during the financial crisis would be very important to the FRBNY, and that requiring Mr. Friedman to step down during the height of the financial crisis would have been disruptive. While the request was pending, the FRBNY was also engaged in a search for a new Reserve Bank president. The chairman of the Reserve Bank would normally play a significant role in this process. This consideration, coming as it did during the financial crisis which was appropriately consuming the time and attention of the staff of the FRBNY and the staff and members of the Board of Governors, made it even more critical that the Reserve Bank retain its chairman, at least while the search for a new Reserve Bank president was underway. While the waiver request was pending, the general counsel and corporate secretary of the FRBNY advised Mr. Friedman that the status quo would be maintained until the waiver request was resolved, and that he would not be required to recuse himself from board activities during that period (beyond what would have been required by Section 208).

Importantly, Mr. Friedman's stock ownership did not violate the provision of the Federal Reserve Act prohibiting Class C directors from owning shares in a "bank." As noted above, the prohibition on ownership of bank holding company stock was imposed by Board policy, not by law. On that basis, and because of the benefits Mr. Friedman's continued service conferred on the FRBNY at the time, the Board granted the request for a temporary waiver of the eligibility policy for the remainder of Mr. Friedman's term, which was set to expire on December 31, 2010. Neither the Board nor the FRBNY was aware that Mr. Friedman had purchased additional shares of Goldman stock while the waiver request was pending, although the FRBNY was aware that Goldman directors received compensation for their services with Goldman shares. The FRBNY's waiver request and the Board's action in granting a temporary waiver of its policy related only to Mr. Friedman's continued service as a Class C director, and did not address or authorize any additional stock purchases.[3] Nor did it waive the requirements of the Federal Reserve Act or Section 208.

Because of the conflict of interest rules regarding directors' involvement in any matter in which they have a financial interest, Mr. Friedman had no involvement of any kind relating to the FRBNY's relationship with Goldman during his tenure on the FRBNY board, either before or after Goldman became a bank holding company, or in the Federal Reserve's consideration of Goldman's application to become a bank holding company. Once that application was approved, Mr. Friedman had no involvement in any

[3] In light of the issues that arose as a result of conversions of non-banking companies to bank holding companies during the financial crisis, the Board in 2009 revised and clarified its eligibility policy for Class B and Class C directors to state explicitly that a Class B or Class C director who is affiliated with a company that becomes a bank holding company during his or her tenure as a Reserve Bank director, and a Class C director who owns stock in such a company, must sell the stock and resign the impermissible affiliation, or resign from the Reserve Bank board of directors, within 60 days of the earlier of the date on which the director becomes aware of the impermissible affiliation or stockholding or the date that the Board informs the Reserve Bank of the company's change in status. During the 60-day period, the director must recuse him- or herself from all regular duties related to service as a Reserve Bank director.

supervisory matter relating to Goldman and was provided no confidential supervisory information or other non-public information concerning the company. Mr. Friedman also had no involvement in supervisory matters or access to confidential supervisory information regarding any of Goldman's competitors that were supervised by the Federal Reserve. In addition, Mr. Friedman had no input into any contractual relationship between FRBNY and Goldman, and no contractual relationship between FRBNY and Goldman was altered during the time Mr. Friedman served on the FRBNY board, from January 1, 2008 through his resignation on May 7, 2009.

10-3134

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 9, 2010

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The Honorable Charles E. Grassley
Ranking Member
Committee on Finance
United States Senate
135 Hart Senate Office Building
Washington, D.C. 20510-6200

Dear Senator:

I am responding to your letter of March 25 regarding the Federal Reserve's exit strategy and related issues. You noted that the Federal Reserve has several possible methods for firming the stance of monetary policy and reducing the size of its balance sheet, including the payment of interest on reserves, short-term reserve management tools such as the use of reverse repos and the establishment of a term deposit facility, and the sale of securities. You further noted that increasing reserve requirements is another option and asked for my thoughts on that alternative. Finally, you noted that the Federal Reserve's holdings of mortgage-backed securities could decline significantly in value if the level of interest rates were to rise appreciably and expressed concern about the possible effects on the Federal Reserve's ability to absorb excess reserves.

You are correct that the Federal Reserve Board could increase reserve requirements as a means of reducing excess reserves. The Federal Reserve Act, as amended, gives the Board the authority to vary the maximum required reserve ratio on transaction deposits in a range of 0 to 14 percent and to vary the maximum required reserve ratio on nonpersonal time deposits and net Eurodollar liabilities in a range of 0 to 9 percent. Since the early 1990s, the required reserve ratio on transaction accounts above the so-called low-reserve tranche has been 10 percent, and the required reserve ratio on nonpersonal time accounts and net Eurocurrency liabilities has been 0 percent.

An increase in the required reserve ratio on nonpersonal time deposits could not be accomplished immediately. To minimize the reporting burden on depository institutions, the Federal Reserve has not been requiring banks to report the data series that would be necessary to compute required reserves on nonpersonal nontransaction accounts. Nevertheless, based on the limited available data, we estimate that increasing the required reserve ratio on nonpersonal nontransaction accounts to 9 percent would reduce excess reserves by a maximum of roughly $400 billion. However, because banks would likely substitute other liabilities for nonpersonal nontransaction accounts in response to the increase in required reserve ratios, the actual reduction in excess reserves would probably be considerably smaller but by an amount that is difficult to estimate.

An increase in the required reserve ratio on transaction accounts could be implemented more quickly because the necessary system for data collection is already in place. We estimate that an increase in the required reserve ratio on transaction accounts to 14 percent would reduce excess reserves by at most $45 billion. The actual decrease would be somewhat smaller if depository institutions substituted other liabilities for transaction accounts. Although $45 billion is a substantial amount of funds, it is relatively small in comparison with the reduction of more than $500 billion in reserves that may be necessary when the Federal Reserve begins to firm the stance of monetary policy.

You also noted that the value of the Federal Reserve's holdings of mortgage-backed securities would decline if long-term interest rates increased and expressed concern that the Federal Reserve might consequently be unable to absorb sufficient amounts of excess reserves. It should be noted that the Federal Reserve's holdings of securities currently total about $2 trillion, while reserve balances are considerably less, at about $1.1 trillion. Given the relative magnitudes, it is extraordinarily unlikely that the market value of the Federal Reserve's security holdings could decline by enough to constrain the Federal Reserve's ability to drain reserves through open market operations. Moreover, the Federal Reserve can employ other instruments to absorb reserve--such as a Term Deposit Facility and the Supplementary Financing Program--and the use of these instruments would not be affected by changes in the market value of the Federal Reserve's security holdings. You recommended that the Federal Reserve publish on a weekly basis the market value of its securities holdings so that its capability to absorb reserves can be monitored. The Federal Reserve already provides information on the market value of its securities holdings on a quarterly basis in its Monthly Report on Credit and Liquidity Programs and the Balance Sheet. We will consider the feasibility and desirability of more frequent publication.

I hope these comments are helpful.

Sincerely,

10-2283

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 16, 2010

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Chairman:

This is in response to your letter of March 3, 2010, requesting that the Federal Reserve investigate certain allegations that inappropriate political interference may have been applied to the Federal Reserve System resulting in hidden transfers of resources to facilitate crimes during the Watergate scandal in the 1970s and to Iraq for weapons purchases during the 1980s.

I have no knowledge that the Federal Reserve on its own or as the result of political or other interference facilitated any crimes or transfers in either of these matters. Nonetheless, I have referred this matter to the Board's Office of Inspector General (OIG) and requested that the OIG conduct a complete and appropriate investigation of these allegations.

Sincerely,

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10-5003

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ELIZABETH A. DUKE
MEMBER OF THE BOARD

July 1, 2010

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the February 26, 2010, hearing before the Committee on Financial Services. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Elizabeth A. Duke

Enclosure

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Questions for The Honorable Elizabeth Duke, Governor, Board of Governors of the Federal Reserve System, from Chairman Frank:

Many feel that the crisis was caused by financial institutions that became too big and too complex. Now that the crisis is ending the four largest banks are 50% bigger and much more complex than before the crisis. Are you happy with this outcome? If not, what are you prepared to do to reduce their size and complexity?

The recent financial crisis demonstrated the problems posed by financial institutions that are perceived to be "too big to fail." As supervisors we are pursuing a number of initiatives in this area.

First, we are vigorously addressing the weaknesses at major financial institutions with regard to capital adequacy, liquidity management, and risk management. Firms whose failure would pose a systemic risk should receive especially close supervisory oversight and be held to the highest prudential standards. Aside from its direct benefits for the safety and soundness of these large institutions, this approach also should help offset financial firms' incentive to grow until they are perceived to be "too big to fail."

Second, we are paying close attention to compensation practices that can create mismatches between the rewards and risks borne by institutions or their managers. As the Federal Reserve and other banking agencies have noted, poorly designed compensation policies can create perverse incentives that can ultimately jeopardize the health of the banking organization. Management compensation policies should be aligned with the long-term prudential interests of the institution, be tied to the risks being borne by the organization, provide appropriate incentives for safe and sound behavior, and avoid short-term payments for transactions with long-term horizons.

In addition, we and our supervisory colleagues around the world are exploring requiring banking firms to identify obstacles to the sale or liquidation of parts of the firm, areas of unnecessary complexity, and obstacles to an orderly resolution, and to show they can quickly produce the information needed for the supervisor to orchestrate an orderly resolution should the need arise (so called "living wills"). A living will of this type could remove some of the uncertainty around a possible resolution. As part of their ongoing oversight, supervisors could target the areas where a firm's planning falls short of best practices. Focusing on the legal, contractual, and business relationships among the firm's subsidiaries could yield significant benefits for prudential supervision in normal, as well as stressed, times. The various elements of the regulatory system could thus be better integrated by identifying mechanisms and connections for the transmission of risk and liability between affiliates and by identifying relationships that may present an obstacle to the ready sales of businesses, the proceeds from which might allow the firm to avoid failure.

For the two banks that are above the 10 percent cap on deposits, would you approve a new deposit taking branch? Are you intent on flouting the express desire of congress?

You have said that the Bank of America's former thrift deposits don't count toward the market cap. Would you tell the committee how those former thrift customers are treated differently by the bank? Can they use B of A ATM machines? Go to B of A branches? Apply for consumer loans?

The terms of the deposit cap, and the authority of the Federal Reserve to apply that cap, are set by statute and do not cover all manners in which an insured depository institution may expand. Specifically, the deposit cap provision in Section 3(d) of the Bank Holding Company Act (BHC Act) applies only to interstate acquisitions of a bank. See 12 USC 1842(d). By its terms, this limitation does not apply to in-state acquisitions, acquisitions of savings associations, branch openings, or organic growth. If a bank holding company such as B of A proposed to acquire a bank in an interstate transaction, however, the deposits of its subsidiary thrifts and banks alike, together with the deposits of the bank to be acquired, would be included in the bank holding company's amount of total deposits for purposes of evaluating compliance with the 10 percent deposit limit in Section 3(d).

If pending legislative proposals are enacted, the deposit cap limitation would be broadened to include acquisitions of savings associations.

10-7017

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

August 12, 2010

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of July 30, 2010, recommending Mr [redacted] for a position on our Consumer Advisory Council.

I can assure you that Mr. [redacted] will receive full consideration when the Board makes its selection of new Council members.

The Council provides valuable assistance in advising the Board on its implementation of consumer-related matters, and the Board is pleased to receive recommendations for qualified individuals who can contribute to the Council's work.

Again, the Board appreciates your recommendation.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 28, 2011

The Honorable Darrell Issa
Chairman
Committee on Oversight
and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter dated January 11, 2011, requesting information related to the Federal Reserve's financial assistance to the American International Group, Inc. ("AIG") and certain information relating to the assets of Maiden Lane LLC, a special purpose vehicle formed by the Federal Reserve Bank of New York ("FRBNY") to facilitate the acquisition of Bear Stearns, Inc. by JPMorgan Chase. As I indicated to you in our meeting last month, the Federal Reserve wants to cooperate with the Committee's oversight efforts and to provide the Committee with access to the information requested.

Today we are producing to you documents maintained at the FRBNY that mention AIG, including AIG counterparties, between January 1, 2007 and September 8, 2008. Information responsive to your request dealing with Maiden Lane III counterparty payments and disclosure of payment for the period of September 9, 2008, through the end of May 2009 has already been provided to you. We are providing requested information dated after May 2009 through December 31, 2010, related to oversight inquiries regarding counterparty disclosure including congressional inquiries and an investigation by the Special Inspector General for TARP. Finally, we are providing today documents relating to the disclosure of information concerning assets held by Maiden Lane LLC, which includes previously published disclosures identifying individual Maiden Lane assets by CUSIP number where applicable.

Certain of the material provided today contains confidential supervisory information obtained through the exam process relating to third party financial institutions regulated by the Federal Reserve that had dealings with AIG and that are open and continue to operate. Experience has shown that public disclosure of examination material threatens to impair cooperation between regulated institutions and bank examiners and thus to turn the examination process into an adversarial proceeding. Comments in reports by examiners or their preliminary analyses also may be misunderstood or exaggerated by the public, resulting in unwarranted harm to the institution. Accordingly, we request that the Committee maintain the confidentiality of this information.

We are continuing to assemble other information responsive to your request. A significant portion of this material will contain detailed proprietary financial information about the commercial operations of AIG, an open and functioning institution, and its individual business lines, its financial prospects and business plans, and potential divestiture of assets. Much of this detailed information has not been made available to the public by AIG and is commercial information protected by the Trade Secrets Act.

A substantial set of AIG related documents were previously made available to the Senate Banking Committee and the House Financial Services Committee which are the direct oversight committees for the Federal Reserve. In recognition of the highly confidential nature of this information, both Committees established conditions on access by Committee members and staff to this information that preserved the confidentiality of the information while allowing the Committees to fulfill their responsibilities for oversight of the Federal Reserve. We propose to make this sensitive information available to the Committee for review under the same conditions that our oversight Committees followed in reviewing these documents.

Both the Board and the FRBNY are conducting additional searches for responsive materials and will make these materials available to the Committee at quickly as possible.

Sincerely,

cc: The Honorable Elijah Cummings

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 26, 2010

The Honorable Darrell Issa
Ranking Member
Committee on Oversight and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter of February 17, 2010, regarding payments made to certain counterparties that held credit default swaps written by the American International Group, Inc. (AIG). You request information relating to the Federal Reserve's decisions to extend credit to AIG and to pay AIG counterparties at par and relating to the disclosure of information related to those payments.

As indicated in your letter, I strongly support the goal of transparency with regard to the actions taken by the Federal Reserve in connection with AIG. To that end, we have made public an extensive amount of information that describes the nature and basis for the Federal Reserve's decisions and provides detailed data on the operation of the credit facilities established for AIG. The information you requested includes confidential business information that is subject to the prohibitions on disclosure contained in the Trade Secrets Act, 18 U.S.C. § 1905.

To further greater accountability and to provide a comprehensive response to questions that have been raised by members of Congress, the Federal Reserve has said that it would welcome a full review by the Government Accountability Office (GAO), the investigative and audit arm of Congress, of all aspects of the Federal Reserve's involvement in extending credit to AIG, in accordance with the provisions of the Helping Families Save Their Homes Act of 2009. Chairman Towns and another member of the Committee on Oversight and Government Reform have requested the GAO to undertake a full review of all aspects of federal assistance from any source provided to AIG, including a review of the decisions of the Federal Reserve relating to payments made to AIG's counterparties to credit default swaps. We will cooperate fully with any review of this kind undertaken by the GAO.

I hope this information is helpful.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 8, 2011

The Honorable Darrell Issa
Chairman
Committee on Oversight and
Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter dated December 29, 2010, relating to prior correspondence requesting disclosure of information concerning the American International Group, Inc. (AIG). The information requested in this prior correspondence was also requested in your letter to me dated January 11, 2011, to which I responded on January 28, 2011. In my response, I indicated that the Federal Reserve is providing the Committee with certain requested AIG information and is proposing to make additional information concerning AIG available for review by the Committee.

I hope this is helpful.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 14, 2011

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of December 16, 2010, concerning implementation of the derivatives title (Title VII) of the Dodd-Frank Act. The Board shares your goal that the Dodd-Frank Act be correctly implemented, and we are working to achieve this goal with respect to all our new authority, including in the derivatives area.

In particular, you asked about the provisions in Title VII related to margin and capital requirements applicable to swap dealers and major swap participants and the effect of these provisions on certain end users of swaps. Although section 723 of the Act provides an explicit exemption for certain end users from the swaps clearing requirement, there is no exclusion in section 731 or section 764 of the Act from the margin requirements for a swap dealer or major swap participant's (MSPs) swaps with end users. Sections 731 and 764 of the Act require the CFTC, SEC, Board, and other prudential regulators to adopt rules for swap dealers and MSPs imposing initial and variation margin requirements on all non-cleared swaps. The statute directs that these margin requirements be risk-based. Although development of a proposed rule is still underway, the Board and the other prudential regulators are giving serious consideration to how the relatively low risk posed by commercial end users engaged in hedging activities should be reflected in the amount of margin that dealers and MSPs need to collect from them. For example, we are considering whether it would be appropriate to allow a banking organization that is a swap dealer or MSP to establish a threshold, with respect to an end user counterparty, based on a credit exposure limit that is reviewed, monitored, and approved in accordance with the banking organization's standard credit approval processes, below which the end user would not have to post margin. Your comments on these issues will be carefully considered as we work with the other agencies in developing implementing regulations.

You also expressed concern about the potential retroactive application of margin requirements to existing derivative contracts. The Board is of the view that the new margin requirement regime should be applied only to contracts entered into after the new requirements become effective, regardless of counterparty type.

In addition, you noted your concern that the concentration of risk in financial market utilities (FMUs), coupled with the Title VIII provisions that provide for access by those utilities to the Federal Reserve discount window in times of crisis, could result in increased potential for taxpayer bail-outs of those utilities. Title VIII also imposes heightened supervisory oversight of designated financial market utilities. We are carefully considering ways to implement these provisions in a way that reduces potential systemic risk, protects taxpayers, and limits any rise in moral hazard.

I hope this information is helpful to you.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 14, 2011

The Honorable Frank Lucas
Chairman
Committee on Agriculture
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of December 16, 2010, concerning implementation of the derivatives title (Title VII) of the Dodd-Frank Act. The Board shares your goal that the Dodd-Frank Act be correctly implemented, and we are working to achieve this goal with respect to all our new authority, including in the derivatives area.

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I hope this information is helpful to you.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 16, 2011

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your February 10, 2011, letter concerning the definition of a "qualified residential mortgage" for purposes of the risk retention requirements to be established under section 941(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. The Board is working with the other relevant federal agencies to develop proposed regulations that would effectively implement all aspects of section 941(b), including the exception for qualified residential mortgages from any credit risk retention requirement, in a manner consistent with the language and purposes of that section.

Section 941(b) directs the Federal banking agencies, the Securities and Exchange Commission, the Secretary of Housing and Urban Development, and the Director of the Federal Housing Finance Agency to define jointly what constitutes a qualified residential mortgage, taking into consideration underwriting and product features that historical loan performance data indicate result in a lower risk of default (15 U.S.C. § 78o-11(e)(4)(B)). As part of these efforts, the Board is continuing discussions with the other agencies on how to define qualified residential mortgage in a manner consistent with the language and purposes of section 941(b), taking into account economic research and data on mortgage characteristics associated with historically lower risk of default. A down payment standard is one subject that has been raised in these interagency discussions. We will carefully consider your comments as the agencies move forward with this interagency rulemaking process. Moreover, any proposed rules developed by the agencies will be published for public comment, as required under the Administrative Procedure Act (5 U.S.C. § 552). The Board has found the public comment process to be an important aspect of the rulemaking process.

Thank you for sharing your views. We will carefully consider your comments as we move forward with this interagency rulemaking process.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 15, 2011

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter regarding recent amendments the Federal Reserve Board's Regulation Z, which implements the Truth in Lending Act (TILA). These amendments, which became effective on April 6, 2011, were adopted to protect consumers from certain unfair or abusive practices related to loan originator compensation. The final rules prohibit a party other than the consumer from paying compensation to a loan originator that is based on the terms or conditions of the loan, except the amount of credit extended. When a consumer pays the loan originator compensation directly, the final rules prohibit parties other than the consumer from also paying any compensation to a loan originator in the transaction.

You suggest that the Board make two changes to the final rules so that the rules are more consistent with the provision in Section 1403 of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). We recognize that the Board's final rules issued in August 2010 do not fully implement the provisions in Section 1403 of the Dodd-Frank Act. The Board's rules were initially proposed in 2009 based on the Board's authority in TILA to prohibit unfair or deceptive practices in connection with mortgages. The prohibitions in Section 1403 are intended to be implemented without the need for findings under the "unfair or deceptive" standard that applied to the Board's rulemaking. In addition, changes to the Board's proposal to implement Section 1403 would have called for the issuance of a new proposed rulemaking. Recognizing this, the Board determined that finalizing its 2009 proposal was the best way to effectuate Section 1403's legislative purpose and eliminate the unfair practices that the Congress sought to prohibit without further delay.

Specifically, you are concerned that under the Board's rules, when a consumer compensates a mortgage brokerage firm directly, a loan officer employed by the brokerage firm may not receive any payment that is specific to, and paid solely in connection with, that particular transaction. You state that the brokerage firm and its employee should be allowed to share any compensation that is paid by the consumer directly as long as such compensation is not based on terms of the loan, other than the loan amount.

The Board's rule seeks to prevent the firm's loan officers from steering consumers to transactions that will increase the loan officer's compensation. Because the rules prohibit "dual compensation," a brokerage firm, may be paid either by the creditor or by the consumer, but not by both. When the brokerage firm's compensation is paid by the creditor, the amount cannot be based on the loan's rate or other terms (except the loan amount) and the rule's anti-steering provisions apply. However, when a consumer pays a brokerage firm's compensation directly, the Board's rules do not deem it to be an unfair practice for the originator to negotiate any compensation amount to which the consumer will agree.

The Board believed it was necessary to prohibit a brokerage firm from sharing the consumer-paid compensation with its loan officer to prevent the loan officer from steering consumers to more expensive transactions by influencing the decision on whether the consumer will pay the brokerage firm directly or allow the originator's fees to be paid by the creditor. Because this restriction only covers payments that are specific to the particular transaction, a brokerage firm still may provide its loan officers with other forms of incentive compensation (in addition to salaries or hourly wages) without violating the rule, for example, by paying bonuses to loan officers who exceed a threshold number of loans closed within a specified period.

You also suggest a second revision to the Board's final rules. Under the rules, compensation received by a loan originator from the creditor may not be based on the loan's terms or conditions (except the loan amount). To prevent circumvention of this restriction, the final rules prohibit creditors from either increasing or reducing the originator's compensation in response to changed loan terms or conditions, such as closing costs. You suggest that a limited exception to this rule should be created, to allow an originator to make a small decrease to the originator's compensation on an infrequent basis when the adjustment is requested by a consumer within a short period before the loan closing to cover an unexpected third-party charge. The manner in which such an exemption could be crafted without allowing circumvention of the rules, is a matter that would benefit from public comment.

As you are aware, general rulemaking authority for TILA is scheduled to transfer to the Consumer Financial Protection Bureau (CFPB) in July 2011. Accordingly, the issuance of rules implementing Section 1403 will be the responsibility of the CFPB. We believe that both of the issues you have raised can best be resolved by the CFPB in the context of that rulemaking, so that any reforms made to the originator compensation rules can be addressed comprehensively.

I appreciate you taking the time to share your views with us on these important matters.

Sincerely,

11-4593

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

September 16, 2011

2011 SEP 23 A 11: 24

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION

The Honorable Darrell Issa
Chairman
Committee on Oversight
and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter of July 19, 2011, concerning monetary policy, inflation and other issues affecting the economy.

Attached, please find responses to the questions posed in your letter. In addition, for many questions we have either referenced publicly available studies or documents in the answers, or have attached copies of documents that supplement the answers.

I am also providing a copy of these materials to the Ranking Member of the Oversight and Government Reform Committee as well as the Chairman and Ranking Member of the Committee on Financial Services.

I hope this information is helpful to you.

Sincerely,

Enclosures

cc: The Honorable Elijah Cummings
The Honorable Spencer Bachus
The Honorable Barney Frank

Questions for The Honorable Ben Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Issa:

1. In the May 19, 2011 meeting mentioned above, your staff mentioned that the Federal Reserve has done studies to determine the value of the Federal Reserve's assets and what the potential losses would be based on different unwind scenarios regarding the Federal Reserve's portfolio of mortgage backed securities, collateralized debt obligations, Treasury bonds, Treasury notes, Treasury bills, and Treasury inflation-Protected Securities (TIPS). The Committee requests those studies.

See the analysis by Glenn Rudebusch[1] and the material on income on the System Open Market Account in the annual report on *Domestic Open Market Operations During 2010 (pp. 11-16).*[2] Both are available on Federal Reserve websites.

2. In the May 19, 2011 meeting mentioned above, members of your staff stated that the Federal Reserve believes it is possible to pay interest on reserves sufficient to prevent inflation by incentivizing banks to maintain excess reserves. Currently, the Fed pays interest on reserves. How much have these interest payments on reserves cost taxpayers to date? How much do you expect these reserve interest payments to rise as interest rates rise? Provide all estimates and analysis of the potential costs of payment of interest on reserves.

Central banks in most advanced countries pay interest on reserves to facilitate the implementation of monetary policy. The Federal Reserve long supported the payment of interest on reserves in the United States for this reason and also as a way of reducing distortions and inefficiencies associated with reserve requirements.[3] Congress enacted legislation specifically authorizing the Federal Reserve to pay interest on reserves in 2006 and 2008.[4]

The accounting costs associated with interest on reserves are reported in the Federal Reserve's annual reports. For the years 2008, 2009 and 2010, these interest expenses were $0.8 billion, $2.2 billion, and $2.7 billion, respectively. However, these accounting measures of interest expense do not represent net costs to U.S. taxpayers. The large expansion in the quantity of reserves outstanding over this period (and the associated increase in interest expense) was the counterpart of the expansion of the Federal Reserve's assets that, in turn, reflected policy actions taken to address the financial crisis and foster the economic recovery. These assets have generated interest income over recent years that far exceeds the interest expense from the payment of interest on the associated reserves. The Federal Reserve has remitted this income to the Treasury after deducting its costs and other adjustments, such as dividends paid on capital stock held by member banks and transfers necessary to equate surplus with capital paid in. Net

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[1] http://www.frbsf.org/publications/economics/letter/2011/el2011-11.html

[2] http://www.newyorkfed.org/markets/omo/omo2010.pdf

[3] See the Congressional testimonies by Governor Meyer at http://www.federalreserve.gov/boarddocs/testimony/2000/20000503.htm and Governor Kohn at http://www.federalreserve.gov/boarddocs/testimony/2001/20010313/default.htm on this topic.

[4] The Financial Services Regulatory Relief Act of 2006, section 201 (P.L. 109-351; 120 Stat. 1966); and The Emergency Stabilization Act of 2008, section 128 (P.L. 110-343; 122 Stat. 3765).

of these expenses, the Federal Reserve remitted a total of $31.7 billion, $47.4 billion, and $79.3 billion to the U.S. Treasury in 2008, 2009, and 2010, respectively.

The future path of interest expense, both associated with reserves and overall, as well as remittances to the Treasury will depend on economic developments and monetary policy actions. The FOMC has indicated that it will normalize the stance of monetary policy and the size and composition of the Federal Reserve's balance sheet when warranted by economic conditions. This process will involve an increase in short-term interest rates and a gradual decline in both the size of the Federal Reserve's balance sheet and in the reserves banks maintain at the Federal Reserve. Once this process is completed, the direct accounting costs associated with interest on reserves will likely be quite modest. While these costs will continue to be offset by earnings on the assets held by the Federal Reserve, the reduced size of the balance sheet that comes from reducing reserves will also likely cause the Federal Reserve's annual remittances to the Treasury to return to levels consistent with historical experience.[5]

3. In an article dated January 16, 2010, Harvard Professor of Economics Greg Mankiw wrote:

> **[A]s a result of legislative changes in October 2008, the Fed has a new tool: it can pay interest on reserves. With short-term interest rates near zero, this tool has been largely irrelevant. But as the economy recovers and interest rates rise, the Fed can increase the interest rate it pays banks to hold reserves as well. Higher interest on reserves would discourage bank lending and prevent the huge expansion in the monetary base from becoming inflationary.... [T]he Fed could easily overestimate the economy's potential growth. In light of the large fiscal imbalance over which Mr. Obama is presiding, it's a good bet he will end up raising taxes for most Americans in coming years. Higher tax rates mean reduced work incentives and lower potential output.** ***If the Fed fails to account for this change, it could try to promote more growth than the economy can sustain, causing inflation to rise.*** **(Italics added).**

Do interest payments on reserves reflect the Fed's intention to retain those reserves at the Fed to prevent inflation? Does this indicate the Fed's recognition of a limit to potential growth given aggregate constraints on the economy? Please explain and provide Fed analysis, internal communications and communications between the Treasury and the Fed.

The current high level of reserve balances is the counterpart of actions the Federal Reserve has taken over recent years to address the financial crisis and foster economic recovery and price stability. The payment of interest on reserve balances can influence the level of short-term interest rates but has essentially no bearing on the quantity of reserves outstanding. As Professor Mankiw notes in his article, the payment of interest on reserves is one of several tools that the Federal Reserve can employ in removing policy accommodation at the appropriate time so as to

[5] Projections of Federal Reserve income and expense are presented in the article by Glenn Rudebusch and annual report on *Domestic Open Market Operations During 2010* (see footnotes 1 and 2, respectively, in question 1 above).

maintain inflation at a level consistent with the Federal Reserve's statutory mandate to foster maximum employment and stable prices.[6]

In June, the Federal Open Market Committee provided additional information concerning key principles of its strategy for normalizing the stance of policy and the size and composition of the Federal Reserve's balance sheet.[7] These exit strategy principles indicate how the interest rate on excess reserves will be adjusted over time to foster trading in the federal funds market at rates close to the FOMC's target rate. The exit strategy principles are summarized below.

- The FOMC will determine the timing and pace of policy normalization to promote its statutory mandate of maximum employment and price stability.
- To begin the process of policy normalization, the Committee will likely first cease reinvesting some or all payments of principal on the securities holdings in the SOMA.
- At the same time or sometime thereafter, the Committee will modify its forward guidance on the path of the federal funds rate and will initiate temporary reserve-draining operations aimed at supporting the implementation of increases in the federal funds rate when appropriate.
- When economic conditions warrant, the Committee's next step in the process of policy normalization will be to begin raising its target for the federal funds rate, and from that point on, changing the level or range of the federal funds rate target will be the primary means of adjusting the stance of monetary policy. During the normalization process, adjustments to the interest rate on excess reserves and to the level of reserves in the banking system will be used to bring the funds rate toward its target.
- Sales of agency securities from the SOMA will likely commence sometime after the first increase in the target for the federal funds rate. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted up or down in response to material changes in the economic outlook or financial conditions.
- Once sales begin, the pace of sales is expected to be aimed at eliminating the SOMA's holdings of agency securities over a period of three to five years, thereby minimizing the extent to which the SOMA portfolio might affect the allocation of credit across sectors of the economy. Sales at this pace would be expected to normalize the size of the SOMA securities portfolio over a period of two to three years. In particular, the size of the securities portfolio and the associated quantity of bank reserves are expected to be reduced to the smallest levels that would be consistent with the efficient implementation of monetary policy.
- The Committee is prepared to make adjustments to its exit strategy if necessary in light of economic and financial developments.

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[6] See also testimony by Ben S. Bernanke, "The Federal Reserve's Exit Strategy," before the Committee on Financial Services, U.S. House of Representatives, Washington, D.C., February 10, 2010, at http://www.federalreserve.gov/newsevents/testimony/bernanke20100210a.htm.

[7] See Minutes of the Federal Open Market Committee, June 21-22, 2011, at http://www.federalreserve.gov/newsevents/press/monetary/20110712a.htm.

Regarding possible constraints on potential output, the FOMC carefully assesses the evolution of demand and supply conditions in the economy including possible changes in the level and growth of potential output. In their economic projections prepared in conjunction with the June FOMC meeting, policymakers generally viewed the unemployment rate as elevated and likely to decline only gradually toward a longer-run level in a range of 5-1/4 to 5-1/2 percent. Economic growth was projected to pick up in 2012 and 2013 to a level that would result in a gradual decline in the unemployment rate and then return to a rate of about 2-1/2 to 2-3/4 percent in the longer-run.[8]

4. As the Prudential Regulators state in a proposed rulemaking related to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank):

> **Assessing the quantitative impact of the proposed requirements is particularly difficult in light of the wide ranging and as yet undetermined changes that are occurring to the derivatives market as a result of regulatory reform.**

The "wide ranging" changes to financial regulation arising out of Dodd-Frank represent a fraction of the regulatory changes and uncertainties facing our economy today. Given the extent of new regulations, growth of the national debt, and the Fed's uncertain regarding the impact of new regulations (as indicated above) it seems unlikely that the Fed will be able to accurately estimate the extent to which regulations or taxes may constrain the economy.

In your opinion, can the Fed accurately estimate the extent that regulations or taxes may constrain the economy? If not, how can the Fed be confident in its management of monetary policy generally? Is the Fed essentially making an educated guess with regard to the extent that regulations or taxes may constrain the economy? Please provide Fed estimates, analysis, internal communications and communications between the Treasury and the Fed referring or relating to the impact of regulations on the expected growth of the economy.

As part of the analysis used to inform the FOMC's policy decisions, the Federal Reserve staff estimates the productive potential of the U.S. economy, taking into account a number of different factors, including the rate of capital formation, trend growth in the labor force, the underlying rate of technological progress, and movements in underlying inflation.[9] Changes in government

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[8] See Summary of Economic Projections of the Meeting of June 21-22, 2011, pp. 12-21 at http://www.federalreserve.gov/newsevents/press/monetary/fomcminutes20110622.pdf.

[9] These factors are incorporated in models of the U.S. economy--the Board's FRB/US and EDO models--that the staff uses in developing forecasts for U.S. economy as background material for each meeting of the Federal Open Market Committee. A discussion of the EDO model is provided by the following papers: Hess T. Chung, Michael T. Kiley, and Jean-Philippe Laforte (2010), "Documentation of the Estimated, Dynamic, Optimization-based (EDO) Model of the U.S. Economy: 2010 Version." FEDS 2010-29 (May); and Rochelle Edge, Michael T. Kiley, and Jean-Philippe Laforte (2008), "Natural Rate Measures in an Estimated DSGE Model of the U.S. Economy." *Journal of Economic Dynamics and Control*. Vol 32, 2512-2535. On the FRB/US model, see "Potential Output in FRB/US," May 2002. Finally, Michael T. Kiley (2010), "Output Gaps" FEDS 2010-27 (May), provides a general

regulations and taxes have the potential to influence all these factors, and as a result, by paying attention to developments in business investment, labor force participation, labor productivity, and inflation, the Federal Reserve can pick up the broad effects of regulatory or tax changes as they manifest themselves in actual economic performance.

To be sure, estimates of the economic effects of regulatory and tax changes, as with all economic estimates, are subject to uncertainty, and the FOMC sets monetary policy with uncertainty about both the economic outlook and the impact of its policy actions fully in mind. Indeed, the quarterly economic projections prepared by FOMC participants and published on the Board's website (see http://www.federalreserve.gov/monetarypolicy/fomccalendars.htm) regularly report the range of policymakers' forecasts for key economic variables and their assessment of the uncertainty surrounding their forecasts. More generally, an assessment of uncertainty and risks to the forecast are an integral part the monetary policy process.[10]

5. Following up on No. 4 above, is the Fed at risk of triggering inflation by allowing too much money to flow out of reserves and into the economy if it inadvertently underestimates the burden of regulation and taxation? Please provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

If the FOMC were to attempt to stimulate the economy beyond its productive capacity for a sustained period because capacity was lower than the FOMC estimated, inflation would rise. Currently, however, with the unemployment rate above 9 percent, there is very little doubt that the economy is producing well below its potential. Moreover, the FOMC is closely monitoring inflation and inflation expectations and is prepared to act as necessary to foster maximum employment and price stability. In particular, the Committee has developed the tools necessary to tighten monetary policy when it is appropriate to do so, including by immobilizing or draining reserve balances if necessary.[11]

6. What maximum growth rate for the U.S. economy does the Fed estimate it can accommodate through optimal monetary policy (i.e., the fastest possible growth without generating excessive inflation)? Please provide your estimates for each quarter for the next two years. Please explain and provide all Fed analysis and internal communications referring or relating to potential growth rates and risk of inflation. Please include estimates that identify the impact of new regulations and taxation separately.

Based on the Summary of Economic Projections of Board members and Reserve Bank Presidents, policymakers generally view economic growth in the neighborhood of 2-1/2 to 3 percent and an unemployment rate in the range of 5 to 6 percent to be consistent, over the

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discussion of the issues involved in the measurement of potential GDP and the output gap, including estimates generated by both EDO and FRB/US.

[10] See my October 19, 2007, speech "Monetary Policy under Uncertainty," at http://www.federalreserve.gov/newsevents/speech/bernanke20071019a.htm

[11] See my February 2010 testimony on exit in footnote 6 above and the discussion of the FOMC's exit principles in the minutes of the June 2011 FOMC meeting, cited in the response to question 4.

medium term, with the Federal Reserve's mandate of maximum employment and price stability.[12]

In the short run, there is no mechanical linkage between the rate of economic growth and inflation. Inflation depends on many factors including resource utilization, cost pressures, and inflation expectations. Given very low levels of resource utilization, subdued cost pressures, and stable long-term inflation expectations, past experience suggests that economic growth well in excess of 2-1/2 to 3 percent could be sustained for a time without creating significant inflation pressures.

7. Do you agree that a share of the blame for the limitations to growth should fall on the substantial new regulations and potential for new taxes, and the resulting Fed actions to attract excess bank reserves? Please provide related Fed analysis, internal communications, and communications between the Treasury and the Fed.

It is important that regulations to implement the laws passed by the Congress be designed in a manner that achieves the law's key objectives as cost-effectively as possible so that unnecessary burdens are not placed on individuals or businesses. More broadly, as the Federal Reserve carries out its statutory responsibilities, we are committed to promulgate rules that are economically sensible within the constraints of the law and to appropriately weigh costs and benefits.

Even after economic conditions have returned to normal, the federal government faces a sizable and unsustainable structural budget gap that is projected to widen over the long term under current policies. Trying to keep the federal budget on an unsustainable path would eventually result in serious economic consequences. Achieving fiscal sustainability would require a long-run plan that restrains federal spending, increases tax revenues, or some combination of these policies. In addressing our fiscal challenges, it would help long-run economic growth if tax policies were reformed so that they not only raised sufficient revenues to cover the level of federal spending that Congress has chosen, but also increased incentives to work, save, hire, and invest. In current circumstances, an advantage of taking a longer-term perspective for fiscal consolidation is that policymakers can avoid a sudden fiscal contraction that might put the still-fragile recovery at risk. At the same time, acting now to put in place a credible plan for reducing future deficits would not only enhance economic performance in the long run, but could also yield near-term benefits by leading to lower long-term interest rates and increased consumer and business confidence.[13]

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[12] See the FOMC's Summary of Economic Projections, cited in the response to question 3.

[13] See Ben S. Bernanke, "The Economic Outlook and Monetary and Fiscal Policy," testimony before the Committee on the Budget, U.S. House of Representatives, Washington, D.C, February 9, 2011, at http://www.federalreserve.gov/newsevents/testimony/bernanke20110209a.htm; and Ben S. Bernanke, "The Near- and Longer-Term Prospects for the U.S. Economy," speech presented at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming August 26, 2011, at http://www.federalreserve.gov/newsevents/speech/bernanke20110826a.htm.

As noted in the answer to question 2 above, the high level of reserve balances is the counterpart of actions the Federal Reserve has taken over recent years to address the financial crisis and foster economic recovery and price stability. The Federal Reserve, like many other central banks, remunerates reserves at a rate close to the general level of short-term interest rates. Currently, the Federal Reserve remunerates reserve balances at an annual rate of 1/4 percent. In the current environment, the low level of short-term interest rates is a factor that helps to foster economic recovery and stable prices. As noted in its August statement, the Federal Open Market Committee anticipates that economic conditions--including low rates of resources utilization and a subdued outlook for inflation over the medium run--are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.

8. It is generally understood that, since February 2000, the Federal Reserve Board has relied on the Personal Consumption Expenditures Price Index (PCE deflator), which excludes volatile food and energy, to estimate inflation. Previously, the Fed relied on the Consumer Price Index (CPI). Please explain whether the Fed continues to believe the PCE deflator method of inflation measurement is appropriate and whether this measure underestimates inflation and/or may lead to an overestimation of deflation. Please provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

Although Federal Reserve policymakers consider a variety of price measures in assessing inflation trends, we emphasize in our communications the price index for personal consumption expenditures (PCE), both the overall index and a sub-index that excludes food and energy items. Overall consumer price inflation is most relevant for assessing changes in the cost of living for the average American household. Accordingly, the Federal Reserve interprets its price-stability mandate as pertaining to overall consumer prices. For this reason, the FOMC presents long-term projections for overall PCE inflation only.[14] However, over shorter time periods the prices of food and energy items can be very erratic; in such circumstances, an inflation sub-index that excludes food and energy can provide a useful gauge of underlying trends in overall inflation. To provide the public with the views of FOMC participants on the extent to which shorter-term movements in food and energy prices are pushing overall inflation away from its longer run path, the Federal Reserve presents near term (that is two-year ahead) projections for both overall inflation and the sub-index that excludes food and energy.

Measuring inflation accurately is extremely important but it is also difficult. The available evidence indicates that, on average over time, the consumer price index (CPI) has tended to overstate increases in the cost of living. This conclusion was reached most prominently in 1996 by the Senate Advisory Commission on the CPI, headed by Michael Boskin,[15] and the broad

[14] See the Committee's Summary of Economic Projections, cited in response to question 3.
[15] See "Toward a More Accurate Measure of the Cost of Living," Final Report to the Senate Finance Committee from the Advisory Commission to Study the Consumer Price Index, December 4, 1996, at http://www.ssa.gov/history/reports/boskinrpt.html.

conclusion has been supported by other researchers, including within the Federal Reserve.[16] One reason the Federal Reserve emphasizes the PCE price index, rather than the CPI, in its communications is that the PCE measure employs an aggregation formula that better captures the way consumption patterns change in response to changes in relative prices. In addition, the PCE price index has somewhat broader coverage than the CPI, and it also seems to be based on more accurate expenditure weights. These differences notwithstanding, the overall CPI and overall PCE price index move similarly over time. Thus, I do not see the PCE price index as systematically overestimating the risks of deflation.

9. On July 14, 2011, you warned of risks of deflation as a basis for quantitative easing programs and its low rate policy. Deflation is generally defined as a decrease in the general price level of goods and services. Do you consider deflation resulting from gains in productivity ("good deflation") as different from deflation resulting from a reduction in demand ("bad deflation")? Which form of "deflation" worries you more?

As I said in my Congressional testimony, deflation can be quite detrimental to economic performance. That said, one can imagine, in principle, a situation in which an acceleration of productivity that is not initially matched by correspondingly rapid wage gains would reduce firms' costs and lead to downward pressure on prices, perhaps enough so as to lead to outright deflation. Such a scenario could be beneficial overall in that it would be associated with an economic boom and low unemployment; even so, deflation would still carry risks, including those associated with an increased debt burden on those who had incurred debt prior to the deflation, and economic performance would probably be better still if the rapid productivity growth in that scenario were associated with prices that were stable on average rather than declining. In any event, such a hypothetical scenario bears little resemblance to the economic circumstances the economy has faced in recent years. Rather, the deep recession and relatively modest recovery have led to a persistently high rate of unemployment and low underlying inflation that at times has raised the risk of outright deflation. Federal Reserve policy has helped to prevent that risk from being realized.

10. When considering the risks of deflation, do you attempt to exclude "good deflation" from your ultimate measurement of the risks of deflation? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

When we consider the risks of deflation, the economic scenarios that have confronted the U.S. economy correspond to the "bad" deflation scenario according to your taxonomy. In my view,

[16] See "Measurement Error in the Consumer Price Index: Where Do We Stand?" *Journal of Economic Literature*, Vol. XLI (March 2003) pp. 159-201; "Estimates of Measurement Error in Inflation," Memorandum by Jeremy Rudd, Feb. 13, 2004; and "Bias in the PCE price index," Memorandum by David Lebow and Jeremy Rudd, Oct. 10, 2001.

those are the situations that were a risk to the economy, and that our policies have been attempting to prevent.[17]

11. Assume that, in the case of flat screen televisions, 100% of deflation resulted from "good deflation." Would this generate concerns of a "deflationary spiral" or would it simply reflect an increase in the dollar's purchasing power? Is there any reason to fear this decline in television prices resulting solely from productivity improvements? Please provide all analysis, internal communications and communications between the Treasury and the Fed referring or relating to "good deflation" and "bad deflation."

As you noted in an earlier question, the term deflation is reserved for a decline in the overall level of prices, not for a decline in the price of any individual item. Indeed, in a properly functioning market economy with low and stable inflation, prices of some items will inevitably decline as prices of other items increase. Such price declines frequently occur among items for which productivity growth has been especially rapid, including many high-tech products. To take your example, the CPI for televisions has declined persistently over time. The deflation scenario that concerns me and my colleagues involves a generalized decline in the overall price level, not a decline in the relative price of particular items.

12. Given that the PCE deflator relied on by the Fed excludes food and energy price changes, but includes price decreases resulting from productivity gains, doesn't this underestimate the dangers of inflation while overestimating the dangers of deflation? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

As I noted above, the Federal Reserve interprets its price-stability mandate as applying to overall consumer prices, not to a sub-index that excludes food and energy items. With due recognition of the difficulties involved in measuring inflation accurately, I do not believe that the PCE price index systematically underestimates inflation or overestimates the dangers of deflation. Indeed, the best available evidence suggests that both the CPI and the PCE price index probably overestimate changes in the cost of living.[18]

13. Does the Fed implement the PCE deflator with its inherent multi-factor downward bias in order to reduce the national debt through inflation? Does the Fed seek to subsidize debtors, including the U.S. government, at the expense of savers? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

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[17] For additional discussion of the risks of, and policy response to, deflation, see Ben S. Bernanke, "Monetary Policy Objectives and Tools in a Low-Inflation Environment," speech presented at the Federal Reserve Bank of Boston, Boston, Massachusetts, October 15, 2010, at http://www.federalreserve.gov/newsevents/speech/bernanke20101015a.htm

[18] See the answer to Question 8 for references related to price measurement.

The Federal Reserve conducts monetary policy to meet its statutory mandate to foster maximum employment and stable prices. As I noted in my response to question 8, Federal Reserve policymakers consider a variety of price measures in assessing inflation trends, but we have emphasized in our communications the price index for personal consumption expenditures (PCE). Over recent years, the Federal Open Market Committee (FOMC) has taken a number of policy steps to address the financial crisis and encourage economic recovery in a context of price stability. These actions have resulted in very low levels of short- and longer-term interest rates. In general, low interest rates reduce borrowing costs for businesses and households and bolster asset prices, and the associated easing in financial conditions encourages spending and counters potential disinflationary pressures. At all times, monetary policy is guided by the Federal Reserve's fundamental macroeconomic objectives--maximum employment and stable prices; monetary policymakers do not seek to subsidize any particular sector of the economy or any particular group of households and businesses or the U.S. government. Effective monetary policy benefits all Americans by fostering solid macroeconomic performance and low inflation.

14. Does the Fed recognize that negative real interest rates generate a risk of inflation while also transferring wealth from savers to borrowers? This is effectively a stealth tax on assets, wouldn't you agree? Have you quantified the effective revenue that this has provided to the U.S. government at the expense of savers? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

As noted in the answer to question 6, inflation is determined by a number of factors including resource utilization, cost pressures and inflation expectations. Negative real interest rates could, if maintained for too long, result in inflationary pressures. However, in conducting monetary policy, the Federal Reserve carefully monitors a range of economic indicators and various measures of inflation and inflation expectations. As the Federal Open Market Committee (FOMC) noted in its August statement, it anticipates that inflation will settle, over coming quarters, at levels at or below those consistent with the Committee's dual mandate to foster maximum employment and stable prices. The Committee also noted that it anticipates that economic conditions--including low rates of resources utilization and a subdued outlook for inflation over the medium run--are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.

The Federal Reserve conducts monetary policy to foster its statutory objectives of maximum employment and stable prices. It is important to note that all Americans--both borrowers and savers--benefit from effective monetary policy. Over the long run, an environment with strong macroeconomic performance and stable prices best fosters the welfare of all of our citizens.

15. Does the Fed recognize that its pro-inflation strategy increases the risk that China and Japan will shift away from Treasury bonds, which in turn would drive up interest rates in an uncontrolled manner? Please provide all Fed analysis and communication on the risks that China or Japan will shift away from purchasing Treasury debt and the related impacts.

The Federal Reserve takes the inflation half of its dual mandate very seriously and will take whatever actions are needed to ensure price stability. While inflation increased earlier in the year, reflecting run ups in prices of energy, food, and imports, it has moderated more recently as these prices generally have flattened out or declined from their peaks. Moreover, high levels of resource slack and stable longer-term inflation expectations should keep inflation contained going forward. Reflecting this, both the yields on long-term Treasuries and the spread between the yields on nominal Treasuries and the yields on TIPS remain quite low.

Treasuries remain the premier asset class in cross-border investment portfolios as their safety and the depth and liquidity of their markets are unparalleled. Indeed, foreign holdings, as a share of total Treasuries available to the public (those not held by government agencies or the Federal Reserve), rose by a further two percentage points during the first half of this year. This increase has been driven primarily by demand from foreign official investors, generally associated with foreign exchange reserve management.[19]

16. Does the Fed seek to replace any loss in demand for Treasury bonds by imposing margin requirements through Title XII of Dodd-Frank that would heavily incentivize the use of U.S. Treasury and Agency debt as collateral to derivatives transactions? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed.

No, we do not seek to incentivize the use of Treasury and Agency bonds through the imposition of margin requirements. As required by the Dodd-Frank Act, the proposed margin requirements on uncleared swaps are intended to offset the greater risks arising from the use of swaps that are not cleared.

17. Currently, what percentage of Treasury and Agency bills, notes and bonds currently act as collateral to financial transactions such as derivative transactions and repurchase transactions (repo transactions)? Please explain and provide analysis sufficient to support your response. Please breakdown your response for transaction types.

According to Flow of Funds data, as of the first quarter of 2011, the stock of Treasury securities and Agency debentures was roughly $12 trillion. Below I discuss the amount of Treasury and Agency debt serving as collateral against repo, OTC derivative, and exchange-traded derivative transactions. Before moving on to this discussion, I would note that the data infrastructure needed to track collateral use for global repo and derivative transactions is imperfect and incomplete. Accordingly, the following discussion should be viewed as illustrative.

Roughly $580 billion of Treasury securities and Agency debentures are being used to support tri-party repo transactions.[20] This amount does not account for bilateral repo transactions that settle

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[19] See "U.S. Treasury Yields and Foreign Holdings of U.S. Securities: An Interim Report" by Daniel Beltran, Maxwell Kretchmer, Jaime Marquez, Charles Thomas, Federal Reserve Board, February 19, 2010, for further background on this topic.

[20] http://www.newyorkfed.org/tripartyrepo/margin_data.html

outside the tri-party repo market; however, tri-party repos are the larger portion of the repo market. Moreover, it is difficult to accurately estimate the true size of collateral supporting bi-lateral transactions because counting bilateral transactions would result in significant double counting since assets that are pledged in a bilateral repo transaction are often re-pledged. Primary dealers report financing around $2 trillion of Treasury and Agency securities with repurchase agreements (both tri-party and bilateral), but as noted above, because collateral in the bilateral repo market can be re-pledged, this figure cannot be used to estimate how many Treasury and Agency securities are supporting repo transactions.

In the case of OTC derivatives, the overwhelming majority of collateral backing these transactions is held in the form of domestic and foreign currency. In particular, the 2010 ISDA margin survey indicates that roughly 82 percent of all OTC derivative collateral is held in the form of currency while around 5 percent, or $50 billion, is held in the form of U.S. Treasury and Agency securities. Nearly all derivatives dealers re-use collateral received for other purposes, such as collateralizing their own exposures to their counterparties. As a result, the $50 billion figure is an upper bound on the amount of Treasury and Agency debt supporting OTC derivative transactions.

In the case of exchange-traded derivatives such as futures and options, Treasury and Agency collateral is held by clearing organizations in the form of initial margin and guaranty fund contributions. Only currency is typically accepted by clearing organizations to satisfy variation margin requirements. The Chicago Mercantile Exchange and Options Clearing Corporation, two large and significant U.S. clearing organizations, hold roughly $100 billion of U.S. Treasury and Agency collateral against cleared derivative transactions. This amount does not reflect any Treasury and Agency collateral held by other clearing organizations, including foreign clearing organizations, to support cleared derivative transactions.

Taken together, the information above suggests that around $730 billion of Treasury and Agency securities are being used to support repo and derivative transactions. This estimate should be viewed as an order of magnitude estimate rather than a precise estimate of the actual level of Treasury and Agency collateral being held. As explained above, available data sources are imperfect and data on some collateral held by unregulated and foreign market participants is not included in the above analysis.

18. What percentage of Treasury and Agency bills, notes and bonds does the Fed expect to act as collateral in the years that follow the full implementation of Dodd-Frank? Please explain and provide all related Fed analysis, internal communications and communications between the Treasury and the Fed. Please breakdown your response over time and for transaction types.

Two provisions of Dodd-Frank that could require additional collateral are the requirement for mandatory clearing of some swaps and the requirement that prudential margin requirements be imposed on non-cleared swaps. Rules concerning mandatory clearing are still under development by the CFTC and SEC. Rules concerning margin requirements on non-cleared swaps are also still under development; however, the International Swaps Dealers Association (ISDA), in a public comment letter, has estimated that the additional Dodd-Frank margin requirements on uncleared swaps could be as high as $1 trillion. How these collateral requirements would be satisfied depends on the range of eligible collateral. Under the proposed rule both domestic and foreign currency as well as Treasury and Agency debt could be used to satisfy initial and variation margin requirements. Further, the notice of proposed rulemaking invited public comment on several questions about possible expansions to the set of eligible collateral. We will carefully consider the comments received in response to these and other questions posed in the proposed rulemaking when moving forward with a final rule. Accordingly, it is not possible to determine whether increased collateral requirements would be fulfilled with Treasury and Agency securities or other forms of collateral at the present time because of the range and potentially expanding set of eligible collateral.

Attachments for Response to Question 1

FRBSF ECONOMIC LETTER

2011-11 | April 11, 2011

The Fed's Interest Rate Risk

BY GLENN D. RUDEBUSCH

To make financial conditions more supportive of economic growth, the Federal Reserve has purchased large amounts of longer-term securities in recent years. The Fed's resulting securities portfolio has generated substantial income but may incur financial losses when market interest rates rise. Such interest rate risk appears modest, especially relative to the Fed's policy objectives of full employment and price stability.

In the midst of the recent financial and economic crisis, with short-term nominal interest rates essentially lowered to zero, the Federal Reserve started expanding its portfolio of longer-term securities in order to spur economic growth, reduce unemployment, and avoid deflation. However, the Fed's purchases of longer-term securities have been controversial, in part because of the associated interest rate risk, including the possibility that increases in interest rates will cause the market value of the Fed's portfolio to fall. For example, former Fed Governor Frederic Mishkin (2010) argued that "major holdings of long-term securities expose the Fed's balance sheet to potentially large losses if interest rates rise. Such losses would result in severe criticism of the Fed and a weakening of its independence." This *Economic Letter* provides a financial assessment of the Fed's interest rate risk and places that risk in the context of the Fed's macroeconomic goals for monetary policy.

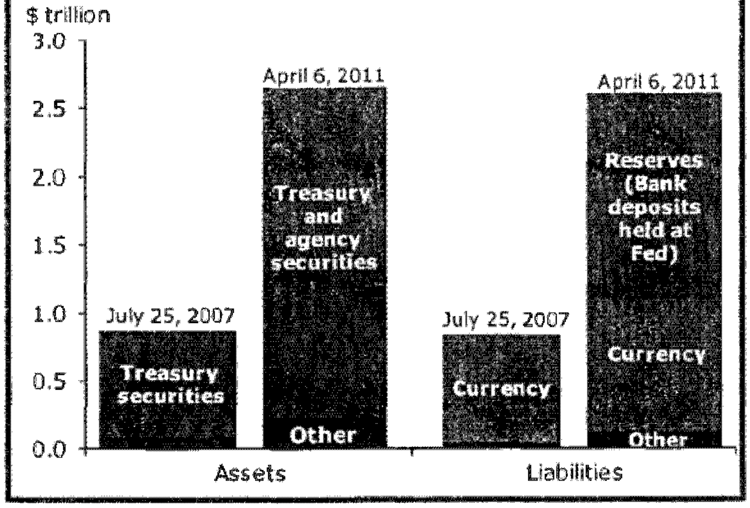
The Fed's bigger balance sheet

Responding to the financial crisis that started in August 2007 and the ensuing deep recession, the Fed took extraordinary monetary policy actions. By the end of 2008, the Federal Open Market Committee (FOMC) had reduced the overnight interest rate—the usual instrument of monetary policy—essentially to its lower bound of zero. With no scope for lowering short-term interest rates further, the Fed started to provide additional monetary stimulus to the economy by buying longer-term Treasury and federal agency securities. These purchases reduced the stock of such securities available to private investors and put downward pressure on longer-term interest rates. The Fed's securities purchases generally supported asset prices and improved credit conditions, thereby helping stabilize the economy (Rudebusch 2009, 2010).

As Figure 1 shows, the Fed's recent securities purchases have caused its balance sheet to grow enormously. Just before the financial crisis, the Fed's largest financial asset was about $0.8 trillion in Treasury securities, and its chief liability was a similar amount of currency outstanding in the form of Federal Reserve notes. The Fed now holds about $2.4 trillion in Treasury and federal agency securities. These assets are roughly balanced by a similar amount of currency and bank reserves, which can be thought of as the electronic equivalent of currency.

Although the Fed's securities portfolio carries essentially no credit risk, its market value can vary over time. Of course, throughout history, central bank balance sheets have contained tradable assets, such as gold, government bonds, and foreign currencies. So financial risks associated with fluctuations in the market prices of central bank assets are nothing new. Still, the increased size of the Fed's current portfolio could result in unusually large financial gains and losses from market fluctuations. Furthermore, besides producing a larger balance sheet, the Fed's purchases have shifted the composition of the Fed's securities portfolio toward longer-maturity securities. Indeed, the duration of the Fed's portfolio—which is roughly a measure of average maturity—rose from between two and three years before the financial crisis to between four and five years now. The longer duration of the Fed's portfolio implies that its market value is more sensitive to changes in interest rates. The combination of a larger securities portfolio with a longer duration implies that the Fed is taking on more interest rate risk than usual.

Figure 1
Federal Reserve balance sheet



Accounting for rising interest rates

In understanding the Fed's interest rate risk, it is useful to separate the effects of rising short-term interest rates from the effects of rising long-term interest rates. In general, when short-term interest rates rise, the manager of a portfolio financed by short-term liabilities faces increasing interest expenses. Similarly, when short-term interest rates rise, the Fed will pay a higher interest rate on bank reserves, which increases the funding cost of its securities portfolio. In contrast, the Fed's interest income that is generated from its holdings of fixed-coupon longer-maturity securities will be essentially unaffected. Thus, rising short-term interest rates will squeeze the Fed's net interest income.

Table 1
Federal Reserve income statement
(Billions of dollars, January 1 through December 31, 2010)

Interest income	82.9
− Interest expense	3.1
+ Other income	6.1
− Operating expenses	5.1
+ Realized capital gains/losses	0.8
= Net income (comprehensive)	81.7
+ Change in deferred credit	0.0
− Additions to capital	0.9
− Dividends paid to banks	1.6
= Remittances to Treasury	79.3
Memo: Unrealized capital gains (as of December 31, 2010)	*71.0*

Note: Numbers may not total due to rounding.

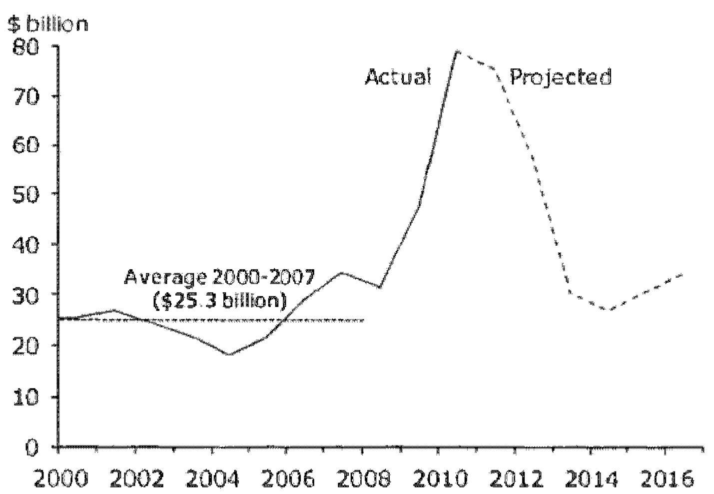
The potential quantitative effect of rising short-term rates can be assessed using the Fed's income statement in Table 1. In 2010, the Fed earned $82.9 billion in interest income, which is equal to an average coupon yield of around 4% applied to a $2 trillion portfolio of longer-term securities. The interest expense for funding these assets last year was only $3.1 billion, which is equal to the Fed's reserves rate of 0.25% applied to more than $1 trillion in bank reserves. If short-term interest rates were to rise, the Fed's net interest income would fall as interest expenses rose and its fixed-income earnings changed little. Importantly though, currency, which now represents about 40% of Fed liabilities, has a zero funding cost. So, short-term interest rates would have to rise rapidly to quite high levels—in the neighborhood of 7%—for the Fed's interest expenses to surpass its interest income. Such an outcome appears very unlikely. Indeed, in the latest Blue Chip consensus forecast, it takes almost five years for short-term rates to gradually inch up to 4% and long-term rates to reach 5%. By that time, bank reserves are likely to be reduced closer to pre-crisis levels, so the Fed's interest expenses would remain limited.

After accounting for other income and operating expenses, the Fed's 2010 net income was $81.7 billion. From this amount, the Fed added to its capital reserves and paid dividends to its member banks. It then remitted the remainder—$79.3 billion—to the Treasury. While the Fed has a substantial net income cushion, it must still consider the risk of capital losses on its securities portfolio when long-term interest rates rise. To do this, the Fed values its securities at acquisition cost and registers capital gains and losses only when securities are sold. Such historical-cost accounting is considered appropriate for a central bank that is motivated by macroeconomic policy objectives rather than financial profit and is consistent with the buy-and-hold securities strategy the Fed has traditionally followed.

The Fed's securities portfolio grew in 2010, so it had essentially no realized capital gains or losses. Although not part of its standard accounting, the Fed does report *unrealized* capital gains and losses on its securities portfolio for greater transparency (Federal Reserve Board 2011). This disclosure mimics private-sector mark-to-market accounting on holdings of longer-term securities. As shown in Table 1, when valued at market prices at the end of 2010, the Fed's securities were worth $71 billion more than their amortized purchase price. These capital gains reflect the general decline in longer-term interest rates since the securities were bought. If longer-term interest rates were to rise, these unrealized capital gains would be reduced and perhaps turn into capital losses. If the Fed sold securities and realized the capital losses, its net income would be reduced.

To add it all up, Figure 2 shows the Fed's remittances to the Treasury over the past decade, which have jumped with the Fed's enlarged balance sheet, and a plausible illustrative scenario for future remittances. These future remittances are based on net portfolio income projections by the Federal Reserve Bank of New York (2011) using the above Blue Chip consensus interest rate forecasts, a constant adjustment for average operating costs and dividends, and an assumption that gradual securities sales by the Fed commence next year and continue through 2017. Even after accounting for rising interest rates and realized capital losses, the Fed's payments to the Treasury remain sizable. Of course, it is conceivable that capital losses

Figure 2
Federal Reserve remittances to Treasury



could reduce the Fed's net income to zero or even generate net losses. In such unlikely circumstances, the Fed's capital base would be maintained by letting remittances to the Treasury fall to zero. In the most extreme case, future remittances would also be reduced (and recorded as a change in deferred credit), but the Fed's capital base and financial position still would remain completely secure.

Costs and benefits of the Fed's actions

The above financial accounting helps put the broader fiscal costs and benefits of the Fed's large-scale purchases of securities in perspective. One obvious benefit to the U.S. Treasury (and, by extension, the U.S. taxpayer) has been the additional income received from the Fed. Figure 2 shows that, from 2008 to 2010, the Fed transferred to the Treasury $83 billion more than the 2000–2007 historical average would have predicted. That is, instead of paying more interest to, say, a foreign bondholder, the Treasury paid the Fed, which then returned the funds to the Treasury. A second fiscal benefit from the Fed's securities purchases followed from the ensuing stronger economic recovery. As longer-term interest rates were pushed lower by the Fed's actions, the resulting higher output and household income boosted federal tax revenue and reduced federal outlays. Finally, as a third benefit, lower longer-term interest rates also lower the Treasury's borrowing costs for issuing new debt. These three financial benefits would likely overwhelm any future capital losses that the Fed might realize on its securities holdings, even if short- and longer-term interest rates jumped quite high.

However, it is important to stress that this financial accounting is ancillary to the Fed's mission. The Fed, of course, strives to be a cost-efficient steward of the public purse. But its statutory mandate for conducting monetary policy is to promote maximum employment and price stability. These macroeconomic goals are the key metrics for judging monetary policy. Financial considerations—even potentially large capital losses—are secondary.

Of course, financial considerations would take on a greater significance if they obstructed the Fed's ability to implement monetary policy. However, regardless of its income expenses or capital losses, the Fed still has the operational ability to raise short-term interest rates to stem inflationary pressures. In particular, the Fed's ability to pay interest on bank reserves allows it to conduct monetary policy independently of the size of its balance sheet (Bernanke 2010).

Still, while it is generally recognized that central bank capital losses would not directly impede monetary policy operations, some analysts worry about the attendant political pitfalls (Borio and Disyatat 2010). Large realized or unrealized capital losses could be misinterpreted and subject the Fed to criticism, especially if the losses exceeded the additional interest income from the enlarged portfolio. In the worst case, the political backlash could perhaps threaten the Fed's operational autonomy. In the past, the Bank of Japan has taken such threats quite seriously and has limited its balance sheet policy actions in part because of a fear that capital losses could tarnish its credibility (Bernanke 2003). Indeed, to insulate itself from such political fallout, the Bank of England obtained in advance an explicit government indemnity for potential future capital losses stemming from its program of large-scale asset purchases. The Fed's accounting arrangements, as detailed above, automatically provide a similar implicit indemnification. Still, the most effective means for avoiding such criticism likely is to communicate clearly to the public the Fed's monetary policy objectives and the macroeconomic benefits of its actions.

Conclusion

In its policy actions, the Fed's primary focus has been on restoring the economy to health and maintaining low inflation. The Fed's recent securities purchases appear likely to register financial gains, though these are at risk if interest rates rise. However, as then-professor Ben Bernanke (2000) wrote: For a central bank "to allow consideration of possible capital losses to block needed policy actions is misguided." That is, interest rate risk should be a secondary consideration, subordinate to the macroeconomic goals of monetary policy.

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2011-10	Are Large-Scale Asset Purchases Fueling the Rise in Commodity Prices? http://www.frbsf.org/publications/economics/letter/2011/el2011-10.html	Glick / Leduc
2011-09	Recent College Graduates and the Job Market http://www.frbsf.org/publications/economics/letter/2011/el2011-09.html	Hobijn / Gardiner / Wiles

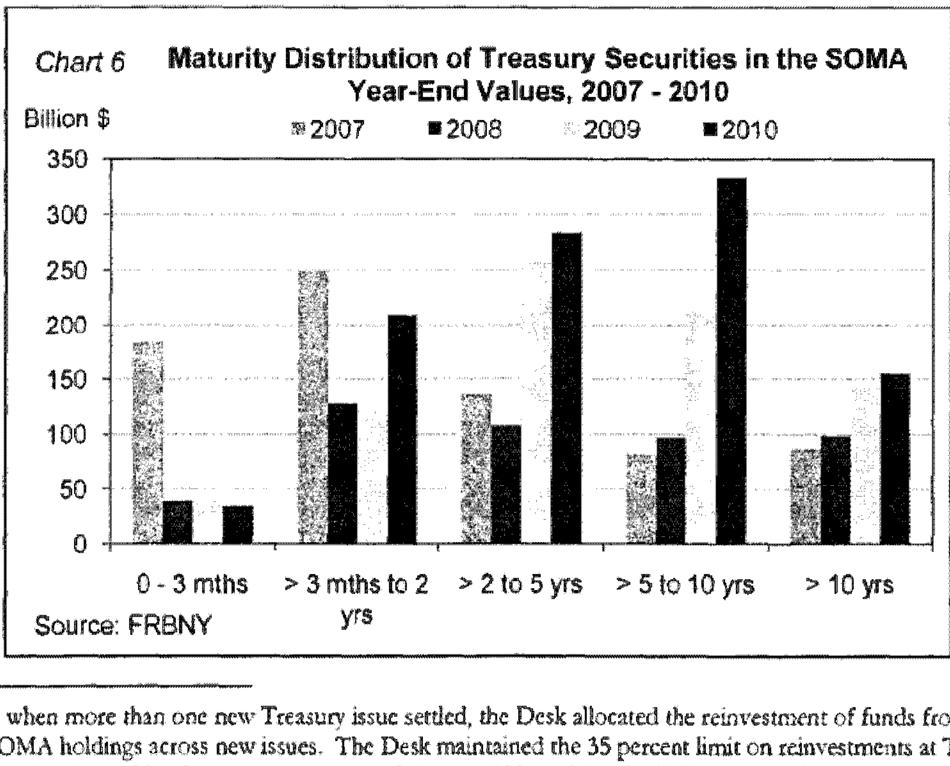
Desk reinvested maturing securities by placing add-on, non-competitive bids for the SOMA at Treasury auctions, equal to the amount of its holdings maturing on the issue date of a new security.[24]

C. SOMA Portfolio Characteristics

The effect of policy actions since the onset of the financial crisis has been to produce a larger SOMA portfolio that is also more heavily weighted towards holdings of non-Treasury securities and longer term debt compared to previous years. In this section we describe the maturity structure of the SOMA as of the end of 2010 and the income flows associated with this different portfolio structure.

Maturity Structure and Composition

Prior to the financial crisis, SOMA holdings of Treasury securities were skewed towards the shorter end of the maturity spectrum. Consistent with the policy objectives of the asset purchase programs, purchases of Treasury securities during 2009 and 2010 were weighted towards longer term securities. The effect of this shift in the pattern of purchases, as well as the rundown in short term holdings in 2008, is evident in the maturity structure of Treasury holdings in the SOMA (**Chart 6**). The value of holdings of securities with maturities of between two and ten years in both absolute terms and as a share of all Treasury securities in the SOMA was much higher at the end of 2010 than it was in 2007.



[24] On dates when more than one new Treasury issue settled, the Desk allocated the reinvestment of funds from maturing SOMA holdings across new issues. The Desk maintained the 35 percent limit on reinvestments at Treasury auctions. The Desk would redeem any amount needed to avoid breaching the limits, but the limits were not binding in 2010.

The Desk's holdings of agency debt at the end of 2010 were instead concentrated in securities with less than three years to maturity, and nearly all of the agency debt held at the end of 2010 matures by June 2018, reflecting the fact that agency debt purchases focused on the shorter maturities where issuance was greatest.

Almost all of the MBS purchased for the SOMA were backed by 30-year conventional mortgages. Repayment of principal on these types of securities is sensitive to many factors besides the contractual maturity of the underlying loans because of the option that households have to repay their mortgages early. As noted previously, prepayments in 2010 rose following declines in mortgage rates during the year. The rise in mortgage rates late in the year, however, suggests that most of the mortgagors underlying the MBS held in the SOMA will have little incentive to refinance, so the pace of prepayments on these SOMA holdings is likely to slow in 2011.

Prepayment speeds will depend on other underlying characteristics of the more than 4 million mortgagors backing the MBS held by SOMA. For example, most of the mortgages underlying the MBS in the SOMA were originated in 2008 and 2009, after credit standards had been tightened considerably. As more creditworthy mortgagors presumably should be able to refinance more readily whenever they have a financial incentive to do so, the prepayment rates for the MBS in the SOMA may be somewhat above those on older vintages of MBS.

The weighted average remaining life of the MBS held in the SOMA at the end of 2010 was estimated to be about 4.2 years.[25] While not strictly comparable, the average maturity of Treasury holdings was 6.4 years at the end of 2010.[26] At the end of 2006, the average maturity of Treasury securities, which accounted for all outright holdings in the SOMA at that time, was 3.4 years. Thus, in addition to being both larger and including many non-Treasury securities, the SOMA portfolio consisted of a proportionately larger amount of longer-term securities at the end of 2010 than it did before the onset of the financial crisis.[27]

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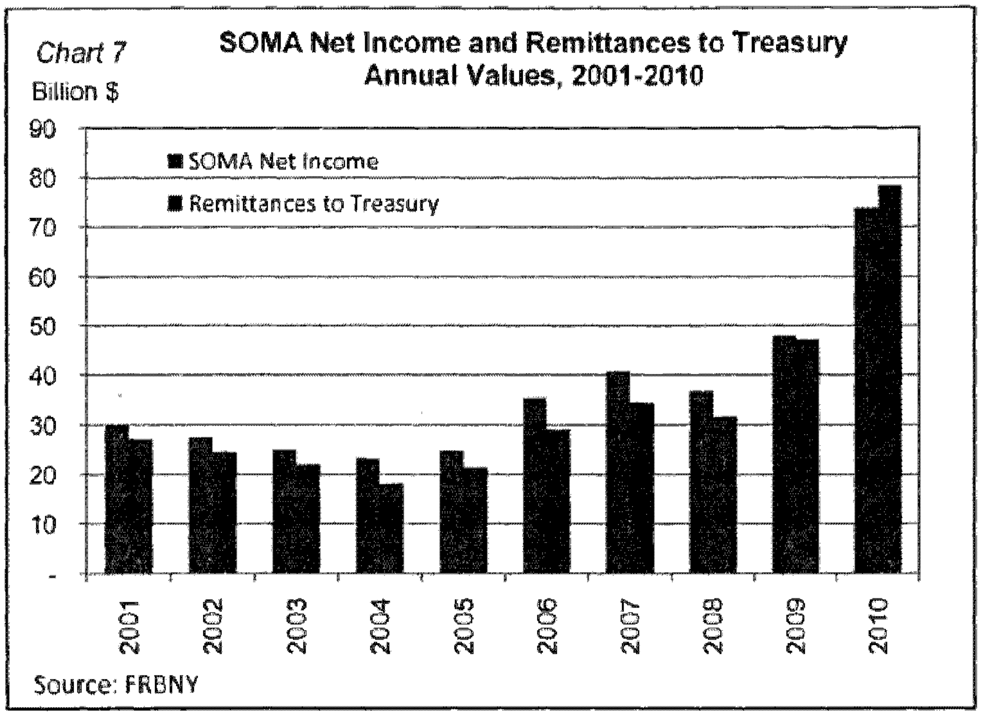
[25] To help assess the portfolio of MBS holdings in the SOMA and to project future prepayments under various scenarios, the Desk uses analyses and monitoring tools purchased from external vendors. The estimate of the average remaining life is subject to considerable uncertainty because of the many factors that affect actual prepayment speeds.

[26] Although purchases of Treasury securities since 2008 have been concentrated in longer term securities, the average maturity of this portfolio has not changed significantly since then because the average maturity of these purchases has been similar to the average maturity of the Treasury holdings that remained in the SOMA after the sales and redemptions of 2008. In fact, the average maturity of Treasury holdings has fallen slightly over the past two years because existing holdings have aged while new purchases have held roughly constant in maturity composition.

[27] As of the end of 2010, the average maturity of agency debt in the portfolio was 2.9 years, but these securities accounted for only a very small portion of the total portfolio.

Portfolio Income

The expansion of the SOMA and concentration of holdings in longer term securities led to a substantial further increase in net income in 2010, which in turn contributed to a large rise in remittances to the U.S. Treasury from the Federal Reserve.[28] SOMA net income was $74 billion in 2010, up from $48 billion in 2009 and well above the typical levels observed ahead of the financial crisis (**Chart 7**).[29]



Many factors will influence the path of SOMA net income in the future. For instance, earnings on the SOMA would be expected to decline if the size of the total portfolio were to move back towards pre-crisis levels. Portfolio income will also be affected by changes in portfolio composition, as these changes could affect the coupon income realized from the assets held. And, for a given portfolio of fixed coupon securities, increases in the interest rate paid on reserves would reduce SOMA net income.

[28] The primary component of SOMA net income is the interest income earned on the outright holdings of domestic securities, but it also reflects all other earnings and interest expense (including interest income on foreign currency denominated assets and interest expense on reverse repurchase agreements) associated with the SOMA portfolio. SOMA net income is also measured net of the interest paid on reserve balance liabilities created by SOMA assets. Remittances to the Treasury reflect all Federal Reserve earnings in excess of those needed for operating costs, dividends and capital maintenance. In general, remittances are close to SOMA net income.

[29] Remittances in 2008 and 2009 were lifted by net earnings associated with the temporary lending facilities created by the Federal Reserve.

Another factor that could affect future SOMA net income is the difference in the value of any securities that might be sold in the future from their book value.[30] As the market value of these securities will move inversely with the level of longer-term interest rates, capital losses could be realized if the FOMC were to decide to sell assets in a higher interest rate environment, which would reduce SOMA net income.[31]

The realized path of SOMA net income will therefore depend on the evolution of interest rates and future policy decisions made by the FOMC about the size and composition of the SOMA portfolio. To provide an illustrative example, a projection of SOMA net income out to 2018 was made under a particular set of assumptions for these factors. In particular, interest rates were assumed to evolve according to the Blue Chip consensus forecast, with short-term interest rates rising to around 4 percent and the ten-year Treasury yield rising to between 5 ¼ and 5 ½ percent.[32] In addition, the size and composition of the Federal Reserve balance sheet were assumed to evolve in a manner similar to that assumed in a recent research paper by Chung, Laforte, Reifschneider, and Williams.[33] Specifically, SOMA domestic asset holdings grow to $2.6 trillion by June 2011, remain at that level until mid-2012, and then fall steadily over a four year period at a pace of roughly $80 billion per quarter through a combination of asset redemptions and asset sales.[34]

Based on these assumptions, SOMA net income would be expected to remain quite elevated over the next two years, to subsequently decline for several years to a trough in 2014, and to rise again thereafter (**Chart 8**). The decline in income from 2012 to 2014 results primarily from the assumed rise in interest rates and from the declines in SOMA outright holdings. The rise in interest rates would reduce net income by increasing interest payments on reserve balance liabilities, although this effect declines over time since reserves shrink as the size of the SOMA falls. In addition, the assumed sales of securities generate capital losses in these projections, which further reduce income. Nonetheless, SOMA net income remains sizable throughout the

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[30] The book value will be their value at the time of purchase, adjusted for any amortized premium or accreted discount.

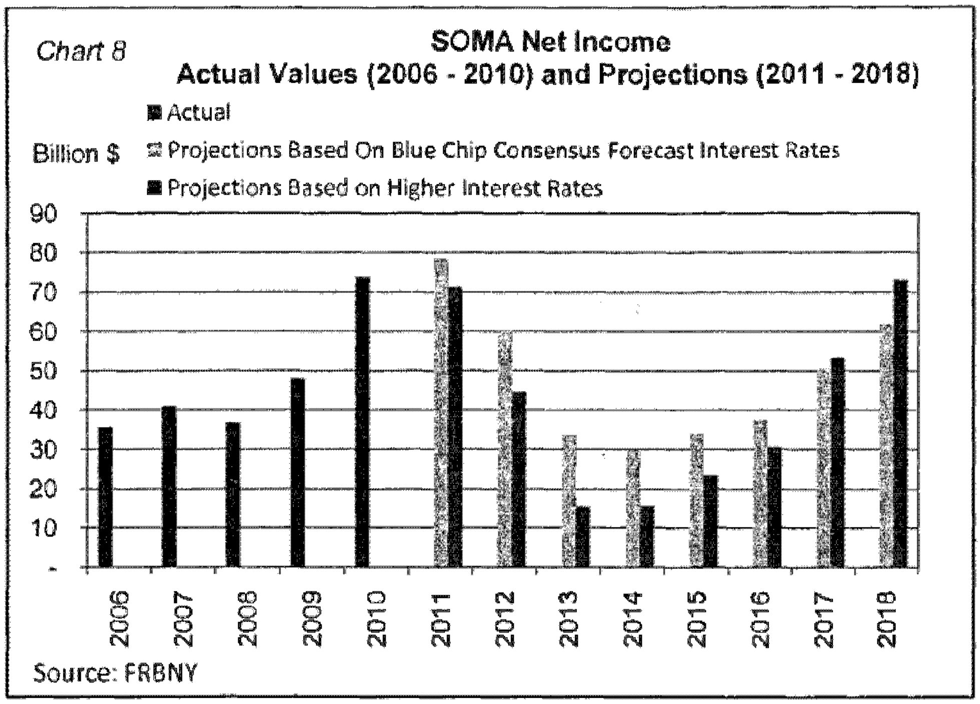
[31] For MBS, the inverse relationship between the market value of the portfolio and interest rates is amplified by the response of mortgagors to interest rate changes. For example, higher rates would not only make current holdings of MBS less attractive relative to newly issued securities having higher coupons, but would also reduce the expected prepayment speeds on the mortgages underlying these securities.

[32] These assumptions are based on long-range consensus interest rate projections from "Blue Chip Economic Indicators: Top Analysts' Forecasts of the U.S. Economic Outlook for the Year Ahead," Vol. 36, No. 3, March 10, 2011.

[33] See "Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events?" Federal Reserve Bank of San Francisco Working Paper, 2011-01. For balance sheet projections, the authors make illustrative assumptions about SOMA reinvestment and sales policies, reserve levels, and growth in Federal Reserve note liabilities. The portfolio assumptions behind the SOMA net income projections presented here are similar to the "Phase 3" assumptions made in the research paper. These projections are based on historical SOMA holdings through February 2011. Minor sources of net income, such as income on foreign assets held in the SOMA, were ignored in constructing these estimates.

[34] Under these assumptions, by mid-2016 the size of the SOMA is consistent with reserve balances close to levels prevailing just ahead of the crisis. But as some MBS would remain in the portfolio at this time under these assumptions, sales of these securities continue for about another year until completely eliminated from the portfolio, the impact of these sales on portfolio size being offset by purchases of Treasury securities. By 2018, the portfolio is renormalized in both its composition and its size.

projection period in these projections, and even the lowest projected levels are close to amounts prevailing just ahead of the financial crisis.[35]



To provide a sense of the sensitivity of the projections to alternative interest rate paths, SOMA net income was also projected under the assumption that all interest rates are 1 percentage point (100 basis points) higher than the Blue Chip forecast, while maintaining the same assumptions about the size and timing of adjustments to the SOMA portfolio.[36] Compared to the first set of projections, the higher interest rates reduce SOMA net income through 2016 by further raising the interest cost of reserves and the realized capital losses on asset sales. However, these effects subsequently disappear, as asset sales are assumed to be completed and reserve levels are significantly reduced. As a result, SOMA net income is actually higher beginning in 2017 under the alternative scenario, reflecting the greater interest income earned on the assets held in the SOMA. Of course, realizations of lower-than-expected interest rate paths would have effects in the opposite direction, initially raising SOMA net income relative to the first set of projections for several years and then reducing it in the outer years.

[35] Even though SOMA size and composition have been renormalized by 2018, projected net income is much higher than it was just ahead of the crisis, in part because of the ongoing growth in Federal Reserve note liabilities, on which the Federal Reserve does not pay any interest, which is offset by higher holdings of interest-bearing SOMA assets.
[36] The higher alternative interest rate path is phased in over six months beginning in March 2011, and then remains 100 basis points above the Blue Chip forecast for the remainder of the projection period.

Overall, many different paths for SOMA net income are possible over the projection horizon, depending on the realized course of interest rates, the SOMA portfolio, and other factors.

III. FEDERAL RESERVE LENDING ACTIVITY[37]

A. Short-Term Liquidity Provisions

Overview

A key component of the Federal Reserve's response to the extraordinary strains in the financial system that emerged in 2007 was the provision of short-term credit, extended through a number of liquidity programs, on a scale sufficient to promote financial stability. Individual liquidity programs differed from one another in many important ways, but all were tied to a central bank's lender of last resort role in the provision of short-term liquidity to financially sound institutions. In addition to making adjustments to the primary credit facility (PCF), several new arrangements for extending short-term credit were established between December 2007 and October 2008 under different authorizations within the Federal Reserve Act, most of which were still operational in 2010.[38] These additional facilities included the Term Auction Facility (TAF), the Central Bank Liquidity Swaps (swap lines), the Primary Dealer Credit Facility (PDCF), the Term Securities Lending Facility (TSLF), the Asset-Backed Commercial Paper Money Market Mutual Fund Lending Facility (AMLF), and the Commercial Paper Funding Facility (CPFF).[39]

Total outstanding credit arranged through all facilities peaked at $1.714 trillion in December 2008 (**Chart 9**).[40] Usage of these facilities declined markedly over the course of 2009 as conditions in wholesale funding markets improved, and by the start of 2010 total outstanding loans at all these facilities had fallen to $122 billion (**Chart 10**).[41]

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[37] Further details about many of the lending arrangements described in this section, including their use throughout the period of financial market strain, are available at the following link: http://www.federalreserve.gov/monetarypolicy/bst.htm. Also, the impact of Federal Reserve lending arrangements on its income is described in "Income Effects of Federal Reserve Liquidity Facilities," Michael J. Fleming and Nicholas J. Klagge, FRBNY Current Issues in Economic and Finance, vol. 17, number 1, 2011, http://www.newyorkfed.org/research/current_issues/ci17-1.html. The authors estimate that between August 2007 and December 2009 many of the facilities described in this section contributed about $13 billion to income in excess of the cost of funds.

[38] Two other standing short-term discount window lending arrangements that are not discussed in this section are the Secondary Credit and the Seasonal Credit programs. The spread between the Secondary Credit and Primary Credit rates was maintained at 50 basis points throughout the period of financial stress, but otherwise the terms for these programs were not adjusted in order to help address financial market strains during 2007-2010, and lending amounts under these programs remained small throughout this period.

[39] The Money Market Investor Funding Facility (MMIFF) became operational in November 2008, but it was terminated in October 2009 with no loans having been arranged through the facility.

[40] Included are TSLF loans that were arranged as a result of both regular TSLF auctions and the TSLF Options Program (TOP). Not included are RPs associated with the 28-day single-tranche operations the Desk arranged against all OMO-eligible collateral types, which totaled $80 billion during much of 2008 but that matured in early 2009.

[41] Many of the facilities were designed so that credit would no longer be attractive relative to market alternatives as financial market conditions normalized.

Attachments for Response to Question 4

May 2002

Potential Output in FRB/US

Potential output in the nonfarm business (NFB) sector is based on a three-factor (labor, capital, energy) Cobb-Douglas production function. Potential is the level of production that would be achieved were factor inputs fully utilized and multifactor productivity at its trend level. In the case of labor, potential aggregate hours is built up from trends for labor-force participation, the workweek, and the difference between total and nonfarm employment. The BLS measure of total capital services is used for capital input, which is linked to the stocks and rental prices of the four types of business investment modeled in FRB/US. Energy input is captured with a measure of the trend energy-output ratio that is essentially a lengthy moving average of the relative price of energy. Trend multifactor productivity—the fourth and final determinant of potential output in the nonfarm business sector—is estimated as an unobserved component in the model's equation for total NFB hours.

Until recently, trend MFP and the trends that define potential hours were measured by smoothing the actual values of the corresponding variable with the HP filter. This approach, however, because it utilizes future values, leads to econometric problems when the HP trends are included as explanatory variables in the estimation of other relationships. To avoid this problem, we now treat each of the trends as an unobserved variable that is estimated with the Kalman filter in one of the model's labor-sector equations, and use the resulting one-sided series to define the components of potential output. While two-sided measures might provide a better view today of the potential output and its determinants in the past, for most purposes to which these trends are put in FRB/US, one-sided estimates are preferred.

The next five sections describe in more detail the production function for nonfarm business output and the measurement of trend values of its four inputs. The final section describes the translation of potential output in this sector into potential GDP.

1. Production in the Adjusted Nonfarm Business Sector

A three-factor production function is the basis for the measurement of potential output in the adjusted NFB sector,

$$\hat{X} = \hat{A}(\hat{H}\hat{Q})^{.700} K_S^{.265} \hat{M}^{.035}, \tag{1}$$

where X is nonfarm output (adjusted to be gross of energy input), A multifactor productivity, H labor hours, Q a quality-adjustment factor for hours, K_S capital services, and M energy consumption. The "hats" on most variables indicate that they are measures of trend or potential; although K_S is not designated in this manner, it too conforms to the concept of "trend" because BLS does not adjust capital services for utilization. The correspondence between FRB/US variable names and the symbols used in this are is shown in table A.

The use of a three-factor production function raises the question of how output should be measured. The definition used in FRB/US is one that adjusts NFB output to contain the income earned by owners of all three factors. Because some energy input takes the form of imported oil, this approach requires that oil imports be included in output to capture the flow of income to foreign oil producers.[1]

The production function elasticities are based on average factor shares. The labor elasticity, 0.70, is similar to the historical mean of the product of total hours times compensation per hour divided by nominal adjusted nonfarm output (0.69 from 1961 to 2000). In the case of energy, the elasticity of .035 is close to the average crude fossil energy share in adjusted output for the period from 1960 to 1973 and from 1986 to 2000. The years of high oil prices from 1974 to 1985 are excluded from the calculation on grounds that the very gradual adjustment of energy use to its price led to an above-trend energy share in this period. The elasticity of output with respect to capital services is the residual share under

[1] An alternative to this "gross" concept of output is one that equals value added by labor and capital. Such a measure would exclude the income accruing to energy, and thus remove from nonfarm output the contribution of domestic energy production.

Aside from oil imports, there are several other differences between the BLS NFB series used for productivity statistics and FRB/US adjusted NFB output. They are minor, however, and pertain to the definition of the price of NFB output.

the assumption of constant returns to scale.

Figure 1 previews the FRB/US series on potential NFB output, showing its level, the gap between actual and potential, and its rate of growth. The middle panel of the figure shows that the percentage gap between actual and potential output typically peaks a few quarters prior to the start of NBER recession periods and tracks closely a simple form of Okun's law in which the output gap is compared with the negative of 2-1/2 times the unemployment gap.

In FRB/US, a distinction is made between the log change of potential output, as given by the first difference of equation (1) after taking logs,

$$\Delta\hat{x} = \Delta\hat{a} + .700(\Delta\hat{h} + \Delta\hat{q}) + .235\Delta k_S + .035\Delta\hat{m}, \tag{2}$$

where lower case symbols denote logarithms, and the potential growth rate of output,

$$g_{\hat{x}} = g_{\hat{a}} + .700(g_{\hat{h}} + \Delta\hat{q}) + .235\Delta k_S + .035\Delta\hat{m}. \tag{3}$$

The symbol "g" is used for a trend growth rate that differs from the log difference of the associated trend level. From a mechanical perspective, $\Delta\hat{x}$ and $g_{\hat{x}}$ differ because most of the Kalman filter series that define trend MFP and hours are I(2) processes that are subject to permanent level and growth shocks. As a result, trend growth depends only on the realization of the second shock, whereas the change in the trend level depends on both.[2] The economic importance of this distinction lies in the fact that the expected value of level shocks is zero. As a result, at any point of time, $g_{\hat{x}}$ is the optimal expectation of how potential output will subsequently grow. In FRB/US, $g_{\hat{x}}$ enters all investment equations as a determinant of future investment requirements and the stock market equation as determinant of future dividend growth. The lower panel of figure 1 compares trend output growth and the growth rate of the level of potential output.

[2]Because their trends are not estimated with the Kalman filter, the log difference of the trend level is the same as trend growth for labor quality, capital services, and energy.

Figure 1a: NFB Output (level)

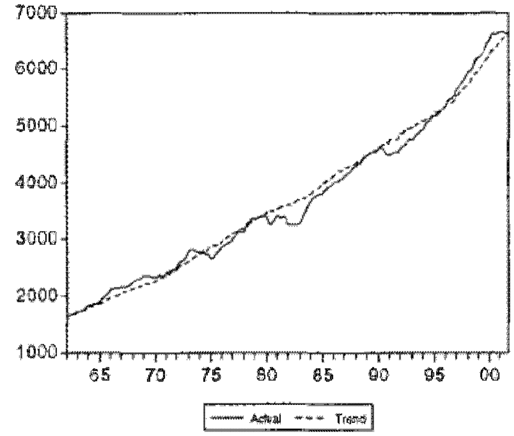


Figure 1b: NFB Output Gap

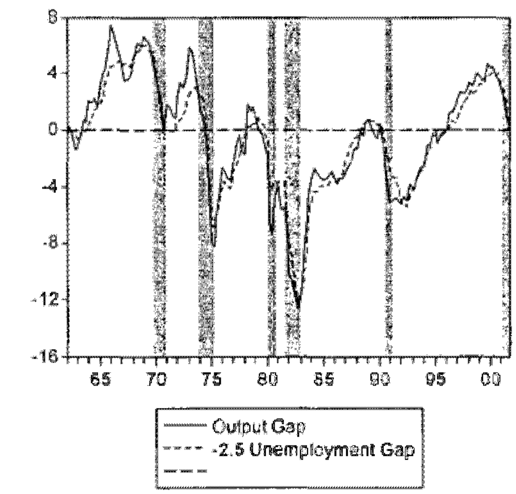
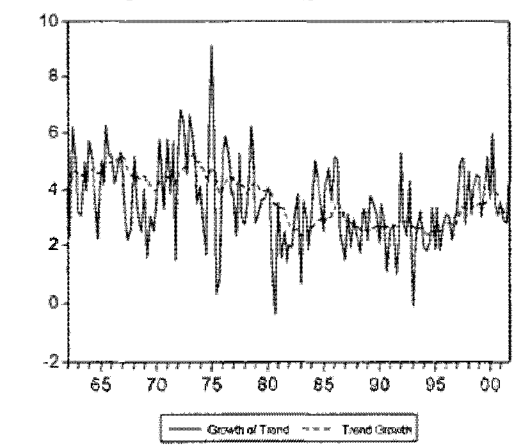


Figure 1c: NFB Output (growth, annual rate)



2. Capital Services

The BLS measure of total capital services is constructed using Tornquist-Theil aggregation of capital stocks (K_i) at the finest level of disaggregation,

$$\Delta log(K_S) = \sum \omega_i \Delta log(K_i), \tag{4}$$

where the weights (ω_i) are ratios of income earned by each type of capital to total capital income.

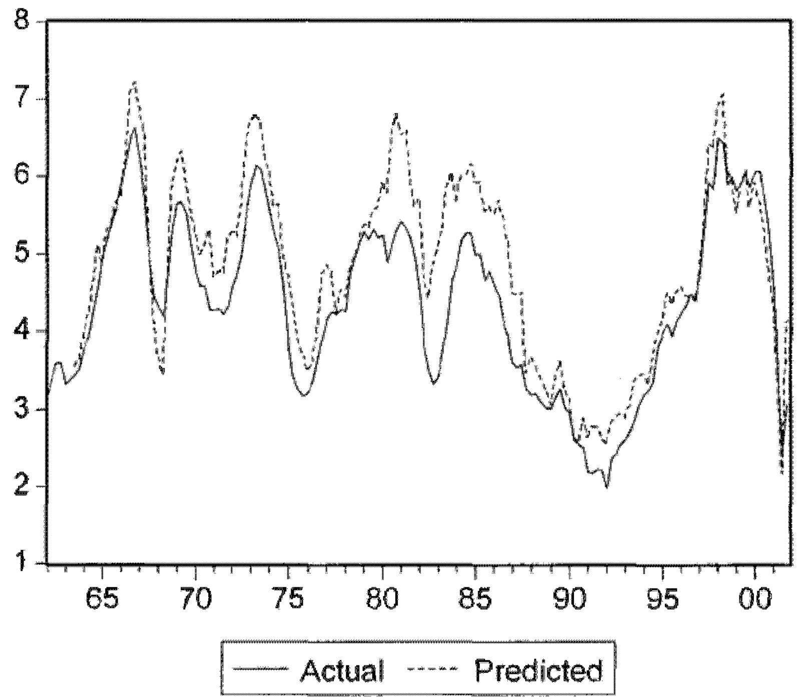
Although FRB/US does not contain the detailed disaggregation of capital stocks and income needed to make equation 4 an identity, the BLS series on capital services can be approximated reasonably well using the four stocks of business capital in the model—nonresidential structures, high-tech E&S, other E&S, and inventories—and weights based on the model's definition of income associated with each type of capital (see figure 2). The generic formula for income earned by capital type i (Y_i^K) is,

$$Y_i^K = (r + \delta_i - \sum_{j=0}^{11} \pi_{i,-j}^r / 12)\tau_i \sum_{j=0}^{1} P_{i,-j}^K K_{i,-j}/2. \tag{5}$$

In this equation, r is a real rate of interest measured in terms of a mixture of output and consumption prices, δ the rate of depreciation, π^r the rate of inflation of the purchase price of the capital good (P^K) relative to the price of output, τ a tax adjustment factor, and K the real capital stock. The capital income series are based on asset-specific measures of depreciation, relative inflation, and tax factors, but on a common real rate of interest in which debt and equity costs receive equal weight.

An aside on rates of depreciation: The rates of depreciation for the three types of business fixed capital are derived from the capital accumulation identity. For a particular capital good or homogeneous capital aggregate, the accumulation equation can be rearranged to express real investment as the product of the lagged real stock and the sum of the rates of growth and depreciation,

Figure 2: Growth Rate of Capital Services



$$I_i = (g_i + \delta_i) K_{i,-1}, \tag{6}$$

where g_i is the growth rate of the real capital stock. For capital aggregates that are not homogeneous, however, this expression must be modified to take account of disparate movements in the prices of aggregate investment (P^I) and capital(P^K),

$$P^I I = (\bar{g} + \bar{\delta}) P^K K_{-1}. \tag{7}$$

Equation 7 links nominal investment to the nominal capital stock, but the expression simplifies to equation 6 when the aggregate investment and capital stock prices are identical.

For a heterogeneous capital aggregate, the rate of depreciation, $\bar{\delta}$, that makes equation 7 an identity is the relevant aggregate depreciation rate, namely, the average of the depreciation rates of the individual capital stocks weighted by the nominal share of each type of capital in the total capital stock. To see this, first, multiply equation 7 by the price of the homogeneous capital good, P_i, and sum the result across all types of capital in the aggregate under consideration,

$$\sum_i P_i I_i = \sum_i (g_i + \delta_i) P_i K_{i,-1}. \tag{8}$$

Next, use the identity $\sum P_i I_i \equiv P^I I$, the approximation $\sum P_i K_{i,-1} \approx P^K K_{-1}$ (which would be an identity if the capital stocks were not lagged), and the definitions $\bar{g} = \sum v_i g_i$ and $\bar{\delta} = \sum v_i \delta_i$, where $v_i = P_i K_{i,-1}/(P^K K_{-1})$, to rewrite equation 8 as,

$$P^I I = (\bar{g} + \bar{\delta}) P^K K_{-1} + \sum_i (g_i - \bar{g} + \delta_i - \bar{\delta}) P_i K_{i,-1}. \tag{9}$$

This simplifies to equation 7, because the summation on the right hand side of equation 9 is zero.

As a practical matter, the heterogeneous composition of the capital aggregates in FRB/US needs to be taken into account only for the high-tech component of E&S. In this instance, a renormalized form of equation 7 is used to define the rate of depreciation. Equation 6 implicitly defines the rates of depreciation for the other two fixed capital stocks.

3. Potential Labor Hours

Potential hours in the nonfarm business sector depends on civilian population and three trends that are estimated in the model's labor sector. The trend participation rate links population to the trend labor force, and, given the NAIRU, to trend economy-wide employment.[3] This measure of broad employment, in turn, is converted to trend NFB employment by adjusting for movements in trend employment outside the NFB sector. Finally, the product of trend employment and the trend value of the average number of hours per worker (the "workweek") yields potential hours. Each trend is treated as an unobserved variable in the FRB/US equation that explains the corresponding actual series, with the equation's parameters and associated (one-sided) historical trend values estimated using the Kalman filter. Brief descriptions of each of these equations follow and coefficient estimates are reported in table 1.

The equations for the participation rate (ϕ) and the timeseries behavior of its trend ($\hat{\phi}$) are:

$$\Delta\phi = \alpha_1(\hat{\phi} - \phi_{-1}) + \alpha_2(U - \hat{U})_{-1} + \alpha_3 \sum_{i=1}^{4} \Delta\phi_{-i}/4 + \epsilon_\phi \tag{10}$$

$$\hat{\phi} = \hat{\phi}_{-1} + d_{\hat{\phi}} \tag{11}$$

$$d_{\hat{\phi}} = d_{\hat{\phi},-1} + \eta_\phi \tag{12}$$

According to equation 10, the participation rate adjusts to close the gap between actual and trend participation, has a procyclical element ($\alpha_2 < 0$), and tends to move in the opposite direction as it has recently ($\alpha_3 < 0$). The cyclical term, measured as the deviation of the unemployment rate (U) from the NAIRU ($\hat{U}$), is lagged to avoid problems that might arise from common measurement error in the contemporaneous values of the participation and

[3]Aside from a time-varying demographic adjustment, the NAIRU is a constant whose value is taken from the model's wage-price sector.

unemployment rates. The trend participation rate is an I(2) process in which trend drift ($d_{\hat{\phi}}$) is subject to permanent shocks (η_{ϕ} in equation 12). The maximum-likelihood estimate of the variance of shocks to the level of trend participation (equation 11) is zero.[4] Given that maximum-likelihood parameters may be biased toward zero, future research may explore alternative procedures for estimating the variance of level shocks. Actual and trend levels of the participation rate are shown in figure 3a.

The equations for the workweek ($w = log(W)$) and its trend have a simpler structure:

$$w = \hat{w} + \beta_1((h - h_{-2}) - (h - h_{-12})) \tag{13}$$

$$\hat{w} = \hat{w}_{-1} + \beta_2 d_{\hat{\phi}}/\hat{\phi} + \mu_w \tag{14}$$

Notably, movements in the workweek are estimated to be predominantly variations in trend (see figure 3b and table 1). There is evidence neither of any delay in the adjustment of the workweek to trend nor of transitory shocks to the workweek (equation 13 has no error term). Only changes in the growth rate of hours ($h = log(H)$) drive a temporary wedge between the actual and trend values of the workweek. The estimated coefficient on this expression ($\beta_1 = .36$) implies that about a third of a change in total hours is initially reflected in the workweek and thus two-thirds shows up in employment; then over the next three years, if the change in hours persists, the workweek returns to trend and the shift in hours is fully reflected in employment. The trend workweek is subject to permanent shocks (μ_w) and has a drift term that is proportional to the drift in trend labor-force participation, expressed as a growth rate ($d_{\hat{\phi}}/\hat{\phi}$). This link reflects the observation that, over the past 35 years, the rise in the participation rate and the fall in the average workweek have a common source.[5]

Employment outside the nonfarm business and government sectors (θ), expressed as a

[4] The symbol "d" rather than "g" is used for the drift term because it applies to the the first difference rather than the growth rate of participation.

[5] The current version of the FRB/US labor sector estimates the participation rate and workweek equations sequentially. Future work may explore simultaneous estimation of the two.

Figure 3a: Labor Force Participation Rate

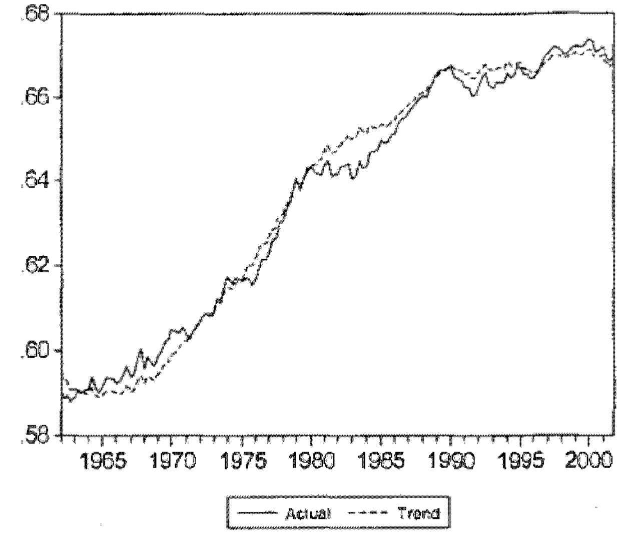


Figure 3b: Workweek

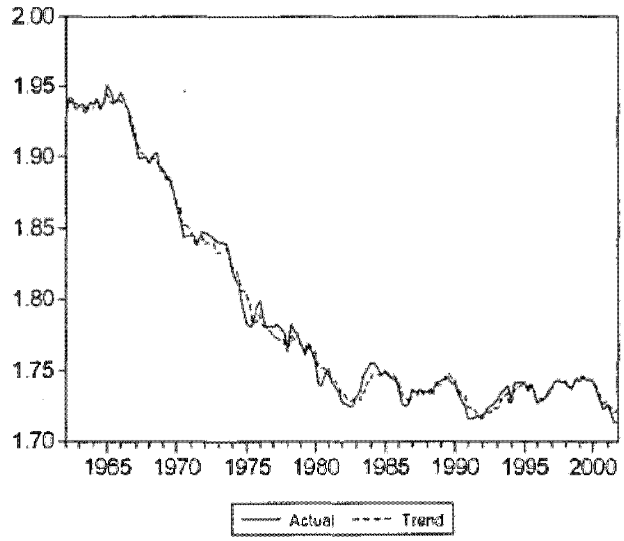


Figure 3c: Residual Employment (Scaled by Labor Force)

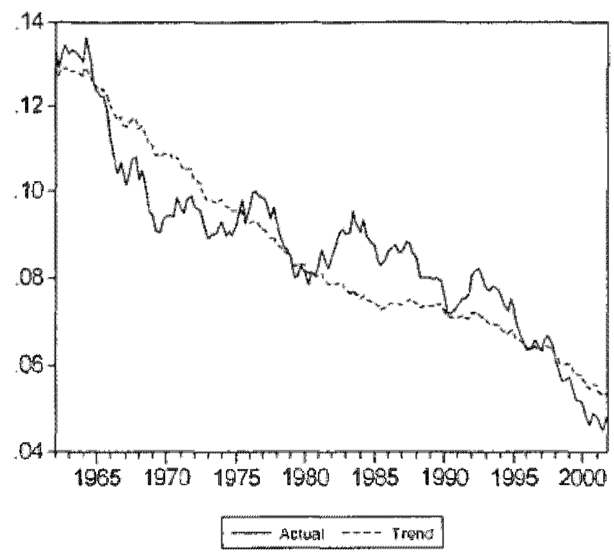


Table 1
Labor Sector Equations

	participation rate (ϕ) (1956q1-2001q4)		workweek (w) (1958q1-2001q4)		other employment (θ) (1958q1-2001q4)		aggregate hours (h) (1961q1-2000q4)	
α_1	.396	(4.4)						
α_2	-.00069	(4.4)						
α_3	-.344	(2.0)						
β_1			.360	(14.3)				
β_2			-.727	(4.1)				
γ_1					.152	(4.9)		
γ_2					.00937	(4.5)		
γ_3					-.0056	(6.7)		
λ_1							.195	(5.5)
λ_2							.178	(2.0)
λ_3							.380	(constr.)
λ_4							-.067	(constr.)
λ_5							.620	(19.7)
σ_ϵ	.0014	(17.6)			.0272	(16.7)	.0041	(15.3)
σ_μ			.0024	(18.7)	.0099	(constr.)	.0025	(0.8)
σ_η	.00011	(3.4)					.00037	(2.2)

Asymptotic t-statistics shown in parentheses.
The equation for h contains the following restrictions:
$\lambda_3 + \lambda_5 = 1$ and $\lambda_4 = -\lambda_2\lambda_3$.

ratio to the labor force, is given by equations 15 and 16,

$$\Delta log(\theta) = \gamma_1 log(\hat{\theta}/\theta_{-1}) + \gamma_2(U - \hat{U})_{-1} + \epsilon_\theta \quad (15)$$

$$log(\hat{\theta}) = log(\hat{\theta})_{-1} + \gamma_3 + \mu_\theta \quad (16)$$

This residual category includes employment in the agricultural and household and institutions sectors, as well as the discrepancy between the household and payroll employment reports. The ratio of residual employment to the labor force varies counteryclically and adjusts gradually to trend. The latter is subject to permanent shocks (μ_θ) and has a constant (negative) drift over time that primarily reflects the secular decline in the share of employment in agriculture.[6] The lower panel of figure 3 shows this downward drift of the trend, and the large transitory variations about this trend of the the residual employment ratio.

We can now pull together these labor-sector trends ($\hat{\phi}$, $\hat{W}$, and $\hat{\theta}$) and construct potential NFB employment ($\hat{E}$) and (aggregate) hours ($\hat{H}$).

$$\hat{E} = N\hat{\phi}(1 - \hat{U} - \hat{\theta}) - \hat{E}^{gov}, \tag{17}$$

$$\hat{H} = \hat{E}\hat{W}. \tag{18}$$

Potential nonfarm employment ($\hat{E}$) is the product of civilian noninstitutional population (N) and the trend in labor-force participation ($\hat{\phi}$), adjusted for the natural rate of unemployment ($\hat{U}$) and the trend ratio of employment outside of the nonfarm sector and outside of government to the labor force ($\hat{\theta}$). Trend government employment ($\hat{E}^{gov}$), which is actual government employment smoothed with the HP filter (λ = 6400), is also subtracted. Potential hours ($\hat{H}$) is the product of this measure of potential nonfarm employment and the trend workweek ($\hat{W}$). Figures 4a and 4b show that series on potential employment and hours tend to cut through the ups and downs of their actual counterparts, although each trend lies above its actual counterpart from the mid-1970s to the early 1990s. This feature comes from the behavior of the trend participation rate (figure 3a) and is a matter for future work.

The trend growth rate of NFB employment ($g_{\hat{e}}$) is given by equation 19. Although it is possible to express ($g_{\hat{e}}$) directly as a function of the growth trends of its components, the resulting expression is quite complicated. A bit more straightforward is the approximation

[6]The maximum likelihood of the standard error of μ_θ is zero. Because this probably reflects a biased estimate owing to the "pile up" problem, the Stock-Watson median unbiased estimate of $\sigma(\mu_\theta)$ is used: $\sigma(\mu_\theta) = .0533\sigma(\epsilon_\theta)/\gamma_1$, which is significantly different from zero with a p-value of $< .01$.

used in FRB/US in which the log difference of trend employment is adjusted to add the contributions of labor force participation and residual employment to trend growth and to subtract their contributions to the log difference of trend employment.[7]

$$
\begin{aligned}
g_{\hat{e}} &\approx \Delta\hat{e} + (N/\hat{E})[(d_{\hat{\phi}} - \Delta\hat{\phi})(1 - \hat{U} - \hat{\theta}) - (g_{\hat{\theta}} - \Delta log(\hat{\theta}))\hat{\phi}\hat{\theta}], && (19)\\
g_{\hat{h}} &= g_{\hat{e}} + g_{\hat{w}}, && (20)\\
g_{\hat{\theta}} &= \gamma_3, && (21)\\
g_{\hat{w}} &= \beta_2 d_{\hat{\phi}}/\hat{\phi}. && (22)
\end{aligned}
$$

As shown in equation 20, the trend growth rate of potential hours equals the sum of the trend growth rates of potential employment and the workweek. Equations 21 and 22 restate earlier results. Figures 4c (hours) and 4d (employment) compare trend growth and growth of the trend level.

In addition to potential hours, the contribution of labor to potential output also depends on trend labor quality ($\hat{Q}$), as indicated in equation 1. This trend equals the BLS series on labor quality, smoothed with the HP filter ($\lambda = 6400$).

4. Trend Energy Intensity

Energy use (M) in FRB/US is an aggregate of the three main fossil fuels—petroleum, natural gas, and coal—based on quantities and prices measured at the crude level of production (that is, before refining and distribution costs and taxes). Potential output depends on a concept of equilibrium ($\hat{M}$) energy use, whose specification is based on three considerations. The first is that the energy intensity of newly installed capital should be chosen

[7] The specification of equation 19 relies on the following derivatives:

$$
\begin{aligned}
\partial log(\hat{E})/\partial\hat{\phi} &= N(1 - \hat{U} - \hat{\theta})/\hat{E}\\
\partial log(\hat{E})/\partial log(\hat{\theta}) &= -N\hat{\phi}\hat{\theta}/\hat{E}
\end{aligned}
$$

Figure 4a: NFB Hours (level)

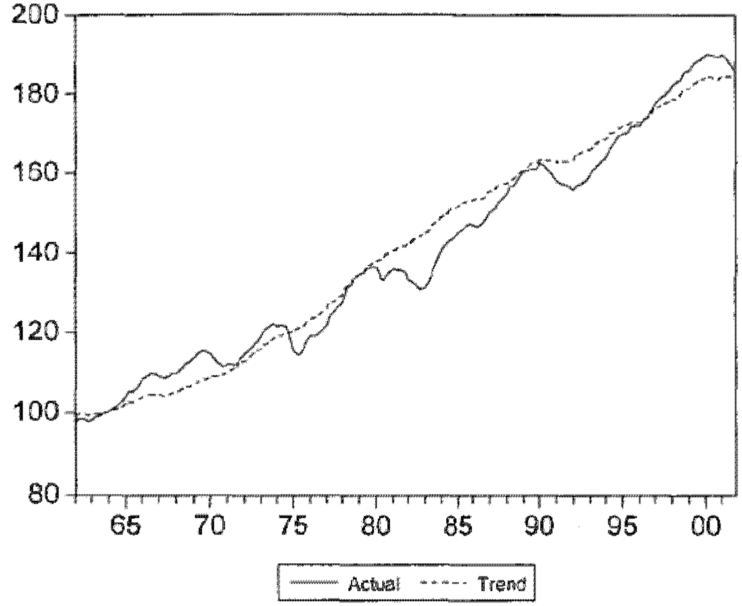


Figure 4b: NFB Employment (level)

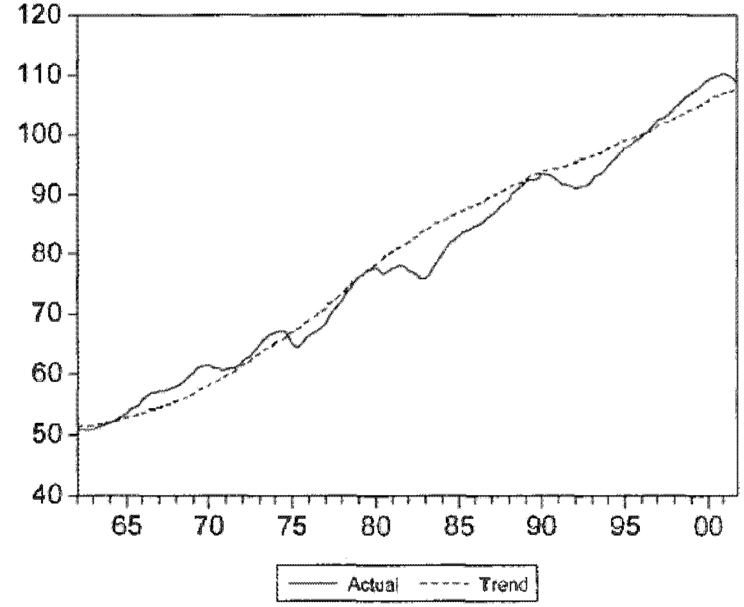


Figure 4c: NFB Hours (growth, annual rate)

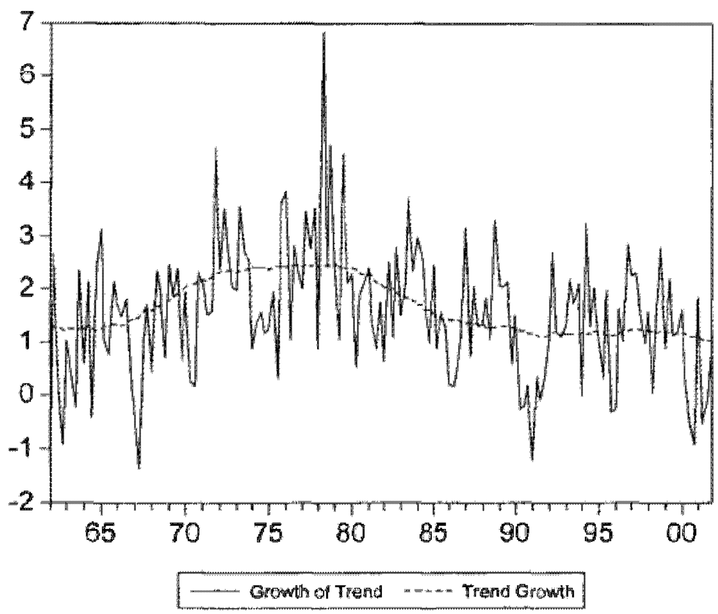
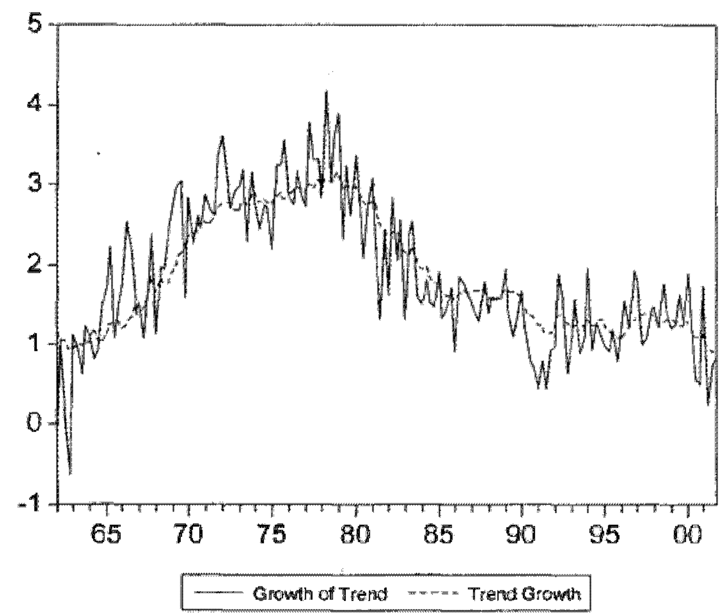


Figure 4d: NFB Employment (growth, annual rate)



in accord with the first-order condition for optimal energy use and thus move in proportion with the inverse of the price of energy relative to the price of output. Although one could define potential output at each point of time using this measure of optimal energy efficiency, the very long lags between movements of optimal and actual efficiency would make this a poor reflection of the economy's production capabilities in the near term. Unlike labor, for which adjustment costs are not so great as to preclude actual hours from moving to potential over a year or two, much of energy use is determined by the characteristics of the existing stocks of business and household capital. For this reason, the second aspect of the specification of $\hat{M}$ is that it should reflect average rather than marginal energy efficiency. This is accomplished by making it a function of a weighted average of past relative energy prices.[8] The final consideration is that $\hat{M}$ should provide an accurate measure of short-to-medium-run equilibrium energy use, in the sense that actual energy demand error-corrects to this equilibrium fairly promptly.

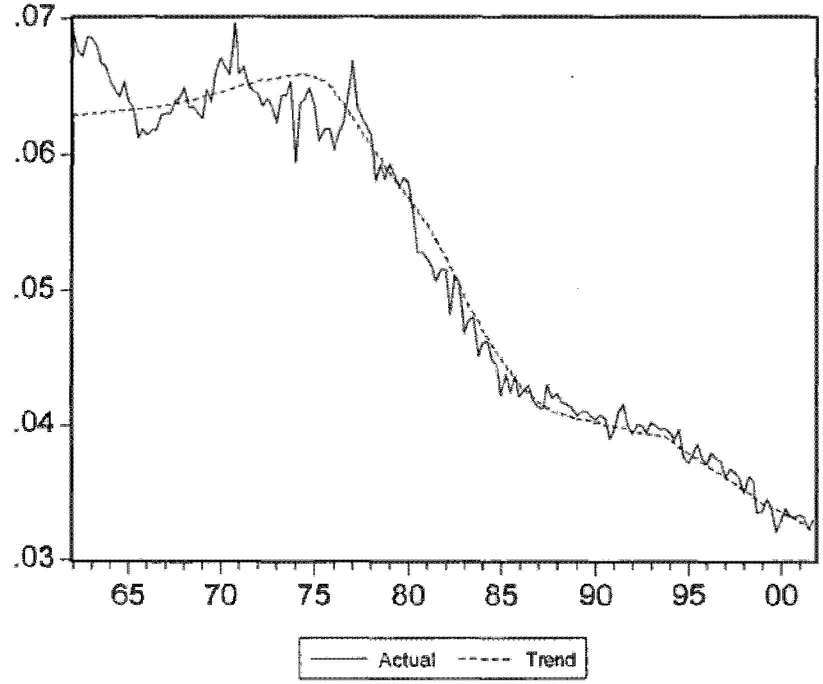
Based on these considerations, the specification of equilibrium energy intensity is governed by the following definition, which is also used in the FRBUS equation for energy demand,

$$
\begin{aligned}
\hat{m}_x &= \alpha \hat{m}_{x,-1} + (1-\alpha) log(P^B/P^M) + \beta(t^{94} - \alpha t^{94}_{-1}), \qquad (23)\\
\alpha &= .988,\\
\beta &= -.00639,
\end{aligned}
$$

where $\hat{m}_x \equiv log(\hat{M}/\hat{X})$ and P^B/P^M is the price of business sector output divided by the crude energy price. The estimated value of α indicates that the rate of adjustment of $\hat{m}$ to a change in the relative price of energy is 1.2 percent per quarter, or 5 percent per year. The expression also includes a time trend (t^{94}) that starts in 1994:Q1 and accounts for a 2-1/2 percent annual rate of improvement in energy efficiency since the mid-1990s that is not

[8]This putty-clay view of the energy requirements associated with capital is, however, at odds with measurement of capital services, which implicitly assumes that factor requirements for existing capital can be flexibly altered.

Figure 5: Energy-Output Ratio



captured by gradual adjustment to relative prices. Figure 5 compares the actual and trend levels of the energy-output ratio.

5. Multi-factor Productivity

Just as MFP is a residual that fills the gap between actual output and the level of production predicted by factor inputs, trend MFP in FRB/US has the characteristic of a residual in that its value is estimated conditional on the values of the other trends that enter the calculation of potential output. Although there may be specifications in which the trends for MFP, participation, the workweek, and residual employment could be estimated simultaneously in a multivariate system that brought together the complete FRB/US labor sector, the current design of the sector does not permit this. The problem is that the log of trend hours is not linear in either the levels or logs of the three stochastic trends that enter its construction, which can be seen by substituting equation 17 into equation 18.

Trend MFP ($\hat{a}$) is estimated as an unobserved variable in the FRB/US equation for aggregate hours, through the contribution of trend MFP to trend labor productivity, whose level and growth rate enter the equation. The logarithm of the level of trend output per hour, $\hat{\rho}$, is the difference between the logs of potential output and trend hours,

$$\begin{aligned} \hat{\rho} &= \hat{x} - \hat{h}, & (24)\\ &= (\hat{a} + .700(\hat{h} + \hat{q}) + .265k_s + .035\hat{m}) - \hat{h}, & (25)\\ &= (\hat{a} + .700(\hat{h} + \hat{q}) + .265k_s + .035\hat{m}_x)/(1 - .035) - \hat{h}. & (26) \end{aligned}$$

Equation 26 results from the substitution $\hat{m} = \hat{m}_x + \hat{x}$. Given that the values of $\hat{h}$, $\hat{q}$, $\hat{k}_s$, and $\hat{m}_x$ have already been specified, only level of trend MFP remains to be determined in the definition of the level of trend labor productivity. Similarly, the only unexplained variable remaining in the definition of the trend growth rate of labor productivity ($g_{\hat{\rho}}$),

$$g_{\hat{\rho}} = g_{\hat{x}} - g_{\hat{h}} \qquad (27)$$

$$= \quad (g_{\hat{a}} + .700(g_{\hat{h}} + \Delta\hat{q}) + .235\Delta k_S + .035\Delta\hat{m}_x)/(1 - .035) - .700g_{\hat{h}}. \quad (28)$$

is associated with trend MFP, namely, its growth rate ($g_{\hat{a}}$).

The aggregate hours equation in FRB/US is based on the polynomial adjustment cost (PAC) framework, which in this particular application makes the growth rate of hours a function of an error-correction term expressed as the gap between trend and actual labor productivity, the lagged growth rate of hours, the contemporaneous and first lagged values of the growth rate of output in excess of trend labor productivity, and a final term that captures the expected future growth rate of target hours ($PV(\Delta h^*), h^* = x - \hat{\rho}$):[9]

$$\begin{aligned} \Delta h &= \lambda_1(\hat{\rho}_{-1} - \rho_{-1}) + \lambda_2\Delta h_{-1} + \lambda_3(\Delta x - g_{\hat{\rho},-1}) && (29) \\ &\quad + \lambda_4(\Delta x_{-1} - g_{\hat{\rho},-2}) + \lambda_5 PV(\Delta h^*) + \epsilon_h \\ \hat{a} &= \hat{a}_{-1} + g_{\hat{a},-1} + \mu_h && (30) \\ g_{\hat{a}} &= g_{\hat{a},-1} + \eta_h && (31) \end{aligned}$$

Equations 30 and 31 specify that trend MFP follows a random walk with stochastic drift. Permanent I(1) shocks enter through μ_h and permanent growth shocks through η_h. Results of estimating the system given by equations 26, 28, 29, 30, and 31 are reported in table 1.

The level and growth of trend MFP are plotted in figure 6. The standard error of growth shocks, σ_{η_h} = 0.15 percentage point at an annual rate, is estimated moderately precisely, but the standard error of permanent level shocks, σ_{μ_h} = .25 percentage point, is not. The duration of deviations of actual labor productivity from trend is in large part governed by the error-correction coefficient in the hours equation (λ_1 = .20), whose magnitude indicates that such deviations tend to be eliminated in 1-2 years. Cyclical productivity is thus more transitory than cyclical output.

[9]For a discussion of the PAC framework and the definition of expectations terms such as $PV(\Delta h^*)$, see Flint Brayton, Morris Davis, and Peter Tulip, "Polynomial Adjustment Costs in FRB/US," May 2002.

Figure 6a: Multifactor Productivity (level)

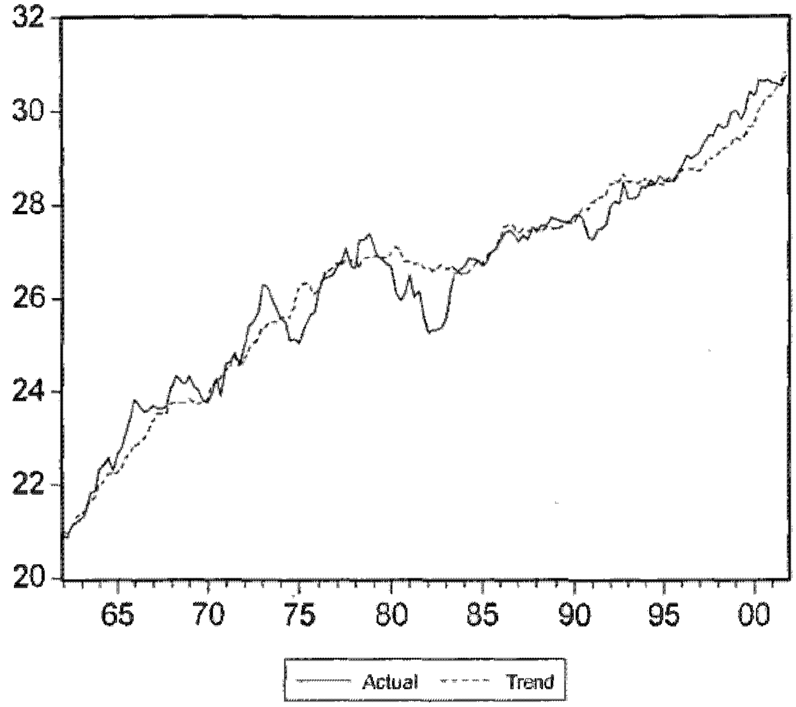


Figure 6b: Trend Growth

are used for capital (K) accumulation and are produced by the business (B) sector. The goods are produced in two stages by intermediate- and then final-goods producing firms (shown in the center of the figure). As in most new-Keynesian models, the introduction of intermediate and final goods producers facilitates the specification of nominal rigidities.

The disaggregation of production (aggregate supply) leads naturally to some disaggregation of expenditures (aggregate demand). EDO moves beyond the typical model with just two categories of (private domestic) demand (consumption and investment) and distinguishes between four categories of private demand: consumer non-durable goods and non-housing services, consumer durable goods, residential investment, and non-residential investment. The boxes surrounding the producers in the figure illustrate the sources of each demand for each category. Consumer non-durable goods and services are sold directly to households; consumer durable goods, residential capital goods, and non-residential capital goods are intermediated through capital-goods intermediaries (owned by the households), who then rent these capital stocks to households. Consumer non-durable goods and services and residential capital goods are purchased (by households and residential capital goods owners, respectively) from the first of economy's two final goods producing sectors, while consumer durable goods and non-residential capital goods are purchased (by consumer durable and residential capital goods owners, respectively) from the second sector. In addition to consuming the non-durable goods and services that they purchase, households supply labor to the intermediate goods-producing firms in both sectors of the economy.

This remainder of this section provides an overview of the decisions made by each of the agents in the economy. Given some of the broad similarities between the model and others, the presentation is selective.

3.1 The Final Goods Producers' Problem

The economy produces two final goods and services: slow-growing "consumption" goods and services, X_t^{cbi}, and fast-growing "capital" goods, X_t^{kb}. These final goods are produced by aggregating (according to a Dixit-Stiglitz technology) an infinite number of sector-specific differentiated intermediate inputs, $X_t^s(j)$ for $s = cbi, kb$, distributed over the unit interval. The representative firm in each of the consumption and capital goods producing sectors chooses the optimal level of each intermediate input, taking as given the prices for each of the differentiated intermediate inputs, $P_t^s(j)$, to solve the cost-minimization problem:

$$\min_{\{X_t^s(j)\}_{j=0}^1} \int_0^1 P_t^s(j) X_t^s(j) dj \text{ subject to } \left(\int_0^1 \left(X_t^s(j)\right)^{\frac{\Theta_t^s - 1}{\Theta_t^s}} dj \right)^{\frac{\Theta_t^s}{\Theta_t^s - 1}} \geq X_t^s, \text{ for } s = cbi, kb. \tag{1}$$

The term Θ_t^s is the stochastic elasticity of substitution between the differentiated intermediate goods inputs used in the production of the consumption or capital goods sectors. Letting $\theta_t^s \equiv \ln \Theta_t^s - \ln \Theta_*^s$ denote the log-deviation of Θ_t^s from its steady-state value of Θ_*^s, we assume that

$$\theta_t^s = \epsilon_t^{\theta,s}, \text{ for } s = cbi, kb, \tag{2}$$

where $\epsilon_t^{\theta,s}$ is an i.i.d. shock process. A stochastic elasticity of substitution introduces transitory markup shocks into the pricing decisions of intermediate-goods producers.

3.2 The Intermediate Goods Producers' Problem

The intermediate goods entering each final goods technology are produced by aggregating (according to a Dixit-Stiglitz technology) an infinite number of differentiated labor inputs, $L_t^s(j)$ for $s = cbi, kb$, distributed over the unit interval and combining this aggregate labor input (via a Cobb-Douglas production function) with utilized non-residential capital, $K_t^{u,nr,s}$. Each intermediate-good producing firm effectively solves three problems: two factor-input cost-minimization problems (over differentiated labor inputs and the aggregate labor and capital) and one price-setting profit-maximization problem.

In its first cost-minimization problem, an intermediate goods producing firm chooses the optimal level of each type of differential labor input, taking as given the wages for each of the differentiated types of labor, $W_t^s(i)$, to solve:

$$\min_{\{L_t^s(i,j)\}_{i=0}^1} \int_0^1 W_t^s(i) L_t^s(i,j) di \text{ subject to } \left(\int_0^1 \left(L_t^s(i,j)\right)^{\frac{\Theta_t^l - 1}{\Theta_t^l}} di \right)^{\frac{\Theta_t^l}{\Theta_t^l - 1}} \geq L_t^s(j), \text{ for } s = cbi, kb. \tag{3}$$

The term Θ_t^l is the stochastic elasticity of substitution between the differentiated labor inputs. Letting $\theta_t^l \equiv \ln \Theta_t^l - \ln \Theta_*^l$ denote the log-deviation of Θ_t^l from its steady-state value of Θ_*^l, we assume that

$$\theta_t^l = \epsilon_t^{\theta,l}. \tag{4}$$

where $\epsilon_t^{\theta,l}$ is an i.i.d. shock process. A stochastic elasticity of substitution introduces transitory wage markup shocks into the wage decisions of households.

In its second cost-minimization problem, an intermediate-goods producing firm chooses the optimal levels of aggregated labor input and utilized capital, taking as given the wage, W_t^s, for aggregated labor, L_t^s (which is generated by the cost function derived the previous problem), and the rental rate, $R_t^{nr,s}$, on utilized capital, $K_t^{u,nr,s}$, to solve:

$$\begin{aligned} &\min_{\left\{L_t^s(j), K_t^{u,nr,s}(j)\right\}} W_t^s L_t^s(j) + R_t^{nr,s} K_t^{u,nr,s}(j) \\ &\text{subject to } \left(Z_t^m Z_t^s L_t^s(j)\right)^{1-\alpha} \left(K_t^{u,nr,s}(j)\right)^{\alpha} \geq X_t^s(j), \text{ for } s = cbi, kb, \text{ with } Z_t^{cbi} \equiv 1. \end{aligned} \tag{5}$$

The parameter α is the elasticity of output with respect to capital, while the Z_t variables denote the level of productivity. The level of productivity has two components. The first, Z_t^m, is common to both sectors and thus represents the level of economy-wide technology. The second, Z_t^s, is sector specific; Z_t^{cbi} is normalized to one, while Z_t^{kb} is not restricted.

The exogenous productivity terms contain a unit root, that is, they exhibit permanent movements in their levels. The stochastic processes Z_t^m and Z_t^{kb} evolve according to

$$\ln Z_t^n - \ln Z_{t-1}^n = \ln \Gamma_t^{z,n} = \ln\left(\Gamma_*^{z,n} \cdot \exp[\epsilon_t^{z,n}]\right) = \ln \Gamma_*^{z,n} + \epsilon_t^{z,n}, \; n = kb, m \qquad (6)$$

where $\Gamma_*^{z,n}$ and $\epsilon_t^{z,n}$ are the steady-state and stochastic components of $\Gamma_t^{z,n}$. The stochastic component $\epsilon_t^{z,n}$ is an i.i.d shock process.

The unit-root in technology in both sectors yields a non-trivial Beveridge-Nelson permanent/transitory decomposition. The presence of capital-specific technological progress allows the model to generate differential trend growth rates in the economy's two production sectors. In line with historical experience, a more rapid rate of technological progress in capital goods production is accomodated by calibrating $\Gamma_*^{z,kb} > 1$, where (as is the case for all model variables) an asterisk on a variable denotes its steady-state value.

In its price-setting (or profit-maximization) problem, an intermediate goods producing firm chooses its optimal nominal price and the quantity it will supply consistent with that price. In doing so it takes as given the marginal cost, $MC_t^s(j)$, of producing a unit of output, $X_t^s(j)$, the aggregate price level for its sector, P_t^s, and households' valuation of a unit of nominal profits income in each period, which is given by $\Lambda_t^{cnn}/P_t^{cbi}$ where Λ_t^{cnn} denotes the marginal utility of non-durables and non-housing services consumption. Specifically, firms solve:

$$\max_{\{P_t^s(j),X_t^s(j)\}_{t=0}^{\infty}} \mathcal{E}_0 \sum_{t=0}^{\infty} \beta^t \frac{\Lambda_t^{cnn}}{P_t^{cbi}} \Bigg\{ P_t^s(j) X_t^s(j) - MC_t^s(j) X_t^s(j) - \frac{100 \cdot \chi^p}{2} \left(\frac{P_t^s(j)}{P_{t-1}^s(j)} - \eta^p \Pi_{t-1}^{p,s} - (1-\eta^p)\Pi_*^{p,s} \right)^2 P_t^s X_t^s \Bigg\}$$

subject to $X_\tau^s(j) = (P_\tau^s(j)/P_\tau^s)^{-\Theta_\tau^s} X_\tau^s$ for $\tau = 0, 1, ..., \infty$ and $s = cbi, kb$. (7)

The profit function reflects price-setting adjustment costs (the size which depend on the parameter χ^p and the lagged and steady-state inflation rate). The constraint against which the firm maximizes its profits is the demand curve it faces for its differentiated good, which derives from the final goods producing firm's cost-minimization problem. This type of price-setting decision delivers a new-Keynesian Phillips curve. Because adjustment costs potentially depend upon lagged inflation, the Phillips curve can take the "hybrid" form in which inflation is linked to its own lead and lag as well as marginal cost.

3.3 The Capital Owners' Problem

I now shift from producers' decisions to spending decisions. There exists a unit mass of non-residential capital owners (individually denoted by k, with k distributed over the unit interval) who choose investment in non-residential capital, E_t^{nr}, the stock of non-residential capital, K_t^{nr} (which is linked to the investment decision via the capital accumulation identity), and the amount and utilization of non-residential capital in each production sector, $K_t^{nr,cbi}$, U_t^{cbi}, $K_t^{nr,kb}$, and U_t^{kb}. (Recall, that the firm's choice variables in equation 5 is utilized capital $K_t^{u,nr,s} = U_t^s K_t^{nr,s}$.) The mathematical representation of this decision is described by the following maximization problem (in which capital owners take as given the rental rate on non-residential capital, R_t^{nr}, the price of non-residential capital goods, P_t^{kb}, and households' valuation of nominal capital income in each period, $\Lambda_t^{cnn}/P_t^{cbi}$, and the exogenous risk premium specific to non-residential investment, A_τ^{nr}):

$$\max_{\{E_t^{nr}(k), K_{t+1}^{nr}(k), K_t^{nr,cbi}(k), K_t^{nr,kb}(k) U_t^{cbi}(k), U_t^{kb}(k)\}_{t=0}^{\infty}}$$

$$\mathcal{E}_0 \sum_{t=0}^{\infty} \beta^t \frac{\Lambda_t^{cnn}}{A_\tau^{nr} P_t^{cbi}} \Big\{ R_t^{nr} U_t^{cbi}(k) K_t^{nr,cbi}(k) + R_t^{nr} U_t^{kb}(k) K_t^{nr,kb}(k) - P_t^{kb} E_t^{nr}(k)$$

$$-\kappa \left(\frac{U_t^{cbi}(k)^{1+\psi} - 1}{1+\psi} \right) Q_t^{nr} K_t^{nr,cbi} - \kappa \left(\frac{U_t^{kb}(k)^{1+\psi} - 1}{1+\psi} \right) Q_t^{nr} K_t^{nr,kb} \Big\}$$

subject to

$$K_{\tau+1}^{nr}(k) = (1-\delta^{nr}) K_\tau^{nr}(k) + E_\tau^{nr}(k) - \frac{100 \cdot \chi^{nr}}{2} \left(\frac{E_\tau^{nr}(k) - E_{\tau-1}^{nr}(k) \Gamma_t^{x,kb}}{K_\tau^{nr}} \right)^2 K_\tau^{nr} \text{ and}$$

$$K_\tau^{nr,cbi}(k) + K_\tau^{nr,kb}(k) = K_\tau^{nr}(k) \text{ for } \tau = 0, 1, \ldots, \infty. \tag{8}$$

The parameter δ^{nr} in the capital-accumulation constraint denotes the depreciation rate for non-residential capital, while the parameter χ^{nr} governs how quickly investment adjustment costs increase when $(E_\tau^{nr}(k) - E_{\tau-1}^{nr}(k)\Gamma_t^{x,kb})$ rises above zero; note that these adjustment costs include a term for the stochastic growth rate of the trend in the level of the output in sector KB, $\Gamma_t^{x,kb}$ equal to $\Gamma_t^{z,m}\Gamma_t^{z,kb}$. The variable A_t^{nr} is a stochastic element reflecting a risk premium on non-residential investment. Letting $a_t^{nr} \equiv \ln A_t^{nr}$ denote the log-deviation of A_t^{nr} from its steady-state value of unity, we assume that:

$$a_t^{nr} = \rho^{nr} a_{t-1}^{nr} + \epsilon_t^{a,nr}. \tag{9}$$

Higher rates of utilization incur a cost (reflected in the last two terms in the capital owner's profit function). Utilization is unity in the steady-state, implying $\kappa = R_*^{nr}/Q_*^{nr}$.

The time-variation in utilization, along with the imperfect competition in product and labor markets, implies that direct measurement of total factor productivity may not provide an accurate estimate of technology; as a result, the EDO model can deliver smoother estimates of technology that might be implied by a real-business-cycle model.

The problems solved by the consumer durables and residential capital owners are slightly simpler than the non-residential capital owner's problems. Since utilization rates are not variable for these types of capital, their owners make only investment and capital accumulation decisions. Taking as given the rental rate on consumer durables capital, R_t^{cd}, the price of consumer-durable goods, P_t^{kb}, and households' valuation of nominal capital income, $\Lambda_t^{cnn}/P_t^{cbi}$, and the exogenous risk premium specific to consumer durables investment, A_τ^{cd}, the capital owner chooses investment in consumer durables, I_t^{cd}, and its implied capital stock, K_t^{cd}, to solve:

$$\begin{aligned}
&\max_{\{E_t^{cd}(k),K_{t+1}^{cd}(k)\}_{t=0}^{\infty}} \mathcal{E}_0 \sum_{t=0}^{\infty} \beta^t \frac{\Lambda_t^{cnn}}{A_\tau^{cd} P_t^{cbi}} \left\{ R_t^{cd} K_t^{cd}(k) - P_t^{kb} E_t^{cd}(k) \right\} \\
&\text{subject to} \\
&K_{\tau+1}^{cd}(k) = (1-\delta^{cd})K_\tau^{cd}(k) + E_\tau^{cd}(k) - \frac{100\cdot\chi^{cd}}{2}\left(\frac{E_\tau^{cd}(k)-E_{\tau-1}^{cd}(k)\Gamma_\tau^{x,kb}}{K_\tau^{cd}}\right)^2 K_\tau^{cd} \\
&\text{for } \tau = 0,1,\ldots,\infty.
\end{aligned} \tag{10}$$

The residential capital owner's decision is analogous:

$$\begin{aligned}
&\max_{\{E_t^{r}(k),K_{t+1}^{r}(k)\}_{t=0}^{\infty}} \mathcal{E}_0 \sum_{t=0}^{\infty} \beta^t \frac{\Lambda_t^{cnn}}{A_\tau^{r} P_t^{cbi}} \left\{ R_t^{r} K_t^{r}(k) - P_t^{cbi} E_t^{r}(k) \right\} \\
&\text{subject to} \\
&K_{\tau+1}^{r}(k) = (1-\delta^{r})K_\tau^{r}(k) + E_\tau^{r}(k) - \frac{100\cdot\chi^{r}}{2}\left(\frac{E_\tau^{r}(k)-E_{\tau-1}^{r}(k)\Gamma_\tau^{x,cbi}}{K_\tau^{cd}}\right)^2 K_\tau^{cd} \\
&\text{for } \tau = 0,1,\ldots,\infty.
\end{aligned} \tag{11}$$

The notation for the consumer durables and residential capital stock problems parallels that of non-residential capital. In particular, the asset-specific risk premia shocks, A_t^{cd} and A_t^r, follow an autoregressive process similar to that given in equation (9).

3.4 The Households' Problem

The final group of private agents in the model are households who make both expenditure and labor-supply decisions. Households derive utility from four sources: their purchases of the consumer non-durable goods and non-housing services, the flow of services from their rental of consumer-durable capital, the flow of services from their rental of residential capital, and their leisure time, which is equal to what remains of their time endowment after labor is supplied to the market. Preferences are separable over all arguments of the utility function. The utility that households derive from the three components of goods and services consumption is influenced by the habit stock for each of these consumption components, a feature that has been shown to be important for consumption dynamics in similar models. A household's habit stock for its consumption of non-durable goods and non-housing services is equal to a factor h multiplied by its consumption last period E_{t-1}^{cnn}. Its habit stock for the other components of consumption is defined similarly.

Each household chooses its purchases of consumer non-durable goods and services, E_t^{cnn}, the quantities of residential and consumer durable capital it wishes to rent, K_t^r and K_t^{cd}, its holdings of bonds, B_t, its wage for each sector, W_t^{cbi} and W_t^{kb}, and the supply of labor consistent with each wage, L_t^{cbi} and L_t^{kb}. This decision is made subject to the household's budget constraint, which reflects the costs of adjusting wages and the mix of labor supplied to each sector, as well as the demand curve the household faces for its differentiated labor. Specifically, the ith household solves:

$$\max_{\left\{E_t^{cnn}(i),K_t^{cd}(i),K_t^{r}(i),\{W_t^s(i),L_t^s(i)\}_{s=cbi,kb},B_{t+1}(i)\right\}_{t=0}^{\infty}}$$
$$\mathcal{E}_0\sum_{t=0}^{\infty}\beta^t\{\varsigma^{cnn}\ln(E_t^{cnn}(i)-hE_{t-1}^{cnn}(i))+\varsigma^{cd}\ln(K_t^{cd}(i)-hK_{t-1}^{cd}(i))$$
$$+\varsigma^{r}\ln(K_t^{r}(i)-hK_{t-1}^{r}(i))\ -\varsigma^{l}\frac{(L_t^{cbi}(i)+L_t^{kb}(i))^{1+\nu}}{1+\nu}\Bigg\}$$

subject to

$$\frac{B_{\tau+1}(i)}{R_\tau\Omega_\tau}=B_\tau(i)+\sum_{s=cbi,kb}W_\tau^s(i)L_\tau^s(i)+CapitalandProfitsIncome_\tau(i)-P_\tau^{cbi}E_\tau^{cnn}(i)$$
$$-R_\tau^{cd}K_\tau^{cd}(i)-R_\tau^{r}K_\tau^{r}(i)-\sum_{s=cbi,kb}\frac{100\cdot\chi^w}{2}\left(\frac{W_\tau^s(j)}{W_{\tau-1}^s(j)}-\eta^w\Pi_{\tau-1}^{w,s}-(1-\eta^w)\Pi_*^w\right)^2W_\tau^sL_\tau^s$$
$$-\frac{100\cdot\chi^l}{2}\left(\frac{L_*^{cbi}\cdot W_\tau^{cbi}}{L_*^{cbi}+L_*^{kb}}+\frac{L_*^{kb}\cdot W_\tau^{kb}}{L_*^{cbi}+L_*^{kb}}\right)\left(\frac{L_\tau^{cbi}(i)}{L_\tau^{kb}(i)}-\frac{L_{\tau-1}^{cbi}}{L_{\tau-1}^{kb}}\right)^2\frac{L_\tau^{kb}}{L_\tau^{cbi}}.$$
$$L_\tau^{cbi}(i)=\left(W_\tau^{cbi}(i)/W_\tau^{cbi}\right)^{-\Theta_t^l}L_\tau^{cbi},\ \text{and}\ L_\tau^{kb}(i)=\left(W_\tau^{kb}(i)/W_\tau^{kb}\right)^{-\Theta_t^l}L_\tau^{kb},$$
$$\text{for}\ \tau=0,1,...,\infty. \tag{12}$$

In the utility function the parameter β is the household's discount factor, ν denotes its inverse labor supply elasticity, while ς^{cnn}, ς^{cd}, ς^{r}, and ς^{l} are scale parameter that tie down the ratios between the household's consumption components.

The stationary, unit-mean, stochastic variable Ω_t represents an aggregate risk-premium shock that drives a wedge between the policy short-term interest rate and the return to bonds received by a household. Letting $\omega_t\equiv\ln\Omega_t-\ln\Omega_*$ denote the log-deviation of Ω_t from its steady-state value of Ω_*, the process is

$$\omega_t=\rho^\omega\omega_{t-1}+\epsilon_t^\omega. \tag{13}$$

The variable ϵ_t^ω is an i.i.d. shock process, and ρ^ω represents the persistence of Ω_t.

The household's budget constraint reflects wage setting adjustment costs, which depend on the parameter χ^w and the lagged and steady-state wage inflation rate, and the costs in changing the mix of labor supplied to each sector, which depend on the parameter χ^l. The costs incurred by households when the mix of labor input across sectors changes may be important for sectoral co-movements.

3.5 Gross Domestic Product

The demand and production aspects of the model are closed through the exogenous process for demand other than private domestic demand and the GDP identity. $\widetilde{X}_t^{HG}$ represents exogenous demand (i.e., GDP other than private domestic demand, the aggregate of E_t^{cnn}, E_t^{cd}, E_t^r, and E_t^{nr}). Exogenous demand is assumed to follow the process:

$$\ln \widetilde{X}_t^{HG} - \ln \widetilde{X}_*^{HG} = \rho^{HG} \left(\ln \widetilde{X}_t^{HG} - \ln \widetilde{X}_*^{HG} \right) + \epsilon_t^{HG}.$$

Exogenous demand impinges on each sector symmetrically, and specifically that the percent deviation of exogenous demand proportionally affects demand for each sector's ($s = cbi, kb$) output via the share of exogenous demand in total demand, ω_{HG}. (In this formulation, $\widetilde{X}_t^{HG}$ represents the level of expenditure relative to the stochastic long-run trend, i.e., the model assumes balanced growth, so exogenous demand for each sector fluctuates around its long-run trend; for example, the long-run trend for sector KB is given by $Z_t^m Z_t^{kb}$).

The rate of change of Gross Domestic Product (real GDP) equals the Divisia (share-weighted) aggregate of production in the two sectors (and of final spending across each expenditures category), as given by the identity:

$$H_t^{gdp} = \left(\left(\frac{X_t^{cbi}}{X_{t-1}^{cbi}} \right)^{P_*^{cbi} X_*^{cbi}} \left(\frac{X_t^{kb}}{X_{t-1}^{kb}} \right)^{P_*^{kb} X_*^{kb}} \right)^{\frac{1}{P_*^{cbi} X_*^{cbi} + P_*^{kb} X_*^{kb}}}. \tag{14}$$

3.6 Monetary Authority

The last important agent in the model is the monetary authority. It sets monetary policy in accordance with an Taylor-type interest-rate feedback rule. Policymakers smoothly adjust the actual interest rate R_t to its target level $\bar{R}_t$

$$R_t = (R_{t-1})^{\phi^r} \left(\bar{R}_t \right)^{1-\phi^r} \exp\left[\epsilon_t^r \right], \tag{15}$$

where the parameter ϕ^r reflects the degree of interest rate smoothing, while ϵ_t^r represents a monetary policy shock. The central bank's target nominal interest rate, $\bar{R}_t$ depends the deviation of output from its stochastic trend ($\tilde{X}^{bn}$, the output gap as defined by Beveridge and Nelson (1981))

$$\tilde{X}_t^{bn} = \mathcal{E}_t \left[\sum_{\tau=-\infty}^{t} H_\tau^{gdp} - \sum_{\tau=-\infty}^{\infty} H_\tau^{gdp} \right]. \tag{16}$$

In equation 16, the deterministic, or steady-state, levels of growth are suppressed. Consumer price inflation and the change in the output gap also enter the target. The target equation is:

$$\bar{R}_t = \left(\tilde{X}_t^{bn}\right)^{\phi^y} \left(\tilde{X}_t^{bn} / \tilde{X}_{t-1}^{bn}\right)^{\phi^{\Delta y}} \left(\frac{\Pi_t^c}{\Pi_*^c}\right)^{\phi^\pi} R_*. \tag{17}$$

In equation (17), R_* denotes the economy's steady-state nominal interest rate and ϕ^y, $\phi^{\Delta y}$, and ϕ^π denote the weights in the feedback rule. Consumer price inflation, Π_t^c, is the weighted average of inflation in the nominal prices of the goods produced in each sector, $\Pi_t^{p,cbi}$ and $\Pi_t^{p,kb}$:

$$\Pi_t^c = (\Pi_t^{p,cbi})^{1-w_{cd}} (\Pi_t^{p,kb})^{w_{cd}}. \tag{18}$$

The parameter w^{cd} is the share of the durable goods in nominal consumption expenditures.

3.7 Summary of Model Specification

The brief presentation of the model highlights several important points. First, although the model considers production and expenditure decisions in a bit more detail, it shares many similar features with other DSGE models in the literature, such as imperfect competition, nominal price and wage rigidities, and real frictions like adjustment costs and habit-persistence. The rich specification of structural shocks (to aggregate and investment-specific productivity, aggregate and sector-specific risk premiums, and mark-ups) and adjustment costs allows the model to be brought to the data with some chance of finding empirical validation.

Within EDO, fluctuations in all economic variables are driven by eleven structural shocks. For the discussion of each concept of the output gap, it is most convenient to summarize these shocks into four broad categories:

- Permanent technology shocks: This category consists of shocks to aggregate and investment-specific (or fast-growing sector) technology.

- Financial, or intertemporal, shocks: This category consists of shocks to risk premia. In EDO, variation in risk premia – both the premium households' receive relative to the federal funds rate on nominal bond holdings and the additional variation in discount rates applied to the investment decisions of capital intermediaries – are purely exogenous. Nonetheless, the specification captures important aspects of related models with more explicit financial sectors (e.g., Bernanke, Gertler, and Gilchrist (1999)).

- Markup shocks: This category includes the price (two shocks) and wage (one shock) markup shocks.

- Other demand shocks: This category includes the shock to autonomous demand and a monetary policy shock.

Using this categorization, only technology shocks affect the Beveridge-Nelson *permanent component*. The Beveridge-Nelson *gap* reflects the influence of all shocks (and technology shocks imply movements in the gap, as the economy does not instantaneous adjust to the long-run implications of a shock to technology for standard neoclassical adjustment reasons and because of the short-run impediments to adjustment created by wage and price rigidities).

Several shocks do not influence the flexible-price or natural-rate of output (defined as the flexible price and constant markup outcome): markup shocks, by definition;

the monetary policy shock, as such shocks are neutral under price and wage flexibility; and the aggregate risk premium shock driving a wedge between the household return to a nominal bond and the policy interest rate, which enters everywhere the nominal funds rate enters and hence affects the *natural rate of interest* but not the *natural rate of output* (as in related models, e.g., Smets and Wouters (2007)). The last point will be important in discussion prescriptions for policy from gaps and policy rules. It will also be quite important in examining the historical fluctuations in the *natural rate of interest* and the *natural rate of output*, as this is an important shock in EDO and was the shock that emerged as central in the 2008-2009 recession where the link between the funds rate and other bond yields broke due to a jump in risk spreads.

Finally, the relation between the natural rate of output and economic efficiency depends upon whether certain shocks are distortionary – a point on which theory is ambiguous, a standard feature of New-Keynesian DSGE models (discussed, for example, in Smets and Wouters (2007)). For example, EDO labels certain shocks as shocks to markups introduced through stochastic elasticities of substitution between goods or labor input, but other models enter shocks in the same equilibrium conditions through labor supply or other shocks; shocks to markups are distortionary, and shocks to preferences are not. Theory does not distinguish between such observationally equivalent shocks, which are (after all) simply appended to a model to generate variation in the data. Chari, Kehoe, and McGrattan (2009) are highly critical of this ambiguity, and suggest that DSGE models must find some method for identifying whether such shocks are distortionary or non-distortionary before such models can be used in policy applications; one possibility they mention is to explore microeconomic implications of these shocks/distortions. While I agree that such research is essential to definitively answer some questions of policy interest, I view the forecast performance (e.g., Edge, Kiley, and Laforte (2009)) and range of policy-relevant stories that can be discussed with such models (e.g., Edge, Kiley, and Laforte (2008)) as suggesting that such models are currently useful, when analyzed with care. (As an aside, the critique of Chari, Kehoe, and McGrattan (2009) is not particularly novel; for example, Clarida, Gali, and Gertler (1999) emphasize how New-Keynesian models may provide a useful guide to underlying structural relationships even if their welfare implications and the interpretation of structural disturbances in such models may be somewhat controversial).

3.8 Estimation Strategy and Results

The empirical implementation of the model takes a log-linear approximation to the first-order conditions and constraints that describe the economy's equilibrium, casts this resulting system in its state-space representation for the set of (in this case 11) observable variables, uses the Kalman filter to evaluate the likelihood of the observed variables, and forms the posterior distribution of the parameters of interest by combining the likelihood function with a joint density characterizing some prior beliefs. Since a closed-form solution of the posterior is not available, Markov-Chain Monte Carlo (MCMC) methods are used.

The model is estimated using 11 data series over the sample period from 1984:Q4 to 2008:Q4. The series are:

1. The growth rate of real gross domestic product;
2. The growth rate of real consumption expenditure on non-durables and services excluding housing services;
3. The growth rate of real consumption expenditure on durables;
4. The growth rate of real residential investment expenditure;
5. The growth rate of real business investment expenditure;
6. Consumer price inflation, as measured by the growth rate of the Personal Consumption Expenditure price index;
7. Consumer price inflation, as measured by the growth rate of the Personal Consumption Expenditure price index excluding food and energy prices;

8. Inflation for consumer durable goods, as measured by the growth rate of the Personal Consumption Expenditure price index for durable goods;
9. Hours, which equals hours of all persons in the non-farm business sector from the Bureau of Labor Statistics;[3]
10. The growth rate of real wages, as given by compensation per hour in the non-farm business sector from the Bureau of Labor Statistics divided by the GDP price index;
11. The federal funds rate.

The implementation adds measurement error processes to the likelihood implied by the model for all of the observed series used in estimation except the nominal interest rate series.

The estimation results depend upon the specification of priors and calibration of certain parameters. A number of parameters are calibrated. As reported in table 1, these include the household's discount factor (β), the Cobb-Douglas share of capital input (α), the curvature parameter associated with costs of varying capital utilization (ψ), the depreciation rates (δ^{nr}, δ^{cd}, δ^{r}), and the elasticities of substitution between differentiated intermediate goods and labor input ($\Theta_*^{x,cbi}$, $\Theta_*^{x,kb}$, Θ_*^{l}). The share of exogenous demand in overall expenditure (ω_{HG}) equals 20 percent. Other calibrated parameters include the steady-state growth rates of aggregate technology, investment-specific technology, and the rate of consumer price inflation (at 0 percent, 4.5 percent, and $2\,\frac{1}{4}$ percent (all at annual rates), respectively); these calibrations ensure the model matches the average behavior of the data over the estimation sample.

Tables 2 and 3 present the prior distributions assumed for the estimated parameters and the posterior mode and standard deviation about that mode from the

[3]A low-frequency trend from hours is removed via the Hodrick-Prescott filter with a smoothing parameter of 64000; our model is not designed to capture low frequency trends in population growth or labor force participation.

Table 1: Calibrated Parameters

β	α	ψ	δ^{nr}	δ^{cd}	δ^{r}	Θ_*^{cbi}, Θ_*^{kb}, Θ_*^{l}	$\Gamma_*^{z,m}$	$\Gamma_*^{z,kb}$	ω_{HC}	Π_*^c
0.990	0.260	1	0.030	0.055	0.004	7.000	1.000	1.011	0.20	1.005

estimation. The parameter values echo results elsewhere in the literature. With regard to monetary policy, smoothing is important (ϕ^R near 0.7), the coefficient on the change in the output gap is large ($r^{\Delta y}$ near 0.3), and the coefficients on inflation and the level of the output gap take values near those of Taylor (r^{π} near 1.5, r^y near 1/4, where the division by 4 converts from annual rates to quarterly rates). There is only modest "indexation" in the price and wage Phillips curves (η^p and η^w near 1/4). Finally, habits and adjustment costs are important (e.g., h near 0.6).

Table 2: Prior and Posterior Distributions of the Behavioral and Policy Parameters

	Prior Distribution			Posterior Distribution				
Parameter	Type	Mean	S.D.	Mode	S.D.	10th perc.	50th perc.	90th perc.
h	N	0.000	0.3300	0.6024	0.0350	0.5917	0.6392	0.6807
ν	G	2.000	1.0000	0.1918	0.2514	0.1409	0.3860	0.7701
χ^p	G	4.000	1.0000	2.5028	1.0797	2.2321	3.2782	4.8710
χ^l	G	4.000	1.0000	3.8424	1.9715	1.9764	3.9778	6.8915
χ^w	G	4.000	1.0000	2.1868	1.0576	2.1997	3.3348	4.8769
χ^{nr}	G	4.000	1.0000	0.2411	0.0911	0.2239	0.3180	0.4504
χ^{cd}	G	4.000	1.0000	0.3702	0.5521	0.4485	0.9534	1.8840
χ^r	G	4.000	1.0000	8.6694	2.3585	7.4588	9.9908	13.3231
η^p	N	0.000	0.5000	0.3006	0.1343	0.2325	0.4056	0.5779
η^w	N	0.000	0.5000	0.2542	0.1318	0.0823	0.2505	0.4207
ϕ_π	N	1.500	0.0625	1.4562	0.0606	1.3776	1.4548	1.5331
ϕ_y	N	0.250	0.1250	0.2096	0.0283	0.1769	0.2101	0.2486
$\phi_{\triangle y}$	N	0.000	0.1250	0.3310	0.0936	0.2104	0.3273	0.4488
ϕ^r	N	0.500	0.2500	0.6593	0.0453	0.5949	0.6559	0.7116

4 Output Gap Estimates

4.1 The Beveridge-Nelson Gap

As implicit in the definition of the Beveridge-Nelson trend above, the Beveridge-Nelson gap is defined as

$$\tilde{X}_t^{bn} = \mathcal{E}_t \left[- \sum_{\tau=t+1}^{\infty} H_\tau^{gdp} \right], \tag{19}$$

i.e., as the forecast of GDP growth in excess of its steady-state level going forward. This measure is computed for the EDO model given the implied reduced-form vector autoregressive/moving average representation of the model in terms of the observable variables used in its estimation.

Figure 2 presents the estimate of the Beveridge-Nelson gap from the EDO model in the upper panel; the shading represents National Bureau of Economic Research (NBER) recession periods. It is clear that this measure of the gap captures the cyclical peaks in activity as identified by the NBER well; it is also clear that the EDO Beveridge-Nelson output gap has continue to widen following the NBER-identified end of recent recessions – consistent with the generally agreed upon view that these periods have been sluggish or "jobless" recoveries. The picture of the Beveridge-Nelson gap implied by EDO also shows a fairly smooth evolution of the gap; this contrasts with much of the literature on univariate time-series estimates of the Beveridge-Nelson gap (e.g., the discussion in Morley, Nelson, and Zivot (2003)), but echoes the result from (at least some) multivariate time series approaches (e.g., Rotemberg and Woodford (1996)).

The middle panel of figure 2 presents the percent change from four-quarters earlier in the Beveridge-Nelson permanent component implied by these gap estimates; the bottom panel presents the one-quarter percent change (at an annual rate). These panels show that the variation in the growth rate of the permanent component is considerable. Of course, the permanent component depends solely on the technology shocks – implying that the variation shown is consistent with a view that permanent

Table 3: Prior and Posterior Distributions of the Parameters corresponding to the Exogenous Processes

	Prior Distribution			Posterior Distribution				
Parameter	Type	Mean	S.D.	Mode	S.D.	10th perc.	50th perc.	90th perc.
ρ^{ω}	N	0.000	0.3300	0.7930	0.0364	0.7579	0.8070	0.8502
ρ^{nr}	N	0.000	0.3300	0.8297	0.0302	0.8076	0.8496	0.8836
ρ^{cd}	N	0.000	0.3300	-0.2110	0.1422	-0.4099	-0.2412	-0.0469
ρ^{HG}	B	0.500	0.0150	0.9173	0.1637	0.4577	0.6821	0.8969
ρ^{r}	N	0.000	0.3300	0.8328	0.0285	0.7914	0.8324	0.8637
σ_{ω}	I	1.000	2.0000	0.3742	0.0597	0.3234	0.3881	0.4737
σ_{HG}	I	1.000	2.0000	1.4573	0.3374	0.5267	0.7994	1.3940
$\sigma_{\theta,l}$	I	1.000	2.0000	1.5877	0.7145	1.6168	2.4055	3.4337
σ_{r}	I	0.200	2.0000	0.1572	0.0134	0.1437	0.1595	0.1778
$\sigma_{z,k}$	I	0.250	2.0000	0.8771	0.1321	0.7181	0.8748	1.0533
$\sigma_{z,m}$	I	0.250	2.0000	0.4036	0.0663	0.3751	0.4551	0.5437
$\sigma_{\theta,cbi}$	I	0.200	2.0000	0.3125	0.1576	0.2845	0.4296	0.6678
$\sigma_{\theta,kb}$	I	0.200	2.0000	0.4621	0.2747	0.3926	0.6584	1.0556
$\sigma_{a,r}$	I	1.000	2.0000	0.4921	0.1562	0.4102	0.5433	0.7742
$\sigma_{a,cd}$	I	1.000	2.0000	7.2703	11.9676	8.8443	18.8741	38.5473
$\sigma_{a,nr}$	I	1.000	2.0000	0.4788	0.0866	0.3984	0.4922	0.6190

technology shocks have considerable quarter-to-quarter volatility. The figures also show that recession periods do not appear very tied to low realizations of technology – that is, recessions are not primarily driven by technology shocks in this DSGE model; Chung, Kiley, and Laforte (2010)) discuss the sources of business cycles in more detail, and there results highlight only a moderate role for technology shocks in cyclical fluctuations, despite the considerable volatility of technology relative to the smooth view embedded in some production-function approaches to potential GDP (as discussed in the section 5).

4.2 The Production-Function Approach

Production in each sector of the EDO model is governed by a Cobb-Douglas production function for each sector. In the production function approach to measuring the output gap, the gap is defined as the deviation of output from the level that would occur if labor input (per capita) and utilization rates equaled their steady-state values (where these steady-state values, denoted with a $*$, are constant, with the latter equal to one). As a result, the production-function gap is given by the Divisia-weighted (i.e., share-weighted) aggregate of the production-function gaps in each sector, which are defined by

$$\tilde{X}_t^{S,PF} = \ln((L_t^s/L_*)^{1-\alpha}\,(U_t^s)^{\alpha});\;\; s = cbi, kb, \tag{20}$$

Several points are noteworthy. First, variable utilization of capital and capital adjustment costs, in addition to imperfect competition in product and labor markets, imply that simple "growth acccounting" may not accurately measure the production-function gap. For EDO, the production function gap is inferred by imposing the model's structural restrictions and using the data on all unobservables to infer this gap. In addition, the production function gap, as written above, does not depend on any smoothing of technology: In EDO, the cyclical movements in total factor productivity (properly measured, after accounting for imperfect competition and the effects of variable utilization and capital adjustment costs) are solely a function of utilization, which enters equation 20; production-function based methods that do not rely on an entire model's structure to control for cyclical movements in total factor productivity, such as those of the CBO or the Federal Reserve's FRB/US model, may smooth their measures of total factor productivity according to some method, and such effects would enter equation 20 through the utilization term (although alternative presentations of the production-function method may include such adjustments as a separate term in their accounting). Because labor input and utilization move to their steady-state values in the long run and production always lies on the production function for each sector (by definition), the production function gap differs from the Beveridge-Nelson gap solely because of deviations of the (aggregate productive) capital stock from its long-run level. To the extent that the contribution of capital stock deviations from long-run levels contribute only moderately to overall deviations of production from its long-run level, it is reasonable to expect that the production function gap and the Beveridge-Nelson gaps will be similar.

Figure 3 presents the estimate of the production function gap from EDO, along with the Beveridge-Nelson gap. It is clear that these measures of the gap move together, and both capture the cycle identified by the NBER.

The middle and bottom panels of figure 2 presents the percent changes from four-quarters earlier and from the previous period in the production-function approach and the Beveridge-Nelson permanent components. These series move together in broad terms. But the magnitude of quarter-to-quarter fluctuations in the Beveridge-Nelson permanent component is a bit higher than that for the production-function approach. This occurs because long-run capital stock levels are strongly affected by quarter-to-quarter movements in technology, but actual capital stock levels move slowly; as a result, capital stock deviations from long-run levels can move considerably, boosting the volatility of the Beveridge-Nelson permanent component.

4.3 The Natural-rate Approach

The final definition is the natural-rate gap, which is the gap between output and the level that would prevail absent wage and price rigidities and markup shocks. This is the concept emphasized in Woodford (2003), largely because the analysis of Woodford considers only distortions associated with nominal rigidities and markup shocks (so that the natural rate is the efficient rate).

As can be seen in figure 4, the natural-gap is closely related to the Beveridge-Nelson cycle, but to a notably lesser degree late in the sample. For example, the natural-rate gap is positive in 2008, whereas the Beveridge-Nelson gap is deep in negative territory. This is consistent with the idea that the downturn in economic activity was driven by an increase factors that could not have been perfectly offset by monetary policy alone – that is, that the increase in risk premia and distortions in financial markets that arose in this period reflected real (as well as nominal) factors (such as information asymmetries, etc.). Of course, simply because such fluctuations were "natural" – that is, not nominal in origin – does not imply that such fluctuations were desirable (e.g., pareto optimal). Pareto optimality depends on the degree to which the movements in risk premia reflect, for example, preferences or distortions associated with informational asymmetries.

The risk premia wedges are related to the *investment wedge* of Chari, Kehoe, and McGrattan (2007), which represents a wedge between the marginal rates of substitution and technical substitution between current and future consumption.[4] Interpreting such wedges as inefficient is consistent with the idea that fluctuations in such premia reflect, for example, information imperfections that make external finance more costly than internal funds, as in Bernanke, Gertler, and Gilchrist (1999). A social planner aware of such information imperfections would ignore such factors in its efficient allocations. It is important to remember in a monetary policy discussion

[4]The central role of this efficiency condition is highlighted in standard microeconomic texts, e.g. Kreps (1990), page 167.

that the presence of such wedges need not imply that monetary policy should act forcefully to counteract the effects of such wedges, even if a social planner would. A policymaker constrained to induce allocations through a given set of instruments may not be able to implement such allocations, and such implementation constraints are central in practical policy design. For example, Carlstrom and Fuerst (2009) present a simple model of financing frictions and examine the optimal monetary policy given such frictions; their analysis presents examples where monetary policy acts to mitigate only a small portion of the (output) effects of financial frictions, because monetary policy does not have the tools to implement the efficient allocation. [5]

With that said, we will see below the central role in typical recessions of the aggregate risk premium, which (as discussed above) should be offset one-for-one by monetary policy in the EDO model to implement the natural rate of output. Indeed, the importance of this shock will be a key reason why the *natural rate of output* does not provide the commonly expected information for a "Taylor" policy rule even though the Beveridge-Nelson gap and the *natural rate of interest* do provide such information. Given the divergence between the Beveridge-Nelson and natural rate gaps shown in figure 4, this issue is especially important in the financial crisis period beginning in 2007.

4.4 Using The Natural-Rate Approach

Two issues arise in any practical use of the flexible-price/natural-rate approach.

First, the natural rate of output provides a point-in-time estimate, but the natural rate follows a complicated time series process and hence the current point-in-time estimate does not provide the same type of "trend" information as the Beveridge-Nelson

[5] Carlstrom and Fuerst (2009) present a model without capital, and hence their financial frictions enter in quite a different manner than the intertemporal wedges discussed above. Nonetheless, their presentation is a nice example of the difference between efficient allocations and the constrained optimal monetary policy.

trend. This occurs because the natural-rate measure depends on the evolution of all exogenous and endogenous state variables in the model used to estimate the concept, and any model capable of explaining the data and stock-flow dynamics (associated with investments in many different types of business and household capital) will have a complex state space.

Second, the natural rate of output gap does not provide "Taylor" rule relevant information without also considering the *natural rate of interest.* In contrast, the Beveridge-Nelson gap will provide this information, at least within the EDO model.

4.4.1 Point-in-time estimates and forecasts of the natural rate

Turning to the first issue and as emphasized by Beveridge and Nelson (1981), their definition of trend implies that the growth of the trend going forward is a constant (which, in the EDO DSGE model, is a function of the expected rate of aggregate and investment-specific technological progress and the expected population growth rate). As a result, the EDO model, at the parameter estimates presented above for the growth rates of technological progress and assuming a population growth rate of 3/4 percent per year, implies that the expected growth rate of the Beveridge-Nelson trend is 23/4 percent per year.

All other concepts of "equilibrium" output must converge to the Beveridge-Nelson trend at some far horizon (as that is the definition of the Beveridge-Nelson trend). And the projection of output from a DSGE model like EDO is a function of economic fundamentals (e.g., capital stocks, technology, markups, risk premia, etc.) and is not affected by "equilibrium" concepts of output like the natural-rate of output (which is simply a construct of the economic analysts focus, not the concern of utility-maximizing households and profit-maximizing firms). Consequently, the projections of the natural rate of output will tend to fluctuate significantly over time. As a result, discussions of the economic outlook or the potential policy implications of alternative measures of "equilibrium" output must take into account both the current level of

Table 4: Gaps and Projected Trend Growth Associated with Different Definitions (1)

		Trends			
Definition	*Gap*	2009$Q4/Q2$	2010$Q4/Q4$	2011$Q4/Q4$	2011$Q4/Q4$
Beveridge-Nelson	-6.2	2.8	2.8	2.8	2.8
Natural-rate	-0.3	1.3	3.2	4.2	4.3

1. Gap in percent. Figures for projected trends in 2009 refer to percent changes over the second half of the year (at an annual rate); figures for 2010, 2011, and 2012 refer to Q4/Q4 percent changes.

such concepts and their projected evolution.

Table 4 illustrates these points by presenting, for the Beveridge-Nelson definition and the natural-rate definition, the 2009Q2 measures of the output gap and the projected change in the "equilibrium" or trend output level associated with those definitions for 2009 and 2010 (on a Q4/Q4 basis).

The Beveridge-Nelson gap is -6.2 percent of GDP as of the second quarter of 2009, and projected growth in the associated trend is 2.8 percent – the constant expected growth rate associated with this concept. In contrast, the natural-rate gap is -0.3 percent – output in the second quarter of 2009 (after real GDP had fallen for four consecutive quarters) was about in line with the flexible-price, constant-markup level consistent with the EDO model and other estimated shocks.

In considering these different gaps, the level of actual GDP is the same across definitions. Moreover, output converges to the Beveridge-Nelson trend; as a result, the "trend" or "equilibrium" level of output associated with the natural rate definition (which must also converge to the Beveridge-Nelson trend) is projected to rise slowly in the second half of 2009 (about 1.3 percent) and then to accelerate considerably over the 2010 to 2012 period, to about 41/4 percent in 2011 and 2012.

It is fairly clear that policy discussions tend to (at least implicitly) assume that future expected "equilibrium" or trend growth is relatively steady (in the way that policy institutions estimates of trend growth tend to be smooth, as discussed for the CBO below). Such a presumption is not warranted if one is considering the natural rate of output from typical DSGE models, a point emphasized in other research (e.g., Edge, Kiley, and Laforte (2008)). To the extent these concepts are increasingly entering policy discussions, there may need to be an increased appreciation for the possibility that such a definition of trend output may move significantly over a projection period.

4.4.2 The natural rate in interest-rate rules

The role of the output gap plays a central role in monetary policy discussions, as even a cursory consideration of the prominence "Taylor" rules (Taylor (1993)) in such discussions reveals.[6] Such a policy rule appears in EDO (equation 17).

For discussion purposes, let's consider a simple benchmark rule, in which the nominal interest rate (r) is a function of its natural rate(r^n), inflation (π), and a measure of the output gap (gap)

$$r_t = \phi_r r_t^n + \phi_\pi \pi_t + \phi_{gap} gap_t. \tag{21}$$

Traditional rules (e.g., Taylor (1993) and Taylor (1999)) ignore the model-specific predictions for the natural rate (i.e., set ϕ_r equal to zero) and consider deviations of output from trend as the gap measure; as discussed above, the Beveridge-Nelson cycle is the most straightforward definition of such a gap. As a result, such traditional descriptions would imply very accomodative monetary policy in the middle of 2009: With ϕ_{gap} equal to 0.5 or 1.0 (the values in Taylor (1993) and Taylor (1999), at annual rates) and the Beveridge-Nelson gap at -6.2 percent, the nominal interest rate would be prescribed by 21 to be more than 3 or 6 percentage points lower than in the absence of a gap.

[6]For example, a search for "Taylor rule" on Google (March 18, 2:14pm) yielded 115,000 hits, while "Lucas critique" yielded 78,100.

Naive application of a natural rate gap in such a policy rule would have implied essentially no downward pressure from the natural rate gap on the nominal interest rate, as the natural rate gap was estimated to be approximately zero in the middle of 2009. But such an application would be inappropriate. As emphasized by Woodford (2003), the natural rate framework aims to stabilize inflation and output at its natural rate by allowing the nominal interest rate to track the *natural rate of interest* (for example, by setting ϕ_r to one). Indeed, such stabilization could be perfectly successful in simple models like those presented in Woodford (2003), implying stable inflation and no output gap in any period; nonetheless, the nominal interest rate would vary considerably with the determinants of the natural rate.

In the event, the *natural rate of interest* from the EDO model is very highly correlated with the Beveridge-Nelson gap from the model, with a simple correlation coefficient of 0.88. As shown in figure 5, the Beveridge-Nelson gap and the natural rate of interest were both extremely low in the middle of 2009. As a result, the natural rate framework for a policy rule of Woodford (2003) and the traditional framework of Taylor (1993) both prescribed accomodative policy. Some discussions have confused the information from Beveridge-Nelson gaps, *natural rate of output* gaps, and the *natural rate of interest.*[7]

5 Comparing Gaps from EDO to Other Estimates

5.1 Estimates

Figure 6 and 7 present the production-function based output gaps from the CBO (CBO (2010) and from the Federal Reserve's FRB/US model, along with the Beveridge-

[7] Of course, I should close by emphasizing that I am not the first to highlight the potential confusion that could arise when, as Paul Samuelson said in the opening quote, the same word is being applied to quite different phenomena. For example, Woodford (2003) discusses these issues on page 250. Nonetheless, practitioners seem to stumble over these points.

Nelson cycle from the EDO model, in the upper panels. The CBO gap is widely used by economists. These gaps are both highly correlated with the Beveridge-Nelson cycle from the EDO model (with correlation coefficients exceeding 0.84 for both measures).

The lower panels of these figures present the percent change from the previous quarter in the estimate of trend (at an annual rate), along with the change in the Beveridge-Nelson permanent component from EDO. While the gaps in the upper panels are highly correlated, the trend estimates from the FRB/US model and especially from the CBO are much smoother. In short, EDO has a much more variable "potential" growth rate.

Of course, the data on GDP is the same for the EDO Beveridge-Nelson gap, the CBO gap, and the FRB/US model gap. Moreover, the growth rate of GDP equals the sum of the change in the gap and potential GDP growth. As a result, similar movements in the gap for all three measures, and quite different movements in potential, must imply quite different *covariances* between actual growth, the change in the gap, and potential growth. (For example, the variance of GDP growth equals the sum of the variance of the change in the gap, the variance of potential growth, and twice the covariance of the change in the gap and potential growth; similar mixes of variances and covariances could be done for other combinations of actual/gap/potential). The structural implications of DSGE models like EDO for the covariance between the Beveridge-Nelson trend and cycle could be used to inform the related time-series literature. For example, Beveridge and Nelson (1981) simply assumed an ARIMA representation of GDP growth, which imposes no restrictions on the covariances between innovations to the trend and cycle; Clark (1987) and other research assumed an unobserved components structure for GDP growth with an assumption of zero correlation between the (true) innovations to the trend and cycle; and Morley, Nelson, and Zivot (2003) discuss in detail the role of such assumptions and the strength of evidence for/against a correlation between innovations to trend and cycle.

Table 5: Granger causality from Gaps to Unemployment and Core Inflation (1)

Gap measure	Change in Unemployment rate	Core PCE inflation
Beveridge-Nelson	0.00	0.08
Natural rate	0.00	0.36
CBO	0.01	0.19
FRB/US	0.00	0.18

1. Each column contains the p-value associated with the null that the variable does not Granger cause the change in the unemployment rate (Sample 1986q1-2009q2, with four lags).

5.2 Granger causality

A final subject that is important in policy discussions related to the output gap or economic slack concerns the relationship of slack, in a projection or reduced-form sense, to other key economic variables such as unemployment and inflation. Indeed, such correlations are two of the most important reduced-form relationships in empirical macroeconomics (i.e., the unemployment/output gap relationship known as Okun's law (Okun (1962)) and the inflation/output gap relationship in reduced-form Phillips curves).

The simplest summary measure of a forecast relationship asks whether a variable helps predict another after accounting for lags of the variable itself – i.e., whether a variable Granger causes another (Granger (1969)). Table 5 presents the p-values associated with Granger causality tests running from each gap measure to the change in the unemployment rate and core inflation.

All the measures of the output gap show the Okun's law relationship – that is, lagged values of these measures of the output gap Granger cause changes in the unemployment rate over the 1986Q1 to 2009Q2 period. This should not be surprising – deviations of output from long-run levels must be associated with movements in labor input, and the lead of hours over unemployment is a well-known regularity.

The Phillips curves relationships are less clear for some of the measures. In particular, the FRB/US model and CBO estimates do not appear to Granger cause core inflation; neither does the natural rate measure. In contrast, the Beveridge-Nelson gap from the EDO model does appear to Granger cause core inflation, at least at the 10 percent statistical significance level. Given that, for example, one of the motivations for the CBO measure is a Phillips curve motivation (see Congressional Budget Office (2001, 2002)), the relative success of the DSGE model's Beveridge-Nelson gap is a victory.[8] It also highlights the potential policy information from this type of DSGE model, as a Phillips curve relation looms large in some policy discussions.[9]

6 Conclusion

The review of alternative output gap definitions and estimates, both from the EDO DSGE model and from policy institutions, suggests that care must be taken in defining concepts in any discussion of economic slack and related policy implications.

Looking back, my analysis suggests four conclusions:

- The EDO model's estimate of the output gap (according to either a Beveridge-Nelson or production-function approach) is very similar to gaps from the Congressional Budget Office or the Federal Reserve's large-scale macro-econometric

[8]The CBO emphasizes one component of its potential output system as particularly related to the Phillips curve framework – the CBO estimate of the natural rate of unemployment. As with the CBO estimate of potential GDP, the CBO natural rate of unemployment is extremely smooth; Kiley (2010) shows how a simple estimate of the natural rate of unemployment based on an equilibrium relationship between vacancies and unemployment is more variable and is more closely correlated with inflation in a Phillips curve framework than the CBO measure.

[9]Given the New-Keynesian structure of the EDO model, it should be clear that no simple measure of the output gap has a structural relationship with inflation; rather, it is real marginal cost that is related to inflation. Of course, output gaps may be correlated with (leads and lags) of marginal cost, implying some reduced form relationship.

model (FRB/US) model, but the DSGE model's estimate of potential growth is considerably more variable; the latter result stems from the significant degree of fluctuation in aggregate technology estimated by the DSGE model, a result consistent with the significant role such fluctuations play in model's descended from those of the real-business-cycle tradition (from Kydland and Prescott (1982)).

- The flexible-price/natural-rate gaps are highly dependent on modeling assumptions, and their use in policy applications or forecasting requires a deep understanding of a specific model's structure. (This result is closely related to the critique of DSGE models of Chari, Kehoe, and McGrattan (2009), who highlight the sensitivity of policy applications of such models to controversial modeling assumptions). In particular, a natural-rate gap does not provide the same type of guidance to a "Taylor" rule for nominal interest rates as other concepts of gaps; indeed, the signals from the Beveridge-Nelson gap provide a better sense of movements in the "natural rate of interest" than do the signals from the natural rate of output gap.

- "Equilibrium" or trend *expected* growth is highly variable in the flex-price/natural-rate case, implying that a focus on the current level of such gaps can be misleading in a policy discussion. In contrast, expected trend growth for the Beveridge-Nelson concept is exogenous and constant; moreover, all other notions of "trend" converge to the Beveridge- Nelson trend.

- The DSGE model's estimate of the Beveridge-Nelson gap is as closely related to unemployment fluctuations as those from policy institutions (e.g., obeys Okun's law) and has more predictive ability for inflation (e.g., has a tighter reduced-form Phillips curve relationship).

On balance, the results suggest that the ability of a DSGE model like EDO to capture the trend/cycle decomposition of output that drives much of the discussion of macroeconomic stabilization policy is quite good – as should be suspected given the forecasting performance of such models (e.g., Edge, Kiley, and Laforte (2009)). An interesting topic for future research involves using the structural model's implications for the covariances between trend and cycle innovations in order to bridge the distance between a structural analysis of output gaps such as herein and the time-series literature of, for example, Morley, Nelson, and Zivot (2003).

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Figure 1: Model Overview

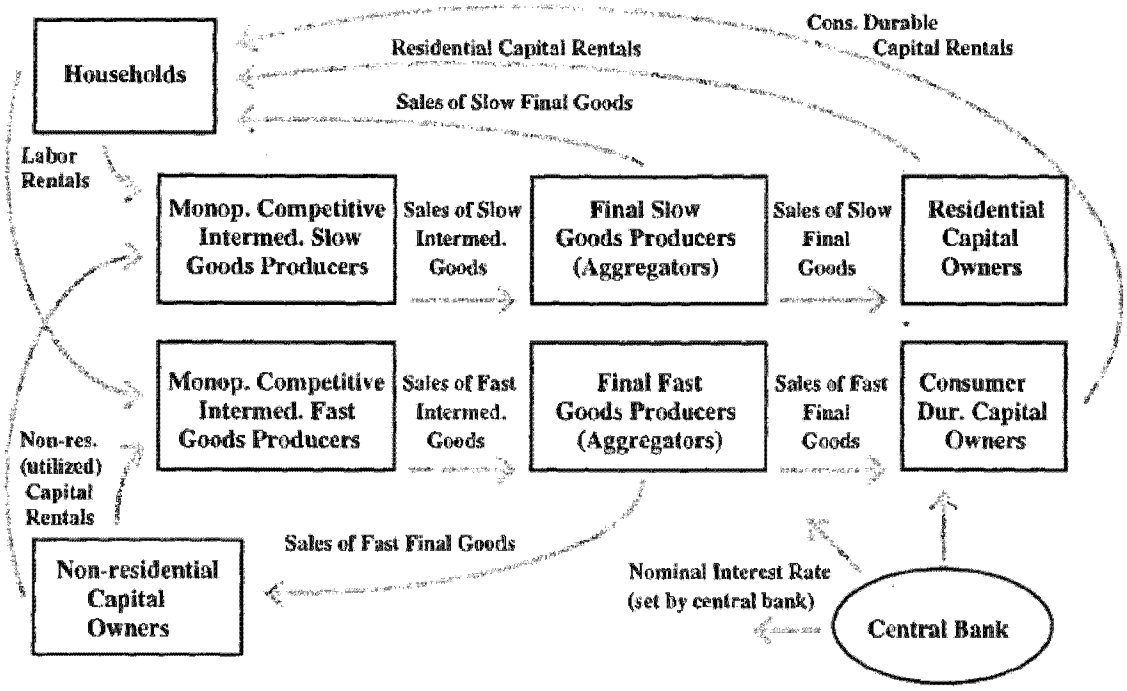


Figure 2: Beveridge-Nelson Gap

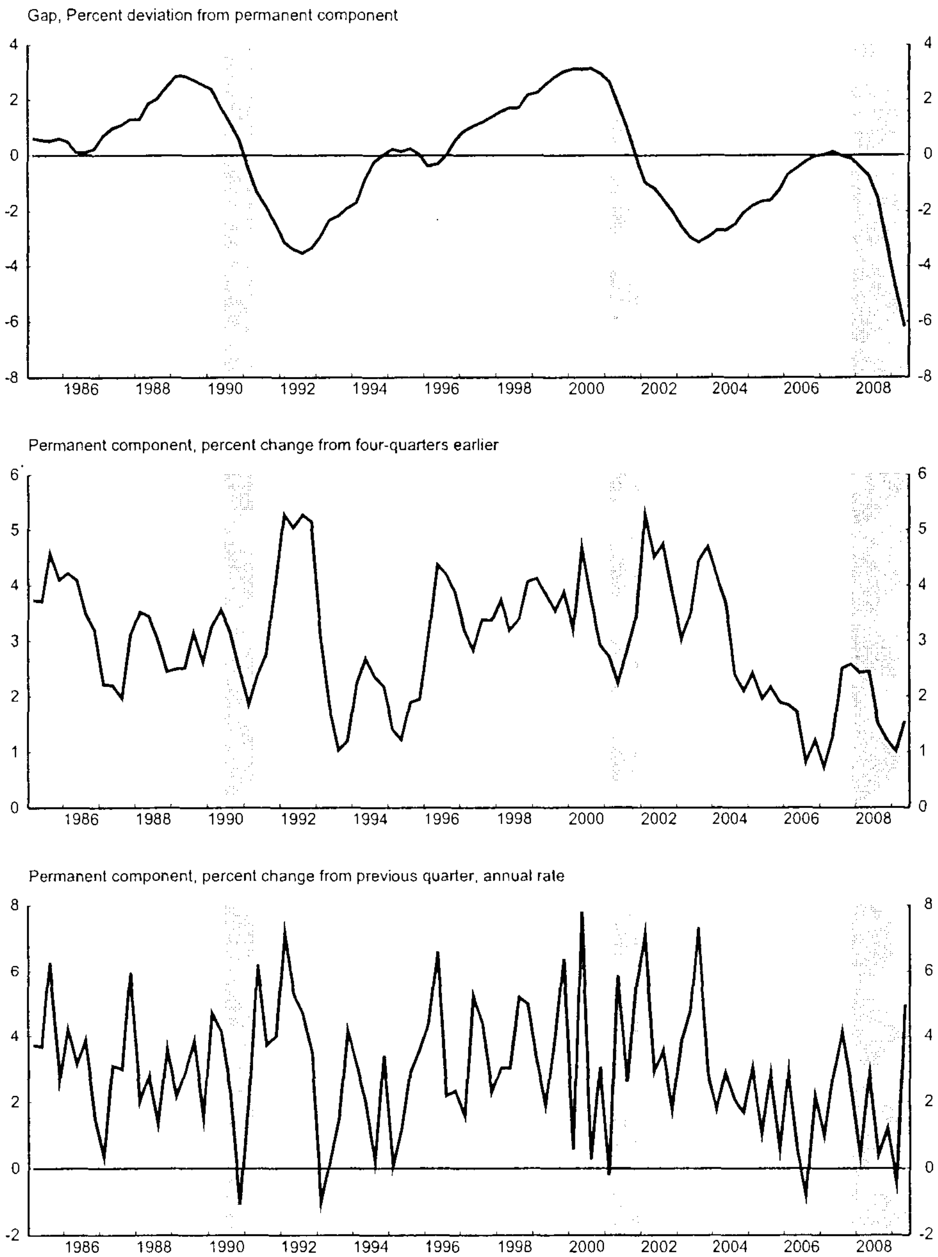


Figure 3: Production-Function Gap

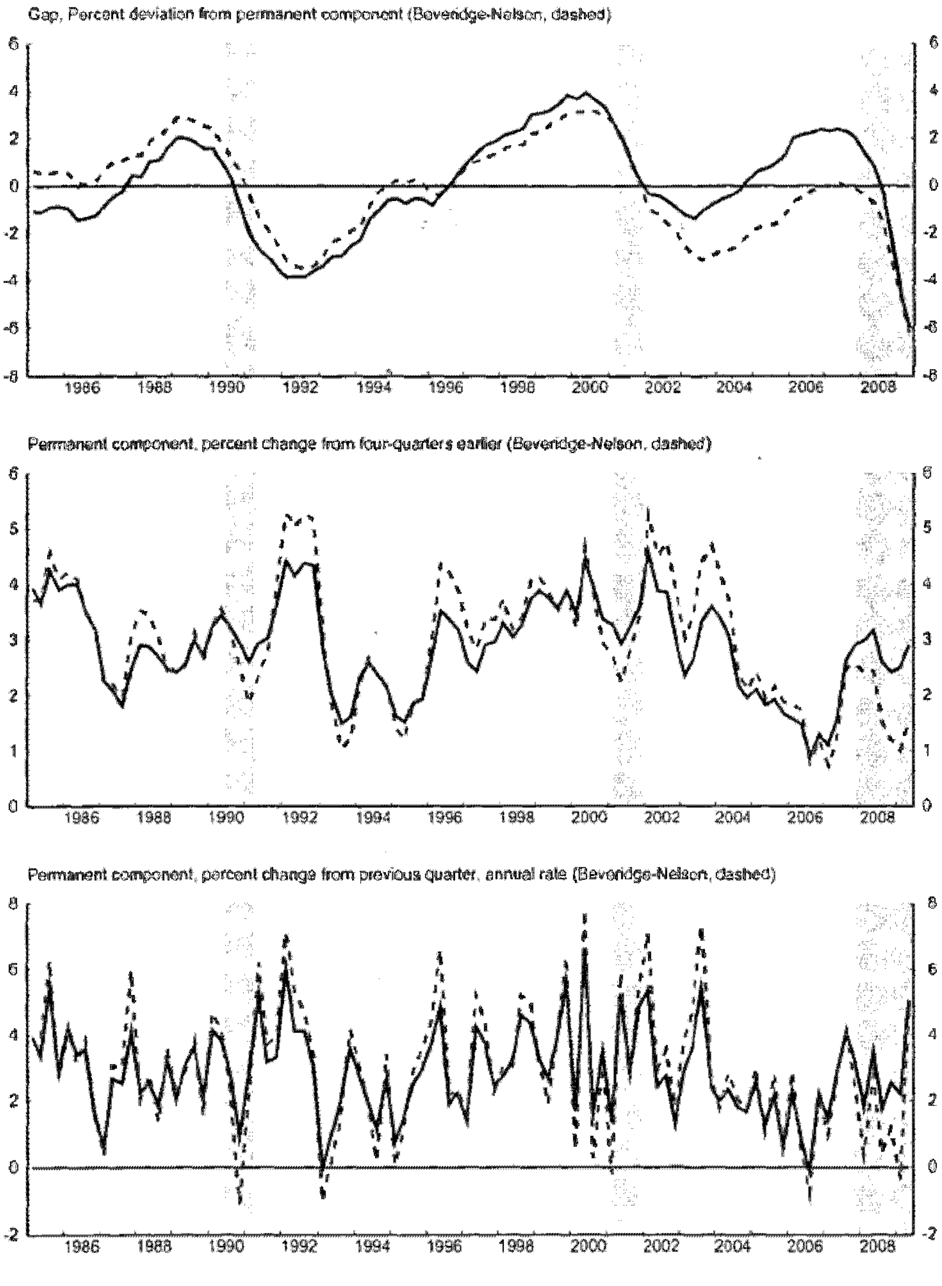
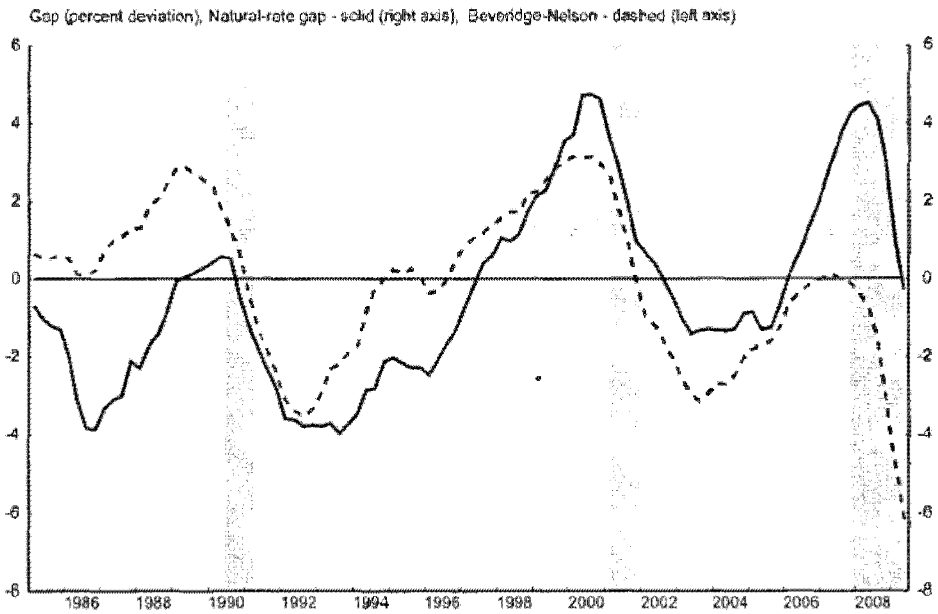


Figure 4: Natural-Rate Gap



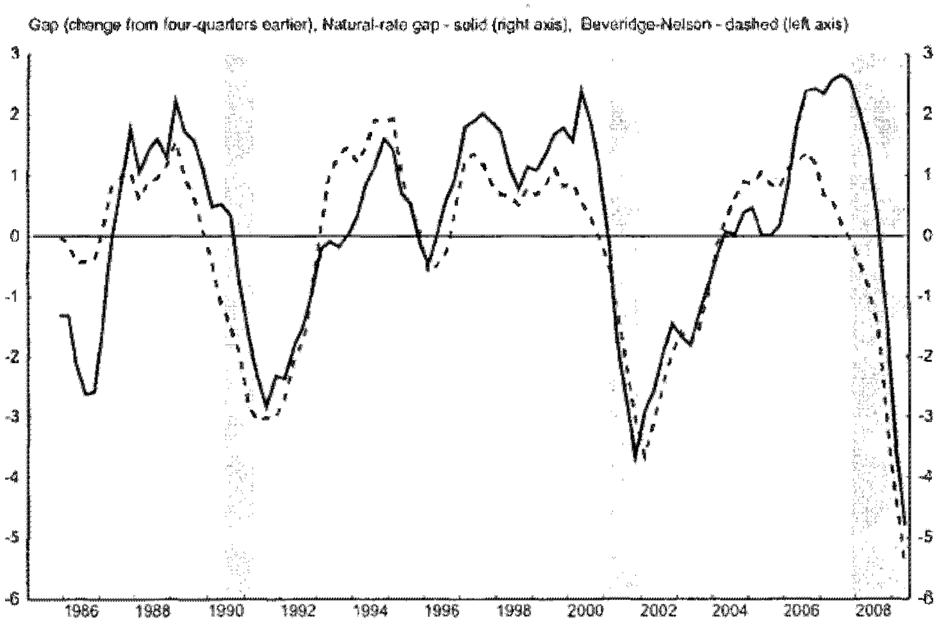


Figure 5: Natural-Rate of Interest and Beveridge-Nelson Gap

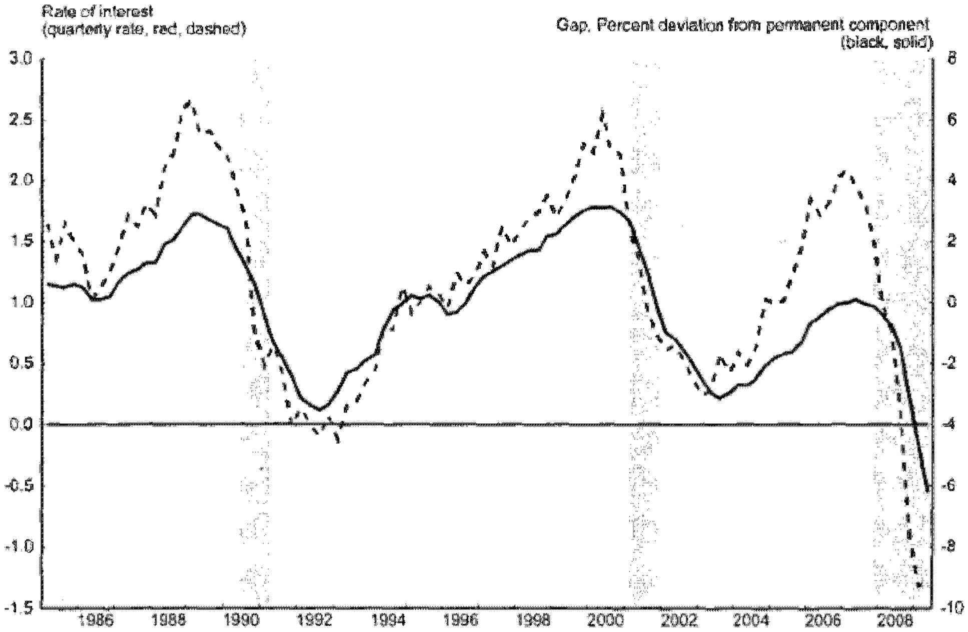


Figure 6: CBO Gap

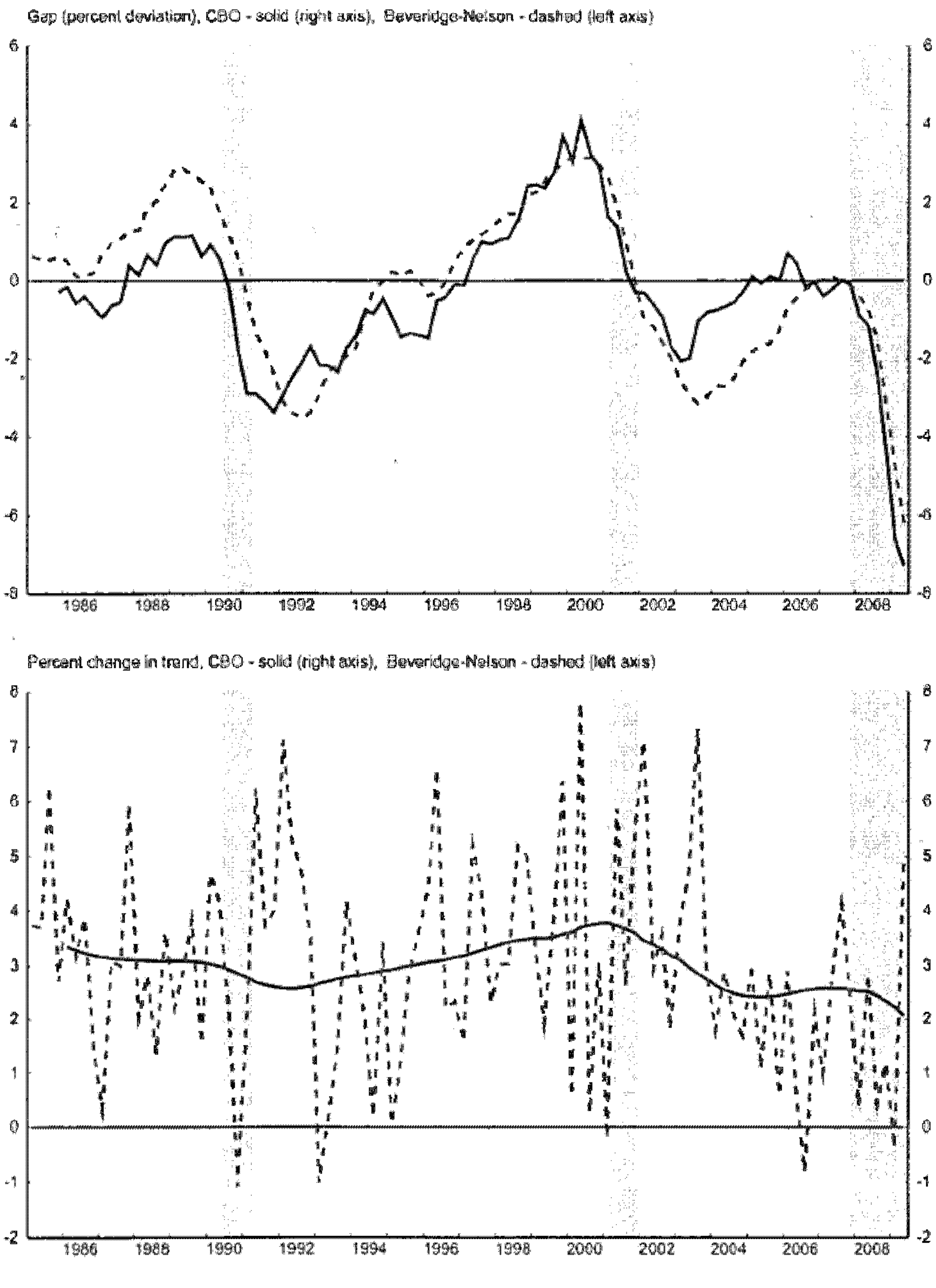
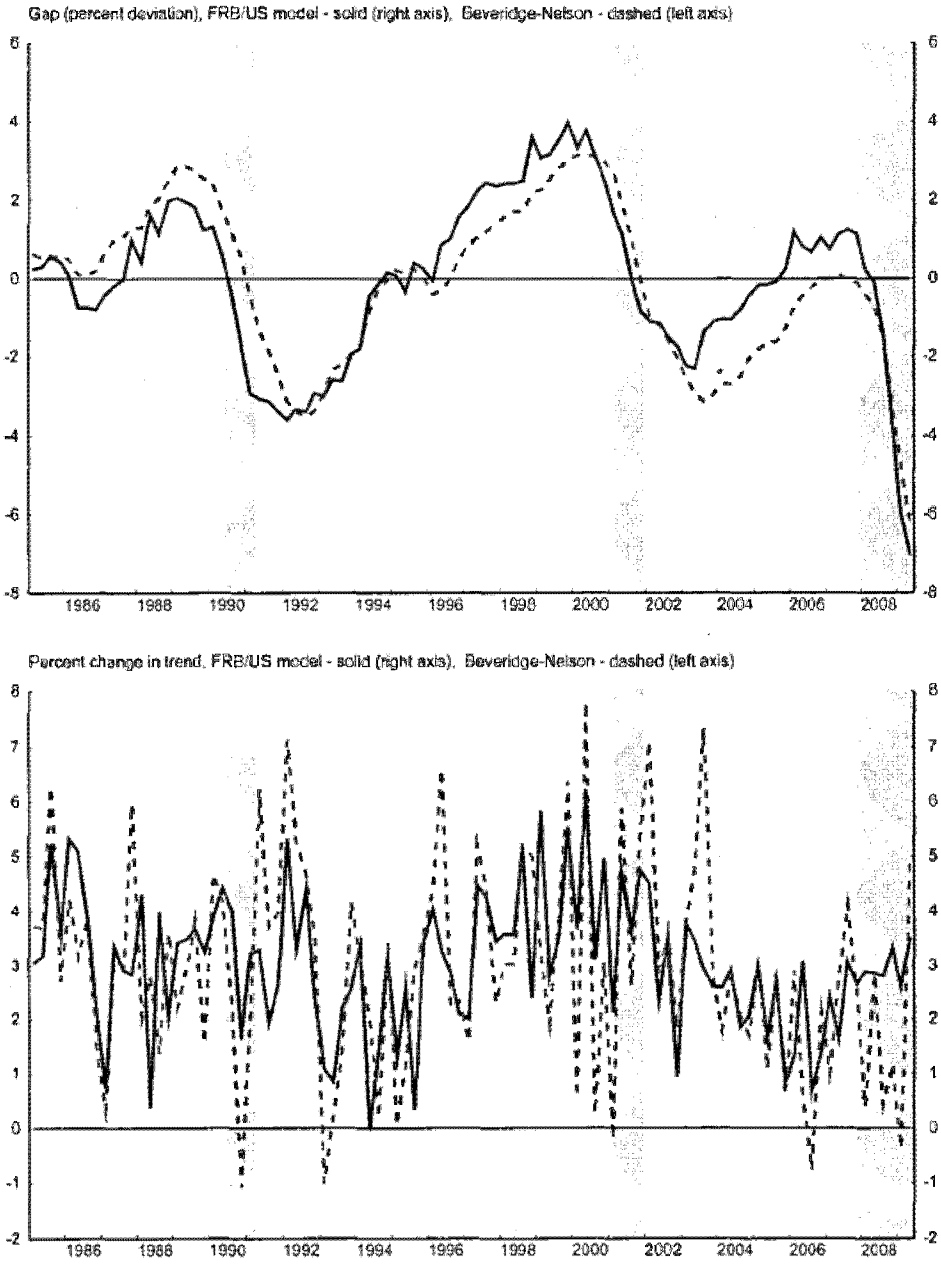


Figure 7: FRB/US Gap



Attachments for Response to Question 8

Confidential (FR)
Class II FOMC

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

DIVISION OF RESEARCH AND STATISTICS

Date: February 13, 2004

To: Chairman Greenspan

From: Jeremy Rudd

Subject: Estimates of Measurement Error in Inflation

You requested the staff's current estimate of the degree to which published price data misstate "true" inflation. The attached table summarizes our past and prospective estimates of inflation measurement error for a number of price indexes.

Our point estimate of prospective overall CPI bias equals 0.9 percentage point per year, with a subjective confidence interval that ranges from 0.3 to 1.4 percentage points. This estimate breaks down as follows.

Sources of Measurement Error in the Consumer Price Index
(Percentage points per year)

Upper-level substitution	0.3
Lower-level substitution	0.05
New outlets	0.05
Weighting[1]	0.1
Quality change/new items	0.37
Total	**0.87**

[1] "Weighting bias" captures the effect of measurement error in the CPI's expenditure weights.

In addition, the attached table provides bias estimates for the core CPI, the total and core PCE price indexes, and the GDP price index.[1]

- Our prospective bias estimate for core CPI inflation is the same as our estimate for the total CPI (0.9 percentage point).[2]

- By contrast, because upper-level substitution bias and weighting bias are not present in the PCE price indexes, our estimate of prospective bias in these inflation measures is 0.4 percentage point lower than our CPI bias estimate, or 0.5 percentage point. (Note that this assumes that quality-change bias for the nonmedical components of the nonmarket portion of PCE is zero.)

- We assume that mismeasurement of investment, government spending, and net export prices contributes 1/4 percentage point to total measurement error in GDP prices; combined with our assumed estimate of PCE bias, this leaves bias in the GDP price index at 0.6 percentage point.

- Finally, our estimate of prospective bias in the chained CPI (C-CPI-U)--which is not shown in the table--equals 0.6 percentage point; this reflects the fact that upper-level substitution bias should be absent from this index.[3]

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1. Estimates of core and total CPI bias can vary over history for two reasons. First, upper-level substitution bias--which we compute using the difference between published and chained CPIs--is not the same in all years. Second, the introduction of various methodological improvements to the index will change our estimate of bias over time. As the NIPA-based price indexes use a superlative index number formula and are based on methodologically consistent CPIs, these sources of variation in measurement error are not present for these measures.

2. Measured quality-change/new-goods bias is approximately equal for the total and core CPI; hence, our estimate of prospective total bias is the same across the two indexes. However, because the effects of methodological changes and upper-level substitution bias have differed over time, the total and core CPI bias estimates are not always equal over history.

3. We do not show the C-CPI-U in the table because its official history is limited: Four-quarter changes in the published chained CPI are only available starting in 2001. (Prior to this date, we use unpublished chained indexes to estimate upper-level substitution bias.)

February 13, 2004

Past and Prospective Estimates of Inflation Bias
(Four-quarter percent changes)

Estimates	1999	2000	2001	2002	2003	2004	2005
Published CPI	2.6	3.4	1.8	2.2	1.9	1.2	1.2
CPI BIAS [1]	1.0	1.3	.9	.9	1.0	.9	.9
Bias-adjusted CPI	1.6	2.2	1.0	1.3	.9	.3	.3
Published CPIX	2.0	2.6	2.7	2.1	1.2	1.4	1.4
CPIX BIAS [1]	1.0	1.2	1.2	1.0	1.1	.9	.9
Bias-adjusted CPIX	1.1	1.4	1.5	1.1	.1	.5	.6
Published PCE	2.1	2.3	1.6	1.8	1.4	.9	1.0
PCE BIAS [2]	.5	.5	.5	.5	.5	.5	.5
Bias-adjusted PCE	1.6	1.8	1.1	1.3	.9	.4	.5
Published PCEX	1.6	1.5	2.1	1.6	.9	1.0	1.0
PCEX BIAS	.5	.5	.5	.5	.5	.5	.5
Bias-adjusted PCEX	1.1	1.0	1.6	1.1	.4	.5	.5
Published GDP	1.6	2.2	2.4	1.4	1.5	.9	1.1
GDP BIAS [3]	.6	.6	.6	.6	.6	.6	.6
Bias-adjusted GDP	1.0	1.6	1.8	.8	.9	.3	.5

Notes:

1. CPI bias is based on Lebow and Rudd (2003). Estimate is the sum of contributions from upper-level substitution bias, which arises from consumers' responses to changes in relative prices across the CPI's item-area strata (0.3 percentage point); lower-level substitution bias, which arises from consumers' responses to price changes within an item-area stratum (0.05 pp); weighting bias, which captures the effect of measurement error in the CPI's expenditure weights (0.1 pp); new-goods/quality-change bias (0.37 pp); and outlet bias (0.05 pp). The subjective confidence interval for our current and prospective CPI bias estimates ranges from 0.3 to 1.4 percentage points.

Time variation in CPI bias reflects changes in the current-methods CPI and estimated changes in upper-level substitution bias based on the C-CPI-U. Core CPI bias differs from overall CPI bias because of differences in upper-level substitution bias and the effect of methodological changes.

2. Upper-level substitution bias and weighting bias are absent from the PCE price index, which uses a superlative index number formula and NIPA-based expenditure weights. In addition, aggregation using PCE-based weights yields a different estimate of overall new-goods/quality-change bias for PCE prices.

3. Estimate of bias in the GDP price index is based on the bias estimate for PCE prices, along with estimates for other GDP components as described in the staff's 1997 paper on price stability.

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Measurement Error in the Consumer Price Index: Where Do We Stand?

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1. *Introduction*

DURING THE 1990s, the accuracy of the Consumer Price Index came under increased scrutiny, with several analysts judging that changes in the CPI tended to significantly overstate the rate of increase in the cost of living. Most prominently, the Advisory Commission to Study the Consumer Price Index estimated in 1996 that the CPI was then overstating increases in the cost of living by about 1.1 percentage points per year, with a plausible range around this estimate extending from 0.8 to 1.6 percentage points per year. Other commonly cited estimates were of similar magnitude.[2]

The ramifications of such a bias in the CPI are numerous. The CPI is the basis of indexation arrangements for many public programs, including Social Security, for income tax brackets, for the U.S. Treasury's inflation-indexed government debt, and for many private labor contracts. Furthermore, because the CPI is an important input into the construction of data on real output and productivity, overstatement of price increases leads directly to an understatement of measured real output and productivity growth. Finally, inflation as measured by the CPI (or by other price measures that take the CPI as an input) influences the formulation of government policy, including monetary policy.

This paper derives a new estimate of CPI bias, one that differs from earlier estimates for several reasons. First, the Bureau of Labor Statistics (BLS) has made a number of improvements to its procedures in recent years; according to a recent General Accounting Office report (2000), these changes led the members of the Advisory Commission by 1999 to revise down their estimates of bias by about 0.3 percentage point per year. Second, we incorporate new research that has become available since the time of the earlier studies. Third, in areas where no new research is available, we

[1] Board of Governors of the Federal Reserve System. We thank Ana Aizcorbe, Ralph Bradley, Rob Cage, Darrel Cohen, Tim Erickson, Thesia Garner, John Greenlees, Pat Jackman, David Johnson, Mary Kokoski, Mary McCarthy, Frank Ptacek, Charles Schultze, Matt Shapiro, Dan Sichel, Ken Stewart, David Stockton, Sandy Struckmeyer, Roger Von Haefen, Karl Whelan, and David Wilcox for helpful comments and discussions, and the Bureau of Labor Statistics for providing unpublished data. We also thank John McMillan and three anonymous referees for numerous useful suggestions. The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the staff, by the Board of Governors, or by the Federal Reserve Banks. Because the authors are U.S. government employees, this work is in the public domain.

[2] David Lebow, John Roberts, and David Stockton (1994) computed bias estimates that ranged from 0.4 to 1.5 percentage points per year. Matthew Shapiro and David Wilcox (1996) estimated a midpoint of 1 percentage point per year, with an 80 percent confidence bound of 0.6 to 1.5 percentage points. Of course, these studies were informed by each other, so they are not truly independent estimates.

sometimes apply different judgment than earlier researchers regarding the interpretation of existing information. Finally, we identify and quantify a previously unrecognized source of bias, which we label "weighting bias"; specifically, we argue that the CPI's weights, which are derived from expenditure estimates from the consumer expenditure survey, may be inaccurate in a manner that systematically overstates the true rate of change in the cost of living.

Table 1 summarizes our estimates of the various sources of bias and compares them with previous estimates. We conclude that the CPI is currently and prospectively overstating the true rate of change in the cost of living by about 0.9 percentage point per year, with a confidence interval for our estimate ranging from 0.3 to 1.4 percentage points. As with previous studies, we judge the largest single source of bias to be the CPI's inadequate accounting for quality improvements and the introduction of new items—the component of bias whose magnitude is most uncertain. However, this is also the component of bias for which our estimates differ most notably from earlier estimates.[3] At the same time, we find a larger estimate of upper-level substitution bias than earlier studies, based on new evidence that the magnitude of this bias increased in the late 1990s. We emphasize that our estimates are intended to be averages, even though for some categories of bias (specifically, upper-level substitution bias and weighting bias) sufficient information is available to generate bias estimates annually.

Although many of our estimates entail a high degree of judgment, we do not take the lack of hard evidence as an argument for entirely eschewing the exercise of constructing a quantitative estimate of bias in the CPI. Public policy decisions require taking a stand, implicitly if not explicitly, on the accuracy of the CPI, and we think it preferable that such decisions be made consciously, informed by an examination of the evidence that is as systematic and thorough as possible. Certainly, though, we do not want to convey a false sense of precision about our calculations, and we try to be clear about the amount of evidence—in many cases extremely thin—that supports our estimates.

There are several important conceptual issues that we do not discuss in this paper, and which, therefore, we implicitly treat as being handled appropriately in the CPI. Many of these issues are examined in detail in a recent study by the National Research Council (2002). Most important, we follow the BLS in taking the CPI's objective to be the measurement of the cost of living in a single period, holding constant nonmarket factors such as government-provided goods and services, crime, and environmental quality. That this is an appropriate objective for the CPI commands widespread but not universal assent (see the discussions in Jack Triplett 2001, John Greenlees 2001a, and Angus Deaton 1998, as well as in chapter 2 of the National Research Council's report). Similarly, we do not discuss whether the CPI's scope should be broadened from its existing domain of out-of-pocket expenditures made by consumers to include, for example, the portion of medical expenditures paid by businesses or governments. Nor do

[3] Other studies have attempted to shed light on CPI measurement questions using different methodologies than those employed here. Mark Bils and Peter Klenow (2000) use cross-sectional evidence on durable goods spending to predict which items will display rapid quality change over time; on the assumption that quality-adjusted price increases should not be especially large for these goods, they estimate that the CPI overstated price increases for durable goods by 2.2 percentage points per year between 1980 and 1996. William Nordhaus (1998) and Alan Krueger and Aaron Siskind (1998) used data on households' perceptions of improvement in living standards to assess the accuracy of the CPI, each coming to different conclusions regarding the CPI's accuracy in capturing changes in the cost of living. Finally, Bruce Hamilton (2001) argues that observed changes in the budget share of food are consistent with real-income mismeasurement (that is, CPI bias) of slightly less than 1 percentage point per year from 1980 to 1991.

TABLE 1
ESTIMATES OF CPI BIAS
(PERCENTAGE POINTS PER YEAR)

<table>
<tr><th rowspan="2">Category of Bias</th><th rowspan="2">Lebow-Roberts-Stockton (1994)[1]</th><th rowspan="2">Shapiro-Wilcox (1996)[2]</th><th colspan="2">Advisory Commission</th><th rowspan="2">This paper[5]</th></tr>
<tr><th>Report (1996)[3]</th><th>GAO update (1999)[4]</th></tr>
<tr><td>Upper-level substitution</td><td>.1–.2</td><td>.2
(.0–.4)</td><td>.15</td><td>.1</td><td>.3
(.15–.55)</td></tr>
<tr><td>Lower-level substitution</td><td>.3–.4</td><td>.25
(.0–.5)</td><td>.25</td><td>.05</td><td>.05
(-.15–.25)</td></tr>
<tr><td>New outlets</td><td>.0–.1</td><td>.1
(.0–.2)</td><td>.1</td><td>.1</td><td>.05
(.0–.20)</td></tr>
<tr><td>Weighting</td><td>—</td><td>—</td><td>—</td><td>—</td><td>.1
(-.05–.25)</td></tr>
<tr><td>Quality change</td><td>.0–.3</td><td>.25
(-.05 –.5)</td><td rowspan="2">.6</td><td rowspan="2">.55</td><td rowspan="2">.37
(-.08–.82)</td></tr>
<tr><td>New items</td><td>.0–.5</td><td>.2
(.0–.4)</td></tr>
<tr><td>Total bias</td><td>.4–1.5</td><td>1.0
(.6–1.5)</td><td>1.1
(.8–1.6)</td><td>.8</td><td>.87
(.3–1.4)</td></tr>
</table>

1. Lebow, Roberts, and Stockton did not specify a point estimate. Implicitly, one may consider the midpoint of their ranges to be their point estimates, with the possible exception of new items bias, for which 0.5 percent was called "surely an upper limit on this effect."
2. Ninety percent confidence intervals are in parentheses, with the exception of the total bias, which is an eighty percent confidence interval.
3. Range on total bias is in parentheses.
4. Total bias is the mean of the Advisory Commission members' estimates. Figures for the categories of bias are approximate.
5. Confidence intervals are in parentheses.

we examine the CPI's use of "plutocratic" (rather than "democratic") expenditure weighting, whereby the CPI assigns equal weight to each dollar of outlay and thus weights the budget shares of high-income households higher than those of low-income households (see National Research Council 2002, and Deaton 1998). Although we think that these issues are both important and debatable, we view the choices embodied in the CPI as being reasonable enough that we are not comfortable assigning the term "bias" to any difference between the existing CPI and an alternative measure that makes different choices about these issues.

The remainder of this introduction summarizes our findings on each type of bias, and the five sections that follow consider these sources of bias in detail (with section 6, which covers quality-change and new-items bias, constituting the bulk of the paper). Section 7 discusses our aggregation of each type of bias to obtain a confidence interval around our overall bias estimate, and section 8 concludes with some suggestions for further improvements to the CPI and further directions for research into price measurement.

Upper-Level Substitution Bias. Because the CPI is a fixed-weight Laspeyres index, it is subject to substitution bias—that is, it tends to overstate increases in the "true" cost of living because it ignores the substitutions that consumers make in response to changes in relative prices. Estimates of the magnitude of the bias from ignoring substitution *across* the CPI's roughly 8,000 item-area strata—upper-level substitution bias—are typically made by comparing the CPI with an alternative measure that does take substitution into account. Such estimates used to center around only 0.1 to 0.2 percentage point per year, but new evidence suggests that this bias increased dramatically in the late 1990s (table 2). Going forward, we estimate that this bias is most likely to be around 0.3 percentage point per year, and our confidence range is skewed upwards.

Lower-Level Substitution Bias. A similar substitution bias can occur *within* the item-area strata, and bias from failing to capture such substitution—lower-level substitution bias—had previously been estimated to be larger than upper-level substitution bias. However, since 1999 the CPI has utilized within most of its strata a geometric means aggregation formula that does assume a certain degree of substitution. Thus, our estimate of lower-level substitution bias is smaller than that from studies made prior to 1999, and centers at just 0.05 percentage point per year. But the degree of within-stratum substitution cannot be measured directly, and not much evidence is available to support this estimate.

New-Outlet Bias. When new retail outlets are rotated into the CPI sample, the BLS implicitly assumes that any difference in price between the old and new outlets is fully explained by differences in quality. However, the fact that the existence of these new outlets reflects shifts in buying patterns suggests that this is not so. Thus, the CPI likely fails to capture the quality-adjusted declines in price that occur as buying patterns change. We put the magnitude of this bias at 0.05 percentage point per year, based on only sketchy evidence because we have to rely on a single study of food and gasoline prices in the late 1980s.

Weighting Bias. The weights in the CPI are derived from the BLS's consumer expenditure survey and may be measured inaccurately, thereby leading to a "weighting bias" in the CPI—a topic that has not been addressed previously in the literature. The sign of such a weighting bias is not clear *a priori*; it depends on whether items with weights that are too large happen to display above- or below-average price increases. We argue that consumer expenditures as measured in the NIPAs may be more accurate than those used in the CPI; based on those data, we estimate that weighting bias pushed up the rate of change of the CPI by 0.1 percentage point per year on average from 1987 through 1997 and by about 0.2 percentage point from 1988 through 2001 (table 4). Going forward, we put our point estimate of bias at 0.1 percentage point per year.

Quality-Change and New-Items Bias. The final source of bias in the CPI arises because it is difficult to measure the effect on welfare of changes in the quality of existing items or from the introduction of new items. This is easily the most controversial area of CPI measurement, both because this component of bias is often viewed as being large and because our knowledge is so incomplete that any such estimates must involve a large subjective component. Estimating the magnitude of this bias requires detailed judgments about each category of prices in the index; our own judgments are based on a comprehensive review of the available literature on price measurement. In several instances, updated BLS procedures, new research, or differing judgment led us to make a smaller bias estimate than was chosen by the Advisory Commission—the only study to have considered the topic in as much detail as we do here. In particular, our estimates of the bias arising from incomplete quality adjustment of transportation, apparel, and computers and other electronic equipment are smaller than the Advisory Commission's estimates (table 5). In all, we judge quality-change and new-items bias to center a little below 0.4 percentage point per year. We place a substantial confidence bound around this figure; this reflects our assessment that we have at least a moderate degree of hard evidence on the extent of quality-change bias for items comprising less than 10 percent of the CPI. For about 40 percent of the CPI, we have a small or inadequate degree of evidence, and for more than half of the CPI our estimates are almost entirely subjective (table 6).

2. *Upper-Level Substitution Bias*

Because the CPI is a fixed-weight Laspeyres index, it is subject to substitution bias—that is, it tends to overstate increases in the cost of living because it ignores the substitutions that consumers make in response to changes in relative prices. In the CPI's context, the term "upper-level" substitution bias refers to substitution *across* the CPI's roughly 8000 item-area strata; the ability of the CPI to capture substitution among the specific items *within* these strata—"lower-level" substitution—is discussed below. (Examples of item-area strata are uncooked ground beef in Dallas-Fort Worth and hospital services in Atlanta.) Estimates of upper-level substitution bias have been reported in a number of studies that compare a Laspeyres CPI with an alternative CPI based on a so-called superlative aggregation formula, which does take substitution into account. Until recently, these studies gave a fairly narrow range of bias estimates that were relatively uncontroversial. The most complete such study (Robert Cage and Patrick Jackman 1999) examined data through 1997, and yielded an estimated bias averaging 0.16 percentage point per year from 1987 to 1997.[4]

In August 2002, BLS began to publish a superlative version of the CPI (which they call the "chained" CPI, or C-CPI-U). The C-CPI-U begins in 2000, but BLS also made available retrospective estimates that extend back to 1990. From 1990 to 1997, increases in this historical version of the chained CPI averaged 0.26 percentage point per year less than the rate of change of a comparable Laspeyres index—a somewhat larger difference than was found in the Cage and Jackman study (Bureau of Labor Statistics 2002). More recently, however, this difference widened greatly, with the chained CPI increasing 0.5 percentage

[4] This figure is obtained from the standard practice of comparing a "chained" superlative index—one that updates the expenditure weights annually—with a fixed-base Laspeyres index. There are two reasons why one might want to question this practice. First, Ralph Bradley (2001a) argues that small-sample effects lead to an upward bias in the Laspeyres index; if so, some of the difference between the Laspeyres and superlative indexes—while still a genuine source of bias in the CPI—should properly be attributed to finite-sample effects rather than to substitution bias per se. Second, this practice may not lead to a precisely correct measure of upper-level substitution bias because the chained superlative index is associated with different reference indifference curves in each period, while the Laspeyres index is associated with the initial period's utility level; it is not known how to construct a point estimate of upper-level substitution bias that deals adequately with this problem. (Laura Blow and Ian Crawford 2001 develop a method of estimating a *range* of values for this component of bias; however, as their study covers the U.K. retail price index, its results are not directly applicable here.)

TABLE 2
ESTIMATES OF UPPER-LEVEL SUBSTITUTION BIAS[1]
(PERCENTAGE POINTS PER YEAR)

	Cage and Jackman (1999)[2]		Chained CPI[3]	
	Published	Adjusted	Published	Adjusted
1988	.14	.10		
1989	.19	.15		
1990	.15	.11	.11	.07
1991	.16	.12	.13	.09
1992	.09	.05	.44	.40
1993	.13	.09	.25	.21
1994	.09	.05	.22	.18
1995	.14	.10	.16	.12
1996	.18	.14	.36	.32
1997	.30	.26	.42	.38
1998			.43	.39
1999			.49	.45
2000			.70	.66
1987–1997	.16	.12		
1990–1997	.16	.12	.26	.22
1998–2000			.54	.50

1. All figures are based on the percent change in a Laspeyres index less the percent change in a chained superlative index. Adjusted figures are reduced by 0.04 percentage point as described in text to reflect Greenlees (2001b).
2. Figures are based on annual-average data. Laspeyres index is based on 1987 consumer expenditure survey (CEX) weights.
3. Figures are based on December-to-December changes. For 1990 to 1999, an experimental version of the chained CPI is compared with a Laspeyres index based on biennially updated CEX weights. For 2000, the published chained CPI is compared with a biennially weighted CPI. See Bureau of Labor Statistics (2002).

point less than a biennially chained Laspeyres index in 1999 and 0.7 percentage point less in 2000.[5] (Data in hand at the time of this writing show a diminishing gap after 2000, though these data are preliminary and subject to revision.) These figures, which are presented in table 2, stand in striking contrast to earlier estimates and indicate that upper-level substitution bias in

[5] In January of 2002, the BLS began to update the CPI's weights and shift forward its base period every two years; this is much more frequent than the previous procedure of updating the weights at the time of major revisions (approximately once every ten years). To provide the information relevant for judging upper-level substitution bias going forward, all figures discussed here compare the chained CPI to a biennially weighted version of the CPI, rather than to the official CPI. (In 2000, the official CPI used weights based on 1993–95 expenditures and increased 0.1 percentage point more than the biennially weighted alternative index.)

the CPI rose dramatically in the late 1990s.[6] It is difficult to understand why this substitution bias should have increased so much, though BLS found that the variance of relative price changes has also increased notably from the mid-1990s through 2000, and this might have led to greater substitution.

Two issues must be addressed before we can use these calculations to form a judgment about the likely prospective magnitude of upper-level substitution bias. First, Greenlees (2001b) has argued that these estimates of substitution bias are slightly too large as a result of random sampling error in the underlying price data; he shows that increases in superlative indexes are biased downward when such sampling error is present. Intuitively, one can think of a superlative index as measuring substitution by determining how expenditure shares change in response to changes in relative prices; random error in the prices biases the estimated elasticity of substitution toward unity in much the same way that a regression coefficient is biased toward zero by an errors-in-variables problem. Greenlees proposes correcting for this problem with a composite estimation procedure that mitigates the effect of the error by averaging the item-area price data with national-level item indexes. This procedure reduces his estimate of upper-level substitution bias (which he computed over the period 1987 to 1995) from 0.12 percentage point to 0.08 percentage point per year. Without evidence that this sampling error has become larger since 1995, we see no reason to think that this error can account for the widening gap evidenced by the chained CPI data. Therefore, the "adjusted" columns of table 2 apply the same 0.04 percentage point reduction to the Cage-Jackman and C-CPI-U estimates of upper-level substitution bias in all years.

Second, we shall argue below in section 5 that an alternative set of weights that we construct using personal consumption expenditure (PCE) data from the national accounts may be more accurate than the CPI's weights, which are derived from the consumer expenditure survey (CEX). As we show in appendix B, this implies that, to avoid double-counting, one ideally should calculate substitution bias using these alternative PCE-based weights rather than the CPI weights used in the studies we cited above. We experimented with such a calculation; however, because we were unable to perform the calculation at a sufficiently detailed level, our estimates at best provide a lower bound for the magnitude of upper-level substitution bias.[7] That said, even these lower-bound estimates confirmed both the general uptrend in substitution bias in the late 1990s and its decline after 2000. Thus, we are left with assuming that the use of PCE weights would not materially change the bias estimates presented in table 2.

Given that the results based on the C-CPI-U are so strikingly different from the results of previous studies, and given that the C-CPI-U has only very recently come into existence, we find it difficult to make a

[6] Given that many categories of goods are characterized by persistent changes in relative prices (for example, durable goods *versus* services), one might expect the degree of substitution bias to increase as one moves further from the base period. However, by using a biennially weighted CPI, the calculations in table 2 ensure that the most recent years are *not* further from the base period than are the earlier years; moreover, there is little evidence that upper-level substitution bias in the CPI tends to change in this manner (see Greenlees 1998). By contrast, substitution bias in a fixed-weight price index for personal consumption expenditures increases notably as one moves further away from the base period.

[7] These estimates, which are available from the authors upon request, should be interpreted as a lower-bound estimate of substitution bias for two reasons. First, and most importantly, we were able to perform the calculation only for a fairly aggregated 24-item decomposition of the CPI; this calculation therefore misses much of the substitution that occurs among more detailed expenditure categories. In addition, the PCE-based weights exist only at the national level; although the larger sample sizes in the national-level data obviate the sampling-error problem discussed above, the absence of detail on expenditure changes in response to regional relative price changes leaves some substitution behavior unmeasured.

reasonable judgment about the likely magnitude of upper-level substitution bias going forward. In part because of preliminary indications that the bias has diminished after 2000, we certainly do not want to assume that some of the larger figures in table 2 are likely to persist, on average, going forward. But neither would we want to completely discount the recent data and assume that this bias will fully retreat to its early 1990s levels. We therefore put our point estimate of upper-level substitution bias at 0.3 percentage point per year, and we convey our uncertainty about this estimate by assuming a confidence interval that ranges from 0.15 to 0.55 percentage point. Note that this interval is skewed upwards.

3. *Lower-Level Substitution Bias*

Substitution occurs within the CPI item-area strata as well, but in this case the expenditure data are not available (even with a lag) to measure the degree of substitution. Accordingly, the magnitude of lower-level substitution bias is known with much less certainty than is the case for upper-level substitution bias. The Advisory Commission and other analysts have generally estimated lower-level substitution bias as the difference between the published CPI (which originally used a modified Laspeyres weighting within strata) and an alternative that employs geometric means within strata. Unlike the Laspeyres formula, which assumes a zero elasticity of substitution, the geometric-means formula assumes a unit elasticity. (Actually, Robert McClelland and Marshall Reinsdorf 1999 demonstrate that in small samples the geometric means index in effect assumes an elasticity slightly *less* than unity.)[8] This calculation was the basis for the Advisory Commission's estimate that lower-level substitution bias raised measured CPI inflation by 0.25 percentage point per year.

The BLS moved in January 1999 to employ the geometric-means aggregation formula within a majority of the CPI's item-area strata. The BLS retained the Laspeyres formula in strata for which an elasticity of zero was deemed more likely, including renter- and owner-occupied housing, public utilities, and most medical-care services; in all, geometric-means aggregation was used for items that constitute roughly three-fifths the weight of the CPI. BLS estimated this revision to have reduced the rate of increase in the CPI by about 0.2 percentage point per year on average; this is a bit smaller than their previous estimate of 0.25 percentage point, which was based on a calculation that used the geometric-means formula within *all* of the CPI's strata.

Has the BLS's move toward using geometric means eliminated lower-level substitution bias? The answer depends on whether the true elasticities of substitution within strata tend to be larger or smaller than the BLS assumptions of (slightly less than) one for the geometric-means strata and zero for the Laspeyres strata. As noted above, there exists little evidence on this question. Shapiro and Wilcox (1997) found that the estimated amount of upper-level substitution bias is consistent with a *cross*-stratum elasticity of 0.7, and this might be taken as a lower bound on the typical elasticity among the comparatively homogeneous items *within* strata (although examples certainly can be found of heterogenous strata, such as prescription drugs, for which the BLS did decide to adopt geometric means). And, Gerard Tellis (1988) analyzed the results from a large number of papers in the marketing literature that estimate cross-brand elasticities and found a mean elasticity

[8] In particular, under certain assumptions, if all items in a sample of size n have equal weight, the geometric means index is an exact cost of living index for a CES utility function with an elasticity of substitution equal to $1-1/n$. Hence, if elasticities of substitution were truly equal to unity, the geometric means indexes would be biased upward in small samples. McClelland and Reinsdorf report that the average item-area stratum in the CPI includes only nine price quotes per month.

(after adjusting for certain biases in the results) of 2.5. Because the items considered in Tellis's study are more homogenous than most of the CPI strata, this estimate probably represents an upper bound on the typical within-stratum elasticity. Similarly, the growing number of studies based on scanner data are of limited use because these studies typically consider products that are more homogeneous than the strata in which they are found.[9]

Although we have very little to go on, our sense is that typical elasticities within the geometric-means strata are probably a little larger than unity. Accordingly, because the geometric-means formula in small samples is consistent with an elasticity slightly *less* than unity, we suspect that a small amount of lower-level substitution bias remains in the CPI. We therefore pencil in a relatively small number—0.05 percentage point—to convey our suspicions. Our subjective confidence interval around this estimate is symmetric and ranges from −0.15 to 0.25 percentage point per year.

4. *New-Outlet Bias*

A third potential source of bias in the CPI involves the rotation of retail outlets into and out of the CPI sample. At the time of rotation, any difference in price between items in an old outlet and items in a new outlet is implicitly assumed to reflect a difference in quality (broadly construed to include not just the quality of the product itself, but also the convenience of the outlet, the helpfulness of the service, and so on). This is an extreme assumption inasmuch as the rotation of outlets in the CPI reflects shifts in households' buying patterns. The very fact that buying patterns change suggests that people believe quality-adjusted prices to be lower at the new outlets; if so, then the CPI fails to capture these quality-adjusted declines in price.[10] (One exception would be if the price at the old outlet is reduced to match the lower quality-adjusted price at the new outlet; the CPI would correctly capture the price decline in this case. See Shapiro and Wilcox 1996 for a careful discussion of this and other possible scenarios.)[11]

There are no solid estimates of new-outlet bias. All estimates to date are based on Reinsdorf's (1993) study that compares the prices of certain food items and gasoline in incoming and outgoing outlets between 1987 and 1989. He found that prices were lower on average at incoming outlets by an amount that translated to a difference of about 0.25 percentage point per year. Thus, the bias for these items would be between zero and 0.25 percentage point per year, depending on the degree to which the lower prices reflect lower quality. Lebow, Roberts,

[9] For example, Bradley et al. (1997) study scanner data on milk, canned tuna, ketchup, and toilet tissue. Only the first is itself a CPI item stratum, and furthermore, the authors do not examine these items independently but combine them all into a single measure. Thus, it is hard to interpret their result that a geometric-means index overstates increases in the cost of living as measured by a superlative index (though by less than a Laspeyres index). Reinsdorf's (1999) study of coffee prices and William Hawkes and Frank Piotrowski's (2002) study of ice cream products are somewhat more relevant, because these are both item strata in the CPI. Reinsdorf finds high substitutability within roasted coffee and within instant coffee, but low substitutability between those two categories; overall, he finds that the geometric-means index rises slightly faster than a superlative index for this stratum. Similarly, Hawkes and Piotrowski find that a geometric-means index for ice cream products rises slightly faster than a superlative index.

[10] A related issue involves the speed with which new outlets are brought into the CPI. In particular, "e-commerce" internet sites are sufficiently different from traditional brick-and-mortar outlets that their introduction into the CPI may be occurring with a longer lag than usual. Of course, as with any new outlet, price differences between existing outlets and new internet-based outlets are ascribed to quality differences by BLS. (In addition, to the extent that the rise of e-commerce has led to a slower rise in quality-adjusted prices, new outlet bias may have picked up in recent years. We discuss the internet more generally below.)

[11] New-outlet bias provides an important example of how the fact that consumers face a distribution of prices for each good they consume can affect the construction of a price index. As Robert Pollak (1998) has discussed, this is a relatively neglected aspect of index-number theory.

and Stockton (1994) judged that new-outlet bias would be relevant for about 40 percent of the CPI, and applied Reinsdorf's 0.25 percentage point figure to yield a bias of between zero and 0.1 percentage point per year for the overall CPI. The Advisory Commission picked the upper end of the range and assumed a new-outlet bias of 0.1 percentage point, and Shapiro and Wilcox (1996) also judged the mean bias to be 0.1 percentage point (though the mode of their subjective distribution was around 0.05 percentage point).

Because no new information has come to bear on this question, our judgment is that the midpoint of the original Lebow, Roberts, and Stockton range is reasonable, and we put our point estimate of new-outlet bias at 0.05 percentage point per year. We are fairly uncertain about this estimate, but we also view the bias as unlikely to be negative; accordingly, we specify our subjective distribution as being skewed to the right, with a confidence interval ranging from zero to 0.20 percentage point per year.

5. *Weighting Bias*

The weights in the CPI are derived from the BLS's consumer expenditure survey (CEX). If these weights are measured inaccurately, then the CPI could suffer from a "weighting bias"—a possibility that has not, to our knowledge, been addressed by previous studies. In contrast to the substitution biases discussed above, there is no *a priori* presumption as to the sign of this bias; it depends on whether items with weights that are too large happen to display above- or below- average price increases. We present evidence that weighting bias tends to push up the rate of change of the CPI.

We assess the accuracy of the CEX-based weights that underlie the CPI by comparing them with an alternative set of weights for personal consumption expenditures (PCE) from the national income and product accounts. Neither measure of weights is perfect, but we see advantages to the PCE data on balance. In benchmark years, the PCE data are derived in large part from businesses' responses to the economic censuses, which provide a reasonably comprehensive record of expenditures. The main difficulty with the PCE data in this context lies in the need to subtract the purchases of businesses and governments from total expenditure data in order to obtain spending by households and nonprofit institutions. In the Census of Retail Trade, for example, estimates of expenditures by class of customer are available for each establishment on average, but not by the specific line of merchandise sold.

In contrast to the PCE data, the CEX relies in large part on respondents' memory of their own expenditures as well as their knowledge about the expenditures of other household members, and these may be suspect in many cases. The CEX also relies on respondents' willingness to report expenditures that may be viewed as private, such as purchases of alcohol or tobacco.[12] Moreover, for the rental value of owner-occupied housing—an extremely important category owing to its large weight—the CEX estimates are based on homeowners' estimates of what their homes would rent for (see Bureau of Labor Statistics 1983), and these estimates may be quite inaccurate. (In the PCE data, the equivalent estimates are imputed by applying rent-to-value ratios for tenant-occupied units to the stock of owner-occupied housing. See U.S. Department of Commerce 1990.) Finally, the CEX survey's aggregate expenditures may be affected by the survey's relatively small size (though its sample size

[12] The probable underreporting of alcohol and tobacco expenditures in the CEX appears to have been first noted by Hendrik Houthakker and Lester Taylor (1970, p. 252). More recently, Raymond Gieseman (1987) discusses this problem, and also cites evidence of recall bias in the CEX. (These types of mismeasurement are not unique to the CEX; see Deaton 1997, pp. 24–28 for a discussion of recall bias and the underreporting of such purchases in other countries' household expenditure surveys.)

has increased recently), by small response rates from very-high-income households (John Sabelhaus 1998), or by sample attrition (Triplett 1997). The National Research Council (2002) and Triplett (1997) provide additional discussions of the advantages and disadvantages of these two expenditure measures.

To construct weights based on the PCE data that are comparable to the CPI, however, several adjustments must be made. (Details of these adjustments are given in appendix A.) Most importantly, the CPI is intended to cover only out-of-pocket expenditures by households, whereas PCE is considerably broader in scope, representing all goods and services purchased by both individuals and the nonprofit institutions that serve them. For example, PCE includes all expenditures on medical care whether paid for by households, employers, or governments, whereas the CPI only covers the portion of expenditures paid by households out of their own pockets. In all, roughly one-quarter of PCE consists of expenditures that are outside the scope of the CPI. Thus, we adjust the PCE data to cover approximately the same scope as the CPI by removing these out-of-scope expenditures. We also adjust for differences in the definitions of a few specific expenditure categories and for the fact that the CPI covers urban households only. Although the conceptual differences between PCE and the expenditures that underlie the CPI weights are important and these adjustments cannot be made perfectly, we believe that our adjustments capture the most important factors that are needed in order to make the PCE data roughly comparable to the expenditure data used in the CPI.

After making these adjustments, we use the resulting modified PCE data to construct an alternative set of relative importance weights (using procedures that are also described in appendix A). Table 3 shows the December 1997 relative importance weights for a 24-item decomposition of the CPI along with alternative, PCE-based weights. The differences between the two sets of weights are substantial, and the pattern of differences largely corresponds to our expectations given the potential problems in the CEX that we discussed above.[13] Specifically, the CPI weights are smaller for many items like apparel, audio and video equipment, and broad categories of other nondurable goods, where a household head (the usual respondent) may be least knowledgeable about the expenditures of other members of the household. Conversely, the CPI weights are larger for tenants' rent, utilities, and motor vehicles, where a household head is probably more knowledgeable about the overall household's outlays and where we would therefore expect the relative weight to be boosted by the undercounting of other expenditures. The CPI weights also are notably larger for owners' equivalent rent, which also is boosted by the undercounting of other expenditures; in addition, the CEX survey's expenditures on owners' equivalent rent may be inaccurate because they are based on homeowners' estimates of how much their homes would rent for (though the direction of any such mismeasurement is not clear *a priori*). One component that goes counter to our hypothesis, however, is other durable goods, where we might also have expected the respondent to be relatively knowledgeable about overall household expenditure; despite this, the CPI weight is smaller. Finally, the CPI weights are smaller for tobacco and especially for alcohol, where respondents may be reluctant to report their expenditures accurately.

To investigate the importance of these differences in expenditure weights, table 4 reports the rate of increase for an alternative aggregation of the CPI that replaces the CEX weights with the PCE-based weights

[13] See E. Raphael Branch (1994) and Gieseman (1987) for related comparisons of PCE and CEX expenditures.

TABLE 3
WEIGHTS IN THE CPI AND PCE (CPI SCOPE)

	Relative importance weights, Dec. 1997		Difference	Ratio
	CPI	PCE-based		
Nondurable goods				
Meats, poultry, fish, eggs	2.6	2.4	0.2	1.08
Fruits and vegetables	1.4	1.3	0.1	1.04
Other food at home	5.6	6.7	−1.0	0.84
Food away from home	5.7	6.6	−0.9	0.86
Motor fuel	3.0	2.8	0.2	1.08
Heating oil	0.3	0.3	0.0	0.93
Apparel	4.9	7.2	−2.2	0.69
Tobacco	0.9	1.2	−0.3	0.73
Alcoholic beverages	1.0	2.5	−1.5	0.39
Medical commodities	1.2	0.7	0.5	1.67
Other nondurables	4.4	6.8	−2.4	0.65
Durable goods				
Motor vehicles	7.9	5.6	2.3	1.40
Computers	0.2	0.2	0.0	1.02
Audio/video equipment	0.9	1.2	−0.3	0.76
Other durables	3.4	5.1	−1.7	0.66
Services				
Natural gas	1.1	0.9	0.2	1.22
Electricity	2.6	2.0	0.6	1.30
Owners' equivalent rent	20.2	14.8	5.4	1.37
Tenants' rent	6.9	5.4	1.5	1.28
Lodging away from home	2.3	0.8	1.5	2.77
Medical services	4.4	5.8	−1.4	0.76
Tuition & school fees	2.4	2.4	0.0	0.99
Airfares	0.8	1.2	−0.4	0.68
Other services	15.7	16.0	−0.2	0.98
Total	100.0	100.0		

from table 3. As can be seen, the alternative index tends to run lower than the published CPI: The average difference from 1987 through 2001 is about 0.1 percentage point, and the difference since 1998 averages nearly 0.2 percentage point. Much of this gap can be attributed to the substantially smaller weight of shelter in the PCE-based index than in the CPI, which, combined with the above-average increase in the

TABLE 4
ALTERNATIVE CPI USING PCE-BASED WEIGHTS
(PERCENT CHANGE OVER PERIOD INDICATED, ANNUAL RATE)

				Memo: Using 1987 Expenditures		
	Published CPI (CEX weights)	Alternative CPI (PCE-based weights)	Difference (percentage points)	CEX weights[1]	PCE-based weights	Difference (percentage points)
1988	4.14	3.99	.15	3.98	3.91	.07
1989	4.82	4.82	−.01	4.64	4.68	−.04
1990	5.40	5.38	.02	5.11	5.23	−.12
1991	4.21	4.15	.06	3.95	4.06	−.11
1992	3.01	2.90	.11	2.83	2.89	−.06
1993	2.99	2.86	.14	2.80	2.81	−.01
1994	2.56	2.44	.12	2.57	2.44	.13
1995	2.83	2.62	.22	2.75	2.58	.17
1996	2.95	2.85	.10	2.85	2.77	.08
1997	2.29	2.24	.05	2.17	2.16	.01
1987–1997	3.52	3.42	.10	3.36	3.35	.01
1998	1.56	1.43	.12			
1999	2.21	2.11	.10			
2000	3.36	3.13	.24			
2001	2.85	2.60	.25			
1997–2001	2.49	2.31	.18			
1987–2001	3.22	3.10	.12			

[1] From Cage and Jackman (1999), Table A.1.

prices of that component, leads to a smaller increase in the alternative index.

Does this difference constitute a "bias" in the CPI? Because the pattern of differences between the weights corresponds to what one would have expected given the known shortcomings of the CEX, we suspect that it does, and we have included it as one component of our estimate of overall bias in table 1.

The extent to which this bias should be expected to persist in the future is a more complicated question. For reasons that are not clear, the 1982–84 CEX expenditures that were used to construct the CPI from 1987 to 1997 tend to generate higher rates of price increase than do CEX expenditures from other years (Greenlees 1998; Shapiro and Wilcox 1997). Hence, our result that the published CPI rose more rapidly than our PCE-based alternative through 1997 could simply be a reflection of that fact. As evidence that this is so, the right panel of table 4 compares the CPI based on 1987 CEX expenditures (from Cage and Jackman 1999) with a PCE-based alternative that also uses 1987 expenditures. As can be seen, the difference between increases in these series averages close to zero from 1987 to 1997. Thus, one might have expected the magnitude of weighting bias to diminish since 1998, when the 1982–84 CEX weights were replaced by CEX weights from 1993 to 1995. However, as noted above, the gap between the published CPI and our PCE-based alternative increased to average nearly 0.2 percentage point from 1998 through 2001. Putting somewhat greater, but not exclusive, weight on the more recent period, we assume a weighting bias of 0.1 percentage point going forward. We set our confidence interval for weighting bias to range from −0.05 to 0.25 percentage point per year; this range is informed by the range of yearly estimates in table 4, though the uncertainties in our calculations lead us to assume a confidence interval that is a little wider than that range.

6. *Quality-Change and New-Items Bias*

A true cost-of-living index attempts to measure the expenditure needed to maintain a given level of utility. If consumption goods are changing in quality, or if new products are being introduced, then consumer utility will change even if the new items sell for the same price as the items they replace. A cost-of-living index must therefore attempt to value these quality changes.[14] Although the BLS devotes considerable effort to this task (see Greenlees 2000, and Brent Moulton and Karin Moses 1997), it is a daunting one—Shapiro and Wilcox (1996) refer to quality change estimation as the "house-to-house combat of price measurement"—and many analysts believe that unmeasured quality improvement is a source of significant upward bias in the CPI.

[14] This view is not completely uncontroversial. The National Research Council (2002) recommended the CPI not attempt to capture welfare improvement that results from new goods introduction—partly due to skepticism of the CPI's objective of measuring the cost of living, but also due to practical difficulties involved in making such estimates.

Of the several issues surrounding the topic of CPI bias, measuring quality change is easily the most controversial, both because estimates of quality-change bias are often large (for example, the Advisory Commission concluded that unmeasured quality change accounts for some 0.6 percentage point per year of bias in the CPI) and because estimates of bias frequently involve a large judgmental component and are inherently highly uncertain.

Our approach to estimating the magnitude of bias is the same as that taken by the Advisory Commission: We review the research on quality-adjustment bias for each category of expenditure. Although more research is available now than when the Commission wrote its original report, in many cases we still are left with little guidance, and our estimates, like previous ones, are often judgmental. In forming our estimates, we are of course mindful of the fact that quality change could lead to biases in either direction; not all quality change is for the better, and BLS procedures may overcompensate as well as undercompensate for quality improvements that do occur.

Table 5 presents our estimates of quality-change bias for items in the various expenditure categories of the CPI. Using consumer expenditures from 1998 as weights, we obtain an overall estimate of quality-change bias of a little less than 0.4 percentage point per year; we view this as an estimate of current and prospective bias. Owing to the substantial uncertainty about this estimate, we place a confidence interval ranging from −0.1 to 0.8 percentage point around our point estimate. For reference, table 5 also presents comparable bias estimates from the Advisory Commission's report, which imply aggregate quality-change bias of about 0.7 percentage point per year. (This is slightly higher than the Commission's published estimate because we use different weights in the aggregation.) Our smaller estimate stems from lower estimates of bias in a number of categories, especially transportation,

TABLE 5
ESTIMATES OF QUALITY-CHANGE AND NEW-ITEMS BIAS IN THE CPI, 2001
(PERCENTAGE POINTS PER YEAR)

Adjusted PCE shares, 1998	Expenditure catagory	Our estimates		Memo: Advisory Commission	
		Estimated bias	Cont. to total	Estimated bias	Cont. to total
18.15	**Food**	**.2**	**.03**	**.3**	**.05**
1.16	Fresh fruits and vegetables	.0		.6	
8.16	Other food at home	.2		.3	
6.40	Food away from home	.2		.3	
2.43	Alchohol	.2		.15	
30.33	**Housing**	**.1**	**.04**	**.2**	**.07**
4.90	Tenants' rent	−.2		.25	
14.29	Owners' equivalent rent	.3		.25	
.78	Lodging away from home	−.3		.25	
.88	Insurance, maintenance	.0		.25	
.39	Appliances	1.5		3.0	
2.14	Housefunishings	.3		.33	
6.95	Fuels and utilities, other housing	.0		.0	
7.48	**Apparel**	**.0**	**.00**	**1.0**	**.07**
14.36	**Transportation**	**.1**	**.01**	**.3**	**.04**
6.10	New and used vehicles	.0		.59	
2.38	Motor fuel	.1		.25	
1.29	Airfares	.5		.0	
4.59	MV parts and repair, insurance	.0		.0	
7.52	**Medical care**	**2.3**	**.17**	**2.8**	**.21**
.65	Prescription drugs	1.2		2.0	
.35	Nonprescription drugs	.5		1.0	
6.53	Medical care services	2.5		3.0	
9.38	**Recreation**	**.3**	**.03**	**.9**	**.09**
.45	Televisions	1.5		4.0	
.27	Other video equipment	1.5		4.0	
.34	Audio equipment	1.5		4.0	
.89	Toys	1.6		2.0	
7.42	Other recreation	.0		.2	
5.76	**Education and communication**	**1.0**	**.06**	**1.8**	**.10**
2.33	Education	.0		.0	
2.51	Telephone (incl. cellular)	.8		1.5	
.47	Personal computers & peripherals	4.0		15.0	
.10	Personal computer services (internet)	19.0		—	
.35	Postage, other info. processing	.0		.0	
7.01	**Other goods and services**	**.3**	**.02**	**.7**	**.05**
1.21	Personal care products	.8		1.6	
1.22	Personal financial services	1.0		2.0	
.31	Apparel services	.0		1.0	
4.27	Other	.0		.0	
100.00	**Total**	.37		.69	

TABLE 6
QUALITY-CHANGE AND NEW-ITEMS BIAS

Bias estimate based on at least a moderate degree of hard evidence			Bias estimate based on a small or inadequate degree of evidence			Bias estimate almost entirely subjective		
Item	Weight	Cont. to total bias[1]	Item	Weight	Cont. to total bias[1]	Item	Weight	Cont. to total bias[1]
Fresh fruits & vegetables	1.16	.000				Other food and alcohol	16.99	.034
Tenants' rent	4.90	−.010	Owners' equivalent rent	14.29	.043	Lodging away from home	.78	−.002
						Appliances, housefurnishings	2.53	.012
						Insurance, maint., fuels and util., other housing	7.83	.000
			Apparel	7.48	.000			
			New and used vehicles	6.10	.000	Other transport.	4.59	.000
			Motor fuel	2.38	.002			
			Airfares	1.29	.006			
			Medical care services	6.53	.163	Nonprescription drugs	.35	.002
			Prescrip. drugs	.65	.008			
Televisions	.45	.007	Audio & video equip.	.61	.009	Other recreation (toys)	8.31	.014
Personal computers	.47	.019	Computer services (internet)	.10	.020	Education	2.33	.000
						Telephone	2.51	.020
						Postage, other info. proc.	.35	.000
						Other goods and services	7.01	.023
SUM	6.98	.02	SUM	39.43	.25	SUM	53.58	.10

1. Percentage points per year.

apparel, and computers and other electronic equipment.

Table 6 provides some information that helps shed light on the uncertainty around these estimates. We divide the expenditure components into three groups: items for which our bias estimate is based on at least a moderate degree of hard evidence, items for which our estimate is based on a small or inadequate degree of evidence, and items for which our estimate is almost entirely subjective. The implications of this table are sobering. The first category—the items for which we are most confident about our estimates—

accounts for only about 7 percent of the CPI; the second category comprises a little less than 40 percent; and the third category is the largest, comprising more than half of the index. Of our 0.37 percentage point estimate of quality-adjustment/new-items bias, essentially none comes from the first category, about two-thirds comes from items in the second category, and the remainder comes from items in the third category.

Before proceeding to an item-by-item dissection of quality-change bias, we highlight a few general issues that pertain to our analysis. First, in constructing our estimates of quality-change bias, we must be careful to ensure that there is no double-counting. For example, if we obtain a "true" outside estimate of price change for a specific good that properly measures quality improvements, we must be careful to compare this series to a CPI that has already been adjusted for other sources of bias, such as lower-level substitution bias. In many cases, we can avoid these problems by comparing the "true" estimate with the current-methods CPI (Kenneth Stewart and Stephen Reed 1999), in which many of the other sources of bias have already been minimized.

Second, in some cases we take an outside estimate of price change to be superior to the CPI when that estimate is based on the sort of detailed and comprehensive data (such as scanner data) that are increasingly becoming available with improved information technology. The fact that these data are more comprehensive and include far more price quotes than the CPI raises the possibility that they may be more accurate. Such data also may allow more rapid introduction of new items into the index, thereby minimizing new-items bias, and may be linked to product characteristics, facilitating timely hedonic analyses.[15]

Third, quality-change bias probably varies over time (perhaps even more so than other sources of bias). Estimates of bias, however, are frequently based on an examination of a relatively short period of time that might well be atypical. In some cases, we will speculate that past quality changes are unlikely to be repeated in the future, or are likely to continue at a slower pace. Similarly, since we are concerned with deriving a prospective measure of quality-change bias, we do not correct for the effect of new goods that are now fully incorporated in the CPI (such as cellular telephones and VCRs) except to the extent that we view them as being representative of new goods that will continue to be introduced. In addition, we note that BLS has procedures under way to bring new items into the CPI more rapidly (see Walter Lane 2000), and this could help to mitigate the amount of new-goods bias that is currently present in the index.[16]

Finally, we turn to the weights that we use to aggregate our estimates of quality-change bias for each of the detailed expenditure categories. As discussed in appendix B, we would ideally like to use weights from a superlative aggregation formula that are as accurate as possible (if we do not, then we run the risk of confounding quality-change bias with the other categories of bias in table 1). We therefore use recent weights from the adjusted PCE data, which, as we discussed in section 5, we suspect to be more accurate than the weights derived from the consumer expenditure survey. These weights differ from the current CPI weights (the December 2001 relative importance weights) in several ways. First, even after adjusting the PCE data to the CPI's out-of-pocket scope, those PCE data place a higher weight on medical care services, an expenditure category in which we judge there to be a very

[15] The BLS is investigating how to integrate such data into the CPI, an undertaking with considerable promise in our view. See David Richardson (2002) for a description of BLS efforts in this area. Also see Robert Feenstra and Shapiro (2002) for a discussion of some potential pitfalls in using such data.

[16] As noted by Ariel Pakes (2001), the more rapid introduction of new items into the CPI need not reduce new-items bias, though we expect that in most cases more rapid introduction would indeed help.

large quality-change bias. Second, the fact that the CPI weights are based on CEX expenditures from 1993–95 implies that the more recent PCE weights place a notably higher weight on computers (whose relative importance declines over time as its relative price falls, only to increase again when the expenditure weights are updated) and internet services (whose expenditure share has increased rapidly in recent years).[17]

Because we recognize that not all readers will agree with our assessment about weighting bias in the CPI, we also calculate an aggregation using expenditure shares from the 1998 consumer expenditure survey, the most up-to-date CEX data currently available.[18] Doing this yields a value for quality-adjustment bias of 0.30 percentage point per year, 0.07 percentage point smaller than the estimates presented in table 5, with the difference driven by the higher weight of medical care services in the adjusted PCE data. (Of course, this smaller estimate is well within the substantial confidence interval around our point estimate.) Thus, readers who prefer the CEX data to the adjusted PCE data should reduce our overall estimate of CPI bias by about 0.17 percentage point—0.1 percentage point for weighting bias, and another 0.07 percentage point to reflect a smaller estimate of quality-change and new-items bias.

6.1 *Item-by-Item Estimates of Quality Change*

Shelter: If quality adjustment is the "house-to-house combat" of CPI bias estimation, then obtaining an estimate for the quality bias in shelter is much of the battle: Owners' equivalent rent and tenants' rent together account for more than one-quarter of the CPI. The Advisory Commission was forced to rely largely on informal judgments in estimating that quality change biased the CPI for shelter upward by 0.25 percentage point per year between 1976 and 1996. Since the Commission's work, two additional papers have become available that directly pertain to this question. First, Moulton (1997) uses data on housing characteristics to consider quality-change bias for the rent of tenant-occupied housing; he concludes that the CPI for tenants' rent *under*states the true quality-adjusted price increase by 0.15 to 0.25 percentage point per year. Second, Theodore Crone, Leonard Nakamura, and Richard Voith (2000) use hedonic techniques to estimate constant-quality price indexes for tenants' rent based on data from the American Housing Survey. Their estimate is close to Moulton's, rising 0.3 percentage point per year more rapidly than the current-methods CPI (this is perhaps not remarkable, given that both studies' methodologies and data sources are similar).

Crone et al. also attempt to measure quality-change bias in the service flow obtained from owner-occupied housing. Under the assumption that trait prices for owner- and tenant-occupied housing are the same, Crone et al. are able to estimate a hedonic model that allows them to impute constant-quality rents for owner-occupied housing. According to their results, the true cost of owner-occupied housing increased by about 0.6 percentage point per year less than the CPI for owners' equivalent rent (based on current methods) between 1985 and 1993.[19]

[17] For similar reasons, the Advisory Commission augmented the weights they applied to computers and certain categories of electrical appliances in their aggregation of quality bias.

[18] These shares are derived from a single year of CEX data (adjusted to the CPI item structure and rental equivalence concept) and therefore may be less reliable than either the three-year averages that have gone into the CPI's weights historically or the two-year averages that began to be used in 2002. In addition, these data have not been through all of the processing that goes into the production of the weights in the official CPI. We are grateful to the BLS for allowing us to use these unpublished data.

[19] The current-methods rent indexes incorporate estimates of the effects in earlier years of the 1995 adjustments to the formulas used to compute rent changes, as well as the introduction (in 1988) of quality adjustments to control for depreciation (Stewart and Reed 1999).

It is not clear, however, that the difference between the CPI for owners' equivalent rent (OER) and Crone et al.'s estimates completely reflect the effect of quality-change bias. Crone et al.'s maintained hypothesis—that the trait prices for renter- and owner-occupied housing are the same—is identical to the rental equivalence concept that the BLS invokes in computing OER; namely, that OER seeks to capture what an owner-occupied unit would receive were it rented out.[20] In principle, therefore, the Crone et al. estimates of constant-quality OER should only differ from the CPI for owners' equivalent rent for the following three reasons. First, the sample of housing units employed by Crone et al. in their study differs from that employed by the BLS in computing OER. Second, the specific procedure for imputing rents to owner-occupied units differs: Over the period considered by Crone et al., the CPI imputed rents to an owner-occupied unit based on the rents of comparable renter-occupied units, while Crone et al.'s imputation is based on estimates from a hedonic regression. Finally, as with any item in the CPI, BLS introduces new housing units into the existing sample during a sample rotation by "linking in" the new price quotes—thereby assuming that there is no difference in quality-adjusted price between old and new units. By contrast, new units in the Crone et al. sample are handled by their hedonic regressions. Sample rotation in the shelter component of the CPI occurs roughly every ten years; notably, the period considered by Crone et al. saw one instance of sample rotation, in 1987.

Of these three possible sources of difference between the Crone et al. OER measure and the corresponding CPI measure, only the third can unambiguously be considered a failing of the CPI that Crone et al.'s procedure would remedy. Hence, we are not inclined to view the entire 0.6 percentage point difference between the CPI for owners' equivalent rent and Crone et al.'s estimate as reflecting quality-change bias. We therefore scale down the bias estimate judgmentally, and assume that prospective quality-change bias for owner-occupied housing averages 0.3 percentage point per year.

The preceding discussion regarding the Crone et al. bias estimates for owners' equivalent rent also applies to their estimate of quality-change bias in tenants' rents, as well as to Moulton's estimates. Both studies use data from the American Housing Survey to compute estimates of tenants' rents that control for changes in observable housing characteristics (although Moulton's menu of characteristics is somewhat less detailed than that employed by Crone et al.). We therefore assume a downward bias of 0.2 percentage point per year for tenants' rent, which is a little smaller than both Crone et al.'s point estimate and the upper bound of Moulton's range of estimates. (Note that this is one of the few estimates in this paper that we classify in table 6 as being based on at least a moderate degree of hard evidence.) Using expenditure weights from the 1998 PCE data, we find that tenants' rent and owners' equivalent rent contribute about 0.03 percentage point to the bias in the overall CPI.

Since 1988, BLS has adjusted the rent indexes in the CPI upward by roughly 0.3 percentage point per year to account for the depreciation of the housing stock; previously, the indexes had been subject to a downward "aging bias" of about this magnitude (Lane, William Randolph, and Stephen Berenson 1988). However, the BLS makes no such adjustment to the index for lodging away from home, even though a given sample of hotels and motels also is likely to be depreciating on average as long as maintenance is incomplete. We therefore suspect that lodging away from home is subject to a downward

[20] We are indebted to Timothy Erickson for clarifying this point. Interestingly, the hypothesis that trait prices are equal across owner- and renter-occupied housing is rejected in Crone et al.'s data; this calls into question both Crone et al.'s methodology as well as the BLS's rental equivalence methodology.

aging bias. We have found no estimates of the magnitude of this bias, however, so we put our estimate at −0.3 percentage point per year, the same rate of depreciation as was found for rental housing.

Medical Care Services: Evaluating quality changes for medical care is perhaps the most daunting challenge BLS faces. There are at least two quality-related problems with the CPI's estimates of medical care prices. The first is methodological: Prior to 1997, the CPI priced hospital services by pricing a fixed set of inputs (such as one night's stay in a hospital room), rather than the costs incurred in treating a given disease. Because technological change can alter the mix of inputs used to treat a given condition (for example, some procedures no longer even require a hospital stay), such a procedure will likely mismeasure the "true" price of medical services. As a result, the CPI changed its procedure for measuring hospital services prices beginning in 1997, and now attempts, in principle, to price a course of treatment for a given disease. In practice, this is implemented by repeated pricing of a given set of services specified in a random selection of bills for a particular hospital visit, combined with an attempt to identify changes in treatment practices. While this should bring the CPI closer to the goal of being able to price the treatment of a specific disease, most such changes in treatment are apparently unlikely to be captured by the CPI's procedures.[21]

The results from two studies—Irving Shapiro, Matthew Shapiro, and David Wilcox's (2001) analysis of cataract surgery, and David Cutler, et al.'s (2001) study of heart attack treatments—suggest that failing to control for changes in treatment can represent a significant source of bias. Shapiro et al. construct a cost index for cataract treatment that accounts for the changing mix of inputs employed; they find that the difference in growth rates between an index in which input weights change every ten years (as in the CPI) and one for which weights are allowed to change more frequently varies considerably over time and averages about 5.5 percentage points per year from 1969 to 1994. Similarly, Cutler et al. estimate that from 1983 to 1994, the actual cost of treating a heart attack rose approximately 2.1 percentage points per year more slowly than the average change in the cost of a fixed input bundle for heart-attack treatment (see their table 8.4).

However, we are aware of one study that reaches a different conclusion regarding the sign of this type of bias. Ernst Berndt, Susan Busch, and Richard Frank (2001) present estimated price indexes for treatment bundles for clinical depression, albeit only over the five-year period 1991–95. They do not make a clean comparison between an index that captures changes in treatment paths with a CPI-like index that does not, but according to our reading of the information they present, such an index appears to increase about 1.4 percentage points per year *more* rapidly than a CPI-like index over this period, reflecting a switch toward more expensive treatments.[22]

The second quality-related problem with the CPI's estimates of medical care prices

[21] To use an example cited by Shapiro, Shapiro, and Wilcox (2001, p. 433), sutures are no longer needed after cataract surgery in some cases. Even under the new CPI procedures, small changes such as this might not be picked up by BLS enumerators (and even major changes such as the greater use of outpatient surgery for cataracts might not be captured). Cutler et al. (2001, note 24) are similarly skeptical that the new CPI methodology will be able to adjust for significant changes in treatment inasmuch as these changes are too gradual to be identified.

[22] We are comparing the average supply price from their table 12.4 with the fixed-weight Laspeyres index from their table 12.7. Of course, this calculation ignores any improvement in quality, which presumably is the reason for the change in treatments in the first place—though the authors describe clinical results suggesting that each of the examined treatments lead to comparable outcomes. We note as well that the results of this study differ sharply from earlier research by the same authors (Frank, Berndt, and Busch 1999), reflecting changes in their sample.

involves *pure* quality change—for many (though certainly not all) illnesses, advances in treatment have significantly improved treatment results. The issue of pure quality adjustment is a much more difficult one since it involves assigning a value to a medical outcome; indeed, we have found only one study—the paper on heart attacks by Cutler et al.—that provides useable estimates of a quality-adjusted index for a specific medical treatment.[23] They find that such an index declines by 1.7 percent per year—a marked contrast from their fixed-weight index, which rises 4.5 percentage points per year more rapidly. However, this estimate is extremely sensitive to the assumed value of additional life (as Cutler et al. point out, different assumptions yield indexes that decline by 0.3 to 16.8 percent per year); valuing medical outcomes that involve well-being or quality of life rather than length of life is likely to be even more difficult. In addition, Cutler et al.'s cost-of-living index only includes the cost of treatment in the year following a heart attack, even though evidence suggests that treatment received more than one year after a heart attack contributes significantly to lower mortality. (Dennis Fixler 1999 discusses some of the conceptual difficulties involved in measuring total treatment costs.)

Altogether, there is an immense degree of uncertainty surrounding the issue of quality adjustment for medical services. That said, we would guess that estimates derived from the Shapiro et al. and Cutler et al. studies represent upper bounds, because treatments for cataracts and heart attacks likely have enjoyed unusually rapid improvement—indeed, Shapiro et al. chose to examine cataract treatments in part for that very reason. In contrast, as emphasized by Berndt, Cutler et al. (2001, p. 192), progress in the treatment of other diseases—such as Alzheimer's or the common cold—has been virtually nonexistent. (Treatment of depression may be in the latter category as well, at least over the limited period covered by the Berndt, Busch, and Frank study.) To estimate the amount of quality-change bias in medical services (ignoring for the moment the CPI's 1997 changes in procedures), therefore, we assume that rapidly improving treatments such as those for cataracts and heart attacks are representative of two-thirds of all hospital services, and that the amount of quality bias in these rapidly improving treatments is 4.5 percentage points per year (the value reported in Cutler et al. for heart-attack treatments).

Obtaining an estimate for the period following the 1997 change in CPI procedures is even harder. The BLS had hoped that pricing the items from a given bill for a specific hospital visit—as is now done—would allow them to identify changes in treatment for a particular disease, thereby permitting them to factor these treatment changes into the price index and come closer to pricing a specified treatment path. In addition, the CPI now measures transaction prices, rather than list prices, to a larger extent than had previously been the case. Unfortunately, very little information is available as to how these changes affected the CPI. The CPI's procedures apparently remain unable to capture most changes in treatment; indeed, our discussions with BLS analysts suggest that very few such changes have been detected since 1997. However, the use of list (or "chargemaster") prices is widely believed to have biased upward the CPI during the 1980s, as rapidly rising list prices were met with increased discounting for certain classes of purchasers (though the Cutler et al. and Shapiro et al. studies on which we base our bias estimates should not have been affected by this problem). In the end,

[23] Berndt, Busch, and Frank's (2001) treatment bundles for clinical depression were found to lead to comparable outcomes, but this again raises the question as to why the treatments changed over time toward more expensive alternatives. Possibly, their definition of "comparable outcomes" ignores some quality issues that are important to consumers, such as the time saved in replacing some therapy with drugs.

we are prepared to believe that the change in CPI procedures had at least some effect on the index. Thus, following the CPI's revision in procedure in 1997, we use an estimate of quality-change bias for the rapidly improving components of medical services that is lower by 0.7 percentage point per year; this is intended to reflect the CPI's improved ability to capture changes in the "mix" of inputs and is based on the difference between the rate of growth of a fixed-input price index for heart-attack treatment and an index with input weights that are updated every five years (see Cutler et al. 2001, table 8.4). In all, then, we assume a bias in the CPI for medical services of 2.5 percentage points (= 2/3 × (4.5–0.7)) since 1997. Given the weight for medical care services, this component contributes about 0.16 percentage point to quality-change bias in the overall CPI.

One additional issue involving the CPI for medical care that we did not factor into our bias estimate (because we have no presumption about which direction it goes) concerns the treatment of health insurance.[24] The CPI does not currently price health insurance directly; rather, the expenditure weight for health insurance is distributed among the other medical strata (with a small weight remaining in the health insurance stratum itself to capture insurers' retained earnings) and its price is assumed to move with those components. Thus, any changes in health insurance provisions (such as higher copayment requirements) will be reflected in the CPI only indirectly and to the extent that these changes result from cost pressures on insurers (such as higher physicians' charges) that are themselves captured by the CPI. Of course, these changes may be hard to capture by such indirect means. BLS is currently investigating the direct pricing of health insurance, which may help to address this issue.

Medical Care Commodities (Pharmaceuticals): A number of papers have documented problems with official measures of pharmaceutical prices; in particular, the CPI's previous treatment of generic drugs—in which price differences between branded and generic drugs were treated as quality differences and purged from the index—probably induced significant upward bias in years past.

In January of 1995, the CPI changed its procedures for adding generic drugs to the index. Under the new procedure, a generic drug is permitted to replace the corresponding branded drug—with the two prices directly compared—six months after the branded drug's patent has expired; the probability that this substitution occurs is proportional to the generic's relative expenditure share. The introduction of this new procedure reduces measured inflation for prescription pharmaceuticals by 0.4 percentage point per year over the period 1993 to 1997 (Stewart and Reed 1999, p. 32).

However, to the extent that generic drugs continue to gain market share six months after their introduction, they will not receive sufficient weight in the CPI even under the new procedure. For the seven antidepressants considered by Berndt, Iain Cockburn, and Zvi Griliches (1996), generic drugs' market shares after one year ranged from 25 to 100 percent of their eventual (three-year) shares.[25] Similarly, in a study of two antibiotics, Griliches and Cockburn (1994) found that revenue shares for generic variants reached only 30 to 70 percent of their three-year shares after six months.

[24] See Bradley (2001b) for an analysis of some deeper issues that arise when one attempts to measure the cost of living in the presence of insurance.

[25] The fact that the market share of most of the generic drugs in the Berndt et al. sample remained significantly below 100 percent even three years after their introduction suggests that consumers and/or physicians did not consider them to be perfect substitutes for branded drugs.

For our estimates of bias, we assume that the CPI's current methodology assigns a weight to generic drugs that is only one-half as large as the drugs' true final expenditure share. Because the BLS estimated that the new procedures for generic drugs reduced the increase in prescription pharmaceutical prices by 0.4 percentage point per year (Stewart and Reed 1999), we assume that the effect of fully incorporating generic drugs into the CPI would be twice as large as BLS estimated, or 0.8 percentage point per year, yielding a bias estimate of 0.4 percentage point per year. We emphasize that this is a highly speculative estimate since it relies on the experience of the few drugs that have been studied, which may not be representative.

We have found only a modest amount of useable research that bears on the issue of pure quality bias in the CPI for prescription drugs. An attempt to apply hedonic techniques to anti-arthritis drugs (Cockburn and Aslam Anis 2001) finds little correlation between these drugs' characteristics and their price, although characteristics do affect quantities. In their study of antidepressants, Berndt et al. (1996) estimate that the incremental effect of using hedonic adjustments to control for the introduction of new drugs reduces the average annual rate of price increase anywhere from zero to 1.2 percentage points, depending on the subperiod that they consider. In addition, Valerie Suslow (1996) finds that a hedonically adjusted price index for three anti-ulcer drugs rises about 0.8 percentage point per year more slowly than a fixed-quantity price index for these drugs.

We interpret these studies as pointing to some pure quality bias in the CPI for pharmaceuticals. We therefore add 3/4 percentage point of pure quality-change bias to our estimate of the bias that results from failing to fully incorporate generic drugs; this figure is roughly in line with the values found in the studies described above.[26] In total, then, we obtain a bias estimate of 1.2 percentage points per year for prescription drugs.

Quality-change bias may exist for *non*prescription drugs as well. For example, the variety of drugs available over the counter appears to have risen notably over time as prescription drugs switch to OTC status and as new products and varieties become available; the welfare benefit of this increased availability goes unmeasured. (Any price decline that happens to be associated with a drug's moving from prescription to OTC status, however, would be captured by the CPI.) Unfortunately, we know of no detailed studies of this issue, and we judgmentally assume ½ percentage point of bias per year for this category of medical care commodities (an estimate that is smaller than what we assume for the pure quality improvement in prescription drugs).

Electronic Equipment: The CPI recently began extending hedonic quality adjustments to a number of types of electronic goods. In 1998, the CPI began using hedonic models to adjust computer prices, and in 1999, the CPI incorporated hedonic adjustments for television prices. More recently, hedonics have been used to adjust camcorder prices and prices for twelve types of audio equipment (starting January 2000), and VCRs and DVD players (starting April 2000). Many analysts had advocated such a move, and the change overall has been a welcome development. Nevertheless, hedonics are no panacea, and we find reason to believe that measurement

[26] Although we do not question the CPI's use of a "conditional" cost-of-living framework that holds nonmarket factors constant, the introduction of new drugs into the CPI presents an example of the potential difficulties of this approach. Consider, for example, the development of new antibiotics to treat drug-resistant infections that were previously treatable by older drugs; because the reduction in welfare owing to those drug-resistant infections is not included in the CPI, it could be misleading for the CPI to include the welfare benefit of the new drugs. As noted by the Advisory Commission (1996) and Dean Baker (1998), a similar argument could be made regarding drugs developed to treat new conditions such as AIDS.

problems remain even in some of the areas in which these techniques are now employed.

In many cases, the new, hedonically adjusted indexes increase as rapidly as—or even more rapidly than—their unadjusted counterparts. (Computer prices are an important exception.) This result may be perfectly reasonable. If manufacturers tend to link normal price increases to the introduction of new, higher-quality models, then the old overlap procedure would purge from the index the true price increase as well as the portion of the price increase that reflects improved quality. But a hedonically adjusted index could allow the normal price increase to be identified and retained, and so may appropriately rise more rapidly than its unadjusted counterpart.

A second possibility, however, is that the hedonic procedures could be inadequate. Construction of a workable hedonic model is difficult, for it requires very complete information on product characteristics. Furthermore, even with a good hedonic model, BLS's implementation of hedonics may leave some fraction of quality-change bias intact; this is because BLS uses hedonic models to adjust prices only during item substitutions—that is, when an item is no longer available to be priced and a substitute is therefore chosen at the same outlet. But during routine sample rotation, when a new item is chosen at a new outlet, the usual overlap method of quality adjustment is employed. For this reason, we refer to the BLS's procedure as "partial" hedonic adjustment. The evidence that we consider below suggests that for at least one good (televisions), confining the hedonic adjustments to item substitutions appears to miss a significant fraction of quality change.[27] In section 8, we discuss ways that BLS might deal with this problem.

Unfortunately, with the exception of Moulton, Timothy LaFleur, and Moses's (1999) work on televisions, BLS's methodology papers are of limited use in assessing the effect of incomplete hedonic adjustment. Comparable full-hedonic indexes often cannot be constructed for these goods, and the studies typically cover a relatively short period of time (often less than one year). For want of better estimates, we assume that the bias for televisions applies to many other electronic goods as well, and take comfort in the fact that these items receive a very small weight in the CPI (so our estimates of quality-change bias for these goods contribute little to our overall bias estimate). Below, we discuss our estimates in more detail.

Televisions: In recent work, Moulton, LaFleur, and Moses (1999) find that constant-quality television prices rise about 2.1 percent more slowly than the published CPI for televisions from August of 1993 to August of 1997. (If the published television CPI is adjusted for the effects of geometric-mean aggregation, the difference over this period is 1.6 percentage points.) However, when the BLS's current procedures for applying "partial" hedonics to the television CPI are used, the resulting index increases a scant 0.1 percentage point more slowly than an index without hedonics. As discussed above, this appears to reflect the fact that BLS continues to employ the overlap method of quality adjustment during sample rotations; evidently, this method misses most of the improvement in the quality of newer televisions.[28] We therefore assume that

[27] Another problem arises because the goods that are substituted into the sample when item substitutions occur are typically chosen so as to be as similar as possible to the goods that are replaced. To the extent that pure price declines tend to be larger over the initial portion of a good's life cycle, this will cause the CPI to be biased upward. (Of course, this problem would exist in the absence of hedonic adjustment as well.)

[28] It is also possible that the small impact of hedonics under the BLS's new procedures arises because the hedonic regressions do not control for changes in outlet (although this seems unlikely inasmuch as there was probably not a significant shift in outlets over the period considered here). Alternatively, the BLS's enumerators might be missing changes in quality when they deem item substitutions to be "comparable." However, Moulton et al. characterize the sample-rotation explanation as being most plausible.

complete quality adjustment would reduce the rate of change of the CPI for televisions by an additional 1.5 percentage points per year on average.

Audio Equipment: In January of 2000, the BLS began applying hedonic adjustments for audio equipment prices when there are item substitutions. Estimates presented by Mary Kokoski, Keith Waehrer, and Patricia Rozaklis (2000) for the preceding two years indicate that the BLS's new procedures yield a price index for audio equipment that rises about 0.1 percentage point more slowly than the unadjusted CPI.

Kokoski et al. also estimate a fully adjusted hedonic price index—that is, an index that applies hedonic adjustment to all cases where one item is replaced by another—and find that it increases 1.5 to 10.2 percentage points more slowly than the new index, with the larger difference obtained by including vintage effects in the hedonic regression.[29] It is difficult, though, to know how to utilize these estimates. First, the data on prices and characteristics that are used to construct the hedonic models are taken from an industry source, as opposed to the CPI sample, and there is evidence that the two samples differ significantly. In particular, the measured price declines in the industry data appear to be much larger than those for the CPI price quotes, and it is therefore not clear whether the full hedonic indexes are even comparable to the CPI measures.[30] Second, the significant influence of the vintage effects—which Kokoski et al. argue reflects unmeasured characteristics that are related to quality improvement—is disturbing, and suggests that the hedonic models are misspecified. A case can therefore be made that the estimates obtained from the two variants of the full hedonic-adjustment model should be heavily discounted.

On balance, we view the full hedonic indexes as providing some evidence that there remains an upward bias in the CPI for audio equipment, but not a usable quantitative estimate of such a bias. We therefore fall back on assuming that the use of only "partial" hedonics leads to the same bias for audio equipment as for televisions, namely, 1.5 percentage points per year.

VCRs, Camcorders, and DVD Players: BLS's procedure for applying hedonic adjustments to the prices of these video products is also confined to instances of item substitution, not sample rotation; hence, we might suspect that quality-change bias will persist as a result of employing overlap methods when samples are refreshed. It is difficult, however, to determine the extent of the problem because BLS's methodology papers do not compare the published indexes for these goods to fully adjusted hedonic price indexes; in addition, the effects of the partial use of hedonics are themselves especially uncertain in these cases, because they are calculated over only a six- or seven-month period in 1999.[31] Militating for a positive bias is the fact that the hedonic adjustments are specific to each type of

[29] The dependent variable in the hedonic regressions is log price, which makes the full-hedonic index comparable to a geometric-means index. When we compare the full-hedonic and partial-hedonic indexes, therefore, we adjust the 1998 change in the partial-hedonic measure to reflect the estimated impact of geometric-means aggregation.

[30] Several studies compare the CPI to hedonic price indexes that are estimated using independently gathered price data (such as prices taken from store catalogs). The results of Kokoski et al. underscore the importance of validating these alternative data by comparing them to the price quotes used in the CPI.

[31] William Thompson (2000) studies hedonic adjustments for VCR prices over a seven-month period in 1999 and finds that, using the CPI's procedures for partial hedonic adjustment, quality-adjusted prices declined 1.9 percentage points (annual rate) more slowly than the unadjusted CPI. (Paul Liegey and Nicole Shepler 1999 conduct a similar study in which the regression is based on data from Consumer Reports, and find a smaller effect for VCRs over 1997.) Shepler (2000a) considers camcorder substitutions over a six-month period and finds that a quality-adjusted price index falls about 0.4 percentage point faster (at an annual rate) than an unadjusted index. Finally, Liegey (2000a) finds that his hedonic model for DVD players would have had no effect on the CPI over the six-month period in 1999 that he studied, because there were almost no DVD item substitutions made during that time.

equipment, so any benefits from the *introduction* of VCRs, camcorders, and DVD players have gone unmeasured in the CPI; to the extent that this rate of new-goods introduction is representative, the prospective degree of bias in the CPI will be greater for this category of goods. In all, we assume again that measured price changes for this category of the CPI will suffer from 1.5 percentage points of bias per year, the same as for televisions.

Computers: The BLS began to apply (partial) hedonic adjustment to computers in 1998, and found that this change led to a decline in computer prices that was 6.5 percentage points larger that year than would have occurred under the old procedures. To determine whether these partial hedonics are adequate, we can compare them to the estimates in Ana Aizcorbe, Carol Corrado, and Mark Doms (2000), which use extremely comprehensive, disaggregated, and timely data to construct price indexes for desktop and notebook computers. As these authors demonstrate, the data's timeliness and coverage is such that new items enter into their index with extremely small weight, reducing any new-items bias and obviating the need for direct hedonic adjustment (see also Griliches 1990). Comparison with the CPI is not completely straightforward because the CPI stratum includes peripheral equipment as well as computers, but a rough calculation suggests that the Aizcorbe et al. estimates would generate an index that declined roughly 4 percentage points per year more rapidly than even the post-1998 CPI stratum.[32] This, together with the fact that the CPI does not make any hedonic adjustments to the peripheral equipment portion of the index (mostly printers and monitors) leads us to believe that an upward bias remains in this stratum on the order of 4 percentage points per year.

Transportation: The BLS makes a host of direct quality adjustments in constructing its price indexes for new motor vehicles, based on manufacturers' estimates of the cost of new and improved auto characteristics. Surprisingly, we know of no detailed analyses evaluating the adequacy of BLS's procedures more recent than Robert Gordon's (1990) careful study, which only covered the period through 1983. After factoring in the cost of pollution-control-related improvements as price increases, Gordon found that the CPI *under*stated automobile price increases through 1983. Nevertheless, the Advisory Commission argued that this downward bias was unlikely to persist after 1983 because there were fewer safety- and fuel-efficiency-related improvements since then, and, furthermore, that additional quality-change bias was present because automobiles have become more durable over time.[33] The direct quality adjustments made by BLS, however, include items related to durability, such as corrosion protection and longer-lived parts. This suggests that the Commission's estimate of quality-change bias may be too large (see Baker 1998, pp. 114, 152; or Moulton and Moses 1997, p. 319 for additional discussion). Furthermore, as noted by Triplett, automobile manufacturers' estimates of the cost of new features may be in excess of their true value.[34] On balance, therefore, we assume no quality adjustment bias in either direction for new vehicles.

[32] The Aizcorbe et al. preferred (geometric-mean) index of desktop PC prices declined 44 percent over 1998 and the index of notebooks declined 34 percent. By contrast, the CPI stratum—which is roughly 80–90 percent desktops and 5 percent laptops—declined only 36 percent that year. Assuming zero price change for peripheral equipment yields the 4 percentage point figure cited in the text.

[33] The Advisory Commission also argued that mandated pollution-control devices for automobiles should be treated as an indirect tax (that is, as a price increase) rather than as a quality improvement. In 1999, the BLS adopted this view as well.

[34] Triplett's claim, which is based on his experience at the BLS, appears in a comment to Moulton and Moses (1997, p. 363).

Since late 1999, the CPI has included prices of leased vehicles as well as new vehicles (though publication of the stratum only began in 2002). This is a welcome development, both because leasing has become more common and because leases might some day form the basis of a rental-equivalence index for purchased vehicles. For present purposes, because BLS applies the same quality-adjustment factors to leased vehicles as to purchased vehicles, we assume no quality-adjustment bias for this index either. Similarly, the BLS now controls for used-car quality by applying the new-car quality adjustments with a lag of three years. (Prior to 1987, no such adjustments were made.) This strikes us as reasonable, and so we assume no quality bias for used cars as well.

Citing the convenience of built-in credit-card readers in gasoline pumps, the Advisory Commission estimated quality-change bias for motor fuels equal to 0.25 percentage point per year. Moulton and Moses (1997, pp. 319–20) use data on the diffusion of "pay-at-the-pump" technology in order to better assess the improvement in quality that has obtained from being able to purchase gasoline more conveniently, and obtain an estimate of quality-change bias for motor fuel that equals 0.1 percentage point per year. Even though pay-at-the-pump technology by now likely has diffused to most gasoline stations, some further retail innovations appear to be continuing, and we retain this small bias estimate going forward.

David Good, Robin Sickles, and Jesse Weiher (2001) attempt to compute a hedonic index for airfares, and find that their index rises 3.5 to 5.1 percentage points per year less rapidly than the CPI for airfares from 1979 to 1992. The difference appears to largely reflect BLS's difficulties in capturing a representative mix of airfares in the sample rather than quality-change bias per se. The BLS significantly revised its methodology in 1991, however, so as to increase the share of discount fares in the index, and this suggests that Good et al.'s bias estimate is not applicable going forward. Gordon (2000a) argues that the CPI for airfares remains overstated because of its failure to measure frequent-flyer discounts; this view receives some support from Janice Lent and Alan Dorfman (2002), who compared the CPI for airfares with an index based on detailed data from the Department of Transportation that better captures special discounts such as frequent-flyer tickets. The CPI increased more than 2 percentage points per year more rapidly between 1998 and 2000 than did Lent and Dorfman's index. Furthermore, the PCE price index for airfares, which measures revenues per passenger mile flown and which should be a reasonable alternative to the CPI (although it conflates business and personal travel), increased nearly 5 percentage points per year less rapidly than the CPI measure between 1991 and 2001. Offsetting this evidence of upward bias in the CPI for airfares, however, are two factors. First, it is unclear whether the trend toward greater use of special discounts not captured by the CPI will continue in the future. Second, we assign weight to more anecdotal judgments that some aspects of the quality of air travel—such as congestion, comfort of seating, and frequency of delays—have deteriorated. In the end, we assume only a small upward bias of 0.5 percentage point per year for airfares.

For the other components of the CPI for transportation—largely motor vehicle insurance and repair services—we have neither any evidence nor intuition that the CPI is biased in either direction.

Apparel: Analyses of the CPI for apparel are limited to two studies by Robert Gordon, both of which are based on comparisons with apparel price indexes that are constructed from Sears catalogs. We are uncomfortable in drawing conclusions about overall apparel prices from prices that are derived from a single outlet, which are unlikely to be representative of the nation as a whole; indeed, as Gordon (1996, p. 15)

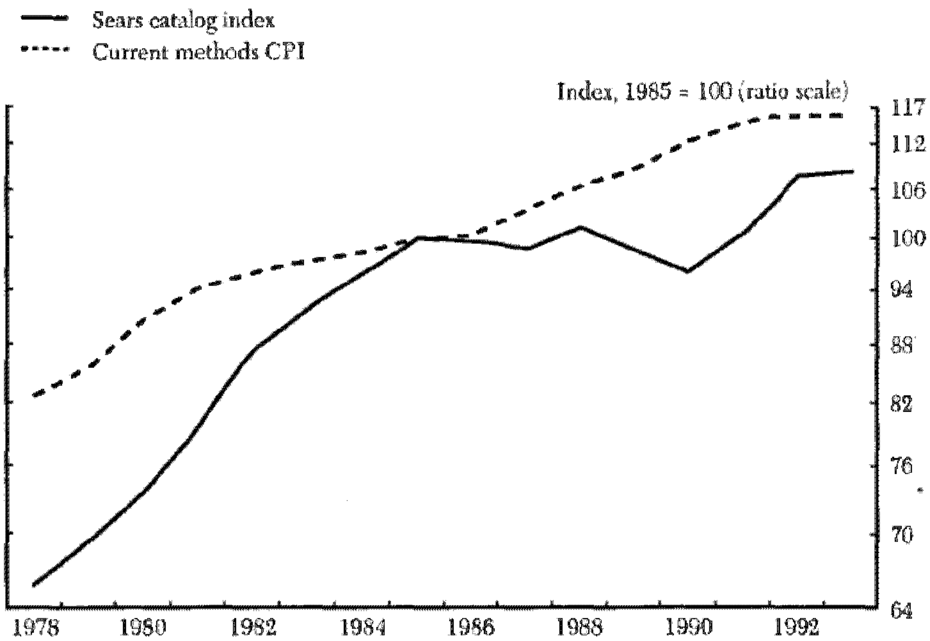

Figure 1. Indexes of Apparel Prices

notes, the Sears catalog is likely to be more heavily weighted to standard utilitarian items, whose prices may behave differently from other items. Nevertheless, Gordon's results are the most comprehensive set that we have, and it is worth examining them in detail.

As shown in figure 1, over the period from 1978 to 1993—the longest period for which both the current-methods CPI and Gordon's (1996) index are available—Gordon's catalog-based measure rises more rapidly than the current-methods CPI.[35] (Extrapolating the current-methods CPI backward prior to 1978 to generate an even longer comparison would yield a similar conclusion.) The Advisory Commission put more weight on the years since 1985, during which the catalog-based index rose more slowly than the CPI for apparel (though somewhat less so relative to the current-methods index). This led them to assume quality-change bias of 1.0 percentage point per year in the CPI for apparel. Whether the recent period is likely to be a better indicator of the future is hard to say. Furthermore, Gordon's (2000b) more recent work on apparel prices suggests that the Sears catalog index, which is a matched-model index that "links in" new items, may itself importantly understate inflation by failing to capture price increases that occur when new items are introduced. (The CPI began using hedonic methods in 1991 to correct for precisely this problem.)

Thus, to the extent that the catalog-based index provides an independent check on the CPI for apparel, the CPI may more likely be understating the rate of price change for these goods rather than overstating it. At the

[35] In addition to the implementation (noted below) of hedonic adjustments, the current-methods CPI utilizes a geometric-means aggregation formula, which also significantly affects the rate of change of the apparel index. Note that Gordon's catalog-price index aggregates price quotes across items using geometric means with unit weights (Gordon 1996, p. 21).

same time, though, Gordon argues that the Sears catalog price series might be an overestimate of economy-wide price changes in that Sears was losing market share during the latter years of his study. Putting this all together, and given our doubts about the representativeness of the catalog-based index, we are inclined to assume no quality-change bias in either direction for this component of the CPI under current procedures.

Other Durable Goods: The BLS recently introduced hedonic methods to adjust the prices of a variety of household appliances, including microwave ovens (starting July 2000), refrigerators/freezers (July 2000), and clothes washers and dryers (October 2000).[36] These items make up about 75 percent of the "major appliances" stratum. Introducing these hedonic estimates into the CPI—using the BLS's "partial" hedonic approach of utilizing the hedonics to measure changes in characteristics during item substitutions but not sample rotations—reduced the rate of increase of the index for this stratum by 0.8 percentage point per year in total. Unfortunately, the estimates for each of these items were based on an analysis of only several months of CPI data, so they provide at best a very rough idea of the effect of using these hedonics over longer periods of time. Moreover, none of these studies computes a full hedonic price index. Hence, while we suspect that BLS's new procedures are not fully correcting for the presence of quality-change bias, we have no way of assessing the magnitude of any remaining bias. We therefore use the same estimate for these goods as for televisions (1.5 percentage points), based admittedly on nothing more than the idea that the rate of technological improvement for these goods may be similar.

For house furnishings other than appliances, which includes items such as furniture and cookware, we maintain the Advisory Commission's assumption that quality-change bias averages about 0.3 percentage point per year. We also assume a small amount of quality-change bias for personal care products in order to reflect quality improvements for small electrical appliances such as hair dryers (which make up about half of the personal care products category in "other goods and services"), and we assume that the quality-change bias for these goods is the same as for televisions without any hedonic adjustment, or 1.6 percentage points per year. We make a similar estimate for the toys category (which appears under the recreation heading) to capture any such effects in electronic games. These estimates are almost entirely subjective.

Food: Food constitutes more than 15 percent of the CPI. Nevertheless, the only careful analysis of the adequacy of the CPI for food that we could find is the Moulton and Moses (1997, pp. 312–14) response to the Advisory Commission's estimates—and this analysis was limited to the index for fresh fruits and vegetables. The Advisory Commission identified increased seasonal availability of certain varieties of fruits and vegetables as a source of new-items bias that they guessed to be worth about 0.6 percentage point per year. Moulton and Moses pointed out two potential problems with this value. First, for fruits, expenditure data suggest that there has not been a sufficiently large increase in the consumption of seasonal varieties to support the Advisory Commission's estimate: Using an approximation formula for the consumer surplus that results from the introduction of a new good (derived by Jerry Hausman 1997a), Moulton and Moses find that the expenditure share of fresh fruits and vegetables

[36] These are described in Liegey (2000b) for microwaves, Shepler (2000b) for refrigerators, and Liegey (2000c) for clothes dryers. These papers fit their hedonic regressions to an expanded set of CPI data (that is, a set of additional quotes that are obtained using the same sampling techniques that are employed in the published CPI). They therefore mitigate the potential comparability problem that could arise from using price data from an outside source.

would have to have increased by 40 percent over the period considered by the Advisory Commission for their bias estimate to be correct. In addition, Moulton and Moses report that virtually all of the increase in the seasonal availability of vegetables appears to have taken place prior to 1985. In light of this evidence, we find it most reasonable to assume no new-items bias in the fresh fruits and vegetables category of the CPI going forward.

For the remainder of the food items in the CPI, we are left in the realm of purely subjective judgments. The Advisory Commission cited the emergence of specialty and mid-market restaurants as a source of increased quality for food away from home. In addition, they argued that the introduction of supermarkets that include services that were previously available only in separate shops (such as delicatessens and butcher shops), as well as the increased availability of imported alcoholic beverages, should be considered quality improvements. We agree that these improvements were real and probably were not captured by the CPI. Nevertheless, the Commission's quantitative estimates of quality-change bias (namely, 0.3 percentage point per year) strike us as a little too generous, and we assume that quality-change bias in these categories (and alcoholic beverages as well) is 0.2 percentage point per year.

Finally, for packaged foods we note Hausman's (1997b) well-known study that ascribes a large consumer surplus to the introduction of new brands of breakfast cereal. While Hausman's study is an exemplar of how such estimates should be constructed, we are persuaded by Timothy Bresnahan's (1997) view that one of Hausman's key identifying assumptions—namely, that there are no brand-specific demand shocks (induced, say, by advertising)—is probably not defensible. As a result, we are somewhat skeptical of Hausman's estimate of consumer surplus, and we assume that any such new-items bias for foodstuffs is subsumed in our 0.2 percentage point estimate.

Education: The most important component of the CPI for education involves out-of-pocket expenditures for college tuition and for child care and nursery school. Regarding the former, a recent paper by Amy Ellen Schwartz and Benjamin Scafidi (2001) employs hedonic techniques to construct a constant-quality price index for four-year colleges. The authors find a slight deterioration in the quality of four-year colleges over the period 1991 to 1995. However, their most interesting result is that accounting for financial aid leads to a pattern of price increases that is somewhat different from the CPI; this results mainly from a single year's observation (1994), which saw the introduction of HOPE scholarships. (With the exception of this one year, changes in the CPI for tuition and fees track Schwartz and Scafidi's index quite well.) We are inclined to agree that the CPI should measure college tuition net of financial aid, and note that the BLS has tentative plans to make this change to their procedures. However, we have no reason to expect the average amount of financial aid to vary in a systematic way going forward; thus, we make no quality-bias adjustment to this component of the CPI. Regarding child care and nursery school, we know of no analyses of the adequacy of the CPI, and again we assume no quality bias for this component.

The CPI for education also includes a small weight on textbooks. This is another area where BLS recently began using hedonic adjustment to capture quality changes, in this case those associated with changes in the number of pages, changes toward or away from use of soft covers, and so on (Mike Reese 2000). We have no reason to believe there is any bias in this index.

Telephones: An oft-cited example of the CPI's failure to include new goods involves the belated introduction of cellular telephones into the index in 1998. Hausman (1997a) argues that as a result, the rate of change in the CPI for telecommunications services was biased upward by about 2.3

percentage points per year from 1988 to 1996. However, as Moulton and Moses (1997, pp. 321–22) point out, this estimate is likely to be too large because Hausman's analysis includes business as well as consumer use of cell phones. Using data from the consumer expenditure survey, Moulton and Moses compute that failing to initially include this good in the CPI led to a cumulative new-items bias that is only about 40 percent as large as Hausman's estimate, or about 1 percentage point per year.

Is this estimate of the bias from failure to introduce cell phones in a timely manner indicative of an ongoing bias in this category of the CPI? On the one hand, the spread of cell phones was probably the most important innovation in communications consumption in the past decade, making us somewhat hesitant to assume that a bias of this magnitude should be expected to continue in the future. On the other hand, we recognize that telecommunications is an area of especially rapid product innovation. In the end, we arbitrarily scale back a little the Moulton-Moses cell-phone estimate, and assume a bias of 0.8 percentage point per year in telecommunications services going forward. This estimate would take into account any unmeasured improvements in sound clarity, convenience associated with the spread of pay phones that accept credit cards, and so on, that the Advisory Commission used to justify their estimate of a 1 percentage point per year bias in telecommunications services.

Robert Hall (1993) argues that the CPI for long-distance telephone calls overstates the true price of long distance because it fails to properly measure discount plans. As with Hausman's cell phone estimates, Hall's estimate appears to suffer from the inclusion of business expenditures on long distance; more importantly, however, the CPI changed its methodology for measuring long-distance services in the early 1990s, and now prices telephone calls using an average-revenue concept that better captures discounting plans. While the BLS's new methodology is not perfect—respondents in some markets refuse to provide necessary data, citing confidentiality concerns—it probably mitigates much of the problem. Thus, we make no additional adjustments to incorporate Hall's estimates.

The Internet: One of the most important new consumption items in recent years—and one whose expansion appears likely to continue for some time—has been the ability to connect to the internet. Prior to 1998, when the CPI began to include the fees of internet service providers, the omission of this service contributed to new-items bias. And, as the internet has expanded since then, these ISP fees can be viewed as having purchased a wider and wider variety of services, suggesting that the quality-adjusted monthly fees for internet use in fact may have been declining sharply. The BLS currently makes no adjustment to capture the quality improvement associated with this expansion of services.

The types of services provided by the internet can be grouped into two broad categories. First, some uses of the internet may themselves be new goods; for instance, surfing the web to obtain information on a hobby could be considered a recreational pursuit on its own. Second, existing goods or services may now be provided more efficiently or at lower cost by the internet; for example, one can now peruse the online version of a newspaper rather than purchasing a printed copy, or make a purchase online rather than by telephone or from a brick-and-mortar outlet.

The unmeasured welfare benefit that obtains from this latter set of internet-provided goods spans several categories of CPI bias, including outlet bias, upper-level substitution bias, and "pure" new-item or quality-change bias. Consider, for example, an online version of a newspaper. In this case, the internet can serve as a type of new outlet (purchasing the newspaper with an online subscription may be more convenient than going to a newsagent); as a higher-quality version of an existing good (hypertext links may improve the usefulness of the newspaper); and as a substitute for an existing good (one consumes the online paper—the subscription to which might be cheaper—in lieu of a paper copy).[37] Similarly, one can now use e-mail in place of letters or telephone calls; in some cases, this reflects an improvement in the quality of these goods (for example, e-mail is faster and possibly cheaper than regular mail), while in other cases it can be considered an entirely new good.

It is not completely clear that free internet content should be considered within the scope of the CPI. For example, if we consider the internet to be analogous to broadcast television, where television programs are provided free-of-charge to households in order to promote advertising for other products, then improvements in free internet content may not be relevant for the CPI.[38] (Note, though, that there are some analysts—such as Baker 1998, p. 121—who do consider deterioration in the quality of broadcast television as implying a cost-of-living increase.) In our view, however, a closer analogy is to cable television, where viewers pay providers for unlimited access to content, and where increases in the quality of cable programs, the number of channels provided, and so on, represent legitimate quality improvements that the CPI should seek to capture. Put differently, if spending a given amount on internet service provision now yields greater satisfaction than before (for instance, because of the greater variety of web sites), it seems reasonable to characterize this as a reduction in the quality-adjusted price of this good.

We have not found any studies that estimate the effects of the introduction and expansion of the internet on consumer welfare. But as a way of assessing its approximate impact we use the Hausman (1997a) formula for consumer surplus together with expenditure weights for internet services (which constitute most of "computer information processing services") from the consumer expenditure survey. The approximate consumer surplus that obtains from a new good is equal to one-half of the current expenditure share for this good divided by the absolute value of the good's price elasticity of demand. In 1998, expenditure on these services amounted to about 0.1 percent of total expenditures. If we assume that the price elasticity for internet services is −0.5 and that internet services first became available five years earlier, then the new-goods bias from the introduction of the internet contributed 0.02 percentage point per year to bias in the overall CPI during those years.[39] We have every reason to believe that the internet will continue to expand, and we have built such a figure into our bias estimates going forward. Note that, given the small share of expenditures in this category, the magnitude of this contribution to overall bias implies that bias for the computer information processing services stratum itself is on the order of 19 percentage points per year.

[37] We emphasize that this last source of bias should properly be considered substitution bias, even if the change in consumption involves using a "free" online news service in place of purchasing a newspaper. Adding an online news service to the internet acts to shift the demand curve for paper newspapers or magazines inward; ideally, the resulting reduction in the consumer's expenditure on news services will be captured by a superlative index, and thus in our estimate of upper-level substitution bias. (The situation is analogous to the impact of videocassette rentals on purchases of film tickets.)

[38] We thank an anonymous referee for raising this point.

[39] Our assumed elasticity is similar to the elasticity for cellular-telephone usage estimated by Hausman (1997a) and is also similar to the elasticities for travel and communication (−0.5) and entertainment (−0.6) reported in Deaton and John Muellbauer (1980a, p. 71) for a Rotterdam model of consumer demand. However, it is somewhat smaller (in absolute value) than the price elasticities for transport and communication (−0.9 to −1.2) and other services (−0.7 to −0.9) estimated by Deaton and Muellbauer (1980b, p. 320) using an "almost-ideal" demand system.

Financial Services: Personal financial services (included in the CPI's "other goods and services" expenditure category) is yet another area where we have found no detailed studies of the adequacy of the CPI. The Advisory Commission assumed that such innovations in the retail banking industry as ATMs and cash-management accounts induce 2 percentage points per year of quality-change bias in the CPI for personal financial services. While we have no way of assessing how reasonable this estimate is, we suspect that it should be lower to the extent that the rate of expansion of the specific innovations identified by the Commission may have slowed considerably (for example, ATM use is now ubiquitous). Of course, these developments may be indicative of further innovations yet to come. We arbitrarily assume a 1 percentage point bias for this category of expenditure going forward; in any event, these services receive a tiny weight in the CPI.

7. *An Estimate of Aggregate CPI Bias*

For each source of bias listed in table 1, we present not only our point estimate but also a confidence interval that summarizes our view of the likely distribution around each estimate. To obtain a confidence interval for the total bias estimate, we follow Shapiro and Wilcox (1996) and specify explicit functional forms for the distributions of each source of bias; this allows us to aggregate them numerically. These distributions convey nothing more than our subjective degree of confidence about our estimates; we present them at some risk of creating a false sense of precision.

To perform these calculations, we associate our confidence intervals with a 90 percent range. For lower-level substitution bias, weighting bias, and quality-adjustment/new-items bias, we view our confidence intervals as symmetric, and we formalize our distributions as being normal with means equal to our point estimates and with standard deviations such that we obtain 90-percent confidence intervals equal to the intervals listed in table 1. For upper-level substitution bias and new-outlet bias, our confidence intervals are skewed to the right. In these cases, we formalize our distributions as being the concatenation of the left and right halves of two normal distributions in which the two halves have different standard deviations set so as to generate the desired mean, 5 percent tail, and 95 percent tail. This assumption, though unusual, is transparent and it avoids the implication of some better-known skewed distributions (such as the lognormal) that the distribution be strictly positive. We construct a distribution for our overall CPI bias estimate by computing the sum of the draws from each of the component distributions, and obtain a 90-percent confidence interval that ranges from 0.3 to 1.4 percentage points.[40] Note that, although our confidence intervals extend below zero for three of the five components of bias, it does not do so for our total bias estimate.

Finally, we mention a few issues relating to the confidence interval around our point estimate of quality-change/new-items bias. We specified this confidence interval as being wide—ranging from −0.1 to 0.8 percentage point per year—to convey the subjective nature of our bias estimates for a large portion of the CPI. But it is worth noting one factor that argues for a narrower confidence interval (and that led us to temper its size somewhat). Because we build up this bias estimate by

[40] In making this calculation, we assume that the biases are uncorrelated with one another. Shapiro and Wilcox (1996) assumed that the distributions for lower-level substitution bias, new-outlet bias, and the new-items portion of quality-adjustment bias—each of which relates to the propensity to substitute one item for another—are positively correlated with a correlation coefficient of 0.25. Making such an assumption here leads to only a minuscule effect on the confidence interval around our estimate of total bias. Similarly, our discussion of the use of PCE weights to aggregate quality-adjustment bias suggests that this bias may be positively correlated with weighting bias; however, imposing such a correlation leads to essentially no change in the confidence interval.

forming judgments about the bias for each expenditure item, one can imagine constructing a distribution for overall quality-change bias as on aggregate of the bias distributions for each of those items. If one believes that these bias distributions are essentially independent—that is, that quality-change biases in the CPIs for televisions, hospital services, owners' equivalent rent, new vehicles, and so on, have little to do with one another—then the aggregate distribution will be much less dispersed than the distributions of the pieces.[41] One should not take this argument too far, as the biases for many of these items may not in fact be independent—for example, there may be a common element to the problems the BLS has in measuring the prices of many different items. But neither should one get carried away in translating the substantial uncertainty surrounding the degree of quality-change bias in many components of the CPI into uncertainty about overall quality-change bias.

8. *Conclusions, Recommendations, and Directions for Future Research*

This paper has surveyed the evidence bearing on measurement error in the CPI and estimated the current and prospective magnitude of CPI bias. Acknowledging fully the uncertainty surrounding our estimates, we conclude that the CPI likely overstates the rate of increase in the "true" cost of living by about 0.9 percentage point per year, with a probable confidence interval that ranges from 0.3 to 1.4 percentage points. We judge the CPI's limited ability to fully capture the welfare improvement from quality change and the introduction of new items as accounting for a little less than half of this bias. That said, however, our estimate of quality-change and new-items bias is somewhat smaller than that of many earlier studies. At the same time, our estimate of upper-level substitution bias is somewhat larger than in earlier studies, and we identify a new "weighting bias" that has not previously been discussed.

An important reason why our estimate for some categories of bias is smaller than those found in several earlier studies is that the BLS has recently made a variety of improvements to its procedures. Although much of the low-hanging fruit has already been picked, further progress remains possible, and our analysis points toward a number of possible areas for additional improvement. In addition, our study suggests several areas in which more fundamental research is warranted. In this concluding section, we discuss these issues in detail.

We begin with upper-level substitution bias. This type of bias is an artifact of the modified Laspeyres formula that is currently used to construct the CPI; were timeliness and revisions not an issue, this problem could therefore be largely corrected by employing a superlative index-number formula. Indeed, with the recent introduction of the "chained" CPI, the BLS is now publishing a version of the CPI that employs such a formula (note, however, that this index is probably affected by the sampling-error issue discussed in section 2). This is an important step, but it would be desirable for the BLS to mitigate upper-level substitution bias in the official CPI as well—especially given the new evidence that suggests this bias has recently been much larger than was previously believed. Along these lines, Shapiro and Wilcox (1997) have advocated having the BLS replace the Laspeyres formula in the official CPI with a constant-elasticity-of-substitution (CES) formula in which a non-zero elasticity is assumed based on recent

[41] This reflects the fact that the variance of uncorrelated random variables will be larger than the variance of their sample average. For example, suppose we assign to each of the 24 items in table 6 a normal distribution with a standard deviation that generates a 90-percent confidence interval that is 1 percentage point wide. Assuming these distributions to be independent generates an aggregate distribution with a confidence interval that is only 0.3 percentage point wide.

years' data. This proposal was seconded by the Conference Board's Study Group on the Consumer Price Index (Conference Board 1999). It would be useful to determine whether such a procedure could reliably produce an index with properties similar to a superlative measure.

Upper-level substitution bias appears to have increased dramatically in the late 1990s, and research is clearly needed to understand the source of that increase. Additional research into the way that upper-level substitution bias is measured also would be helpful. As noted in section 2, the comparison of a Laspeyres index with a superlative index may not provide a precise estimate of this bias because of the different reference utility levels associated with the two indexes. In this regard, we see the research by Blow and Crawford (2001) as providing a potentially valuable alternative means for quantifying this source of bias. (A reconsideration of the use of estimated demand systems to compute substitution bias, following in the footsteps of Steven Braithwait, 1980, for instance, may also represent a fruitful line of research.) Furthermore, the calculations underlying estimates of substitution bias, both within and across strata, are affected by a variety of small-sample issues. We have cited papers by BLS analysts that discuss possible small-sample biases in superlative indexes (Greenlees 2001b), Laspeyres indexes (Bradley 2001a), and geometric mean indexes (McClelland and Reinsdorf 1999). Further analysis of these small-sample problems could clarify the degree to which the CPI is affected by substitution biases; it could also provide an important argument for expansion of the CPI or CEX samples.

Correcting weighting bias in the CPI would represent a more difficult undertaking. As evidenced by our discussion in section 5, we believe that our PCE-based weights are preferable to the existing weights in the CPI. Very likely, however, it would be extremely difficult for the BLS to replace the CEX-based weights used in the CPI with a set of PCE-based weights. In particular, the differences in scope between the CPI and PCE are pervasive, and the adjustments to the PCE data that we had to make—while informative for the purposes of this paper—are judgmental enough that BLS would be justifiably reticent to fully adopt them. Furthermore, the PCE data exist only for the nation as a whole, though it should be possible to establish a procedure whereby the metropolitan-area CEX expenditures are benchmarked to national PCE-based expenditures.

Nevertheless, we believe that BLS should consider whether adjustments to the PCE data can be made with sufficient confidence to warrant adopting PCE-based weights for use in the CPI. Intermediate steps may also be possible, and the BLS ought to consider augmenting the CEX data with additional information on certain components that are known to be poorly measured—such as alcohol and tobacco, and perhaps some other categories of expenditure that are thought to be undercounted as well—to bring their estimates more into line with PCE data or other outside information. At the same time, we would encourage the BLS to work to improve the accuracy of the consumer expenditure survey. For example, the BLS is investigating expanding the diary portion of the survey so that it is filled out by all members of the household and not just the household head, which might help remedy some of the current undercounting of expenditures.

Reducing quality-change and new-items bias is perhaps the most difficult task facing the CPI, but here, too, we think progress is feasible. First, the utilization of outside sources of comprehensive, high-frequency price data (from check-out scanners or other sources) provides one promising approach to increasing the number and quality of price quotes in the CPI. Such data may also help identify new items to be brought into the CPI more rapidly, and can serve as a valuable source of information on product characteristics. Second, hedonic techniques remain an important tool for valuing quality change. The BLS has moved aggressively to expand the use of hedonic techniques in the CPI, and we concur with the National Research Council's (2002) conclusion that the BLS should proceed cautiously and integrate hedonic estimates into the CPI only when the quality of the underlying hedonic regressions is sufficiently high.

Having said that, we also see areas where, given reliable hedonic estimates, these estimates can be utilized more completely in the CPI. Specifically, as we discussed in section 6, the CPI now uses hedonic techniques only for item substitutions and not during routine sample rotation. BLS is experimenting with new procedures for item substitutions—called "directed" substitutions—that may help to reduce a portion of any remaining quality-change bias caused by the incomplete use of hedonic adjustment. Under directed substitution, item substitution (and hedonic adjustment) would occur after fixed intervals even if the old item remains available to be priced. Directed substitution should allow BLS to maintain a more up-to-date sample; it therefore ought to diminish the differences between existing items and those that replace them during sample rotation, and so might reduce the bias associated with the lack of hedonic quality adjustment at such times. Directed substitution is currently being implemented for personal computers, and related procedures are in train for prescription drugs (Lane 2000).

To address this problem more directly, BLS could consider trying to apply hedonic adjustment during sample rotation. A schematic description of this alternative, and its interaction with new-outlet bias, is outlined in table 7. Under current procedures, new items are linked into the CPI using the "overlap method" during sample rotations; this leaves the CPI susceptible both to quality-adjustment bias (because differences in item characteristics are not valued) and to new-outlet bias (because the entire price differential between outlets is attributed to differences in outlet quality).[42] Applying hedonics during sample rotation ought to help alleviate quality-adjustment bias—presuming, of course, that the hedonic estimates are accurate. Whether it will help alleviate new-outlet bias will depend on whether outlet characteristics also can be priced in the hedonic regressions. If they cannot, then BLS would implicitly be making the opposite assumption to the one currently made in allowing the full price differential across outlets to show through to the CPI; this might or might not be an improvement over current practice. But if outlet characteristics can be priced, then applying these hedonic estimates should help alleviate new-outlet bias as well as quality-change bias.

While increased use of hedonics by BLS represents, on balance, an important improvement to the CPI, one is left somewhat uneasy by the degree to which practical application of these techniques appears to have outstripped theory. In particular, we share Triplett's (2001) opinion that "a theory of consumer behavior toward the characteristics of goods, rather than the goods themselves" has not been fully worked out, and, although recent work by Pakes (2001) moves part of the way toward achieving a fuller understanding of the economics of quality change, much more work in this area is needed.

Furthermore, hedonic techniques are of little help when the characteristics of a good or service are hard to measure or even define. This is the case with medical services, which we judge to be the largest source of quality-change and new-items bias in the CPI. Here the measurement challenges are especially daunting, and there are no easy fixes, though a procedure in which the BLS samples a set

[42] With the "overlap" method, the price change between months $t-1$ and t is given by the old item at the old outlet, and the price change between months t and $t+1$ is given by the new item at the new outlet. No direct comparison is made between prices of the old and new items.

TABLE 7
APPLYING HEDONICS DURING SAMPLE ROTATION
(METHODS FOR HANDLING DIFFERENCES IN ITEM AND OUTLET CHARACTERISTICS)

	Item substitution	Sample rotation		
			Applying Hedonics during Sample Rotation	
	Current BLS Practice	Current BLS Practice	Hedonics do not include outlet characteristics	Hedonics include outlet characteristics
Item differences	Hedonics[1]	Overlap method[2] → quality bias	Hedonics[1]	Hedonics[1]
Outlet differences	N.A.	Overlap method[2] → outlet bias	Direct comparison[3] → opposite outlet bias	Hedonics[1]

1. Prices of old and new items are compared using estimates of the value of different item (and, possibly, outlet) characteristics from hedonic regressions.
2. The price change between months $t-1$ and t is given by the old item at the old outlet, and the price change between months t and $t+1$ is given by the new item at the new outlet. No direct comparison is made between prices of the old and new items.
3. Prices of old and new items are compared directly.

of illnesses and then carefully monitors the cost of their treatment over time ought to be feasible. This procedure, which has been endorsed by the National Research Council (2002), strikes us as a sensible and workable first step toward better capturing changes in medical treatment paths.

Regarding pharmaceuticals, we have argued that the BLS's current procedures may not give adequate weight to generic drugs because generics are allowed to be brought into the index only once, six months after the branded drug's patent has expired. In light of evidence that the market share of generics continues to increase thereafter, the BLS might consider allowing the generic drugs to be brought into the index again after one year, and perhaps a third time after eighteen months.

Medical care also illustrates a deeper issue that is, at present, only imperfectly understood. Specifically, the theoretical framework that is generally used to inform the measurement of the cost of living is static in nature inasmuch as it involves holding utility constant at a level associated with a specific period's consumption. However, as noted by Irving Shapiro et al. (2001, p. 412) and Cutler et al. (2001, p. 343), there is an important dynamic component to medical care improvements, since advances in care that lengthen life—and so presumably raise lifetime utility—will also raise the expenditures needed to maintain a given period's consumption. This suggests that the analysis of quality change for medical care may require an explicit consideration of the consumer's intertemporal problem. Similarly, intertemporal considerations arise in the context of durable goods and decisions as to whether financing charges should be included in the CPI.[43]

[43] A related issue for which the dynamic dimension of the consumer's welfare problem is relevant concerns the role of asset prices in an index of the cost of living. Once again, this area is one that has only just begun to receive renewed theoretical attention—see, for example, Charles Goodhart (2001).

As this study has documented, the BLS has made important steps toward improving the accuracy of the Consumer Price Index. Moreover, an important consequence of the attention the CPI has received in recent years is a renewed and growing interest in issues related to price measurement on the part of the economics profession. Nevertheless, much remains to be done on both the practical and theoretical fronts, and BLS and academic research will be crucial in generating continued improvement in the accuracy of the CPI going forward. Given the importance of accurate price measurement, the expected value of such research is quite large.

Appendix A: Construction of PCE-Based Weights

This appendix details three adjustments that we make to PCE to put it on a conceptual basis similar to that of the CPI. It then describes how we constructed relative importance weights from these adjusted expenditures.

1) We first adjusted PCE by excluding items that are outside the scope of the CPI, mainly expenditures by nonprofit institutions and the portion of medical and educational expenses that are not made out of pocket. (Our adjustments benefitted from the concordance between the detailed line items in the CPI and PCE contained in Fixler and Ted Jaditz 1997.) The latter adjustments in particular required making some rough assumptions. Specifically:

Goods: Exclude food produced and consumed on farms and food furnished to employees (including military), fuel produced and consumed on farms, and apparel provided to military personnel.

Medical Care Services: Subtract government transfers to persons for medical care, employer contributions for employees' health insurance and workers' compensation, and expenditures by foreigners. These subtractions are made proportionally across medical goods and services.

Education Services: Exclude foundations and nonprofit research organizations. Subtract government transfers for education, and then subtract 50 percent of the remainder, from private higher and lower education.

Other Services: Exclude rental value of farm housing, religion and welfare, net foreign travel (except for Americans' passenger fares), domestic services paid in kind, imputed financial service charges, brokerage fees, expenses of handling life insurance, casino gambling, parimutuel net receipts, lotteries, expenditures by labor unions, professional associations, and clubs and fraternal organizations.

2) We then made two adjustments to specific PCE expenditure categories.

Tenants' Rent and Utilities. In roughly 30 percent of rental units in the CPI, the contract rent includes at least some utility costs (fuel and natural gas for heating or hot water, electricity, water, or sewer charges). But the tenants' rent category in PCE is based on a pure rent concept. To make the PCE data comparable to the CPI, we boost PCE expenditures on tenants' rent by 6 percent, with an equivalent amount subtracted proportionally from the aforementioned utility categories. This adjustment is based on estimates made by BLS analysts, and can loosely be understood as reflecting 30 percent of renters having 20 percent of rent covering utilities.

Major Appliances and Owners' Equivalent Rent. Because services provided by owner-occupied housing in the CPI are based on a rental-equivalence concept, BLS reduces the CPI weight for major household appliances (that typically are included with the house) to exclude purchases by owners in excess of those purchases that they estimate would have been made by renters. In addition, the rental values on owner-occupied housing that are estimated by respondents to the CEX presumably include the service flow from these appliances as well, while the rental equivalence concept in PCE covers the pure rent only. In constructing our PCE weights, we therefore adjusted both the "other durable goods" and owners' equivalent rent categories to estimate the effect of putting the PCE data on the CPI basis. Specifically, we (a) subtracted 39 percent of PCE for major household appliances and 38 percent of PCE for floor coverings from other durable goods expenditures; and (b) added into owners' equivalent rent expenditures an imputed service flow from these items equal to 2.3 percent of the pure rent. These two adjustments, which are of similar magnitude in dollar terms, are calculated as follows.

(a) The 39-percent figure is based on unpublished detail from the CEX that gives expenditures on major appliances made by owners and renters in 1992 (the only year we had available), along with adjustments for the share of owners' expenditures on five major appliances that BLS discounts in constructing the CPI weights. (We are grateful to BLS for providing these adjustment factors.) A similar calculation implies that 82 percent of expenditures on wall-to-wall carpeting should be subtracted, but because this item is not shown separately in PCE (it is included with other floor coverings), we scaled that estimate by 46 percent, the share of wall-to-wall carpeting in overall floor coverings in the 1992 CEX, to obtain our 38-percent adjustment. (BLS also makes adjustments in the CPI weight for household maintenance and supplies other than wall-to-wall carpeting, but these items are largely omitted from PCE and so did not necessitate an adjustment to our estimates.)

(b) The adjustment to owners' equivalent rent is based on BEA's estimates of the stock of "kitchen and household appliances." We calculated the service flow from this stock with a user-cost formula (assuming a 10-percent depreciation rate, a 3-percent real interest rate, and no capital gains or losses on the asset); this service flow is then scaled down by 39 percent to account for the share of appliances owned by renters (described above) and is scaled down by another 8 percent to account for the fact that this category includes small household appliances as well as major appliances. The resulting service flow averages 1.9 percent of PCE for owners' equivalent rent in recent years. BEA does not have capital stock estimates for floor coverings, so we scaled the service flow upward proportionally given expenditures on these items to obtain the 2.3-percent figure that we employ.

We also note two additional conceptual differences between the CEX and PCE expenditure measures that did not require adjustment in our calculations. First, the split between purchases of new and used automobiles differs across the two expenditure measures, with the CEX measuring purchases of new cars net of any trade-in value, and PCE measuring gross new car sales with an offset for trade-in value as part of used cars. We combined motor vehicles into a single sector to avoid this inconsistency. Second, vacation homes—roughly 1.5 percent of the CPI—are included in the lodging away from home category of the CPI, but are included in owner- or tenant-occupied housing in PCE. In fact, the CPI prices very few such vacation homes, and so the lodging away from home index is driven by hotel and motel prices. Thus, our procedure of applying the CPI price to the PCE-based hotel and motel weight is probably reasonable, especially if the user cost of vacation homes tends to behave like the cost of regular owner- or tenant-occupied housing.

3) Finally, we adjusted the data to account for the fact that the CPI-U covers urban households only (about 87 percent of the total), while PCE is national. This can account for some important differences in expenditure shares; for example, urban households spend a larger share of income on housing and a smaller share on motor vehicles than do rural households. Specifically, we multiplied the PCE data for the various expenditure categories in table 3 by the ratios of urban/total expenditures per household, calculated from the 1994 CEX (the midpoint of the 1993–95 weights currently underlying the CPI). These are shown in table A.1.

Given the adjusted PCE expenditures, we constructed relative importance weights using procedures analogous to those used for the CPI. Specifically, the weights are derived from average PCE expenditures during 1993–95; these expenditures were then multiplied by the corresponding relative CPI price change between the 1993–95 average and December 1997 to obtain the December 1997 relative importance weights. The 1993–95 based weights are used to aggregate the CPI since 1998; from 1987 through 1997, an equivalent set of weights based on 1982–84 PCE data is used. (For that earlier period, the relative importance weights are constructed by multiplying the 1982–84 average PCE expenditures by the relative CPI price change from the midpoint of the period, June 1983, rather than from the average of the period.)

Appendix B: Decomposition of the Bias in the CPI

In this appendix we present formulas showing how the total bias in the CPI can be decomposed into the various components listed in table 1. These decompositions help clarify why one would like to use PCE-based weights in the calculations of substitution bias and quality-change/new-items bias.

Overall CPI bias can be defined as

$$Bias = \underset{\text{Published CPI}}{w_l p} - \underset{\text{True COLI}}{w_s^* p^*}, \tag{1}$$

where w and p are the weights and price changes used in constructing the CPI, w^* and p^* are their true values, the subscript l (for Laspeyres) represents the aggregation formulas used in the CPI, and the subscript s (for superlative) represents the aggregation formulas that would ideally be used in constructing a true cost-of-living index.[44]

The bias can be decomposed into components reflecting differences between p and p^* (quality-adjustment/new-items bias and new-outlet bias), between w and w^* (weighting bias), and between w_l and w_s (upper- and lower-level substitution biases). Such decompositions are not unique, but the following decomposition adds up correctly:

$$Bias = w_s^*(p - p^*) + (w_l - w_l^*)p + (w_l^* - w_s^*)p. \tag{2}$$

Under the assumption that our PCE-based weights are a better measure of w^* than the CPI's weights, the calculations we use in the text can be expressed as follows. First, we aggregate our detailed estimates of quality-change/new-items bias using up-to-date values of our preferred PCE weights to best approximate the weights that would be used in a superlative aggregation formula; this gives $w_s^*(p - p^*)$—the first term in equation (2).[45] Second, our weighting bias calculations are based on a comparison of the CPI with an alternative aggregation of CPI prices using PCE-based weights, or $(w_l - w_l^*)p$—the second term in equation (2).

Finally, our estimate of upper-level substitution bias is based on studies that calculated the difference between a modified Laspeyres and a superlative aggregate of CPI prices, based on weights derived from the consumer expenditure survey; lower-level substitution bias is estimated judgmentally, but again the thought experiment involves taking CPI-based weights and prices and modifying only the aggregation formula. Thus, our estimates of substitution biases correspond to $(w_l - w_s)p$ in the notation above. This differs from the third term in equation (2), which corresponds to calculating the substitution biases using the PCE-based weights that we view as more accurate. As we discussed in section 2, we were

[44] More precisely, the subscript l represents the combination of all aggregation formulas that are used in the CPI, including geometric means for aggregating prices within many strata and modified Laspeyres across strata.

[45] Our estimates of new-outlet bias were similarly constructed by applying a bias estimate of 0.25 percent per year to the proportion of the CPI deemed likely to contain such a bias; using these PCE weights yields similar results.

TABLE A.1
RATIO OF URBAN/TOTAL EXPENDITURES PER HOUSEHOLD, 1994 CEX

Expenditure category	Urban/Total	Comments
Meats, poultry, fish, eggs	1.001	
Fruits and vegetables	1.011	
Other food at home	0.990	
Food away from home	1.019	
Motor fuel	0.959	
Heating oil	0.816	
Apparel	1.044	
Tobacco	0.954	
Alcoholic beverages	1.043	
Medical commodities	0.952	
Other nondurables	0.986	Household equipment, pets & toys, other entertainment goods, reading, ½ of personal care
Motor vehicles	0.947	
Computers	1.026	Ratio for TV/radio/sound equipment used
Audio/video equipment	1.026	TV, radios, sound equipment
Other durables	1.035	Household furnishings less adjustments for major appliances and floor coverings
Natural gas	1.099	
Electricity	0.967	
Owners' equivalent rent	1.032	
Tenants' rent	1.098	
Lodging away from home	1.058	
Medical services	0.976	
Tuition & school fees	1.059	Education
Airfares	1.076	Public transportation
Other services	1.031	Water and telephone, household operations, motor vehicle expenses (excl. finance charges), ½ of personal care, fees and admissions, miscellaneous

not able to construct reliable estimates of upper-level substitution bias using PCE-based weights. We would expect any difference between our estimates of upper-level substitution bias and an alternative based on PCE weights to be small.

Some readers may not agree with our assessment that the adjusted PCE data are more accurate than the CEX expenditures. In that case, there is no difference between w and w^* and the bias estimate becomes:

$$Bias = w_s(p - p^*) + (w_l - w_s)p. \qquad (3)$$

For this reason, we also presented an alternative aggregation of our detailed quality-change/new- items bias estimates based on the most up-to-date CEX weights that are available (from 1998), which corresponds to $w_s(p - p^*)$. This calculation generated an estimate that is 0.07 percentage point per year smaller than the 0.37 percentage point figure in tables 1 and 5. Thus, readers who prefer the CEX data to the adjusted PCE data should reduce our overall estimate of CPI bias by 0.17 percentage point—0.1 percentage point for weighting bias, and another 0.07 percentage point to reflect a smaller estimate of quality-change/new-items bias.

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Attachment for Response to Question 15

U.S. Treasury Yields and Foreign Holdings of U.S. Securities: An Interim Report

Preliminary and Incomplete - Do not cite or quote without Permission from the Authors

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Federal Reserve Board*

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Abstract

This paper examines empirically whether foreign holdings of U.S. Treasury securities are relevant to explaining U.S. Treasury yields. Interest in this topic is motivated by the failure of the long-term interest rate to rise during 2004-2005 in response to increases in the short-term rate, a phenomenon that took place against a backdrop of rapidly rising foreign holdings of U.S. securities and declining foreign interest rates. There are not many papers examining this question and the little evidence available offers no agreement on whether holdings of U.S. Treasuries affect U.S. long-term interest rates. What is not clear is what is responsible for it. We requested their data, replicated their results, and found them to be sensitive to minor changes. Our strategy is to re-examine the association by extending the framework used in previous work. Specifically, previous work does not recognize that foreigners can redirect their financial holdings anywhere in the world with effects on world interest rates. We address these limitations using a variety of vantage points: single-equation, Vector Error-correction models, yield-curve models, and DSGE models. The evidence suggests that foreign holdings of U.S. securities help explaining movements in U.S. Treasury yields.

*We have benefited from conversations with Carol Bertaut, Stephanie Curcuru, Michiel De Pooter, Neil Ericsson, and Siem Jan Koopman. We are very grateful to Frank Warnock, Eric Swanson, and Glenn Rudebusch for their data and their comments on our replication of their work. The results reported here are based on OxMetrics and computer code from R developed by Daniel Beltran and Maxwell Kretchmer. An earlier version of this paper was presented at the FRB Workshop Series. The views in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or of any other person associated with the Federal Reserve System.

1 Introduction

This paper reports our preliminary results studying the question of whether movements in foreign holdings of U.S. Treasury securities matter for understanding movements in U.S. Treasury yields. Our interest in this topic is motivated by several considerations. First, foreign demand for U.S. Treasuries has increased substantially in the last three decades. As a share of U.S. Treasuries outstanding, foreign holdings increased from 17 percent in 1981 to 50 percent by 2009 (figure 1) with much of this increase stemming from foreign official holdings. Obvious as it is, this demand-side factor is not considered in most existing models of the U.S. yield curve. Second, the (scant) literature that allows for this demand factor offers no reliable guidance as to whether the foreign holdings affect U.S. interest rates. Warnock and Warnock (2009), using a linear static equation and data from the U.S. Treasury International Capital (TIC) system, find that foreign official purchases of U.S. long-term securities help explain the downward trend of the U.S. 10-year yield (figure 2). Rudebusch et al. (2006) combine affine and latent-factor models of the term structure with data on custodial holdings at the Federal Reserve Bank of New York and find that their models' residuals are not contemporaneously correlated to these net purchases, contradicting Warnock and Warnock.

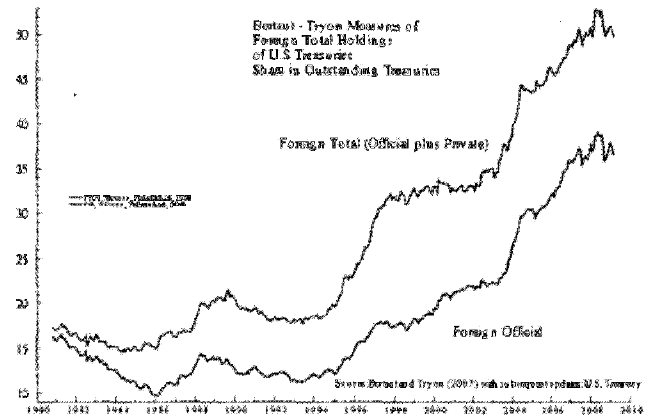


Figure 1

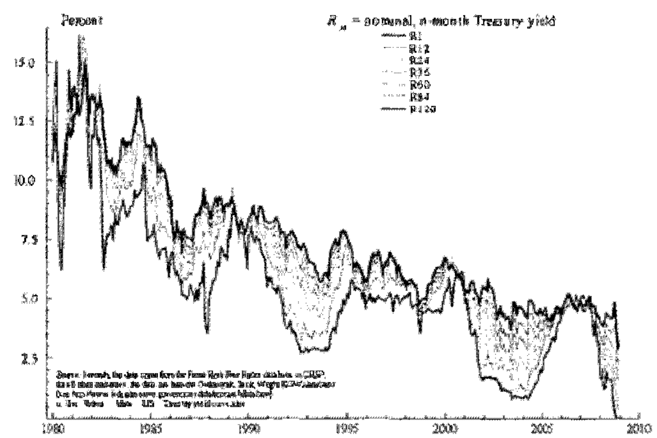


Figure 2: U.S. Treasury Yields, selected maturities

That such a stark difference in predictions matters is clear. What is not clear is what to make of it. Specifically, one cannot tell whether methodological differences among these studies are responsible for the difference in results because they do not report tests central to judging the reliability of their results. Thus, to understand the source of this disagreement, section 2 replicates their results and we find that they are sensitive to minor changes.

We argue that this lack of robustness stems from neglecting the interdependency between asset prices and asset holdings. First, there is a two-way direction of causation: foreign purchases of Treasuries respond to yields (bond prices), and yields respond to foreign purchases. Second, the effect of foreign purchases of U.S. Treasuries on U.S. interest rates are likely influenced by the close substitutability between U.S. and foreign government bonds. For example, an unexpected surge in demand for 10-year U.S. Treasury bonds would raise their prices, but this in turn would make foreign 10-year bonds cheaper relative to U.S. bonds. As investors take advantage of this bigger gap between U.S. and foreign bond prices by purchasing foreign bonds, foreign bond prices rise too. This imperfect substitutability between U.S. and foreign bonds would explain some of the correlation between U.S. and foreign long term interest rates (figure 3).

Figure 3

Because there is no simple, or universally accepted, approach to model these interdependencies, the paper uses several models that differ on whether foreign holdings and foreign interest rates are endogenous. This distinction, though artificial, helps quantifying the gains from endogenizing foreign holdings which, in addition, are hard to model empirically. Given our empirical motivation, we focus on the ability of the models to explain the data. Thus we examine the sensitivity of the parameter estimates and out-of-sample predictions to the choice of econometric modeling: common factors, vector error-correction, and DSGE formulations; we have also examined latent factor and affine formulations but the results are too tentative to report. The evidence so far indicates that movements in foreign holdings matter for explaining movements in U.S. Treasury yields but these magnitude of the effect is sensitive to the allowance and modelling of general equilibrium considerations.

2 Existing Evidence

2.1 Replication of Warnock and Warncok (2009)

The model used by Warnock and Warnock (2009) assumes a prefered-habit in which the long-term rate is not connected explicitly to other yields. Their formulation is

$$R_{120,t} = \alpha + \beta \cdot \pi^e_{t+10} + (1-\beta) \cdot R_{ff,t} + \gamma \cdot Y^e_t + \delta \cdot rp_t + \mu \cdot (\pi^e_{t+1} - \pi^e_{t+10}) + \zeta \cdot deficit_{t-1} + \eta \cdot foreign_t + u_t, \quad (1)$$

where

R_{120} : 10-year U.S. government-bond yield, nominal.

π^e_{t+10} : Expected 10-year ahead inflation rate.

R_{ff} : 3-month euro dollar rate, nominal.

Y^e : Expected growth rate of GDP.

rp : Risk premium: 36-month moving standard deviation of changes in R_{10}.

π^e_{t+1} : Expected 1-year ahead inflation rate.

$deficit$: Structural budget deficit scaled by lagged GDP.

$foreign$: 12-month change in foreign officials' holdings of U.S. long-term securities scaled by nominal GDP.

$u_t \tilde{} IN(0, \sigma^2)$.

Using monthly data from January 1984 to May 2005, Warnock and Warnock use OLS for parameter estimation; they find that an increase in $foreign$ lowers R_{120}. We replicated exactly their results using their data: Column 1 of table 1 shows that the point estimates we obtained are identical to the ones they report in their paper (table 1, column 2).[1]

We examine the sensitivity of their results to changes in the measure of $foreign$ and to changes in the specification. Specifically, we replaced their TIC-based measure of $foreign$ with the 12-month change in foreign official holdings of U.S. Treasuries in custody at the FRBNY relative to monthly lagged GDP.[2] The two series have comparable contours but there are periods when both series differ significantly (see figure below). Column 2 of table 1 reports that the estimates of equation (1) are robust to the measure foreign official purchases of U.S. Treasuries. We also re-estimated the coefficients of equation (1) without imposing the restriction that the coefficients of π^e_{t+10} and $R_{ff,t}$ in equation (1) add up to one. We find that the resulting point estimates differ substantially from those using the parameter restriction (table 1, col. 3). Indeed, the coefficient for $foreign$ turns "insignificant" and is numerically close to zero; using a different measure of $foreign$ does not change this result. Further, a test of the restriction $\beta + \kappa = 1$ is rejected by the data.

[1] Unlike W&W, we did not correct the standard errors because such a correction does not eliminate the message from the diagnostics: the estimating equation is misspecified.

[2] We used FAME's interpolations of nominal GDP; these interpolations constrain the average of the monthly value to be equal to the recorded quarterly value.

2.2 Replication of Rudebusch, Swanson, and Wu (2006)

Rudebusch, Swanson, and Wu (2006) use two models of the U.S. term structure: the affine model of Bernanke-Reinhart-Sacks (BRS) and the latent-factor model Rudebusch and Wu (RW); by design, these models exclude foreign financial flows. Rudebusch, Swanson, and Wu assess whether this exclusion carries a loss of information by regressing the models' residuals for the 10-year U.S. Treasury yield on several variables one of which is foreign official net purchases, measured by the 12-month change in custodial holdings at FRBNY.

To assess whether foreign official purchases explain these residuals, Rudebusch et al. (2006) use bivariate and multivariate regressions. The bivariate regressions are

$$R_t^{brs} = \alpha + \beta \cdot F_t^{ny} + u_{brs,t} \tag{2}$$

$$R_t^{rw} = \alpha + \beta \cdot F_t^{ny} + u_{rw,t}, \tag{3}$$

where

R_t^{brs} is the gap between the 10-year U.S. Treasury yield and the prediction from the BRS model,

R_t^{rw} is the gap between the 10-year U.S. Treasury yield and the prediction from the RW model,

F_t^{ny} is the 12-month change in foreign official holdings of U.S. Treasuries in custody at the FRBNY relative to Federal Debt held by the public.

The multivariate regressions are

$$R_t^{brs} = \alpha + \beta \cdot F_t^{ny} + \gamma \cdot \mathbf{Z}_t^{'} + u_{brs,t} \tag{4}$$

$$R_t^{rw} = \alpha + \beta \cdot F_t^{ny} + \gamma \cdot \mathbf{Z}_t^{'} + u_{rw,t} \tag{5}$$

where $\mathbf{Z}_t^{'}$ is a vector of additional explanatory variables:

Z1: implied volatility on longer-term Treasury securities,

Z2: implied volatility on six-month ahead eurodollar deposits

Z3: implied volatility of the S&P 500,

Z4: realized volatility of GDP growth,

Z5: Realized volatility of monthly core CPI.

The exact definitions of these variables appear in tables 6 and 7 of Rudebusch et al. (2006).

Table 2 compares the results of Rudebusch, Swanson, and Wu (tables 6 and 7 of their paper) to the results obtained here. For the BRS residuals (columns 1-4), the point estimates are quite close but not identical to the estimates of Rudebusch, Swanson, and Wu. For the RW residuals (columns 5-8), the point estimates for the bivariate case (cols. 5-6) are quite different but equally statistically insignificant. However, the point estimates for foreign official purchases in the multivariate case (cols 7-8) are very different: 38 versus -40; the remaining coefficients are quite similar. After consulting with Swanson, we arrived at the conclusion that the difference in results owes to us getting data from a different vintage.

Having replicated their results, we examine their sensitivity to changes in the specification and to changes in the measure of F_t^{ny}. We replaced their formulations with an autoregressive distributed lag of order 3 and re-estimated their parameters. Table 3 shows the results for the BRS residuals and table 4 shows the results for the RW residuals. The evidence reveals that the results reported by Rudebusch-Swanson-Wu are robust to including lags in their specifications (cols. 3 and 4 of tables 3 and 4): the sum of coefficients for foreign official purchases is zero in every instance.

We also replaced F_t^{ny} with the Bertaut-Tryon measure for the 12-month change in foreign official holdings of U.S. long-term U.S. treasuries (notes and bonds) as well as agency bonds; these changes are scaled them by the total outstanding federal debt of the U.S. government. The results shown in cols. 5-8 of tables 3 and 4 indicate that using the Bertaut-Tryon's measure of foreign official purchases explains the residuals regardless of whether the specifications have lags or not. This finding confirms the importance of measurement of foreign inflows for explaining U.S. interest rates.

Summary The replication results indicate that relaxing the estimation of assumptions of Warnock and Warnock yields a model that supports the findings of Rudebusch et al and that relaxing the estimation assumptions of Rudebusch et al. yields a model that is consistent with the results of Warnock and Warnock. We interpret this finding as suggesting that, right now, the literature offers no reliable guidance as to whether the foreign official purchases affect U.S. interest rates.

3 Partial Equilibrium Models

We report below the specifications and results from three partial-equilibrium models that abstract from no-arbitrage considerations; we have developed and estimated latent-factor models and affine (no-arbitrage) models but the results are too tentative to report here.

3.1 Specifications

3.1.1 Preferred Habitat

This framework focuses on explaining the 10-year Treasury yield. To this end, we re-formulated the W&W model as autoregressive distributed lag of order 1

$$\begin{aligned} R_{120,t} &= \alpha + \beta(L) \cdot R_{ff,t} + \varepsilon(L) \cdot R^{€}_{10,t} + \gamma(L) \cdot Y^e_t + \mu(L) \cdot \pi^e_{t+1} \\ &\quad + \eta(L) \cdot F_t + \varphi \cdot R_{120,t-1} + u_t,\ u_t \tilde{} IN(0, \sigma^2). \end{aligned} \tag{6}$$

where $R^{€}_{10}$ is the 10-year euro nominal interest rate and F is foreign holdings of U.S. securities.

3.1.2 Johansen's Method and the Yield Curve

This method argues that changes in Treasury yields owe to short-run dynamics and an adjustment to the long-run yield curve. This view is implemented as

$$\begin{pmatrix} \Delta R_{120,t} \\ \Delta R_{84,t} \\ \Delta R_{60,t} \\ \Delta R_{36,t} \\ \Delta R_{24,t} \\ \Delta R_{12,t} \\ \Delta R_{1,t} \\ \Delta R_{ff,t} \end{pmatrix} \equiv \Delta \mathbf{R}_t = \underbrace{\sum_{k=1}^{2} \underbrace{\Gamma_k}_{8\times 8} \cdot \Delta \mathbf{R}_{t-j}}_{\textit{short run dynamics}} + \underbrace{\underset{8\times 13}{\Pi} \cdot \underset{13\times 1}{\mathbf{X}_{t-1}}}_{\textit{adjustment to long run}} + \underset{8\times 1}{\mathbf{v}_t}, \tag{7}$$

where $\mathbf{X}_t' = \begin{pmatrix} \mathbf{R}_t & R^{€}_{10,t} & F_t & \pi^e_{t+1} & Y^e_t & 1 \end{pmatrix}$, and $\mathbf{v}_t \tilde{} IN(0, \underset{8\times 8}{\Omega})$. This method recognizes the interdependencies among Treasury yields, differentiates between short-run dynamics and long-run adjustment, and avoids simultaneity biases.[3]

We tested the rank of Π using the Trace and Max tests, both with and without correction for degrees of freedom; the results indicate that one cannot reject the hypothesis that the rank of Π is at most seven, meaning that there are seven cointegration vectors. Given this result, we express Π as

$$\Pi = \underset{8\times 7}{\boldsymbol{\alpha}} \cdot \underset{7\times 13}{\boldsymbol{\beta}}', \tag{8}$$

where

$$\boldsymbol{\beta}' = \begin{pmatrix} 1 & \beta_{1,2} & \beta_{1,3} & \beta_{1,4} & \beta_{1,5} & \beta_{1,6} & \beta_{1,7} & \beta_{1,8} & \cdots & \beta_{1,13} \\ \beta_{2,1} & 1 & \beta_{2,3} & \beta_{2,4} & \beta_{2,5} & \beta_{2,6} & \beta_{2,7} & \beta_{2,8} & \cdots & \beta_{2,13} \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ \beta_{7,1} & \beta_{7,2} & \beta_{7,3} & \beta_{7,4} & \beta_{7,5} & \beta_{7,6} & 1 & \beta_{7,8} & \cdots & \beta_{7,13} \end{pmatrix} = \begin{pmatrix} \boldsymbol{\beta}_1' \\ \boldsymbol{\beta}_2' \\ \vdots \\ \boldsymbol{\beta}_7' \end{pmatrix}$$

and

$$\boldsymbol{\alpha} = \begin{pmatrix} \alpha_{11} & \cdots & \alpha_{87} \\ \alpha_{21} & \cdots & \alpha_{87} \\ \vdots & \vdots & \vdots \\ \alpha_{81} & \cdots & \alpha_{87} \end{pmatrix}.$$

Because there are more $\alpha's$ and $\beta's$ than the number of elements of Π, we need to address the issue of identification. We were not able to get satisfactory results with various schemes, either from a statistical standpoint or from an economic viewpoint. Thus we pursued the scheme offered by the Term-premiun hypothesis, equation (10) above. The scheme assumes that which implies that the yield curve is

$$R_{n,t} = \beta_{n,8} \cdot R_{ff,t} + \ell_n, \tag{9}$$

where $\beta_{n,8}$ is the pass-through coefficient of the federal funds rate to the n-month Treasury yield and ℓ_n is the liquidity premium for yields of $n-$months.

[3] For choosing the number of lags, we began with six lags and then tested for fewer lags.

To allow a role for foreign considerations in influencing U.S. Treasury yields, we assumed that

$$\ell_{nt} = \lambda_{n0} + \lambda_{n1} \cdot R^{€}_{10,t} + \lambda_{n2} \cdot F_t + \lambda_{n3} \cdot \pi^e_{t+1} + \lambda_{n4} \cdot Y^e_{t+1}.$$

Intuitively, changes in $R^{€}_{10}$ might affect the term premia to the extent that U.S. and foreign bonds are imperfect substitutes for each other. Similarly, the inclusion of F recognizes that foreign investors might have different degrees of substitutability among Treasury securities than U.S. investors. If $\lambda_{n1} = \lambda_{n2} = 0$, then foreign considerations are not relevant for the U.S. term structure.

Given these assumptions, the resulting term structure is

$$R_{n,t} = R_{ff,t} + \lambda_{n0} + \lambda_{n1} \cdot R^{€}_{10,t} + \lambda_{n2} \cdot F_t + \lambda_{n3} \cdot \pi^e_{t+1} + \lambda_{n4} \cdot \pi^e_{t+1}. \tag{10}$$

We assumed that the above equation holds in the long-run and not minute by minute. What is needed is a method to estimate the λ's and to separate short-run dynamics from adjustment to the long-run yield curve.

$$\begin{pmatrix} \beta_1' \\ \beta_2' \\ \vdots \\ \beta_7' \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & -\beta_{1,8} & -\lambda_{120,0} & -\lambda_{120,1} & \cdots & -\lambda_{120,4} \\ 0 & 1 & 0 & 0 & 0 & 0 & -\beta_{2,8} & -\lambda_{84,0} & -\lambda_{84,1} & \cdots & -\lambda_{84,4} \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & 0 & 0 & 1 & -\beta_{7,8} & -\lambda_{12,0} & -\lambda_{12,1} & \cdots & -\lambda_{12,4} \end{pmatrix}. \tag{11}$$

Though we are imposing, instead of testing, the term hypothesis, we have not imposed any restrictions about the parameters of the term functions. Even so, this scheme does not generate enough parameter restrictions to identify the $\beta's$ and the $\alpha's$. Thus we generated additional identifying restrictions on α by assuming that $R_{ff,t}$ is weakly exogenous ($\alpha_{8j} = 0$ for all j) and that each R_n reacts to one cointegration vector, instead of seven. With these assumptions, we expressed $\boldsymbol{\alpha}$ as

$$\boldsymbol{\alpha} = \begin{pmatrix} \alpha_{11} & 0 & 0 & \cdots & 0 \\ 0 & \alpha_{22} & 0 & \cdots & 0 \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & \cdots & \alpha_{77} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}. \tag{12}$$

3.1.3 Koopman's Method and the Yield Curve

We model Treasury yields as being driven by two common factors and exogenous variables. Following Koopman, we use a recursive model for U.S. yields:

$$R_{1,t} = R_{1,t-1} + \sum_{j=1}^{K} \phi_{1,j} \cdot X_{j,t} + \eta_{1,t}, \; \eta_{1t} \tilde{} N(0, \sigma_{\eta,1}) \tag{13}$$

$$R_{12,t} = R_{12,t-1} + \sum_{j=1}^{K} \phi_{12,j} \cdot X_{jt} + \eta_{12,t}, \; \eta_{2t} \tilde{} N(0, \sigma_{\eta,2}) \tag{14}$$

$$R_{n,t} = (\mu_n + \lambda_{n1} \cdot R_{1,t} + \lambda_{n2} \cdot R_{12,t}) + \sum_{j=1}^{K} \phi_{nj} \cdot X_{j,t} + \varepsilon_{nt}, \; \varepsilon_{n,t} \tilde{} N(0, \sigma_{\varepsilon,n}); \; n > 12 \tag{15}$$

where

R_n is the n-month nominal Treasury yield

$\phi_{n,j}$ coefficient of the jth exogenous variable in the equation for R_n

X_j jth exogenous variable, $j = 1, ...K$

μ_n is an intercept to be estimated

$\lambda_{n,1}$, $\lambda_{n,2}$ constant factor loadings, to be estimated

$E(\eta_{1t} \cdot \eta_{2t}) = \sigma_{\eta,12}$ and $E(\varepsilon_{nt} \cdot \varepsilon_{ft}) = 0$.

This approach has several advantages. First, yields are endogenous and related to each other even if exogenous variables were irrelevant for them ($\phi_{nj} = 0$). Second, the modeling embodies the finding that nominal yields are integrated of order one. Specifically, equations (21) and (22) assume that the *changes* in $R_{1,t}$ and $R_{12,t}$ respond to exogenous variables. These exogenous variables need also to be cointegrated among themselves with one cointegration vector at most.[4] Further, the equation for R_n can be re-arranged as

$$R_{n,t} - (\mu_n + \lambda_{n1} \cdot R_{1,t} + \lambda_{n2} \cdot R_{12,t}) = \sum_{j=1}^{K} \phi_{nj} \cdot X_{jt} + \varepsilon_{nt};\ n > 12 \qquad (16)$$

where, following Koopman, the left-hand side represents deviations from the cointegrating relation between R_n and the linear combination of $R_{1,t}$ and $R_{12,t}$; these deviations respond to changes in exogenous variables. We assume five exogenous variables: R_{ff}, R^{e}_{10}, F, Y^e, and π^e_{t+1}.

3.2 Implementation

- Estimation
  - Sample: monthly from August 1987 to June 2007
  - Single-equation with OLS
  - Vector error-correction with Johansen's FIML
  - Observed Common Factors with Koopman's FIML
- Measures of foreign holdings, expressed as percentage of potential nominal GDP:
  - *FOI*: Bertaut and Tryon measure (BT) for official investors' holdings of U.S. Treasuries (Bills plus bonds plus notes plus indexed bonds)
  - *FTOT*: BT measure for the aggregate of foreign official and foreign private investors' holdings of U.S. Treasuries
  - *FRBNY*: Custodial Holdings at the New York Fed
  - 12-month changes in each of these three measures: $\Delta_{12}FRBNY$, $\Delta_{12}FOI$, $\Delta_{12}FTOT$
- Evaluation:

[4] Results, not shown here, cannot reject hypothesis of one cointegration vector among exogenous variables.

- Tests of properties of the residuals: normality, serial independence, homoskedasticity
- Out-of-sample Forecasts: Dynamic simulation from July 2007 to December 2008 for all 18 models along with forecasts for time-series models: AR(2), Random Walk, VAR(2), Common Factor with no exogenous variables.

3.3 Results

Table 5 shows the long-run coefficients along with the results evaluating the properties of the residuals and out-of-sample forecast accuracy; the focus is on the 10-year Treasury yield.

1. Column 1 shows that the effect of an increase of 100 basis points in the federal funds rate is sensitive to the modeling of the choice of model curve: 20 basis points for the Johansen model and no effect for the other formulations.

2. Column 2 shows that an increase of 100 basis points in the 10-year euro rate raises the 10-year U.S. Treasury yield regardless of model specification; the effect ranges from 11 basis points to 60 basis points, depending on the measure of foreign holdings. For a given measure of foreign holdings, however, the estimated effect is substantially greater for our term-structure models than for our preferred habitat model.

3. Column 3 shows that the effect of an increase of 100 basis points in foreign holdings on the 10-year U.S. Treasury yield depends critically on the choices of model and measures of foreign holdings. This sensitivity replicates the tension found in the replication section: minor changes to the model design translate into large changes in model estimates.

4. Columns 4-6 show that the choice of model has also implications for the properties of the residuals. Only the preferred habitat and Johansen formulations have residuals that are serially independent and homoskedastic; normality is normally rejected.

5. Column 7 shows the root mean squared forecast error from dynamic (s-step) simulations from July 2007 to December 2008; note that the second forecast horizon includes the Lehman Brothers failure.

6. Column 9 shows the ratio of the model's RSMFE to the lowest RMSFE from the four time-series models.

7. Out of the 18 models, only four preferred-habitat models are congruent: the residuals in all remaining models are not white noise. Out of these four models, the ones with the lowest RSMFE use the level of foreign holdings as measured by Bertaut and Tryon (2007). For these models, an increase in foreign holdings of 100 basis points lowers the 10-year U.S. Treasury by a bit over 20 basis points.

4 General Equilibrium Model

To design the general equilibrium model, we exploit the main result from table 5: that the best forecasting and congruent model of the 10-year U.S. Treasury uses the preferred habitat model with Bertaut and Tryon measures of foreign holdings.

4.1 Specification

- Two countries with symmetric relations but different parameters
- Short-term interest rate depends on inflation and output:

$$
\begin{aligned}
R_{1,t} &= \rho_i \cdot R_{1,t-1} + (1-\rho_i) \cdot \left[\psi_\pi \cdot \pi_t + \psi_y \cdot Y_t\right] + \varepsilon_{i1,t} \\
R^*_{1,t} &= \rho^*_i \cdot R^*_{1,t-1} + (1-\rho^*_i) \cdot \left[\psi^*_\pi \cdot \pi^*_t + \psi^*_y \cdot Y^*_t\right] + \varepsilon^*_{i1,t}
\end{aligned}
$$

- Inflation depends on expected inflation, past inflation, and output:

$$
\begin{aligned}
\pi_t &= \mu_\pi \cdot E_t\pi_{t+1} + (1-\mu_\pi) \cdot \left[\alpha_{\pi 1} \cdot \pi_{t-1} + \alpha_{\pi 2} \cdot \pi_{t-2}\right] + \alpha_y \cdot Y_{t-1} + \varepsilon_{\pi,t} \\
\pi^*_t &= \mu_{\pi^*} \cdot E_t\pi^*_{t+1} + (1-\mu_{\pi^*}) \cdot \left[\alpha_{\pi^*1} \cdot \pi^*_{t-1} + \alpha_{\pi^*2} \cdot \pi^*_{t-2}\right] + \alpha^*_y \cdot Y^*_{t-1} + \varepsilon^*_{\pi,t}
\end{aligned}
$$

- Output depends on expected future output, past output, and the ex-ante real interest rate:

$$
\begin{aligned}
Y_t &= \beta_y \cdot E_tY_{t+1} + (1-\beta_y) \cdot \left[\beta_{y1} \cdot Y_{t-1} + \beta_{y2} \cdot Y_{t-2}\right] + \beta_r \cdot \left[R_{1,t} - E_t\pi_{t+1}\right] + \varepsilon_{y,t} \\
Y^*_t &= \beta_{y^*} \cdot E_tY^*_{t+1} + (1-\beta_{y^*}) \cdot \left[\beta_{y1^*} \cdot Y_{t-1} + \beta_{y2^*} \cdot Y_{t-2}\right] + \beta_{r^*} \cdot \left[R^*_{1,t} - E_t\pi^*_{t+1}\right] + \varepsilon^*_{y,t}
\end{aligned}
$$

- 10-year Bond Rate depends on the short-term rate, the expected inflation, foreign holdings of bonds, and a risk premium:

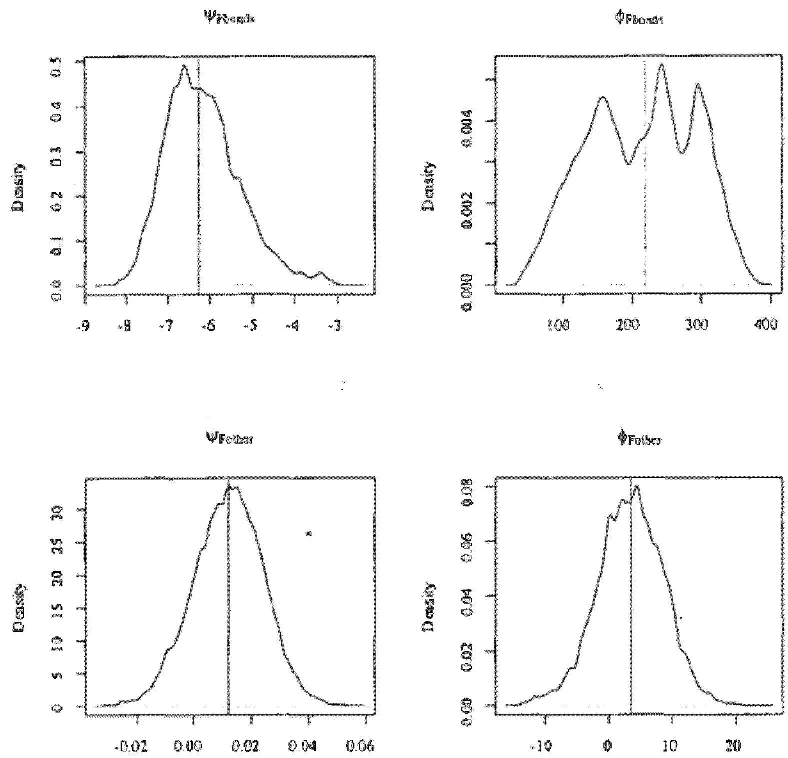
$$
\begin{aligned}
R_{120,t} &= R_{1t} + E_t\pi_{t+1} + \psi_{Fbonds} \cdot F^{bonds}_t + rp_t \\
rp_t &= \rho_{rp} \cdot rp_{t-1} + \varepsilon_{rp,t} \\
R^*_{120,t} &= R^*_{1t} + E_t\pi^*_{t+1} + \psi_{Fother} \cdot F^{other}_t + rp^*_t \\
rp^*_t &= \rho_{rp^*} \cdot rp^*_{t-1} + \varepsilon_{rp^*,t}
\end{aligned}
$$

- Foreign holdings of U.S. Treasury bonds depend on the re-allocation of wealth and real-interest rate differentials:

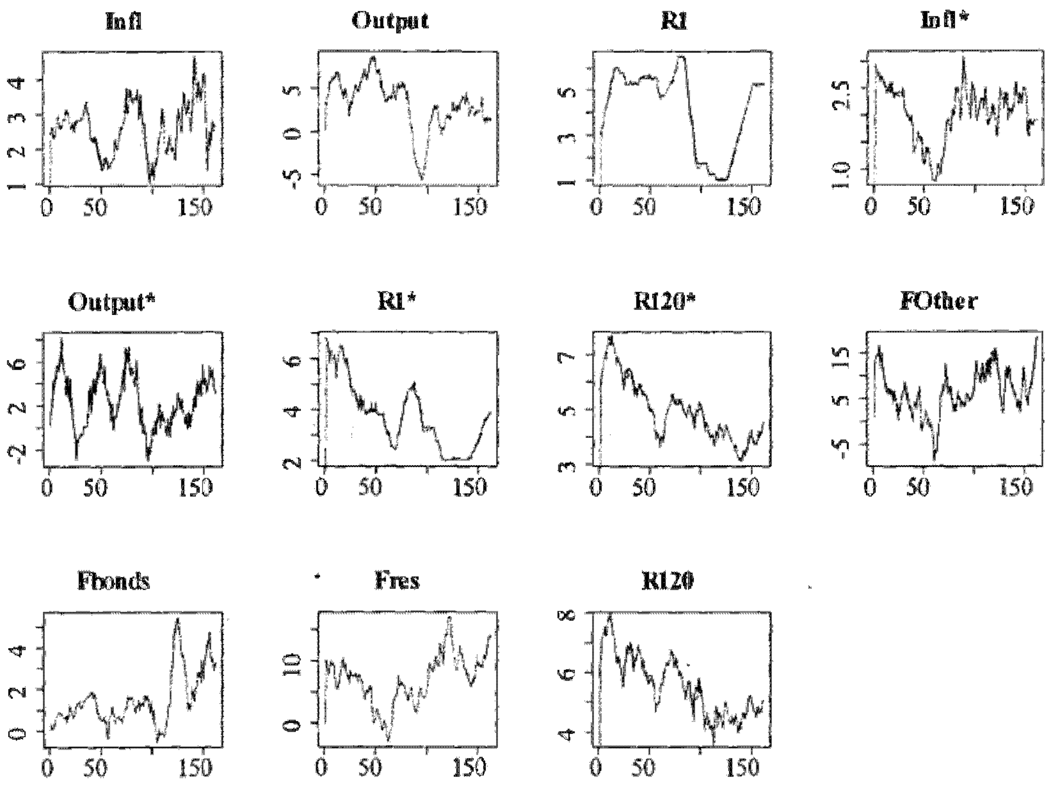
$$
\begin{aligned}
F^{bonds}_t &= \gamma_{Fbonds} \cdot F^{bonds}_{t-1} + (1-\gamma_{Fbonds}) \cdot \left[\lambda_{Fbonds} \cdot \Delta Fres_t + \phi_{Fbonds}(r_{120,t} - r^*_{120,t})\right] + \varepsilon_{Fbonds,t} \\
Fres_t &= \rho_{Fres} \cdot Fres_{t-1} + \varepsilon_{Fres,t} \\
r_{120,t} &= R_{120,t} - E_t\pi_{t+1} \\
r^*_{120,t} &= R^*_{120,t} - E_t\pi^*_{t+1} \\
F^{other}_t &= \gamma_{Fother} \cdot F^{other}_{t-1} + (1-\gamma_{Fother}) \cdot \left[\lambda_{Fother} \cdot \Delta Fres + \phi_{Fother}(r_{120,t} - r^*_{120,t})\right] + \varepsilon_{Fother,t}
\end{aligned}
$$

- Parameters of interest
  - ψ_{Fother} effect of FOther on foreign long rate (-)
  - ψ_{Fbonds} effect of FBonds on U.S. long rate (-)
  - ϕ_{Fother} effect of U.S.-foreign long-term interest rate differential on Fother (-)
  - ϕ_{Fbonds} effect of U.S.-foreign long-term interest rate differential on Fbonds (+)

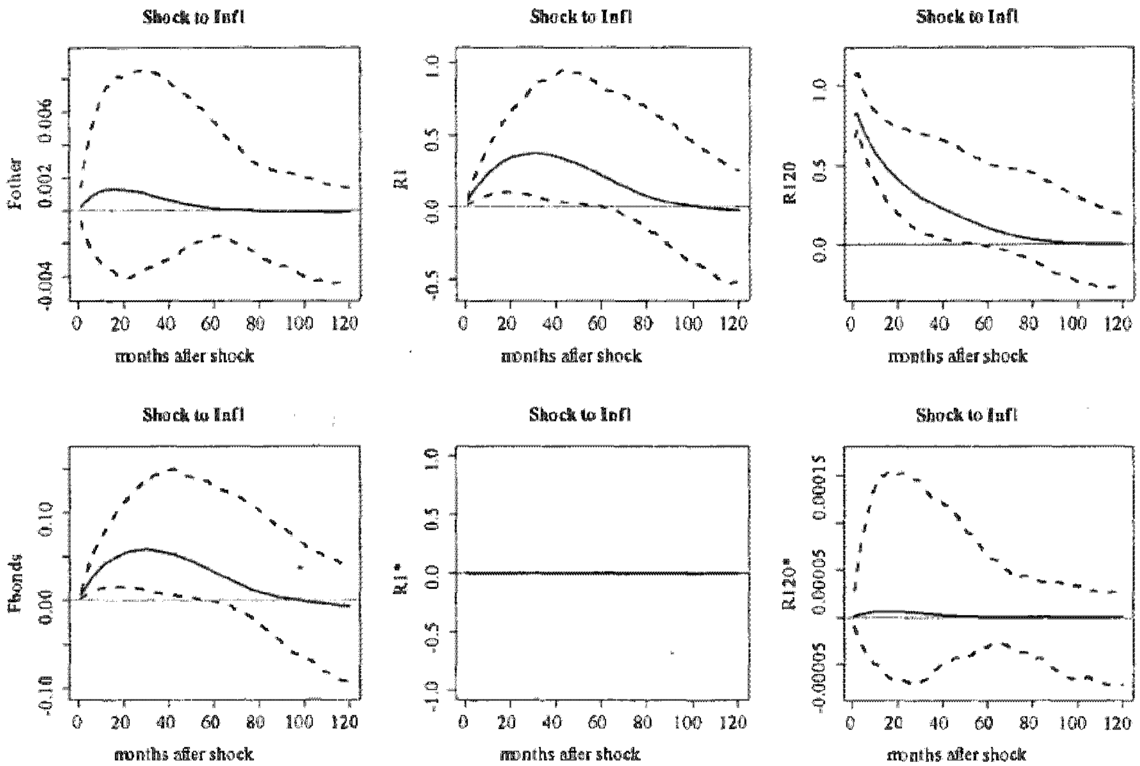
4.2 Results



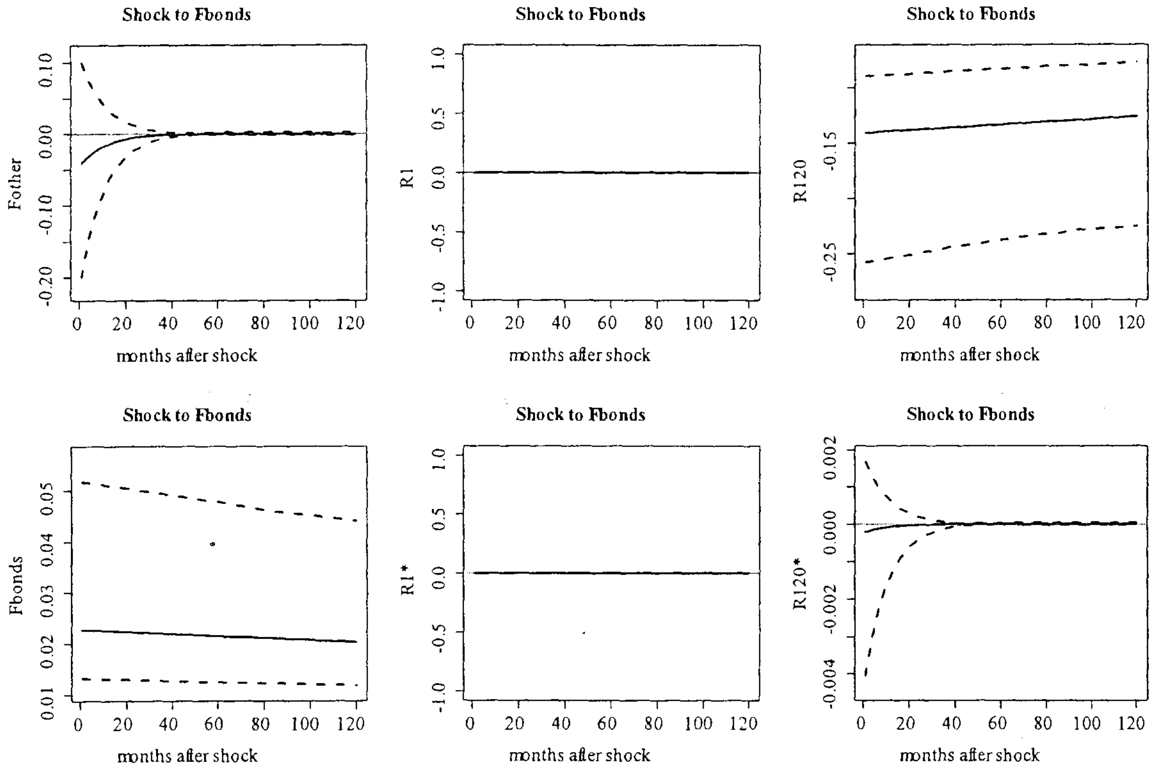
Markov-Chain Monte Carlo Estimates



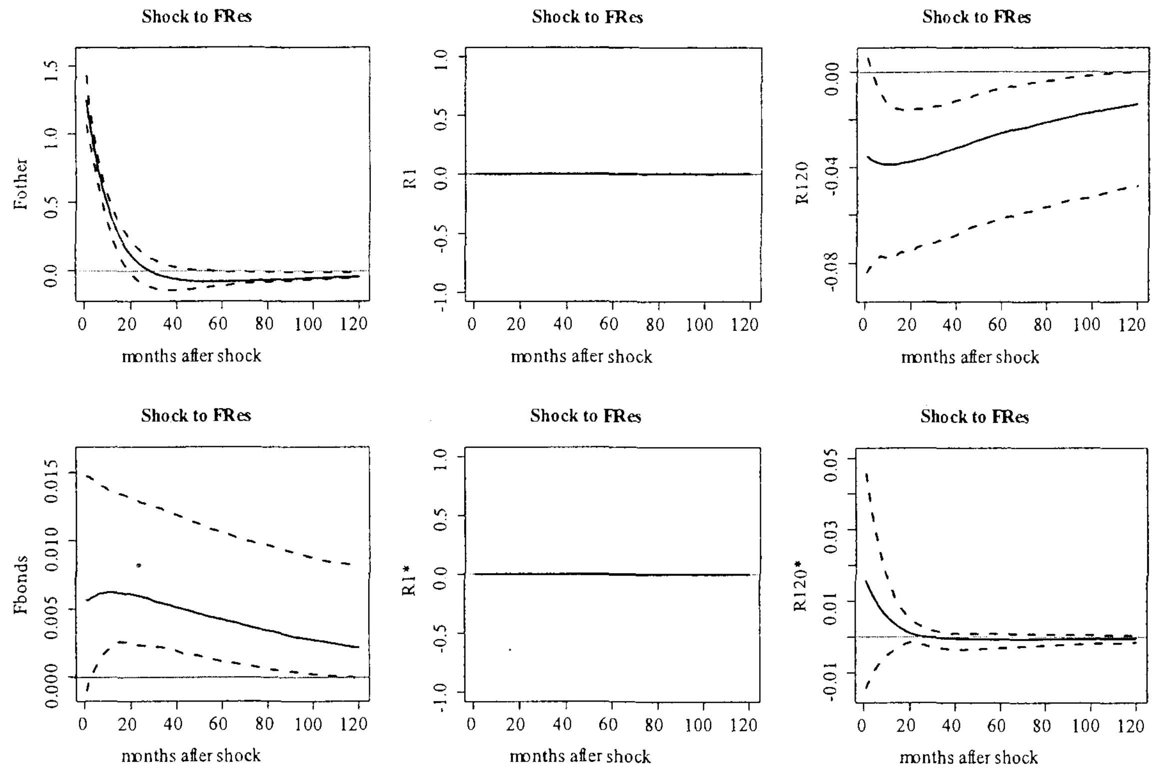
Fitted Values with Kalman Filter Estimates



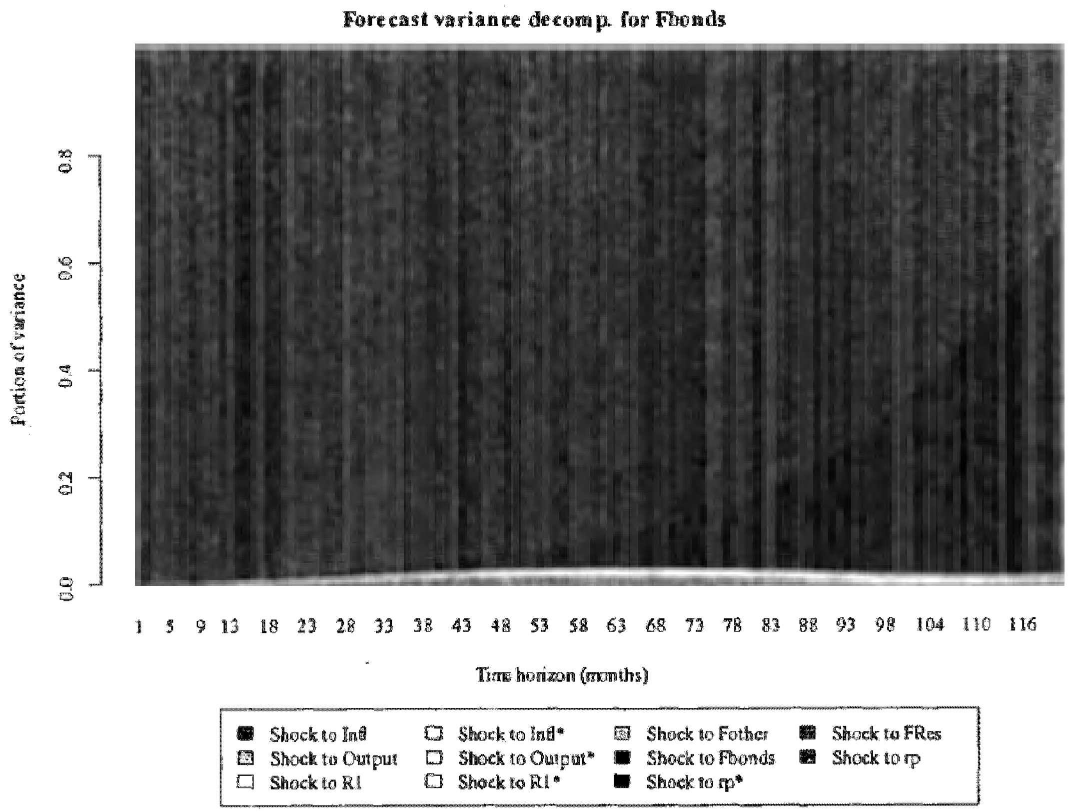
Impulse Response Function to Inflation

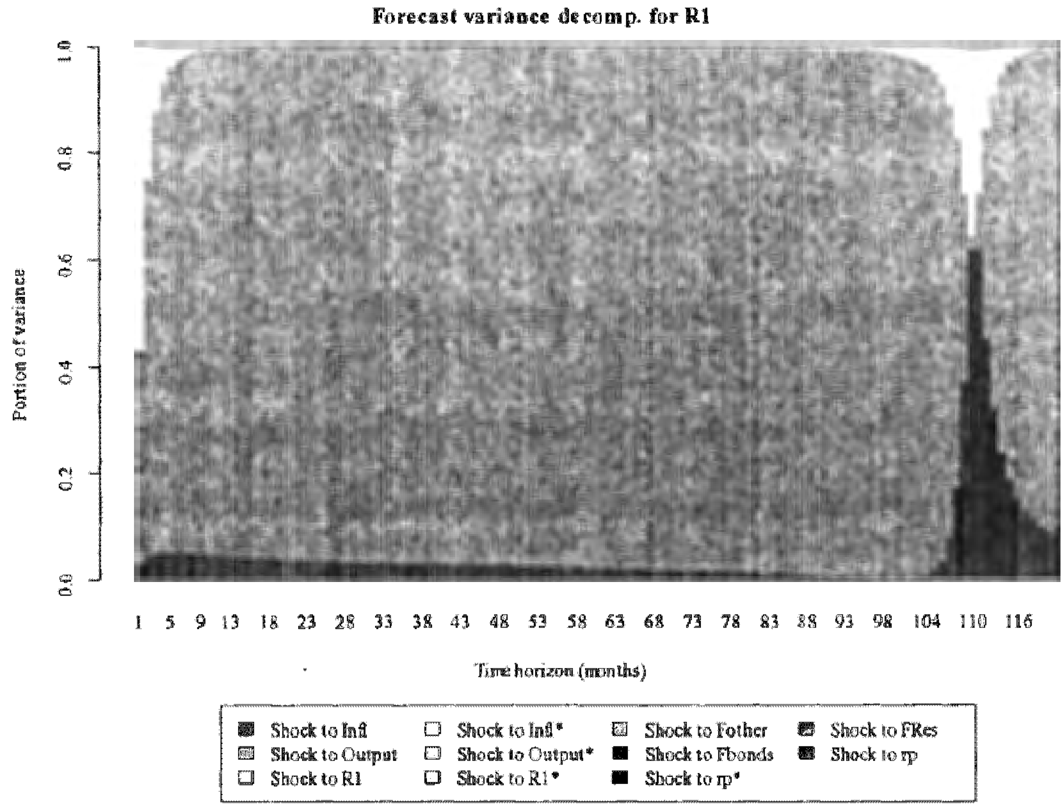


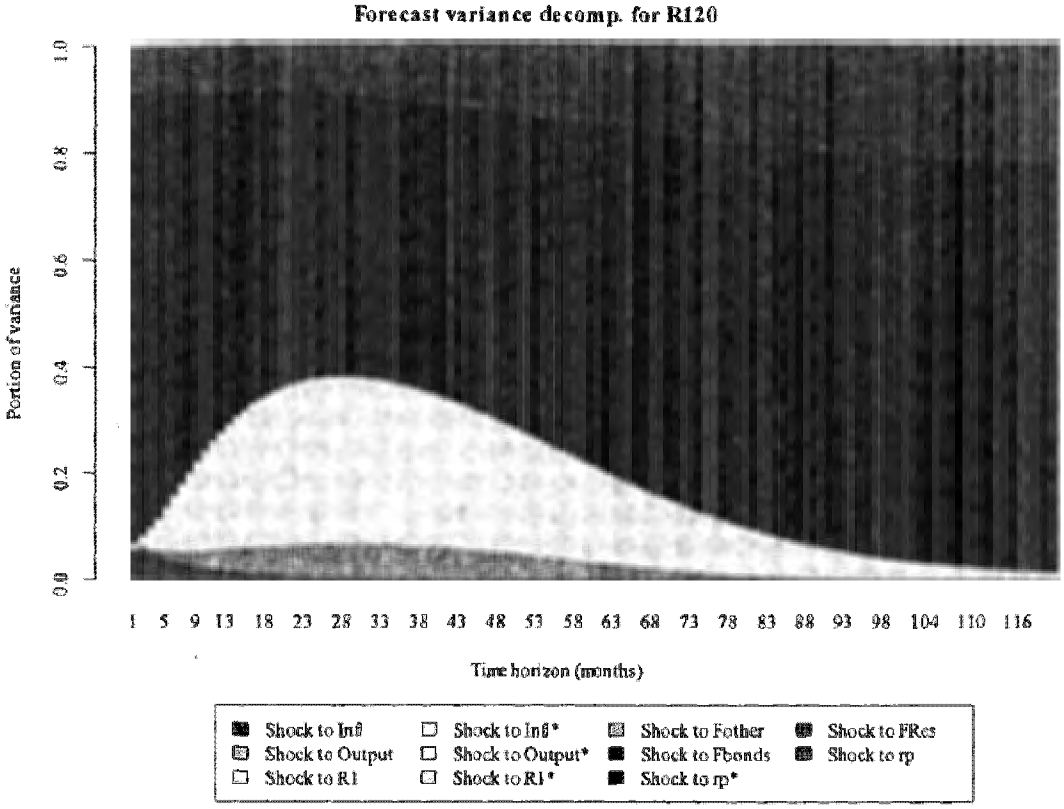
Impulse Response Functions: Shock to Fbonds



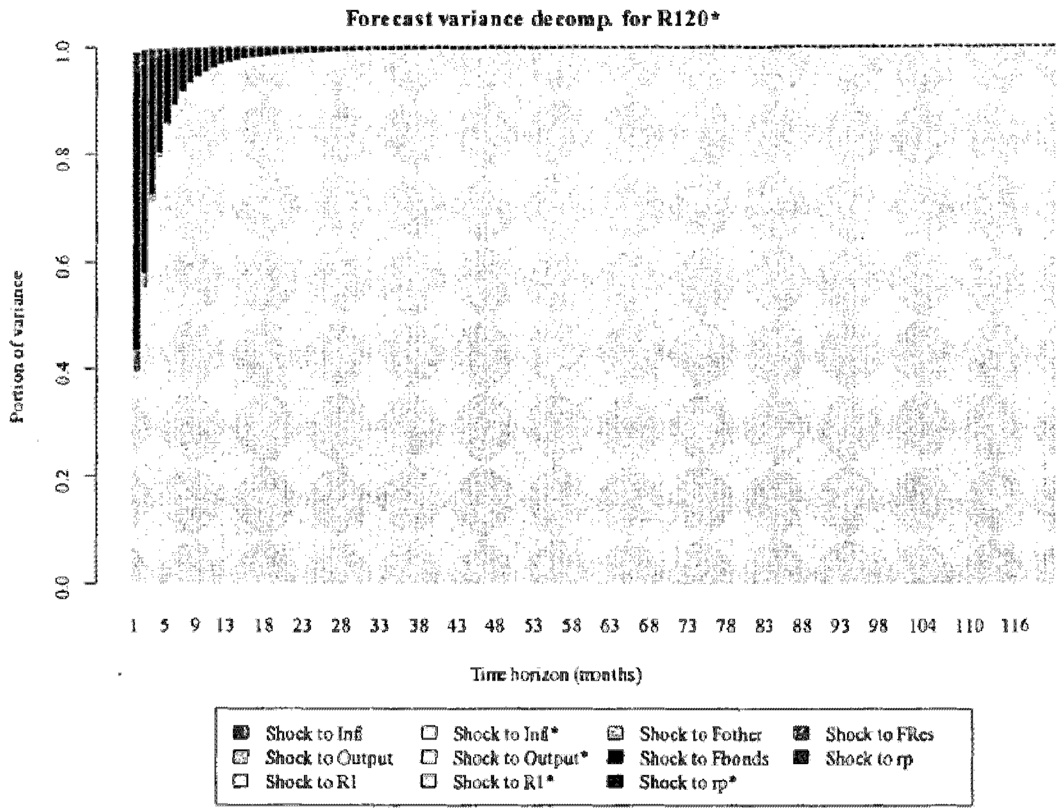
Impulse Response Functions: Shock to FRes


Forecast variance decomp. for Fbonds
Portion of variance
0.0
0.2
0.4
0.6
0.8
1 5 9 13 18 23 28 33 38 43 48 53 58 63 68 73 78 83 88 93 98 104 110 116
Time horizon (months)
Shock to Infl
Shock to Output
Shock to R1
Shock to Infl*
Shock to Output*
Shock to R1*
Shock to Fother
Shock to Fbonds
Shock to rp*
Shock to FRes
Shock to rp


Forecast variance decomp. for R1
Portion of variance
0.0
0.2
0.4
0.6
0.8
1.0
1 5 9 13 18 23 28 33 38 43 48 53 58 63 68 73 78 83 88 93 98 104 110 116
Time horizon (months)
Shock to Infl
Shock to Infl*
Shock to Fother
Shock to FRes
Shock to Output
Shock to Output*
Shock to Fbonds
Shock to rp
Shock to R1
Shock to R1*
Shock to rp*



Forecast variance decomp. for R120
Portion of variance
0.0
0.2
0.4
0.6
0.8
1.0
1 5 9 13 18 23 28 33 38 43 48 53 58 63 68 73 78 83 88 93 98 104 110 116
Time horizon (months)
Shock to Infl
Shock to Output
Shock to R1
Shock to Infl*
Shock to Output*
Shock to R1*
Shock to Fother
Shock to Fbonds
Shock to rp*
Shock to FRes
Shock to rp


Forecast variance decomp. for R120*
Portion of variance
0.0
0.2
0.4
0.6
0.8
1.0
1 5 9 13 18 23 28 33 38 43 48 53 58 63 68 73 78 83 88 93 98 104 110 116
Time horizon (months)
Shock to Infl
Shock to Output
Shock to R1
Shock to Infl*
Shock to Output*
Shock to R1*
Shock to Fother
Shock to Fbonds
Shock to rp*
Shock to FRes
Shock to rp

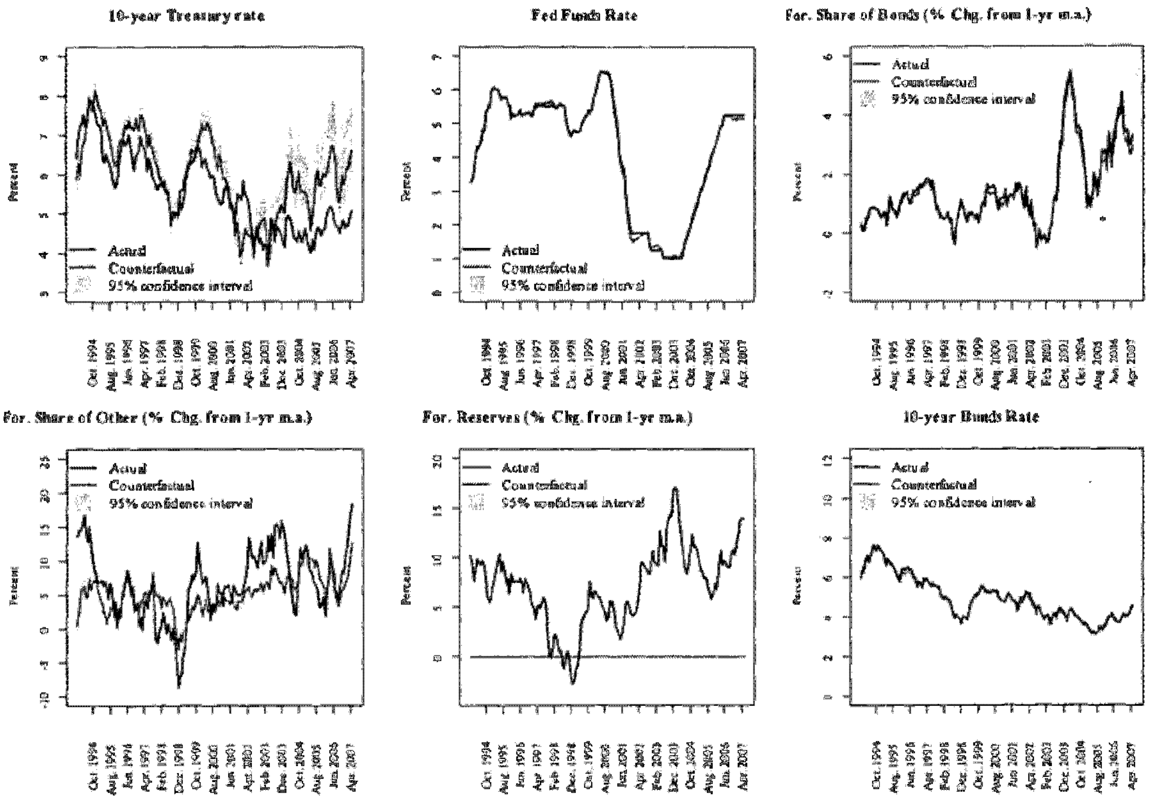
Counterfactual Analysis

What would have happened to U.S. interest rates if foreign official reserves had not grown at all during the period, and if there had been no exogenous shocks to Fbonds and FRes?

Recover time-series of shocks from Kalman filter

Set FRES and Fbonds shocks to zero.

Compare actual versus model-implied paths for state variables.

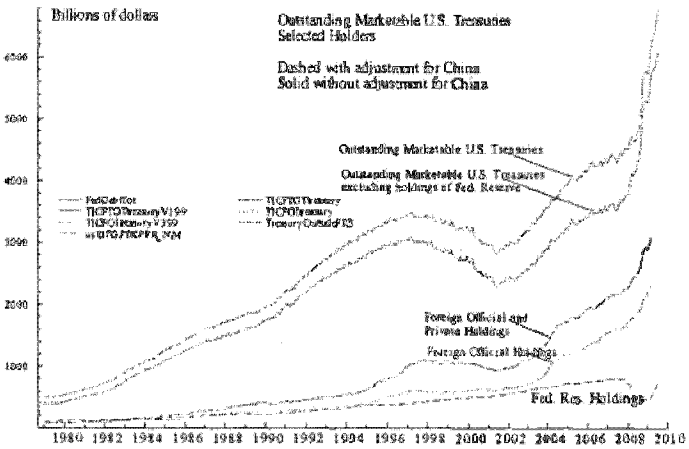


5 Data for Partial Equilibrium Models

5.1 Measuring Foreign Holdings of U.S. Treasuries for Empirical Work

5.1.1 Marketable U.S. Treasuries

- The raw data appear in TREASURY BULLETIN, MONTHLY STATEMENT OF THE PUBLIC DEBT http://www.treasurydirect.gov/govt/reports/pd/mspd/mspd.htm
- Following Treasury's definition, we computed U.S. marketable Treasuries as the sum of the face value of Bonds, Bills, Notes, and Inflation-indexed securities.
- Data for Fed's holdings of U.S. Treasuries are available from The Board of Governors's H.4.1 Release.
- The figure below reports the two measures of marketable U.S. Treasuries; the figure also shows holdings of these securities by the Federal Reserve and by foreigners



5.1.2 Foreign Holdings of U.S. Treasuries

There are several issues associated with the measurement of foreign holdings of U.S. securities:

- Who is the relevant holder of F : Foreign officials or foreign official and private?
- How can one obtain benchmark consistent data?
- What is the data source: Treasury's International Capital System (TIC) or FRBNY?
- What should be the relevant scaling variable: Outstanding Treasuries and Potential GDP?

Benchmark Consistent Positions We are using the Bertaut-Tryon measures of benchmark consistent positions. Greatly simplified, their method reconciles changes in recorded annual positions with the recorded flows and valuation changes. Greatly simplified, the position at time $t = 1$ is

$$P_1 = P_0 + F_1 + V_1$$

where P stands for the recorded position, F stands for flow, and V stands for valuation change; we am ignoring the role of measurement error. The position in subsequent dates is obtained by forward recursion:

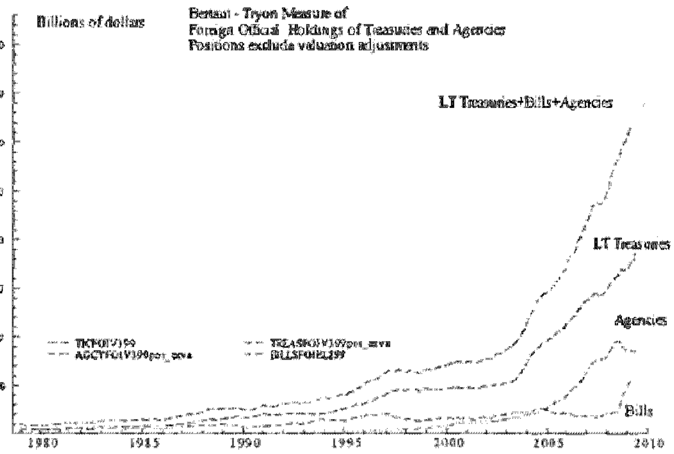
$$\begin{aligned} P_2 &= P_1 + F_2 + V_2 \\ &= P_0 + (F_1 + F_2) + (V_1 + V_2) \\ &\vdots \\ P_t &= P_0 + \sum_{j=1}^{t} F_j + \sum_{j=1}^{t} V_j. \end{aligned}$$

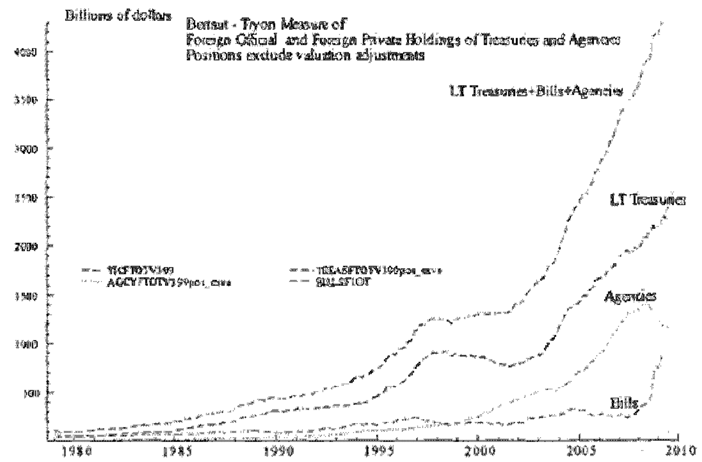
So the recorded position at time t is the sum of an initial condition, cumulated flows, and cumulated valuation changes. To measure the position excluding valuation adjustments we subtract the cumulated valuation adjustments from the recorded position:

$$P_t^{\beta\tau} = P_t - \sum_{j=1}^{t} V_j = P_0 + \sum_{j=1}^{t} F_j,$$

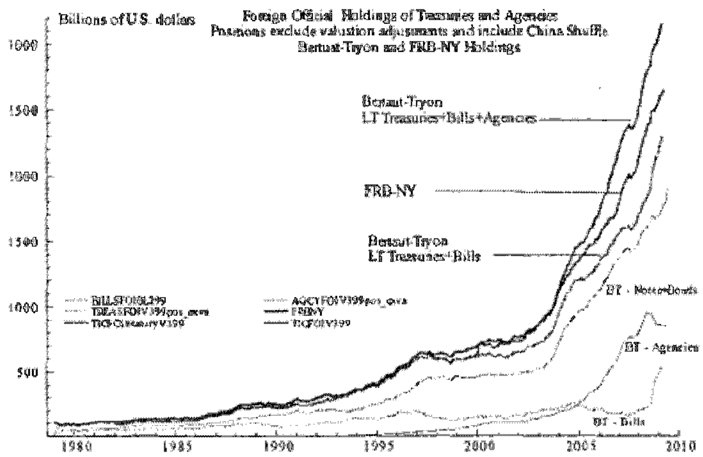
which equals the initial position plus cumulated flows.

Bertaut-Tryon Measures of Foreign Holdings

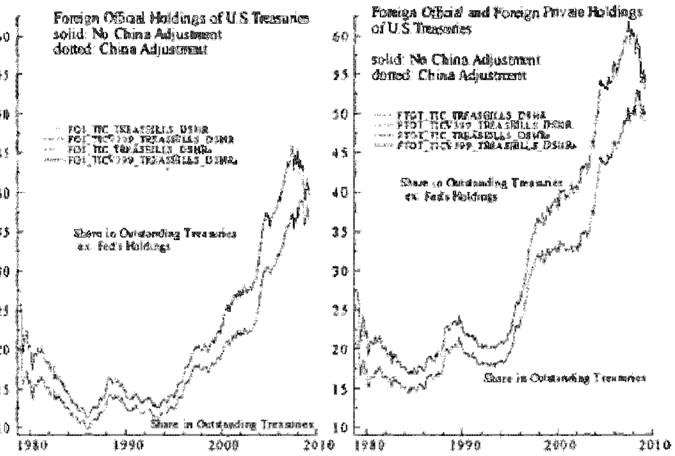




Foreign Official Custodial Holdings at FRBNY Data for all financial holdings of foreign official and international institutions held in custody at FRBNY; the primary source is the Board of Governors's H.4.1 Release The graph below compares the FRBNY measure against Bertaut-Tryon estimates for both official and official and private.

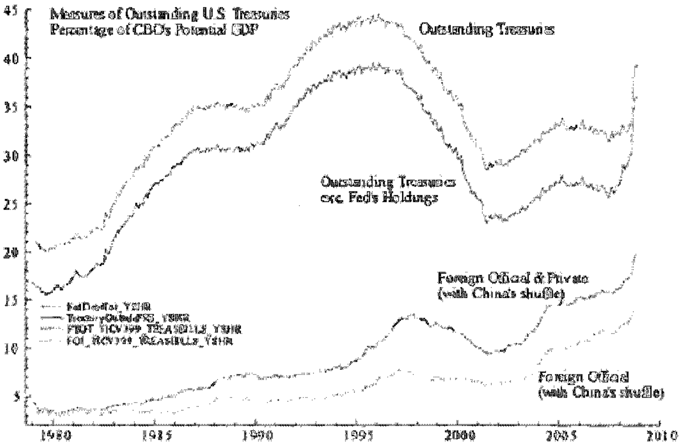


Scaling Foreign Holdings by Outstanding Marketable Treasuries The ratio of foreign holdings of U.S. Treasuries to outstanding Treasuries may be interpreted as the share of U.S. Treasuries held by foreigners. The figure below shows this ratio using foreign official and foreign total and scaling by D with and without including holdings by the Federal Reserve.



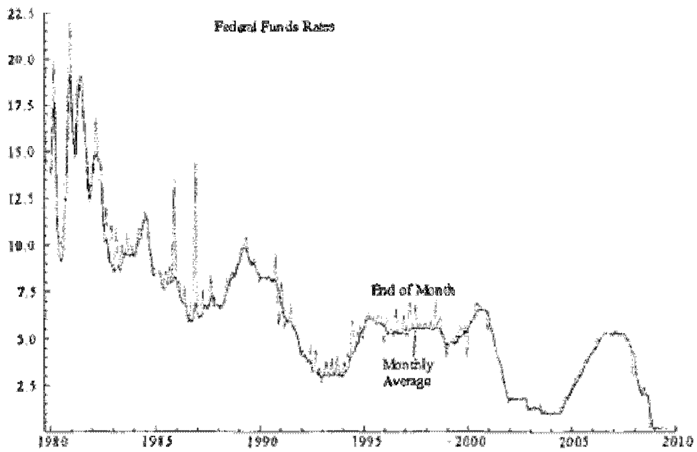
Scaling Foreign Holdings by Potential Nominal GDP However, an increase in f may arise from either an increase in F for a given D, or from a decrease in D for a given F. In either case, there is a decrease in R but the underlying force is different. Thus one might want to differentiate the effect of movements in F from the effect of movements in D. To differentiate the effects of movements in F from the effects of movements in D, we scaled F by potential income. In this formulation, the effects of movements in F on R cannot be confused with the effects of movements in D. Just as important, note that a change in F does not imply a change in D: changes in F alter the ownership composition of D but not its level.

The figure below shows the evolution of marketable outstanding U.S. Treasuries, as a percent of potential disposable income; the figure also shows holdings by foreign residents and by the Federal Reserve, both scaled by Y :

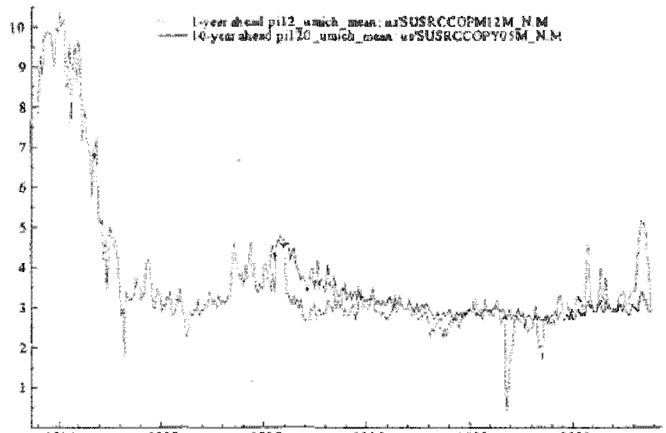


5.2 Macro Variables

Federal Funds Rates The measure corresponds to the effective federal funds rate, which is a weighted average of the reported rates at which different amounts of the day's trading through New York brokers occurs; the primary data source is Board of Governors of the Federal Reserve System H.15 Release.

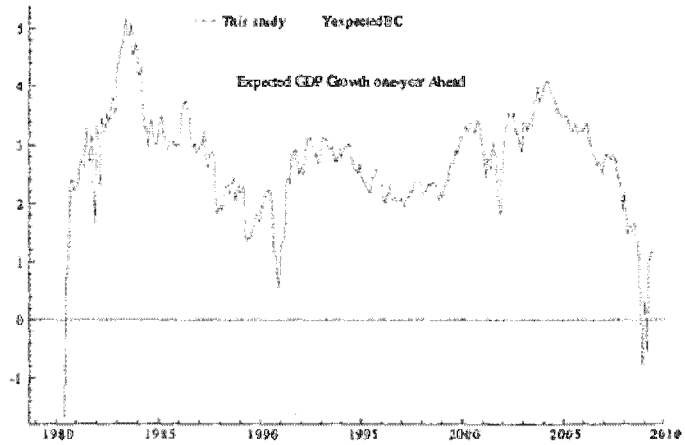


Expected Inflation (π^e_{t+10}, π^e_{t+1}) Primary source: Survey data from the University of Michigan. Figure shows the one-year and the ten-year inflation expectations (fame mnemonics)



expect various horizons.pdf

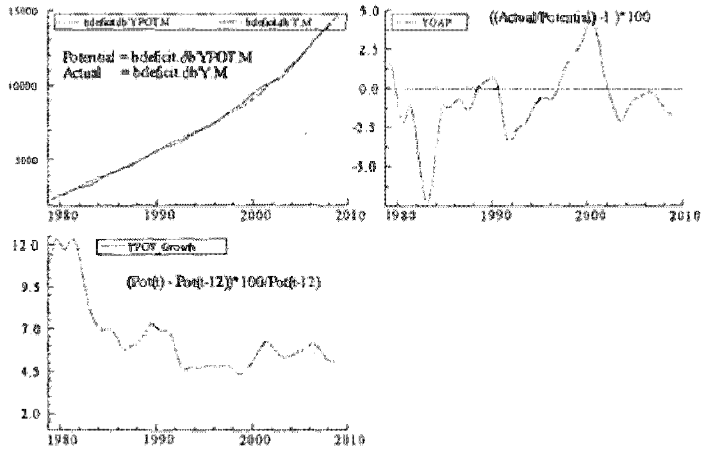
Expected Growth (Y^e) Primary source: table 3, page 5 of the Blue Chip Economic Indicators; we computed the average of these series so as to get the expected growth rate *over* the next four quarters.



Nominal GDP Cyclically Adjusted (Y) Primary source: Congressional Budget Office - Historical Budget Data; Table F-11, column S; dated March 20, 2009.

CBO estimates potential real GDP which is then used to generate the cyclically adjusted nominal GDP.

The data are annual; monthly observations are generated using Fame's cubic interpolation algorithm.



6 Data for General Equilibrium Model

Monthly data from 1/1994 - 6/2007 (162 obs.)

π_t and π_t^* : U.S. and Euro Area inflation: 12-month change in CPI index

Y_t and Y_t^* : U.S. and Euro Area output: 12-month change in Industrial Production index

$R_{1,t}^*$: U.S. short rate: Fed Funds rate

$R_{120,t}$: U.S. long rate: 10-year T-bond rate

$R_{1,t}^*$: Euro Area short rate: EONIA

$R^*_{120,t}$: Euro Area long rate: 10-year Bund rate

F^{bonds}_t : Foreign share of T-bonds: Foreign holdings of Treasury bonds (excluding valuation changes) as a share of outstanding Treasury bonds. Percent change in share from its 1-year moving average.

$Fres_t$: Total foreign reserves: From IFS database, excludes reserves of the United States (but includes foreign reserves held in the form of U.S. Treasury securities). Percent change from its 1-year moving average.

F^{other}_t : Total other reserves: Foreign official reserves other than foreign official holdings of Treasury bills, bonds, and notes. All measured at market value. Percent change from its 1-year moving average.

References

[1] Bertaut, C. and R. Tryon (2007), "Monthly Estimates of U.S. Cross-Border Positions," International Finance Discussion Paper No. 910, Federal Reserve Board.

[2] Diebold, F. and C. Li (2006), "Forecasting the Term Structure of Government Bond Yields," *Journal of Econometrics*, 130, 337-365.

[3] Diebold, F., G. Rudebusch, and S. Arouba (2006), "The Macroeconomy and the Yield Curve," *Journal of Econometrics*, 131, 309-338.

[4] Koopman, S. (2008) "Fitting the Term-Structure in STAMP 8.10," *OxMetrics News*, September, 8.

[5] Koopman, S., A. Harvey, J. Doornik, and N. Shephard, (2007), *STAMP 8*, Timberlake: London

[6] Nelson, C. and A. Siegel (1987), "A Parsimonious Modelling of Yield Curves," *Journal of Business*, 60, 473-489.

[7] Rudebusch, G., E. Swanson, and T. Wu, 2006, "The Bond Yield 'Conundrum' from a Macro-Finance Perspective," Special Issue of the Bank of Japan's *Monetary and Economic Studies*, 24, 83-128.

[8] Warnock, F. and V. Warnock, 2006, "International Capital Flows and U.S. Interest Rates," *Journal of International Money and Finance,* forthcoming.

Table 1: Estimates of W&W: Replication and Sensitivity-OLS, Jan. 1984-May 2005*

	foreign= WW data '(1)	foreign= FRBNY '(2)	foreign= WW data '(3)	foreign= FRBNY '(4)
Constant	1.174	1.054	-1.749	-1.660
SE	0.219	0.214	0.376	0.348
RFF	0.371	0.353	0.375	0.371
SEE	0.036	0.038	0.032	0.033
$\pi^e(t+10)$	0.629	0.647	1.642	1.621
SE	0.036	0.038	0.117	0.111
$\pi^e(t+1)-\pi^e(t+10)$	0.486	0.460	-0.324	-0.289
SE	0.209	0.210	0.203	0.199
$Y^e(t+1)$	0.137	0.187	0.312	0.312
SE	0.079	0.082	0.071	0.072
gov't budget surplus**	-0.134	-0.138	0.124	0.117
SE	0.031	0.031	0.039	0.039
risk premium (rp)	4.673	4.737	0.758	0.836
SE	0.796	0.800	0.817	0.811
foreign	-0.399	-0.309	0.023	-0.012
SE	0.084	0.070	0.087	0.069
Adj R2	0.754	0.751	0.938	0.938
SER	0.608	0.612	0.529	0.529
Tests of Assumptions***	0.868	0.678	0.992	0.996
Normality	0.143	0.111	0.030	0.047
Serial Independence	0.000	0.000	0.000	0.000
Homoskedasticity	0.000	0.000	0.000	0.000

* Estimated standard errors WITHOUT correction for serial dependence and heteroskedasticity

** W&W report estimates with the sign reversed

*** If entry is less than 0.05, then reject null hypothesis at the 5% level

Table 2: Replication of the Estimation Results from Tables 6 and 7 of Rudebusch, Swanson, and Wu (2006) -- 1990.m5-2005.m12

	BRS Residuals				RW Residuals			
	Bivariate		Multivariate		Bivariate		Multivariate	
	Original	Replication	Original	Replication	Original	Replication	Original	Replication
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Foreign Official Purchases	149.00	156.19	147.00	128.39	47.00	6.74	38.00	-40.02
t-stat	0.89	0.90	0.76	0.64	0.58	0.08	0.04	-0.37
Volatility of GDP Growth	--	--	15.40	10.58	--	--	3.90	3.52
t-stat			3.10	2.05			1.45	1.27
Volatility of LT Tr. Securities	--	--	1.20	1.34	--	--	0.49	0.48
t-stat			5.47	5.84			4.11	3.93
S&P 500 volatility	--	--	-0.33	0.01	--	--	-0.50	-0.50
t-stat			-0.63	0.01			-1.73	-1.67
Euro-dollar Volatility	--	--	-0.23	-0.25	--	--	-0.17	-0.15
t-stat			-1.35	-1.41			-1.83	-1.60
Core PCE Volatility	--	--	360.00	304.08	--	--	214.00	202.66
t-stat			2.18	1.76			2.39	2.19
Constant	nr	-1.55	nr	-167.45	nr	1.15	nr	-51.98
t-stat		-0.41		-7.50		0.63		-4.35
R^2	0.00	0.00	0.30	0.30	0.00	0.00	0.14	0.13
SER	nr	39.78	nr	33.89	nr	19.15	nr	18.14

nr: not reported

Table 3: Sensitivity of BRS Residuals Sum of Coefficients

	Foreign = ForPurch_Fdebtshr				Foreign = CHG12_FOI_AGTR_FDebtshr			
	No lags		With Lags		No lags		With Lags	
	'(1)	'(2)	'(3)	'(4)	'(5)	'(6)	'(7)	'(8)
Constant	-1.55	-167.45	0.70	-75.43	9.07	-131.07	4.01	-51.47
SE	3.80	22.33	2.69	24.58	3.91	27.11	2.79	25.76
BRSresiduals	--	--	0.73	0.61	--	--	0.69	0.62
SE			0.06	0.07			0.06	0.07
Foreign	156.19	128.39	-71.18	-118.77	-715.46	-532.01	-418.70	-337.60
SE	173.45	201.48	124.20	167.01	229.16	279.56	168.20	223.30
GDP_Growth_Volat	--	10.58	--	1.98	--	11.16	--	4.23
SE		5.17		4.35		5.13		4.18
MOVE	--	1.34	--	0.78	--	1.40	--	0.63
SE		0.23		0.26		0.21		0.23
S&PVolatility	--	0.01	--	-0.61	--	-0.43	--	-0.63
SE		0.55		0.53		0.49		0.43
EuroVolatility	--	-0.25	--	-0.32	--	-0.33	--	-0.33
SE		0.18		0.17		0.17		0.16
CoreVolatility	--	304.08	--	311.56	--	80.69	--	209.60
SE		172.60		148.48		192.00		156.70
Adj R2	0.00	0.27	0.52	0.61	0.04	0.29	0.54	0.61
SER	39.78	33.89	27.76	25.09	38.86	33.60	27.04	24.93
Tests of Assumptions***								
Normality	0.78	0.57	0.33	0.63	0.62	0.73	0.41	0.50
Serial Independence	0.00	0.00	0.57	0.75	0.00	0.00	0.67	0.96
Homoskedasticity	0.00	0.00	0.80	0.77	0.00	0.00	0.50	0.85

* Estimated standard errors WITHOUT correction for serial dependence and heteroskedasticity

** W&W report estimates with the sign reversed

*** If entry is less than 0.05, then reject null hypothesis at the 5% level

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Table 4: Sensitivity of RW Residuals Sum of Coefficients

	Foreign = ForPurch_Fdebtshr				Foreign = CHG12_FOI_AGTR_FDebtshr			
	No lags		With Lags		No lags		With Lags	
	'(1)	'(2)	'(3)	'(4)	'(5)	'(6)	'(7)	'(8)
Constant	1.15	-51.98	0.53	-6.53	9.28	7.51	2.12	-2.35
SE	1.83	11.95	0.93	8.15	1.73	12.73	1.04	8.66
RWresiduals	--	--	0.87	0.87	--	--	0.83	0.83
SE			0.04	0.04			0.04	0.05
Foreign	6.74	-40.02	-38.50	-9.39	-683.64	-1003.52	-175.55	-160.80
SE	83.51	107.81	42.81	60.63	101.21	131.25	64.05	90.42
GDP_Growth_Volat	--	3.52	--	0.05	--	4.42	--	0.34
SE		2.77		1.56		2.41		1.48
MOVE	--	0.48	--	-0.01	--	0.46	--	0.05
SE		0.12		0.09		0.10		0.08
S&PVolatility	--	-0.50	--	0.05	--	-0.91	--	-0.09
SE		0.30		0.20		0.23		0.16
EuroVolatility	--	-0.15	--	0.05	--	-0.24	--	0.02
SE		0.09		0.06		0.08		0.06
CoreVolatility	--	202.66	--	26.31	--	-148.00	--	-12.28
SE		92.36		53.78		90.14		56.30
Adj R2	-0.01	0.10	0.75	0.77	0.19	0.32	0.76	0.78
SER	19.15	18.14	9.62	9.12	17.16	15.77	9.45	8.91
Tests of Assumptions***								
Normality	0.01	0.00	0.08	0.01	0.34	0.01	0.08	0.02
Serial Independence	0.00	0.00	0.22	0.54	0.00	0.00	0.40	0.37
Homoskedasticity	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.02

* Estimated standard errors WITHOUT correction for serial dependence and heteroskedasticity

** W&W report estimates with the sign reversed

*** If entry is less than 0.05, then reject null hypothesis at the 5% level

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Table 5: Summary of Estimation Results for U.S. 10-year Treasury Yield

		Ceteris Paribus -- Direct -- Long Run Effects						Properties of Residuals			Forecasts	
		Rff		R10euro		F		Serial Independ.	Normality	Constant Variance	RMSFE* basis points	RSMFE relative to RSMFE(AR(2))
Specification	Measure of F	Estimate	std. error	Estimate	std. error	Estimate	std. error					
		(1)		(2)		(3)		(4)	(5)	(6)	(7)	(8)
Single Equation	FRBNY	0.020	0.139	0.174	0.140	-0.216	0.113	Accept	**Reject**	Accept	66	0.60
OLS	Δ_{12}FRBNY	-0.059	0.229	0.363	0.119	0.560	0.504	Accept	Accept	Accept	179	1.64
	Foreign Official	0.059	0.144	0.185	0.146	-0.262	0.149	Accept	Accept	Accept	92	0.84
	Δ_{12}Foreign Official	0.023	0.186	0.368	0.105	0.507	0.379	Accept	**Reject**	Accept	143	1.31
	Foreign Total	0.108	0.128	0.111	0.152	-0.224	0.105	Accept	Accept	Accept	91	0.83
	Δ_{12}Foreign Total	0.010	0.201	0.347	0.114	0.154	0.239	Accept	**Reject**	Accept	139	1.28
Johansen	FRBNY	0.204	0.072	0.272	0.079	-0.156	0.063	Accept	**Reject**	Accept	79	0.72
FIML	Δ_{12}FRBNY	0.214	0.086	0.426	0.051	0.014	0.175	Accept	**Reject**	Accept	134	1.23
	Foreign Official	0.210	0.074	0.313	0.077	-0.153	0.081	Accept	**Reject**	Accept	96	0.88
	Δ_{12}Foreign Official	0.237	0.085	0.427	0.050	0.154	0.163	Accept	**Reject**	Accept	134	1.22
	Foreign Total	0.216	0.068	0.243	0.081	-0.162	0.059	Accept	**Reject**	Accept	98	0.90
	Δ_{12}Foreign Total	0.201	0.089	0.427	0.050	-0.031	0.106	Accept	**Reject**	Accept	130	1.19
Koopman	FRBNY	0.002	0.068	0.475	0.070	-0.157	0.093	**Reject**	Accept	**Reject**	38	0.35
FIML	Δ_{12}FRBNY	-0.015	0.076	0.597	0.076	-0.173	0.096	**Reject**	Accept	**Reject**	91	0.84
	Foreign Official	-0.005	0.069	0.497	0.072	-0.048	0.120	**Reject**	Accept	**Reject**	63	0.58
	Δ_{12}Foreign Official	0.006	0.076	0.596	0.075	-0.040	0.109	**Reject**	Accept	**Reject**	102	0.93
	Foreign Total	-0.020	0.069	0.446	0.072	0.016	0.075	**Reject**	Accept	**Reject**	80	0.73
	Δ_{12}Foreign Total	0.005	0.076	0.598	0.075	0.008	0.070	**Reject**	Accept	**Reject**	105	0.96
Time Series	AR(2)	--	--	--	--	--	--	Accept	Accept	Accept	109	1.00
	Random Walk+drift	--	--	--	--	--	--	**Reject**	Accept	**Reject**	266	2.44
	VAR(2)	--	--	--	--	--	--	Accept	**Reject**	Accept	110	1.01
	Common Factors without exogenous variables	--	--	--	--	--	--	**Reject**	**Reject**	**Reject**	600	5.50

* S-step ahead simulations from July 2007 to December 2008

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BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

November 8, 2011

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Thank you for your letter of October 4, 2011, concerning the Notice of Proposed Rulemaking entitled *Margin and Capital Requirements for Covered Swap Entities*.[1] The Board, along with the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the Farm Credit Administration (FCA), and the Federal Housing Finance Agency (FHFA) (collectively the prudential regulators) jointly invited public comment on the proposed rule in April 2011 in accordance with requirements of sections 731 and 764 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the Dodd-Frank Act). The comment period for the proposed rule closed on July 11, 2011. The prudential regulators received comments from a variety of commenters including commercial companies, pension funds, banks and other financial firms that act as swap dealers, other entities regulated by the prudential regulators, trade associations, and other members of Congress.

As you noted in your letter, the prudential regulators face a number of difficult issues in crafting these rules required by the Dodd-Frank Act. We appreciate the importance of the issues you raise, including the need to protect the ability of end-users, including pension funds, to use swaps in a cost-effective manner; sequence and implement the new regulations in a logical, coordinated manner that encourages compliance and market competition; and avoid the creation of opportunities for international regulatory arbitrage that could increase systemic risk and reduce the competitiveness of U.S. firms.

We also recognize the importance of your concern that U.S. regulators should work with international regulators to seek broad harmonization of appropriately balanced and effective margin standards. As you may know, during its meeting in July, the

[1] Margin and Capital Requirements for Covered Swap Entities, Proposed Rule, 76 Fed. Reg. 27564 (May 11, 2011).

Financial Stability Board encouraged the global standard-setting bodies to pursue coordinated work to set standards on margin requirements for uncleared swaps. The work begins this month, and we expect staff from the Board, the FDIC, the OCC, the Commodity Futures Trading Commission, and the Securities and Exchange Commission to participate. This joint international initiative will work towards the formulation of recommendations for margin requirements for uncleared swaps that can be implemented consistently on a global basis. I assure you that our rulemaking process will take appropriate consideration of this international effort.

The prudential regulators asked many questions about all of these issues as part of the request for comment on the proposed rule in order to understand the potential effects of the proposal and to solicit views on the best way to address the risks and goals that motivated the provisions in the Dodd-Frank Act. We are currently analyzing the comments we have received, including the issues raised in your letter.

Thank you again for sharing your comments and informed perspective.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

November 8, 2011

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives
Washington, DC 20515

Dear Congressman:

Thank you for your letter of October 4, 2011, concerning the Notice of Proposed Rulemaking entitled *Margin and Capital Requirements for Covered Swap Entities*.[2] The Board, along with the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the Farm Credit Administration (FCA), and the Federal Housing Finance Agency (FHFA) (collectively the prudential regulators) jointly invited public comment on the proposed rule in April 2011 in accordance with requirements of sections 731 and 764 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the Dodd-Frank Act). The comment period for the proposed rule closed on July 11, 2011. The prudential regulators received comments from a variety of commenters including commercial companies, pension funds, banks and other financial firms that act as swap dealers, other entities regulated by the prudential regulators, trade associations, and other members of Congress.

As you noted in your letter, the prudential regulators face a number of difficult issues in crafting these rules required by the Dodd-Frank Act. We appreciate the importance of the issues you raise, including the need to protect the ability of end-users, including pension funds, to use swaps in a cost-effective manner; sequence and implement the new regulations in a logical, coordinated manner that encourages compliance and market competition; and avoid the creation of opportunities for international regulatory arbitrage that could increase systemic risk and reduce the competitiveness of U.S. firms.

We also recognize the importance of your concern that U.S. regulators should work with international regulators to seek broad harmonization of appropriately balanced and effective margin standards. As you may know, during its meeting in July, the Financial Stability Board encouraged the global standard-setting bodies to pursue coordinated work to set standards on margin requirements for uncleared swaps. The work

[2] Margin and Capital Requirements for Covered Swap Entities, Proposed Rule, 76 Fed. Reg. 27564 (May 11, 2011).

begins this month, and we expect staff from the Board, the FDIC, the OCC, the Commodity Futures Trading Commission, and the Securities and Exchange Commission to participate. This joint international initiative will work towards the formulation of recommendations for margin requirements for uncleared swaps that can be implemented consistently on a global basis. I assure you that our rulemaking process will take appropriate consideration of this international effort.

The prudential regulators asked many questions about all of these issues as part of the request for comment on the proposed rule in order to understand the potential effects of the proposal and to solicit views on the best way to address the risks and goals that motivated the provisions in the Dodd-Frank Act. We are currently analyzing the comments we have received, including the issues raised in your letter.

Thank you again for sharing your comments and informed perspective.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 5, 2013

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United State Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the July 17, 2012, hearing before the Committee on Banking, Housing, and Urban Affairs. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

__**Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Johnson:**__

2. Critics of Wall Street Reform claim that the law is holding back the economic recovery. What has had a greater impact on high unemployment today – the Wall Street Reform Act or the ineffective regulations that led to the financial crisis? Can you offer examples of how the financial system is now safer as a result of policies that the Fed has implemented pursuant to the Wall Street Reform Act?

The recent financial crisis demonstrated that some financial companies had grown so large, leveraged, and interconnected, that their failure could pose a threat to overall financial stability. The crisis also exposed significant weaknesses in banking organizations' internal management and stress testing practices, as well as deficiencies in the regulators' toolkit to address them. In addition, the amount of high-quality capital held by banking organizations globally was insufficient to absorb losses that banking organizations experienced during that period. Insufficient liquidity and associated risk management practices also directly contributed to the failure or near failure of many companies and exacerbated the crisis. To address these and other weaknesses, the Federal Reserve has taken various steps to improve the regulation and supervision of individual firms to enhance their resiliency in times of stress, as well as the resiliency of the financial system as a whole. These measures have been taken pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), as well as the Federal Reserve's authority as the supervisor of various financial institutions.

For example, in January 2012, the Board published for comment proposed rules that would implement the enhanced prudential standards and early remediation requirements of sections 165 and 166 of the Dodd-Frank Act. The proposal generally applies to all U.S. bank holding companies with total consolidated assets of $50 billion or more and nonbank financial companies that the Financial Stability Oversight Council has designated for supervision by the Board (covered companies). The proposal addresses issues such as capital, liquidity, single counterparty credit limits, stress testing, risk management, and early remediation requirements. The Board intends to supplement the enhanced risk-based capital and leverage requirements proposed in January 2012 with a subsequent proposal to implement a quantitative risk-based capital surcharge for covered companies or a subset of covered companies. To further implement the provisions of sections 165 and 166 of the Dodd-Frank Act, the Board issued proposed rules in December 2012 to strengthen the oversight of the U.S. operations of large foreign banking organizations, including measures regarding early remediation, capital stress testing, overall risk management, and enhanced risk-based and leverage requirements for these organizations. These proposals are aimed at strengthening the regulatory framework to address the risks that large, interconnected financial institutions pose to U.S. financial stability.

In addition, in June 2012, the Board and the other federal banking agencies issued three notices of proposed rulemaking that would effectively result in increasing the quantity and quality of capital held by banking organizations. The proposed rules would introduce a new common equity tier 1 capital requirement, raise existing minimum tier 1 capital requirements, and implement a capital conservation buffer to increase the resiliency of all banking organizations during times of economic and financial stress. The proposed rules would also be incorporated into the enhanced standards for covered companies discussed above. These measures are designed to help address the shortcomings in the international capital standards exposed during the crisis and build additional capacity into the banking system to absorb losses in times of future market and economic stress. The proposals also would enhance the risk-sensitivity of the agencies' capital requirements by revising the calculation of risk-weighted assets for certain exposures to address weaknesses identified in the capital framework in recent years.

The Federal Reserve has also been working to embed its supervisory practices within a broader macroprudential framework that focuses not only on the conditions of individual firms but also on the health of the financial system as a whole. Even before the enactment of the Dodd-Frank Act, the Federal Reserve had begun to overhaul its approach to supervision to better achieve both microprudential and macroprudential goals. For example, in 2009, the Federal Reserve created the Large Institution Supervision Coordinating Committee, which oversees the supervision of the most systemically important financial firms. Another important example of the Federal Reserve's strengthened, cross-firm supervisory approach is the Comprehensive Capital Analysis and Review, through which the Federal Reserve assesses the internal capital planning processes of the largest bank holding companies and evaluates their capital adequacy under a very severe hypothetical stress scenario. Largely as a result of these efforts and the Federal Reserve's action during the crisis, the aggregate amount of tier 1 common for the 19 largest bank holding companies increased by more than $300 billion between 2009 and 2012. The Federal Reserve also routinely uses macroprudential tools in analyzing the potential consequences of significant economic events for the individual firms it supervises and for the financial system as a whole.

The proposed enhanced prudential standards and regulatory capital requirements, as well as other additional steps that the Federal Reserve has taken in response to the crisis and pursuant to the Dodd-Frank Act, are designed to strengthen the banking system and the financial system as a whole by strengthening regulatory requirements and the supervision of the most systemically important financial firms.

3. Do you think that the policy changes announced at the recent E.U. summit go far enough toward solving the European financial crisis? How will U.S. banks be affected by the proposed Eurozone banking union?

At their late June summit, European leaders agreed on a number of measures to address the financial crisis. These included, among other steps, establishing a single supervisory mechanism for European banks and, once such a mechanism is in place, enabling the European Stability Mechanism (ESM), the permanent euro-area backstop facility, to recapitalize banks directly. Subsequently, European leaders have also made progress in enhancing regional policy support for vulnerable euro-area countries. The European Central Bank (ECB) has announced a program that would enable it to purchase sovereign debt in order to address market distortions and contain bond yields. Countries benefitting from ECB support will have to enter into assistance programs and commit to achieving appropriate conditions prior to ECB assistance.

These developments have helped ease stresses in European financial markets and hold out the hope of further progress toward resolution of the crisis. However, European leaders must follow through on their commitments by agreeing to specific, detailed plans and then implementing them. Market participants have reacted favorably to announcements of the ECB's new bond purchase framework, but more work must be done to operationalize this strategy. By the same token, further agreements among European authorities will be required before the single supervisory mechanism for banks can be put in place. Additionally, if a full resolution of Europe's difficulties is to be achieved, these regional initiatives must be complemented by further actions in the vulnerable countries themselves to improve public finances, strengthen banking systems, and promote pro-growth structural reforms.

Euro-area banks currently are supervised by 17 national supervisors. Establishing a single supervisory mechanism should help to streamline supervisory compliance costs, further the integration of the European financial market and make it easier for international banks, including U.S. banks, to conduct business within and across euro area countries. Moreover, tougher and more consistent bank supervision in Europe should reduce the frequency and severity of financial distress of European banks and hence contribute to global financial stability.

4. What are the barriers preventing homeowners who are current on their mortgage payments from refinancing? Could legislation address those barriers, and how would such legislation help with economic recovery?

Low credit scores or levels of home equity make it difficult for many borrowers to refinance their mortgages. Initiatives such as the Home Affordable Refinance Program (HARP) and the streamlined refinance program offered by the Federal Housing Administration (FHA) have reduced or eliminated these barriers for many borrowers with loans guaranteed or insured by Fannie Mae, Freddie Mac, or FHA. However, borrowers whose loans are held in bank portfolios or private-label mortgage-backed securities, as well as borrowers who have already refinanced through HARP, often face significant obstacles to refinancing if their credit scores or home equity fall below certain levels. The *Monetary Policy Report* submitted to the Congress on July 17, 2012, and the staff housing paper sent to the Committee on Banking, Housing, and Urban Affairs on January 4, 2012, provide further discussion of these issues.

The Congress could facilitate refinancing for these borrowers by legislating changes to HARP or the FHA refinancing program or by creating a new refinancing program. In designing such legislation, the Congress would have to consider how to balance the interests of borrowers, taxpayers, and investors. A refinancing program might provide a small boost to aggregate consumer spending, decrease the incidence of mortgage default, and improve consumer confidence, but the size of such effects is difficult to predict.

5. The Fed is proposing a set of rules implementing Sections 165 and 171 of the Wall Street Reform Act and the Basel III agreements. These rules would apply to insurance companies organized as thrift holding companies or designated as nonbank financial SIFIs. Did the Fed consult with the Federal Insurance Office (FIO)? Do you anticipate that you will

consult regularly with FIO as you engage in rulemakings that impact insurance companies? What else is the Fed doing to develop its insurance expertise? As part of these rulemakings, what steps did the Fed take to analyze the differences between banks and insurance companies and to incorporate those findings into the rulemakings? Do you think that the recent actions and rulemakings of the Fed appropriately recognize the differences between insurance companies and banks?

Board staff has consulted with the Federal Insurance Office on issues related to capital requirements, stress testing, and insurance matters generally. Board staff also met with industry representatives and with the National Association of Insurance Commissioners on several occasions to discuss insurance-related issues. The Board also sought public comment on capital and accounting issues as well as on regulatory and supervisory requirements for savings and loan holding companies when it published a notice of intent regarding these institutions on April 22, 2011. The Board expects to continue this practice of consultations with other regulators and standard-setters, as well as the industry and the public, to further the Board's expertise and to gain additional perspectives on the regulation and supervision of insurance companies as appropriate.

In June 2012, the Board and the other federal banking agencies proposed to revise risk-based and leverage capital requirements in three notices of proposed rulemaking. In proposing the regulatory capital requirements, the Board sought to meet several legal requirements and policy goals. Section 171 of the Dodd-Frank Act, requires that the Board establish minimum consolidated risk-based and leverage capital requirements for savings and loan holding companies that are not less than the "generally applicable" risk-based and leverage capital requirements for insured depository institutions. Accordingly, the proposals include consistent treatment for similar types of exposures, whether held at a depository institution or a savings and loan holding company, as well as provide flexibility for certain insurance-related assets that generally are not held by depository institutions. For example, the proposals include specific risk-weights for policy loans and non-guaranteed separate accounts, which are typically held by insurance companies but not depository institutions.

The Board has received numerous comments from the public on the proposals with regard to the application of the proposed rules to insurance-centric savings and loan holding companies. The Board will carefully consider all the comments received while finalizing the regulatory capital rules.

6. The recent losses at JP Morgan have renewed focus on risk management practices. Additionally, JP Morgan has stated that the firm changed its risk models and trading positions in anticipation of new capital requirements under Basel III. Please provide your comments on how new capital requirements will strengthen the financial system, as well as any potential risks that may arise from these new capital standards. If the new standards encourage institutions to shift their activities into other risky activities, or have other unintended consequences, please comment on how you plan to address those shifts. In your

answer, please also include any expectations you may have regarding institutional risk management and the Fed's supervision of risk management at institutions.

In June 2012, in addition to issuing the proposed rules described in the answer to question two above, the federal banking agencies approved a final rule to implement changes to the market risk capital rule that applies to banking organizations with significant trading activity.[1] The changes are primarily designed to ensure appropriate capital is held against trading positions, reduce the procyclicality of the capital requirements, and enhance the measure of credit risk of traded positions. Thus, the rule is expected to help ensure that banking organizations maintain stronger capital positions and improve the resilience of the U.S. banking system in times of stress, thus contributing to the overall health of the U.S. economy.

There are risks that banking organizations may alter their practices and engage in different activities as a result of new and proposed capital rules. However, the Federal Reserve has a comprehensive supervisory framework and regulations beyond the regulatory capital rules to help address these risks. For example, a supervisory assessment of banking organizations' capital adequacy takes into account a banking organization's internal processes for capital adequacy, as well as risks and other factors that can affect the banking organization's financial condition, including the level and severity of problem assets and the organization's exposure to operational and interest rate risk.[2] For internationally-active institutions, the supervisory review process for capital adequacy (the so-called Pillar 2 approach based on the international Basel II standards) is even more rigorous and comprehensive as it emphasizes the need for these institutions to look beyond the regulatory capital standards and to help institution's ensure that they maintain adequate capital levels in relation to their risk profiles. Further, for the largest U.S. bank holding companies, the Federal Reserve has established regulatory requirements for regular stress testing and capital planning and conducts supervisory assessments of the capital planning processes and capital adequacy of these firms.

The Federal Reserve has also put forth other guidance for banking organizations related to risk management in Supervision and Regulation Letters. For example, the federal banking agencies finalized stress testing guidance in May 2012 for banking organizations with total consolidated assets of more than $10 billion that focuses on the importance of banking organizations conducting forward-looking assessments of their risks to better equip them to address a range of adverse outcomes. The supervisory guidance on model risk management, issued in April 2011, describes key aspects of the effective model risk management, as well as key principles of sound governance and internal controls governing the use of models. These and other supervisory guidance and regulations are designed to improve banking organizations' risk management practices, as well as the supervisory toolkit to enforce robust procedures and sound risk management so that banking organizations manage their risks effectively and hold adequate capital commensurate with their risk profiles.

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[1] 77 FR 53060.

[2] See, for example, SR 09-04, "Applying Supervisory Guidance and Regulations on the Payment of Dividends, Stock Redemptions, and Stock Repurchases at Bank Holding Companies"; see also June 2012 proposed regulatory capital rule, 77 FR 52792).

Office of the Comptroller of the Currency
Board of Governors of the Federal Reserve System

March 8, 2013

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing
and Urban Affairs
United States Senate
Washington, DC 20510-6075

Dear Chairman Johnson:

Thank you for your letter dated January 28, 2013, regarding lessons learned by the agencies in directing the Independent Foreclosure Review (IFR) process and the disposition of any funds left from the cash payouts required by agreements announced by the Office of the Comptroller of the Currency (OCC) and the Federal Reserve in January with 13 mortgage servicers subject to regulators' enforcement actions.

The agreements announced in January provide significant benefits to homeowners potentially affected by deficient foreclosure processes as well as homeowners still struggling to keep their homes. The agreements will provide $3.6 billion in cash payments directly to eligible borrowers and $5.7 billion in additional assistance.

The agencies share your views on the importance of borrower awareness, first about the IFR and now about the agreements, and, taking into account our experiences relating to the IFR, intend to take measures to ensure that all borrowers covered by the agreements in principle receive their compensation. In that vein, in implementing the agreements, we met with consumer advocacy groups early in the process to solicit the groups' views on how to best communicate information about the agreements and payments that will be forthcoming.

The agencies are very sensitive to treatment of any residual funds left from the required cash payments. Although a decision on the use of any such funds is best made once we know the total amount available, which likely will not occur for several months, the OCC and the Federal Reserve are reviewing the best options for the use of those residual funds. We will carefully review the options you suggested as well as others that are in the public's interest, and intend to solicit the views of community groups that serve communities in need of borrower relief. While a decision has not been made, our intent is to ensure every penny of any residual funds will be used to benefit the public, and none will be returned to servicers.

With respect to your request for an accounting of the IFR, we have committed to providing public reports relating to the foreclosure enforcement actions that we anticipate will include available details about the findings of reviews where complete, number of requests for review, costs associated with the reviews, and the status of the other corrective activities directed by our enforcement actions. We are currently in the process of gathering this information.

Thank you for sharing your concerns.

Sincerely,

Thomas J. Curry
Comptroller of the Currency

Ben S. Bernanke
Chairman, Board of Governors of the Federal Reserve System

Office of the Comptroller of the Currency
Board of Governors of the Federal Reserve System

March 22, 2013

The Honorable Maxine Waters
Ranking Member
Committee on Financial Services
United States House of Representatives
Washington, DC 20515-3214

Dear Ranking Member Waters:

Thank you for your letters dated January 31, 2013 and February 15, 2013, regarding the agreements reached by the Office of the Comptroller of the Currency (OCC) and the Board of Governors of the Federal Reserve System (FRB) with 13 mortgage servicers subject to regulators' enforcement actions. Those agreements will result in $3.6 billion cash payments and $5.7 billion in other assistance to borrowers. This is the largest cash payout to borrowers affected by foreclosure actions of any settlement to date and provides significant benefit to borrowers.

We appreciate your suggestions and concerns, and are committed to working with you and other interested Members throughout this process. We are sensitive to the issues you raised regarding the importance of monitoring this process, maximizing the benefit to homeowners, and providing transparency.

With regard to monitoring the execution of the agreements and compliance with the agencies' enforcement actions, the OCC and the FRB will fulfill this role, rather than a third-party monitor. As the primary supervisors of these institutions, the regulators are in the best position to perform this important function. In addition, the Treasury Inspector General and the Government Accountability Office have been engaged in monitoring this effort throughout the entire process.

Maximizing the benefit to borrowers has been a primary focus of the agencies and was one of the driving reasons behind the decision to pursue these agreements. These agreements were executed through amendments to our April 2011 consent orders and include expectations for prioritizing the additional assistance in a manner that provides meaningful relief to borrowers. Specifically, the agreements emphasize the importance of prioritizing assistance to the in-scope borrowers who may benefit from the assistance. The agencies are also meeting with a variety of consumer groups to hear concerns and suggestions, and we are considering additional suggestions provided in numerous letters as we implement the agreements to ensure that the $3.6 billion in payments and $5.7 billion in other assistance provide significant benefit to borrowers and help to prevent avoidable foreclosures.

We agree that transparency is an important part of restoring confidence to mortgage servicing overall. To this end, we have committed to providing a variety of reports that detail the implementation of the agreements. We expect the reports to include details about the direct relief and other assistance provided to homeowners, as well as information about the findings of reviews where complete, number of requests for review, costs associated with the reviews, and the status of the other corrective activities directed by our enforcement actions. We are currently in the process of developing and analyzing this information.

As we finalize those reports, we will also consider the information you have suggested as well as the other suggestions that we have received.

Thank you also for your questions regarding how the agencies and servicers reached the $3.6 billion in payments and $5.7 billion in other assistance. In late fall 2012, regulators recognized that the Independent Foreclosure Review was proceeding much too slowly and was delaying valuable relief to homeowners affected by foreclosure. The final amount of cash payment and other assistance provided by the agreement was reached through negotiation. We believe the cash payment alone is significantly more than the amount borrowers would have otherwise received through the IFR process. We arrived at that view by considering the best available information regarding the potential payout to borrowers. We further considered the estimated direct cost of completing the reviews, and other remaining indirect costs.

As you rightly note, compensating borrowers for deficient foreclosure processes was just one goal of our April 2011 enforcement actions. The agreement with the participating servicers does not resolve the other existing provisions of the April 2011 enforcement actions, which remain in full force and effect. Those provisions required servicers to fix what was broken to ensure a fair and orderly mortgage servicing process going forward. In the time since issuing our orders, much progress has been made in implementing better controls, and improving systems and processes to ensure the errors that led to our enforcement actions do not recur. Our examiners continue to work to monitor compliance with those orders and verify the corrective actions taken by the servicers. In addition we are coordinating very closely with the Consumer Financial Protection Bureau on the implementation of standards that help improve mortgage servicing across the industry.

Finally, you have noted an interest in documents prepared in the course of implementing the actions required by our April 2011 enforcement actions and those specifically related to the Independent Foreclosure Review work. We would be happy to have our staff schedule a briefing with your staff to discuss further your document request and information relevant to these regulatory actions.

Please know that we are committed to working with you and the committees of jurisdiction in the House of Representatives and the Senate to ensure the effective oversight of the financial regulatory agencies in this matter.

Sincerely,

Thomas J. Curry
Comptroller of the Currency
Office of the Comptroller of the Currency

Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 28, 2013

The Honorable Jeb Hensarling
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter inquiring into the Board's authority to transfer funds to the Consumer Financial Protection Bureau (CFPB) in the event a court decision invalidates the appointment of the Director of the CFPB.

As you note in your letter, section 1017(a)(1) of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) requires the Board to transfer to the CFPB, up to a pre-established funding cap, the amount the Director of the CFPB determines is reasonably necessary to carry out the authorities of the CFPB under Federal consumer financial law. While one court has considered appointments to the National Labor Relations Board, to date, no court has specifically considered or determined that the Director of the CFPB has been invalidly appointed. If a court should find that the Director of the CFPB was invalidly appointed, the Board will consider the appropriate course of action to take at that time after reviewing the relevant court decision and provisions of the Dodd-Frank Act.

Thank you again for taking the time to share your concerns with me.

Sincerely,

cc: The Honorable Maxine Waters

08-6406

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 13, 2008

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Senator:

Enclosed are my responses to the written questions you submitted following the April 3, 2008, hearing before the Committee titled, Turmoil in U.S. Credit Markets: Examining the Recent Actions of the Financial Regulators." A copy has also been forwarded to the Chief Clerk of the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

(Signed) Ben Bernanke

Enclosure

Chairman Bernanke subsequently submitted the following in response to written questions received from Senator Shelby in connection with the April 3, 2008, hearing before the Committee on Banking, Housing, and Urban Affairs:

Primary Dealer Credit Facility

Chairman Bernanke, the Federal Reserve is now lending regularly to securities firms under its Primary Dealer Credit Facility. It has been suggested that if the Fed is going to open its discount window to securities firms, additional regulation of securities firms may be needed.

- **How do we balance the need to have appropriate supervision of securities firms, especially now that they can receive Federal loans through the Fed, against the need to preserve the competitiveness of our financial services sector and avoid over-regulation?**

All the primary dealers eligible to borrow from the Federal Reserve under the Primary Dealer Credit Facility (PDCF) are subject to supervision and regulation by the SEC. In addition, the parent companies of nearly all of these primary dealers are subject to consolidated supervision--either by the Federal Reserve in the case of dealers that are owned by a U.S. bank holding company, a foreign bank supervisory agency in the case of dealers that are owned by a foreign bank, or the SEC or OTS in the case of dealers that are not affiliated with banks.

The Federal Reserve is working closely with the SEC to ensure that we have access to necessary financial, risk management, and other information about primary dealers--including information about their capital and liquidity positions--and this coordination has been very useful to date. In the near term, the Federal Reserve does not see a need for any additional supervisory authorities with respect to primary dealers.

Over the longer term, the Federal Reserve is analyzing the costs and benefits of possible changes in the supervision and regulation of securities firms and their parent holding companies (particularly as regards their capital adequacy and liquidity). Upon completion of this review, we would be pleased to discuss these issues with you.

Regulatory Relief

It has been reported that as a condition for purchasing Bear Stearns, regulators promised JPMC certain regulatory relief, including SEC no-action letters and forbearance on capital requirements.

- **Would you please list any and all regulatory relief your agency or department has agreed to provide JPMC in connection with its merger with Bear Stearns?**

The Board provided two regulatory exemptions requested by JPMC in connection with its proposed acquisition of Bear Stearns.

First, the Board provided JPMC with a temporary (18-month) exemption from the risk-based and leverage capital requirements for bank holding companies. The exemption allowed JPMC initially to (i) reduce its risk-weighted assets by the total amount of risk-weighted assets of Bear Stearns for purposes of the Board's risk-based capital adequacy guidelines for bank holding companies; and (ii) reduce its balance-sheet assets by the total balance-sheet assets of Bear Stearns for purposes of the Board's leverage capital guidelines for bank holding companies. The amount of the exemption going forward will shrink by one-sixth during each succeeding quarter until the exemption expires on October 1, 2009. JPMC has committed that it will remain well capitalized during this period, both with and without the exemption.

Second, the Board provided JPMC with a temporary (18-month) exemption from section 23A of the Federal Reserve Act and the Board's Regulation W. The exemption allows JPMorgan Chase Bank to extend credit to Bear Stearns and issue guarantees on behalf of Bear Stearns so long as the transactions are (i) fully collateralized; (ii) subject to daily mark-to-market and remargining requirements; and (iii) guaranteed by JPMC. The initial amount of the exemption was 50 percent of the bank's regulatory capital. The amount of the exemption going forward will shrink by one-sixth during each succeeding quarter until the exemption expires on October 1, 2009. All transactions between JPMorgan Chase Bank and Bear Stearns would continue to be subject to section 23B of the Federal Reserve Act, which requires financial transactions between a bank and an affiliate to be conducted on market terms.

A copy of the Board's regulatory capital and section 23A exemption letter is attached.

Although not a regulatory relief matter, the Board also approved the acquisition of Bear Stearns Bank & Trust by JPMC on April 1, 2008, on an expedited basis as provided in the Bank Holding Company Act. A copy of the Board's order approving the acquisition is attached.

Emergency Lending Authority

Chairman Bernanke, in my opening statement I mentioned the Federal Reserve's emergency lending authority. The Federal Reserve Act does not clearly specify the goals or purposes for which the Fed should exercise this authority. It only provides that lending to corporations should occur in unusual or exigent circumstances and when a corporation is unable to secure credit from other banking institutions. These relatively simple conditions effectively give the Fed broad discretion on when to exercise its emergency lending authority. You have written widely about the importance of inflation targeting, arguing that inflation-targeting provides "discipline and accountability in the making of monetary policy."

- **If monetary policy benefits from a framework that provides discipline and accountability, would not the Fed's emergency lending authority also benefit from having clearer objectives and conditions provided by Congress?**

In my view, the Congress has achieved an appropriate balance between the needs for discipline and accountability, on the one hand, and flexibility and judgment, on the other, in the statutory frameworks that it has established for both monetary policy and emergency lending.

With regard to monetary policy, the Congress has established the goals of maximum employment, stable prices, and moderate long-term interest rates, and it has set a framework for monetary policy accountability, partly through semiannual reports and testimony on monetary policy. The Congress has left the specific interpretation of the statutory goals for monetary policy to the judgment of the Board of Governors and the Federal Open Market Committee; for example, the Congress has wisely chosen not to quantify three goals of policy. Similarly, the Congress has provided only general guidance regarding the Federal Reserve's semiannual reports on monetary policy, leaving the specific content of such reports and the accompanying testimony to the judgment of the Federal Reserve.

The Congress has chosen an analogous approach for the conditions and accountability for emergency lending. With regard to the conditions for emergency lending, the Congress has established a clear framework that sets a high hurdle for undertaking such activities: Emergency lending can be done only in unusual and exigent circumstances, only when the borrower cannot otherwise secure adequate credit accommodations, and only with the approval of at least five members of the Federal Reserve Board. However, the Congress left the specific interpretation of the first two conditions to the Board. In my view, this was a wise decision by the Congress: Financial crises tend to be unique events, making it very difficult to set in advance an appropriate set of specific conditions that would have to be met for emergency lending. Moreover, the Congress has established an ongoing framework for the accountability of the Federal Reserve's financial operations by requiring that the Board publish on a regular basis statements of conditions for the Reserve Banks and for the System as a whole. Within this reporting framework, the Board has provided detail on the amounts outstanding under its various credit programs both in routine circumstances and in the current period of financial stress. In addition, the Federal Reserve recognizes that when it undertakes emergency lending it has an obligation to explain why it believes the conditions for such lending have been met. Congress has the authority to review the Federal Reserve's explanations, as it did at the hearing on April 3.

Chairman Bernanke, the Federal Reserve Act grants the Board of Governors broad emergency lending authority. It enables the Fed to extend the Federal safety net to corporations, such as investment banks, that otherwise are not guaranteed by the Federal government.

- **Since taxpayers bear any losses on any emergency loans the Fed extends, should there be limits on the amount of lending the Fed can conduct under its emergency lending authority? And given budgetary implications of such lending, should the Treasury Secretary also have to formally approve these loans?**

When Congress established the Federal Reserve as the nation's central bank, Congress considered it important that an independent agency be created to help maintain the stability of the U.S. financial system. Financial crises can develop quickly and with considerable intensity, and it is crucial that the Federal Reserve have authority to respond rapidly and powerfully to a severe crisis by, if necessary and appropriate, providing liquidity to the financial system.

It is important to note that the Federal Reserve's emergency lending authorities are subject to a number of important qualitative limits. Most notably, the Federal Reserve generally has authority to lend to non-banks only in unusual and exigent circumstances, and when the borrower is unable to obtain adequate credit accommodations from other banking institutions. Moreover, these emergency credits must be secured to the satisfaction of the lending Federal Reserve Bank and approved by a super-majority of the Board of Governors of the Federal Reserve System. Consistent with the spirit of the Federal Reserve Act, we have only used our power to make emergency loans to non-depository institutions on a small number of occasions in the 75 years since Congress granted this authority to the Federal Reserve.

The Federal Reserve also has been very careful in its recent actions to minimize any potential losses to taxpayers. All credit extended to primary dealers under the PDCF and all transactions with primary dealers under the term securities lending facility (TSLF) are fully secured by investment-grade securities with appropriate haircuts. In addition, the March 14 loan to Bear Stearns was repaid on March 17 without loss to the taxpayer. There are also substantial protections for taxpayers associated with the prospective $29 billion extension of credit by the Federal Reserve to be made in connection with the acquisition of Bear Stearns by JPMC. The collateral for the loan will be in the form of investment-grade securities and performing credit facilities, JPMC will bear the first $1 billion of losses on the collateral pool, the Federal Reserve will be able to liquidate the collateral over a long-term horizon of at least ten years, and we have hired a professional independent investment adviser to manage the collateral pool.

The Federal Reserve has never incurred any losses in extending credit through the discount window, and we will take every precaution to ensure that that remains the case.

In light of the strict qualitative limits on Federal Reserve emergency lending, the Federal Reserve's practice of using this authority judiciously and safely, and the need for the Federal Reserve to be able to act in a financial crisis with maximum alacrity and independence of judgment, we do not think it would be necessary or appropriate to require the Secretary of the Treasury to approve Federal Reserve emergency loans.

- **Also, does the Fed's mere possession of such broad lending authority create expectations that the Fed will not permit major financial institutions to fail?**

Investors in and creditors of major financial institutions undoubtedly are now more aware of the Federal Reserve's broad emergency lending authority. There are substantial constraints on the Federal Reserve's authority, however, that should help promote continued market discipline. Specifically, in contrast to the FDIC's broad authority to resolve and/or liquidate insured depository institutions, the Federal Reserve does not have authority to acquire or otherwise resolve financial firms. The Federal Reserve may only address the liquidity needs of solvent non-depository companies in unusual and exigent circumstances. In this regard, the Federal Reserve did not prevent the demise of Bear Stearns. The resolution of Bear Stearns relied on a private sector acquisition.

The inability of the Federal Reserve to acquire or otherwise provide a solvency backstop to financial institutions is reflected in the market prices of obligations of financial institutions and derivative instruments based on obligations of financial institutions. Prices of these financial assets imply that market participants are far from certain that the Federal Reserve would prevent major financial institutions from failing. In particular, market participants continue to pay substantial premiums for protection against losses from failure of most major U.S. financial institutions.

Moreover, any incidental costs associated with the Federal Reserve's lending authority must be compared against the substantial benefits that accrue to the financial markets--and ultimately to taxpayers and homeowners--by allowing the central bank to respond quickly in emergency situations as a lender of last resort. Congress created the Federal Reserve in part to serve the traditional central bank function as lender of last resort and thereby to reduce in emergency situations the potential adverse effects of illiquidity on either an individual firm or on the financial system more broadly. The fact that the Federal Reserve has exercised this authority to extend credit to non-depository institutions on only a small number of occasions in the past 75 years underscores the high hurdle that Congress and the Federal Reserve have set for such lending.

Moral Hazard

Chairman Bernanke, would you please address the extent to which the Fed's actions in this case have increased the risk of moral hazard?

Access to the federal safety net, including access to central bank credit, necessarily entails a degree of moral hazard. Thus, granting primary dealers access to Federal Reserve credit has increased moral hazard to some degree.

Although the potential for moral hazard should be carefully analyzed and considered by policymakers, it seems more likely that the example of Bear Stearns--in which shareholders and management suffered considerable losses--and the broader distress in financial markets will serve as a potent reminder to primary dealers and other leveraged financial firms about the importance of prudent liquidity risk management. In particular, in developing their liquidity management plans, primary dealers and others must now attach considerable weight to scenarios in which their access to funding in the repo market is sharply curtailed. Of course, the Federal Reserve, the SEC, and other regulatory agencies will be working to reinforce that message.

The adverse effects of moral hazard must and can be mitigated through prudential supervision and regulation. The SEC and the Federal Reserve have been monitoring the leverage and liquidity of the primary dealers. Going forward, the SEC and the Federal Reserve will assess what changes in prudential supervision and regulation of primary dealers (such as increased capital or liquidity requirements) are needed to mitigate moral hazard and ensure that the dealers manage their risks appropriately.

The adverse effects of moral hazard from use of the Federal Reserve's emergency lending powers also must and can be mitigated through judicious, sparing, and disciplined use by the Federal Reserve of these powers. In this regard, as noted above, the Federal Reserve generally has authority to lend to non-depository institutions only in unusual and exigent circumstances and has very rarely exercised this authority.

The Federal Reserve's actions with respect to Bear Stearns are instructive in this regard. The Federal Reserve facilitated the acquisition of Bear Stearns by JPMC because the substantial involvement of Bear Stearns in many important financial markets--at a time when the credit markets were particularly vulnerable--was such that a sudden failure by Bear Stearns would likely have led to a chaotic unwinding of positions in already severely strained circumstances. Moreover, a failure by Bear Stearns to meet its obligations would have cast doubt on the financial strength of other financial firms whose operations bore superficial similarity to that of Bear Stearns, without due regard to the fundamental soundness of those firms. The Federal Reserve judged that a sudden failure of Bear Stearns under these unusually fragile circumstances would have been extremely disorderly and would have risked unpredictable but severe consequences for many sound financial firms and for the functioning of the broader financial system and the economy.

Moreover, as discussed in my answer to the previous question, any incidental costs associated with the Federal Reserve's lending authority--such as increased moral hazard--must be weighed against the substantial benefits that accrue to the financial markets by allowing the central bank to serve as lender of last resort. The Federal Reserve's recent actions under its emergency lending authorities--the establishment of the PDCF and TSLF and the proposed financing of the JPMC acquisition of Bear Stearns--were essential to avert a financial crisis that likely would have had serious repercussions for the U.S. economy.

Lessons Learned and Too Big to Fail

We have heard the argument that Bear was "too inter-connected to allow to liquidate quickly". This would appear to be the case for a number of financial entities, including both banks and non-banks.

- **What changes in financial surveillance and reporting could the regulators use to make such a situation of "interconnectedness" less likely to trigger the type of resolution the Fed entered into with Bear?**

As noted in our answer to the previous question, although the interconnectedness of Bear Stearns was a consideration in the Federal Reserve's decision to facilitate the acquisition of Bear Stearns by JPMC, it was not a sufficient condition for the Federal Reserve's actions. Other important causes of the Federal Reserve's actions with respect to Bear Stearns were the suddenness of the collapse of the liquidity position of Bear Stearns and the unusually fragile conditions in the financial markets.

Regulators have for some time been paying considerable attention to the extent and nature of commercial and investment banks' credit exposures to other large financial institutions, including exposures arising from OTC derivatives. But clearly this is an issue that deserves further attention. In particular, regulators need to understand and evaluate the effectiveness of the stress tests that these firms use to assess and limit the potential for exposures to increase significantly in stressed market conditions. Regulators also need to take a hard look at the firms' liquidity risk management practices, including their reliance on common sources of funding and their vulnerabilities to sudden reductions in the availability of those types of funding.

- **Given that the Fed has pursued this transaction, how can the Fed and perhaps the Congress now convince market participants that something similar will not happen again? And if we cannot convince market participants that is the case, what is the implication for risk-taking behavior in the future?**

As discussed above, it seems likely that the considerable losses suffered by shareholders and management of Bear Stearns should serve to check and possibly diminish incentives for undue risk-taking by the owners and managers of large financial institutions. Moreover, as discussed above, the adverse effects of moral hazard from use of the Federal Reserve's emergency lending powers are mitigated by the sparing and disciplined use by the Federal Reserve of these powers. As noted above, the Federal Reserve generally has authority to lend to non-depository institutions only in unusual and exigent circumstances, when the borrower is unable to obtain credit accommodations from other banking institutions, when the loans are secured to the satisfaction of the Federal Reserve, and when at least five members of the Board of Governors of the Federal Reserve System approve the transaction. The Federal Reserve's decision to extend credit in support of JPMC's acquisition of Bear Stearns was based on a highly unusual confluence of events, including the suddenness of the collapse of the liquidity position of Bear Stearns and the highly fragile state of the financial markets at the time.

As noted above, the Federal Reserve is currently analyzing whether changes in the supervision and regulation of securities firms and their parent holding companies (particularly as regards their capital adequacy and liquidity) would be appropriate to mitigate potential residual adverse effects of actions such as the Federal Reserve's recent emergency liquidity facilities.

Attachments (2)

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ADDRESS OFFICIAL CORRESPONDENCE
TO THE BOARD

April 1, 2008

Kathleen A. Juhase, Esq.
Senior Vice President and
Associate General Counsel
JPMorgan Chase & Co.
277 Park Avenue, 19th Floor
New York, New York 10172

Dear Ms. Juhase:

This is in response to the request by JPMorgan Chase & Co. ("JPMC"), New York, New York, for (i) an exemption from section 23A of the Federal Reserve Act and the Board's Regulation W[1] that would permit JPMorgan Chase Bank, National Association ("JPMC Bank"), Columbus, Ohio, to extend credit to affiliates and issue guarantees on behalf of affiliates, in connection with the acquisition by JPMC of The Bear Stearns Companies, Inc. ("Bear Stearns"), New York, New York; and (ii) relief from the Board's risk-based and leverage capital guidelines for bank holding companies[2] in connection with the acquisition by JPMC of Bear Stearns. On March 16, 2008, JPMC entered into an agreement to acquire Bear Stearns.

Exemption from Section 23A and Regulation W

Section 23A and Regulation W limit the aggregate amount of "covered transactions" between a bank and any single affiliate to 10 percent of the bank's capital stock and surplus, and limit the aggregate amount of covered transactions with all affiliates to 20 percent of the bank's capital stock and surplus.[3] "Covered transactions" include, among other things, the extension of credit by a bank to an affiliate and the issuance by a bank of a guarantee on behalf of an affiliate.[4] In

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[1] 12 U.S.C. § 371c; 12 CFR part 223.

[2] 12 CFR part 225, Appendices A and D.

[3] 12 U.S.C. § 371c(a)(1) and 12 CFR 223.11 and 223.12.

[4] 12 U.S.C. § 371c(b)(7) and 12 CFR 223.3(h).

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addition, the statute and rule require a bank to secure its extensions of credit to, and guarantees on behalf of, affiliates with prescribed amounts of collateral.[5]

Section 23A and Regulation W authorize the Board to exempt, at its discretion, a transaction or relationship from the requirements of the statute and the regulation if the Board finds the exemption to be in the public interest and consistent with the purposes of section 23A.[6] JPMC has requested that the Board exempt from section 23A and Regulation W, for a period of 18 months, certain covered transactions between JPMC Bank and its affiliates, up to an aggregate of 50 percent of the bank's capital stock and surplus, to facilitate the acquisition by JPMC of Bear Stearns.

The Board previously has granted other companies exemptions from section 23A and Regulation W that are similar to the exemption requested by JPMC. The Board has provided temporary exemptions to facilitate the orderly integration of merged companies,[7] has provided exemptions to facilitate internal reorganization transactions,[8] and has provided exemptions for banks that engage in securities financing transactions with their affiliates.[9]

The Board has determined to impose several conditions that would help protect JPMC Bank in connection with the exemption request:

- The exemption would apply only to extensions of credit by JPMC Bank to an affiliate and guarantees issued by JPMC Bank on behalf of an affiliate that (i) are fully collateralized; and (ii) are subject to daily mark-to-market and re-margining requirements.

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[5] 12 U.S.C. § 371c(c) and 12 CFR 223.14.

[6] 12 U.S.C. § 371c(f)(2) and 12 CFR 223.43.

[7] See, e.g., Board letter to Troland S. Link, Esq. (Deutsche Bank AG) dated May 28, 1999; Board letter to Ronald C. Mayer, Esq. (The Chase Manhattan Bank) dated August 18, 2000.

[8] See, e.g., Board letter to Carl Howard, Esq. (Citigroup) dated June 30, 2006.

[9] See, e.g., Board letter to Carl Howard, Esq. (Citigroup) dated August 20, 2007; Board letter to Courtney D. Allison, Esq. (Wachovia Corporation) dated June 12, 2007; Board letter to John H. Huffstutler, Esq. (Bank of America Corporation) dated June 7, 2005.

- JPMC must guarantee the performance of the affiliate for the benefit of JPMC Bank in connection with any exempt extension of credit or guarantee by JPMC Bank.

- In the second quarter of 2008, the exemption would be limited in the aggregate to 50 percent of JPMC Bank's capital stock and surplus. The amount of the exemption would then be reduced by one-sixth (that is, 8.33 percent of the bank's capital stock and surplus) in each subsequent quarter until the exemption expires after six quarters. For example, in the third quarter of 2008, the exemption would be limited in the aggregate to 41.67 percent of the bank's capital stock and surplus.

- The exemption would expire on October 1, 2009.

In addition, JPMC Bank would continue to be subject to the market-terms requirement of section 23B of the Federal Reserve Act with respect to its transactions with Bear Stearns. Section 23B requires that financial transactions between a bank and an affiliate be on terms that are substantially the same, or at least as favorable to the bank, as those that the bank would in good faith offer to nonaffiliates.[10]

Granting the requested exemption would have substantial public benefits. The exemption would assist JPMC in ensuring the funding liquidity of Bear Stearns and would facilitate the orderly integration of Bear Stearns with and into JPMC after the acquisition. In light of these considerations, the proposed extensions of credit and guarantees by JPMC Bank appear to be consistent with the purposes of section 23A and in the public interest. Accordingly, the Board hereby grants the requested exemption, subject to the conditions and limits discussed above.

Regulatory Capital Relief

JPMC also has requested that the Board provide JPMC with relief from the Board's risk-based and leverage capital guidelines for bank holding companies. Specifically, JPMC has requested that the Board permit JPMC, for a period of 18 months, to exclude from its total risk-weighted assets (the denominator of the risk-based capital ratios) any risk-weighted assets associated with the assets and other exposures of Bear Stearns, for purposes of applying the risk-based capital guidelines to the bank holding company. In addition, JPMC has asked the Board to permit

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[10] See 12 U.S.C. § 371c-1(a)(1); 12 CFR 223.51.

JPMC, for a period of 18 months, to exclude from the denominator of its tier 1 leverage capital ratio any balance-sheet assets of Bear Stearns acquired by JPMC, for purposes of applying the leverage capital guidelines to the bank holding company. The Board has authority to provide exemptions from its risk-based and leverage capital guidelines for bank holding companies.[11]

JPMC has agreed to several conditions that would limit the scope of the relief request. First, JPMC proposes to exclude from its risk-weighted assets, for purposes of applying the Board's risk-based capital guidelines for bank holding companies, the risk-weighted assets of Bear Stearns existing on the date of acquisition of Bear Stearns by JPMC, up to a total amount not to exceed $220 billion. The amount of the exemption will be reduced by one-sixth in each subsequent quarter. In addition to this scheduled straight-line amortization of the exemption amount, the amount of the exemption also will be reduced in the event that JPMC sells or otherwise transfers to third parties any of the specified Bear Stearns subsidiaries identified on the attached Schedule. The amount of the reduction in such event would be the amount of risk-weighted assets in such subsidiary at the time of transfer. This exemption would expire on October 1, 2009.

Second, JPMC proposes to exclude from the denominator of its tier 1 leverage capital ratio, for purposes of applying the Board's tier 1 leverage capital guidelines for bank holding companies, the assets of Bear Stearns existing on the date of acquisition of Bear Stearns by JPMC, up to an amount not to exceed $400 billion. As with the risk-based capital exemption, the amount of the leverage exemption will be reduced by one-sixth in each subsequent quarter. In addition to this scheduled straight-line amortization of the exemption amount, the amount of the exemption also will be reduced in the event that JPMC sells or otherwise transfers to third parties any of the specified Bear Stearns subsidiaries identified on the attached Schedule. The amount of the reduction in such event would be the amount of assets in such subsidiary at the time of transfer. This exemption also would expire on October 1, 2009.

These regulatory capital exemptions would assist JPMC in acquiring and stabilizing Bear Stearns and would facilitate the orderly integration of Bear Stearns with and into JPMC. The Board notes that (i) JPMC would be well capitalized (as defined in section 225.2 of the Board's Regulation Y[12]) upon consummation of the acquisition of Bear Stearns, even without the regulatory capital relief provided by the exemptions; and (ii) JPMC has committed to remain well capitalized (as defined in

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[11] See 12 CFR part 225, App. A, § III.A; 12 CFR part 225, App. D, § II.b.

[12] 12 CFR 225.2(r).

section 225.2 of the Regulation Y) during the term of the exemptions, even without the regulatory capital relief provided by the exemptions.

In light of these considerations, the Board hereby grants the requested regulatory capital relief, subject to the conditions and limits discussed above.

These determinations are specifically conditioned on compliance by JPMC and JPMC Bank with all the commitments and representations made in connection with the exemption requests. These commitments and representations are deemed to be conditions imposed in writing by the Board in connection with granting the requests and, as such, may be enforced in proceedings under applicable law. These determinations are based on the specific facts and circumstances of the existing and proposed relationships among JPMC, JPMC Bank, and Bear Stearns. Any material change in those facts and circumstances or any failure by JPMC or JPMC Bank to observe any of its commitments or representations may result in a different determination or in revocation of the exemptions.

Sincerely yours,

Robert deV. Frierson

Robert deV. Frierson
Deputy Secretary of the Board

Attachment

cc: Federal Reserve Bank of New York
Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation

SCHEDULE

Principal Subsidiaries of Bear Stearns

- Bear Stearns Asset Management Inc.
- Bear Stearns Securities Corp.
- Bear Stearns & Co. Inc.
- Texas Investment Holding Inc.
- Any other subsidiary of Bear Stearns that represented more than 10 percent of the total assets of Bear Stearns on the date of acquisition of Bear Stearns by JPMC

FEDERAL RESERVE SYSTEM

JPMorgan Chase & Co.
New York, New York

Order Approving the Acquisition of Control of a Bank

JPMorgan Chase & Co. ("JPMC"), a financial holding company within the meaning of the Bank Holding Company Act ("BHC Act"), has requested the Board's approval under section 3 of the BHC Act[1] to acquire indirect control of Bear Stearns Bank & Trust ("BSB&T"), Princeton, New Jersey, a subsidiary of The Bear Stearns Companies Inc. ("Bear Stearns"), New York, New York.[2] JPMC proposes to acquire more than 25 percent of the voting shares of Bear Stearns and then merge Bear Stearns with a newly formed subsidiary of JPMC, with Bear Stearns as the surviving entity.[3]

Based on all the facts and circumstances, the Board has determined that an emergency exists requiring expeditious action on the proposal.[4] In making this determination, the Board has considered the market conditions and the financial condition of Bear Stearns, the parent company of BSB&T, as well as all the facts of

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1 12 U.S.C. § 1842.

2 JPMC includes the intermediate holding companies through which it will own the shares of BSB&T. Although BSB&T is a "bank" for purposes of the BHC Act, Bear Stearns is not treated as a bank holding company under the act. Bear Stearns controls BSB&T pursuant to section 4(f) of the BHC Act, which exempts a company from treatment as a bank holding company if the company controlled certain "nonbank banks" prior to March 5, 1987. 12 U.S.C. § 1843(f). JPMC does not qualify for this exemption, however, and requires approval to acquire direct or indirect control of BSB&T.

3 JPMC is permitted by section 4(k) of the BHC Act to acquire control of Bear Stearns and its nonbanking subsidiaries without obtaining prior approval from the Board. 12 U.S.C. § 1843(f). Because JPMC qualifies as a financial holding company, the BHC Act requires only that JPMC provide the Board notice within 30 days after acquiring control of Bear Stearns and its nonbanking subsidiaries. 12 U.S.C. § 1843(k)(6); 12 CFR 225.87.

4 12 U.S.C. § 1842(b).

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record. The Board has provided notice to the primary federal and state supervisors of BSB&T and the Department of Justice ("DOJ"); all have indicated they have no objection to the consummation of the proposal.

JPMC, with total consolidated assets of approximately $1.6 trillion, is the third largest depository organization in the United States, controlling deposits of approximately $511 billion, which represent 7.4 percent of the total amount of deposits of insured depository institutions in the United States.[5] JPMC operates four subsidiary insured depository institutions in eighteen states[6] and engages in numerous nonbanking activities that are permissible under the BHC Act. JPMC is the sixth largest depository organization in New Jersey, controlling deposits of approximately $7.1 billion.

BSB&T operates in New Jersey and is the 45th largest depository organization in the state, controlling deposits of approximately $398 million. On consummation of the proposal, JPMC would remain the third largest depository institution in the United States, with total consolidated assets of approximately $1.6 trillion. JPMC would control deposits of approximately $511 billion, which represent 7.4 percent of the total amount of deposits of insured depository institutions in the United States. In New Jersey, JPMC would become the fifth largest depository organization, controlling deposits of approximately $7.4 billion, which represent

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[5] National asset, deposit, and ranking data are as of December 31, 2007. Statewide deposit and deposit ranking data are as of June 30, 2007. In this context, insured depository institutions include commercial banks, savings banks, and savings associations.

[6] JPMC's largest subsidiary bank, JPMorgan Chase Bank, National Association ("JPMC Bank"), Columbus, Ohio, operates branches in Arizona, Colorado, Connecticut, Florida, Illinois, Indiana, Kentucky, Louisiana, Michigan, New Jersey, New York, Ohio, Oklahoma, Texas, Utah, West Virginia, and Wisconsin. JPMorgan Chase Bank, Dearborn ("Dearborn Bank"), Dearborn, Michigan, operates only in Michigan. Chase Bank USA, National Association ("Chase Bank"), Newark, Delaware, operates as a credit card bank. JPMC also operates J. P. Morgan Trust Company, National Association, Los Angeles, California, which is an insured trust company.

approximately 3.8 percent of the deposits in insured depository institutions in the state ("state deposits").

Interstate Analysis

Section 3(d) of the BHC Act allows the Board to approve an application by a bank holding company to acquire control of a bank located in a state other than the home state of such bank holding company if certain conditions are met. For purposes of the BHC Act, the home state of JPMC is New York,[7] and BSB&T is located in New Jersey.[8]

Based on a review of all the facts of record, including relevant state statutes, the Board finds that the conditions for an interstate acquisition enumerated in section 3(d) of the BHC Act are met in this case.[9] In light of all the facts of record, the Board is permitted to approve the proposal under section 3(d) of the BHC Act.

Competitive Considerations

Section 3 of the BHC Act prohibits the Board from approving a proposal that would result in a monopoly or would be in furtherance of an attempt to monopolize the business of banking in any relevant banking market. The BHC Act also prohibits the

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[7] A bank holding company's home state is the state in which the total deposits of all subsidiary banks of the company were the largest on July 1, 1966, or the date on which the company became a bank holding company, whichever is later. 12 U.S.C. § 1841(o)(4)(C).

[8] For purposes of section 3(d) of the BHC Act, the Board considers a bank to be located in the states in which the bank is chartered or headquartered or operates a branch. 12 U.S.C. §§ 1841(o)(4)-(7) and 1842(d)(1)(A) and 1842(d)(2)(B).

[9] 12 U.S.C. §§ 1842(d)(1)(A)-(B) and 1842(d)(2)-(3). JPMC is adequately capitalized and adequately managed, as defined by applicable law. There is no applicable age-requirement law in New Jersey, and BSB&T has been in existence and operated for more than five years. See 12 U.S.C. § 1842(d)(1)(B)(i)-(ii). On consummation of the proposal, JPMC would control less than 10 percent of the total amount of deposits of insured depository institutions in the United States and less than 30 percent of the state deposits in New Jersey. JPMC, therefore, would be in compliance with the relevant deposit cap under New Jersey law, which is 30 percent. 12 U.S.C. § 1842(d)(2)(B)-(D). All other requirements of section 3(d) of the BHC Act would be met on consummation of the proposal.

Board from approving a bank acquisition that would substantially lessen competition in any relevant banking market, unless the anticompetitive effects of the proposal are clearly outweighed in the public interest by the probable effect of the proposal in meeting the convenience and needs of the community to be served.

JPMC and Bear Stearns have subsidiary depository institutions that compete directly in the Metropolitan New York-New Jersey banking market.[10] The Board has reviewed carefully the competitive effects of the proposal in this banking market in light of all the facts of record. In particular, the Board has considered the number of competitors that would remain in the market, the relative shares of total deposits in depository institutions controlled by JPMC and Bear Stearns in the market ("market deposits"),[11] the concentration level of market deposits and the increases in those levels as measured by the Herfindahl-Hirschman Index ("HHI") under the Department of Justice Merger Guidelines ("DOJ Guidelines"),[12] and other characteristics of the market.

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[10] The Metropolitan New York-New Jersey banking market is defined as Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, and Westchester Counties, all in New York; Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties and the northern portions of Mercer County, all in New Jersey; Monroe and Pike Counties in Pennsylvania; and Fairfield County and portions of Litchfield and New Haven Counties in Connecticut.

[11] Deposit and market share data are as of June 30, 2007, and are based on calculations in which the deposits of thrift institutions are included at 50 percent. The Board previously has indicated that thrift institutions have become, or have the potential to become, significant competitors of commercial banks. See, e.g., Midwest Financial Group, 75 Federal Reserve Bulletin 386, 387 (1989); National City Corporation, 70 Federal Reserve Bulletin 743, 744 (1984). Thus, the Board regularly has included thrift deposits in the market share calculation on a 50 percent weighted basis. See, e.g., First Hawaiian, Inc., 77 Federal Reserve Bulletin 52, 55 (1991).

[12] Under the DOJ Guidelines, a market is considered unconcentrated if the post-merger HHI is under 1000, moderately concentrated if the post-merger HHI is between 1000 and 1800, and highly concentrated if the post-merger HHI exceeds 1800. The DOJ has informed the Board that a bank merger or acquisition generally will not be challenged (in the absence of other factors indicating anticompetitive effects) unless the post-merger

Consummation of the proposal would be consistent with Board precedent and within the thresholds in the DOJ Guidelines in the Metropolitan New York-New Jersey banking market.[13] On consummation of the proposal, the market would remain moderately concentrated as measured by the HHI, and numerous competitors would remain in the market.

The DOJ has conducted a review of the potential competitive effects of the proposal and has advised the Board that consummation of the transaction would not likely have a significantly adverse effect on competition in any relevant banking market. In addition, the appropriate banking agencies have been afforded an opportunity to comment and have not objected to the proposal.

Based on all the facts of record, the Board concludes that consummation of the proposal would not have a significantly adverse effect on competition or on the concentration of resources in the banking market where JPMC and Bear Stearns compete directly or in any other relevant banking market. Accordingly, the Board has determined that competitive considerations are consistent with approval.

Financial, Managerial, and Supervisory Considerations

Section 3 of the BHC Act requires the Board to consider the financial and managerial resources and future prospects of the companies and depository institutions involved in the proposal and certain other supervisory factors. The Board has considered

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HHI is at least 1800 and the merger increases the HHI by more than 200 points. The DOJ has stated that the higher-than-normal HHI thresholds for screening bank mergers and acquisitions for anticompetitive effects implicitly recognize the competitive effects of limited-purpose and other nondepository financial entities.

[13] JPMC operates the largest depository institution in the Metropolitan New York-New Jersey banking market, controlling deposits of approximately $228 billion, which represent 29 percent of market deposits. BSB&T controls $398 million in deposits, which represents less than 1 percent of market deposits. On consummation, JPMC would remain the largest depository institution in the market, controlling deposits of approximately $228 billion, which represent approximately 29 percent of market deposits. Approximately 271 depository institutions would remain in the banking market. The HHI would remain unchanged at 1118.

these factors in light of all the facts of record, including confidential reports of examination and other supervisory information received from the relevant federal and state supervisors of the organizations involved in the proposal, and other available financial information, including information provided by JPMC.

In evaluating financial factors in expansion proposals by banking organizations, the Board reviews the financial condition of the relevant companies involved on both a parent-only and consolidated basis, as well as the financial condition of the subsidiary depository institutions and other subsidiaries. In this evaluation, the Board considers a variety of information, including capital adequacy, asset quality, and earnings performance. In assessing financial factors, the Board consistently has considered capital adequacy to be especially important. The Board also evaluates the financial condition of the applicant organization after consummation of the proposed transaction.

The Board has considered the proposal carefully under the relevant financial factors. JPMC, its subsidiary depository institutions, and BSB&T are well capitalized and would remain so on consummation of the proposal.

The Board also has considered the managerial resources of the organizations involved and the proposed combined organization. The Board has reviewed the examination records of JPMC and its subsidiary depository institutions, including assessments of their management, risk-management systems, and operations. In addition, the Board has considered its supervisory experiences and those of the other relevant bank supervisory agencies with the organizations and their records of compliance with applicable banking law, including anti-money laundering laws. JPMC and its subsidiary depository institutions, as well as BSB&T, are considered to be well managed.

Based on all the facts of record, the Board has concluded that considerations relating to the financial and managerial resources and future prospects of the organizations involved in the proposal are consistent with approval, as are the other supervisory factors under the BHC Act.

Convenience and Needs Considerations

In acting on a proposal under section 3 of the BHC Act, the Board is required to consider the effects of the proposal on the convenience and needs of the communities to be served and to take into account the records of the relevant insured depository institutions under the Community Reinvestment Act ("CRA").[14]

As provided in the CRA, the Board has reviewed the convenience and needs factor in light of the evaluations by the appropriate federal supervisors of the CRA performance records of the relevant insured depository institutions. An institution's most recent CRA performance evaluation is a particularly important consideration in the applications process because it represents a detailed, on-site evaluation of the institution's overall record of performance under the CRA by its appropriate federal supervisor.[15] Each of JPMC's subsidiary depository institutions that is subject to the CRA received an "outstanding" rating at its most recent CRA performance evaluation.[16] BSB&T currently does not receive a CRA evaluation due to the bank's designation as a special purpose bank by the Federal Deposit Insurance Corporation.[17]

The Board has considered carefully all of the facts of record, including reports of examination of the CRA records of the institutions involved and confidential supervisory information. JPMC's acquisition of BSB&T will enhance and maintain the

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[14] 12 U.S.C. § 2901 et seq.; 12 U.S.C. § 1842(c)(2).

[15] See Interagency Questions and Answers Regarding Community Reinvestment, 66 Federal Register 36,620 and 36,639 (2001).

[16] JPMC's lead bank, JPMC Bank, received an "outstanding" rating at its most recent CRA performance evaluation by the Federal Reserve Bank of New York, as of September 8, 2003. JPMC Bank converted to a national bank on November 13, 2004. The Board has consulted with the Office of the Comptroller of the Currency ("OCC"), which is now JPMC Bank's primary federal supervisor, about the bank's performance since its evaluation in 2003. J. P. Morgan Trust Company received an "outstanding" rating at its most recent CRA performance evaluation by the OCC, as of November 4, 2006. Chase Bank received an "outstanding" rating at its most CRA examination by the OCC, as of January 9, 2006. Dearborn Bank engages in cash management activities for its affiliated banks and is not subject to the CRA.

[17] 12 CFR 345.11.

level of service provided to the customers currently served by BSB&T. Based on a review of the entire record, and for the reasons discussed above, the Board concludes that considerations relating to the convenience and needs factor and the CRA performance records of the relevant insured depository institutions are consistent with approval of the proposal.

Conclusion

Based on the foregoing, and in light of all the facts of record, the Board has determined that the application should be, and hereby is, approved. In reaching its decision, the Board has considered all the facts of record in light of the factors that it is required to consider under the BHC Act. The Board's approval is specifically conditioned on compliance by JPMC with the conditions in this order and all the commitments made to the Board in connection with the proposal. For purposes of this transaction, these commitments and conditions are deemed to be conditions imposed in writing by the Board in connection with its findings and decision and, as such, may be enforced in proceedings under applicable law.

The transaction may not be consummated before the fifth calendar day after the effective date of this order, or later than three months after the effective date of this order, unless such period is extended for good cause by the Board or by the Federal Reserve Bank of New York, acting pursuant to delegated authority.

By order of the Board of Governors,[18] effective April 1, 2008.

(signed)

Robert deV. Frierson
Deputy Secretary of the Board

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[18] Voting for this action: Chairman Bernanke, Vice Chairman Kohn, and Governors Warsh, Kroszner, and Mishkin.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

DANIEL K. TARULLO
MEMBER OF THE BOARD

February 6, 2009

The Honorable Christopher J. Dodd
Chairman
Committee on Banking, Housing
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the additional questions submitted by Senator Johnson and yourself in connection with my nomination hearing before the Committee on January 15. I have also forwarded a copy of my responses to Senator Johnson for his information.

Please let me know if I can be of further assistance.

Sincerely,

Daniel K. Tarullo

Enclosures

Governor Daniel K. Tarullo submitted the following in response to written questions received from Chairman Dodd in connection with the nomination hearing before the Committee on Banking, Housing, and Urban Affairs on January 15, 2009:

Regulatory Modernization

Mr. Tarullo, you have testified before this Committee about the shortcomings of banking regulation well before the subprime crisis erupted. As you assess what has happened since then, what principles will guide your thinking about what the Congress, the Federal Reserve, and other bank regulators should make to modernize our financial regulatory system?

In thinking about modernization of the financial regulatory system, I will be guided by the six principles listed below. Some measures needed to apply these principles can be made under existing authority of the regulatory agencies, while others may require legislative action by the Congress.

First, successful regulatory modernization must be forward-looking. While it is important to make changes that would prevent practices that led to the subprime crisis, it is essential to recognize that financial stress usually does not recur in precisely the same way as in a previous episode. We need a regulatory system that can identify and respond, as necessary, to new risks to financial stability.

Second, the rules and requirements designed to maintain safety and soundness of individual financial institutions must be appropriate and enforceable benchmarks that allow effective monitoring and, where necessary, prompt correction of capital, liquidity, and risk management practices.

Third, a modern financial regulatory system must have the capacity to contain systemic risk, no matter what its source, and the authority to achieve this goal. This means ensuring regulatory coverage of all systemically important institutions. It also means establishing measures to identify, and respond to, risks created in interactions among financial actors.

Fourth, an effective financial regulatory system must ensure that the regulatory and supervisory systems that govern individual financial institutions are effectively integrated with those designed to contain risks specifically arising from interactions among financial actors. That is, regulators commissioned with overseeing systemic stability must have sufficient involvement in the supervision of specific financial institutions to determine how the various measures interact.

Fifth, the organization of, and allocation of functions among, our regulatory agencies must be designed so that each regulatory mission delegated by the Congress will be vigorously pursued with adequate authority and resources to realize that mission. Past shortcomings in consumer protection in the area of financial services provide one example of a need for renewed attention.

Sixth, in attempting to implement these principles--and regulatory modernization more generally--it is essential to keep in mind that the aim of financial regulation should be to establish and maintain a financial system that allocates capital efficiently so as to promote sustainable economic growth by providing investment opportunities and access to credit. The goal is not more or less regulation as such, but the right forms of regulation to achieve these ends.

International Cause of the Problem / Exchange Rates

Dr. Fred Bergsten, Director of the Peterson Institute for International Economics, wrote an op-ed article in the Washington Post entitled "Globalizing the Crisis Response," in which he makes the following point, and I quote –

> **"The current crisis originated in the United States but was importantly affected by massive savings surpluses in some countries and the resulting surfeit of liquidity, which drove down interest rates here and encouraged irresponsible lending here. These international imbalances were in turn partly caused by misaligned exchange rates." – end quote**

- **Do you agree with Dr. Bergsten that the current financial crisis has roots in the global savings surpluses in China and other Asian nations that were accumulated at least in part by misaligned exchange rates?**

I agree that an excess of savings over investment in many emerging market countries, which raised the availability of credit and lowered its cost, contributed to the conditions which gave rise to the current crisis. It is difficult, however, to distinguish with precision the contribution of these savings surpluses from developments in the United States and abroad that also encouraged reckless lending and excessive risk, such as the deterioration in underwriting standards, flaws in the "originate to distribute" model, the over-reliance of financial institutions on short-term credit, and inadequate risk management. Similarly, misaligned exchange rates were decidedly a factor in some emerging market economies' current account surpluses and resultant export of capital to the United States and other advanced economies. However, a number of other factors also figured prominently in these external imbalances, including a protracted slump in investment spending in some East Asian economies and soaring commodities prices, which boosted the revenues of many commodity-exporting countries.

Banking and Commerce

Mr. Tarullo, can you share with the Committee your views on the separation between banking and commerce? Specifically, what are your views on Industrial Loan Companies?

The question of whether, or to what extent, the mixing of banking and commerce should be permitted is an important issue. The decision has important ramifications for the structure of the American financial system and the economy, particularly because any widespread combinations of banking and commerce likely would be irreversible. I believe any reversal of the nation's policy concerning the mixing of banking and commerce should be made only by Congress itself after legislative hearings, public debate, and careful review of the potential benefits and costs to taxpayers, the financial system, and the economy.

One area in which Congress has permitted the mixing of banking and commerce is through the ownership of industrial loan companies (ILCs). The exception for ILCs in the Bank Holding Company Act (BHC Act) allows any type of company--including a domestic or foreign commercial firm--to acquire a federally insured bank chartered in certain states without complying with the limitations on banking and commerce that Congress has established for the corporate owners of other full-service insured banks. Although the number of exempt ILCs recently has declined (primarily through the conversion of several financial owners of ILCs to bank holding companies), the ILC exception in the BHC Act has the continuing potential to undermine the policy that Congress has established on the separation of banking and commerce.

Dual Mandate

Mr. Tarullo, do you believe in the Fed's dual mandate for maximum employment and price stability? Are there approximate figures for the nation's unemployment rate and inflation rate that match what you believe to be maximum employment and price stability? If so, can you share what those are?

I fully endorse the monetary policy mandate that Congress has set out for the Federal Reserve of pursuing maximum employment and price stability. These policy goals have served our economy well.

It is difficult to provide specific figures for the unemployment rate and inflation rate that would best satisfy the Congressional mandate. With regard to inflation, there are a number of different measures of inflation, each with its own strengths, weaknesses, and biases. As for employment, a fixed measure of "maximum employment" is not compatible with the fact that our economy develops and changes over time in response to changes in technology and other factors.

Mr. Tarullo, can you inform the Committee of any periods in American history where you believe that maximum employment was not being reached or that price stability was not achieved? During those periods, what actions do you believe the Fed should have undertaken to achieve its mandate?

The economy is subject to a variety of demand or supply shocks that can pose a threat to the achievement of maximum employment and price stability. It is of course important for monetary policy to respond appropriately to these developments. At some times in the past, though, adherence to a particular monetary policy response well after a reduction in the risks associated with the shock has itself contributed to an increase in other risks to achieving these goals. For example, during the 1970s, increases in the prices of oil and other commodities, along with a slowdown in the rate of underlying productivity growth, contributed to a substantial rise in inflation, which reached double-digit levels by the end of the decade. Over time, high inflation became built into expectations and distorted the decisions of businesses and households with adverse results for economic performance. A tighter policy stance would have been appropriate to limit the rise in inflation. Had such a policy been pursued earlier, it might well have avoided some of the negative effects on employment that ensued from the very tight monetary policy that was adopted in the early 1980s to bring inflation back down to lower levels.

Transparency

As a result of the recession and the crisis in our financial markets, the Federal Reserve has lowered its short term interest rate target to an effective rate of zero. The Fed has also exercised authority under the Federal Reserve Act to make a series of loans to provide liquidity and that have had the effect of expanding the Fed's balance sheet. As a result, we find ourselves in an unprecedented period in which traditional monetary policy tools have been exhausted and the Fed is using new methods to implement monetary policy.

- **Do you believe that it is important that as the Federal Reserve begins to conduct monetary policy through non-traditional means that it ensures that those actions are highly transparent?**

I strongly believe that it is important for the Federal Reserve to conduct its monetary policy actions in as transparent a manner as is consistent with the effective achievement of its monetary policy goals, both in routine circumstances and in periods such as the present when it must conduct policy using nontraditional tools.

- **What are the advantages to conducting these operations in a transparent manner?**

Conducting such operations in a transparent manner supports the overall accountability of the Federal Reserve to the Congress and the public. Such accountability is always important, but it is especially critical when nontraditional policy tools--which are less familiar to the public, and entail somewhat greater risks, than traditional policy tools--are being employed. In addition, by improving market understanding of these operations, such transparency helps support public confidence that the Federal Reserve and the rest of the government are implementing measures that will be effective in strengthening financial markets and institutions and thus encouraging a resumption of sustainable economic growth.

- **What are the costs associated with a lack of transparency in the conduct of both traditional and non-traditional monetary policy?**

Lack of transparency in the conduct of traditional and non-traditional monetary policy would tend to undercut the effectiveness of policy actions. In the case of traditional monetary policy, lack of transparency would create greater uncertainty about the Federal Reserve's policy objectives as well as likely actions in response to various economic developments. Such uncertainty would tend to boost risk premiums and thus interest rates and depress spending and economic activity. In addition, a major benefit of transparency stems from the ability of market participants to anticipate future policy actions. If market participants can anticipate future policy actions, those expectations will be priced into longer-term interest rates and other asset prices immediately, thus amplifying the power of monetary policy to affect overall financial conditions and the economy. Lack of transparency would undercut this important role of expectations.

Lack of transparency regarding the purposes, terms, and conditions of the Federal Reserve's liquidity programs would similarly undercut their effectiveness. For such programs to be effective, market participants and the general public must understand the rationale and the terms and conditions for all such programs. As with interest rate policies, the ability of investors and others to anticipate how such programs will operate is extremely important.

Sovereign Wealth Funds

Mr. Tarullo, foreign government-controlled funds known as sovereign wealth funds have invested significant resources in U.S. financial institutions struggling to recover from losses during the current recession.

- **Do you believe that the procedures in place at the Federal Reserve to review and monitor the effects of these transactions on bank holding companies are adequate to ensure the safety and soundness of the affiliated depository institutions?**

I believe that the Federal Reserve has adequate authority under existing legislation to review and monitor investments of sovereign wealth funds in banks and bank holding companies and, if necessary, to take action to ensure the safety and soundness of those institutions. The Bank Holding Company Act ("BHCA") and the Change in Bank Control Act ("CIBCA") require any company, including a company owned or controlled by a foreign government, to obtain the approval of the Federal Reserve or other federal banking agency before making a direct or indirect investment in a bank or bank holding company if the investment meets certain thresholds or conditions. The BHCA requires regular reporting on matters such as risk management and financial conditions, subjects bank holding companies to regular examination, and gives the Federal Reserve broad, ongoing authority to prevent bank holding companies from engaging in unsafe or unsound practices.

To date, sovereign wealth funds have structured their investments so as not to trigger the thresholds and conditions for review under the BHCA and CIBCA. Even below these threshold levels, however, the investments must not allow the sovereign wealth fund to exercise a controlling influence over the management or policies of the banking organization. Of course, even under these circumstances, the Federal Reserve has broad supervisory authority over the bank holding company, including authority to ensure compliance with applicable limitations on connections or relationships between a supposed passive investor and the banking organization.

Based on publicly available information, I am not aware of any inadequacy in the Federal Reserve's procedures to ensure compliance with these requirements. However, if and as circumstances change, it would be important for the Federal Reserve to adapt its monitoring and enforcement procedures to ensure the safety and soundness of U.S. banking organizations.

- **Do you believe that the Federal Reserve Board has sufficient information to monitor the influence these foreign government investments may have on the U.S. banking system?**

Based on publicly available information, I have no reason to believe that information available to the Federal Reserve pertaining to foreign government investments in U.S. banking organizations is insufficient to protect safety and soundness and otherwise monitor their impact on the U.S. banking system. As a Member of the Board of Governors of the Federal Reserve System, I would seek to ensure that Federal Reserve staff develop and maintain sources of information sufficient for effective monitoring of the relationships between investors and U.S. banking organizations.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 6, 2009

The Honorable Spencer Bachus
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter of December 3, 2008, which enclosed correspondence from the Alabama Deputy Superintendant of Banks, Mr. Trabo Reed. Mr. Reed's letter raised concerns about the TARP Capital Purchase Program and the process that the federal bank supervisory agencies are following in considering applications. I can assure you that the Federal Reserve highly values its strong working relationship with the state banking agencies and will give due consideration to Mr. Reed's observations and suggestions. We recognize the important role that the state regulators play in fostering a safe and sound banking system and, as Mr. Reed's letter notes, have endeavored to work cooperatively with our state colleagues in processing applications under the TARP CPP. Moreover, the Federal Reserve very much shares Mr. Reed's interest in ensuring a clear, fair, and timely process for the consideration of applications for investments under the TARP CPP.

Sincerely,

(signed) Ben Bernanke

For files
M. Huff Taylor

08 - 13934

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 10, 2009

RECEIVED
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2009 MAR 11 P 6: 18

The Honorable Max Baucus
Chairman
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Thank you for your letter concerning an event sponsored in September 2008 by American International Group, Inc. (AIG), a large diversified financial services company, at a California resort. The event was sponsored by AIG for independent life insurance agents and a small number of employees of one of AIG's regulated insurance subsidiaries. This event occurred several days after the Federal Reserve committed to lend to AIG. In order to prevent a disorderly failure of AIG that could add to already significant levels of financial market fragility and other adverse consequences, the Federal Reserve agreed on September 16, 2008, to lend up to $85 billion through a revolving credit facility (Revolving Credit Facility) to assist AIG in meeting its obligations as they come due and facilitate the orderly disposition of its businesses.

You have asked about the Federal Reserve's response to AIG's sponsorship of the resort event and about control over its senior management and compensation. Since your letter was received, there have been several material developments regarding controls on expenses at AIG that directly relate to the questions you have raised. We would like to update you on these recent developments.

As is usual in commercial lending transactions involving distressed borrowers, the Federal Reserve has certain limited rights as a creditor, such as the right to require that overall corporate governance be acceptable to the Federal Reserve. These rights allow the Federal Reserve to monitor the financial condition of AIG and to restrict certain major decisions that might reduce the ability of AIG to repay its loan from the Federal Reserve. However, as with other lending arrangements, these rights do not permit the Federal Reserve to participate in the ordinary business decisions of management. For example, the credit agreement requires AIG to submit to the Federal Reserve a significant number of financial statements and reports that address a broad range of topics relating to the financial condition and future prospects of the company. However, as a lender, the Federal Reserve is not in a position to review or approve all of the specific compensation or other expenditures related to the ongoing business operations of AIG and its subsidiaries. These types of decisions are within the authority of the company's senior management and, as noted below, are also to some degree within the authority of the Treasury as an equity owner.

The Federal Reserve has a team of about ten staff, led by senior officials, who are primarily responsible for conducting oversight of AIG pursuant to the credit agreement. Staff are in some cases stationed onsite at the company, in different locations and subsidiaries, in order to make sure that we are adequately informed on funding and cash flows, liquidity, earnings, valuation of assets of the company, risk management across the company, and progress in pursuing the company's divestiture plan. Federal Reserve monitoring extends to the general financial condition of the company on a consolidated basis as well as to reviews of separate financial information on all of the company's major subsidiaries. Federal Reserve Bank of New York staff usually meet several times a week with key corporate managers, including the CEO, the Chief Restructuring Officer, and the Chief Financial Officer. We observe all meetings of the board of directors of AIG, including committee meetings. We have obtained the assistance of qualified advisors to help us with the monitoring process. Our oversight of AIG has been coordinated with the U.S. Department of the Treasury, and we will continue to provide the Treasury with relevant information regarding AIG.

Importantly, we routinely make our views known on key issues. Last fall, for example, we made clear to AIG's management our deep concern about reported incidents of corporate spending and questions surrounding certain executive compensation. We have also pressed the company to ensure that robust corporate governance surrounds all compensation actions--for example, internal vetting by its Human Resources division, review by the Compensation Committee of AIG's Board of Directors, and consultations with outside experts. We also supported the establishment of a Special Governance Committee within AIG, the issuance of a new Expense Policy Guidebook for all employees, and the cancellation of all meetings, conferences and other events that are not strictly justified by clear business needs. In December 2008, AIG established a strengthened internal reporting and oversight process for expenses, under the direction of a Senior Vice President. In addition to monitoring and reporting compliance with the recent Expense Guidebook, the objective of the new process is to establish targets for expense reductions consistent with the company's divestiture program and a reporting framework for the government and other constituencies.

We believe it is in the taxpayer's interest for AIG to provide reasonable, market-based compensation with a view toward attracting and retaining qualified staff in order to maintain the value of the businesses that AIG is seeking to sell in order to repay the federal financial assistance it has received. At the same time, we are mindful that the company must avoid excessive compensation and other unnecessary expenditures that do not further this objective. Operating under this oversight framework, and with our active encouragement, AIG has adopted voluntary limits to executive compensation that restrict salary and bonuses for 2008 and 2009 of the CEO, who was installed after the Federal

Reserve extended credit, and of other senior managers. Moreover, AIG and the New York Attorney General have agreed to restrictions on certain compensation agreements involving a former CEO and its financial products subsidiary.

In addition to these voluntary restrictions, in connection with the U.S. Treasury's purchase of $40 billion of preferred stock of AIG under the Troubled Assets Relief Program (TARP), the Treasury has imposed standards governing executive compensation on AIG that are more wide ranging than those established by the Secretary under the Capital Purchase Program established for banking organizations by the Treasury. None of the proceeds of the Treasury preferred stock or the funds provided by the Federal Reserve's Revolving Credit Facility may be used to pay annual bonuses or other future cash performance awards to AIG senior executives. The Treasury has also required a comprehensive written policy on corporate expenses that may be materially amended only with the prior written consent of the Treasury. Material deviations from the expense policy must be reported to the Treasury. Moreover, the Office of the Special Inspector General for the TARP has recently announced plans to focus on enforcement of the executive compensation limits required for TARP recipients and has begun preliminary data collection from TARP recipients.

We also note that AIG remains obligated to repay the full amount of the Revolving Credit Facility from the Federal Reserve with accrued interest. To assure repayment, the Federal Reserve is secured by the pledge of a substantial portion of the assets of AIG and its primary non-regulated subsidiaries, including AIG's ownership interest in its regulated U.S. and foreign subsidiaries. We expect that the orderly disposition of certain of these assets will provide the funds for the loan repayment. As part of the restructuring of the government's financial support for AIG in November, the total amount of credit available under the Revolving Credit Facility was reduced to $60 billion from $85 billion.

On March 2, 2009, the Federal Reserve and Treasury announced several additional steps to restructure the government's assistance to AIG in order to further stabilize the company and promote financial stability, including a reduction in the total amount available under the Revolving Credit Facility to $25 billion after certain restructuring transactions take place.

With regard to the terms and conditions of the Federal Reserve's credit to AIG, as part of our efforts to keep Congress informed about the Federal Reserve's actions regarding AIG, the Federal Reserve routinely files reports in accordance with section 129(b) of the Emergency Economic Stabilization Act. The Board filed reports last fall with the House Financial Services Committee and the Senate Banking, Housing, and Urban Affairs Committee explaining, among other things, the specific terms of the Board's actions in establishing the Revolving Credit Facility and other credit facilities for AIG. On December 29, 2008 and February 26, 2009, updated reports were filed with the Committees under section 129(b) with respect to the outstanding Federal Reserve credit facilities for AIG, providing information on the status of the loan, the value of the collateral, and the projected cost to taxpayers. Additional periodic updates will be provided so long as these facilities remain outstanding.

You also inquired about the securities lending facility established on October 8, 2008, which has now been terminated. This facility authorized the Federal Reserve Bank of New York to borrow up to $37.8 billion in securities from AIG in return for cash collateral. This program was implemented to relieve the liquidity strains placed on AIG due to the ongoing withdrawal of counterparties from its securities borrowing transactions. The facility reduced pressure on AIG to liquidate immediately the portfolio of illiquid residential mortgage-backed securities (RMBS) that were purchased with the proceeds of the securities lending transactions. This permitted AIG to use the remaining amounts of the Revolving Credit Facility for other purposes.

In December 2008, the Federal Reserve implemented a new lending facility with a different structure. Under this lending facility, the New York Reserve Bank lent approximately $19 billion to an LLC (as opposed to AIG directly), the proceeds of which were used to purchase the RMBS that AIG had purchased with the proceeds of its securities borrowing transactions. The Federal Reserve loan is fully collateralized by the RMBS portfolio. In connection with this lending facility, the October 8 lending facility was repaid and terminated.

We hope this information has been helpful.

Sincerely,

(signed) Ben Bernanke

08-14633

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 12, 2009

RECEIVED
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2010 JAN 26 A 3:09

The Honorable Chuck Grassley
Ranking Member
Committee on Finance
United States Senate
Washington, D.C. 20510-6206

Dear Senator:

This is in response to your letter regarding assistance provided by the U.S. government to the American International Group, Inc. (AIG). In your letter, you ask about the policies and procedures we have implemented to assure the independence of our advisors and to prevent conflicts of interest. You also ask several questions about restrictions on compensation and expenses paid by recipients of funds under the Troubled Assets Relief Program (TARP) and Federal Reserve lending programs. You specifically question certain payments by AIG to former executives and for an event at a California resort. The event was sponsored by AIG for independent life insurance agents and a small number of employees of one of AIG's regulated insurance subsidiaries. This event occurred several days after the Federal Reserve committed to lend to AIG.

With respect to preventing conflicts of interest, Federal Reserve employees are subject to extensive ethics rules designed to prevent conflicts of interest. It is a violation of federal criminal law for Federal Reserve employees to participate personally and substantially in any particular matter in which the employee or his or her immediate family has a financial interest (12 U.S.C. 208). In addition to being subject to this statutory criminal prohibition, Federal Reserve employees also are prohibited by regulation generally from owning debt or equity interests in depository institutions and their affiliates (e.g., 12 C.F.R. 6801.103(a)). Although this regulatory prohibition does not literally cover companies primarily in the insurance business, like AIG, employees at the Federal Reserve Bank of New York (FRBNY), which has established the AIG credit facilities, are specifically barred from owning stock in AIG. For employees who have had prior work experience at financial institutions, we carefully review any continuing financial interests resulting from the prior employment with a view to preventing prohibited conflicts of interest. Moreover, federal ethics regulations and Federal Reserve Bank policy require employees to disclose circumstances or relationships that could create even an appearance of a conflict of interest, such as the employment of a relative by an institution involved in an employee's assigned work.

There are also policies and procedures addressing potential conflicts of interest that apply to third party firms that have been retained by the Federal Reserve as advisors in connection with emergency credit facilities authorized by the Board. In particular, where independent investment advisor firms have been retained to manage assets acquired by special purpose vehicles set up to facilitate the AIG and other Federal Reserve credit facilities, the agreements with the advisors have specific provisions designed to assure the System receives independent and objective advice and avoids conflicts of interest, such as the segregation of employees providing services to the Federal Reserve from the advisors' other activities, and restrictions on disclosure of confidential information. In addition, the FRBNY has asked all of its outside vendors performing services related to financial stability to identify potential and actual conflicts of interest that may arise in the course of performance of their contractual duties and, where a potential issue has been identified, to develop mitigation plans to our satisfaction or to seek a waiver where appropriate.

With regard to limitations on excessive expenditures and compensation by AIG, as is usual in commercial lending transactions involving distressed borrowers, the Federal Reserve has certain limited rights as a creditor, such as the right to require that overall corporate governance be acceptable to the Federal Reserve. These rights allow the Federal Reserve to monitor the financial condition of AIG and to restrict certain major decisions that might reduce the ability of AIG to repay its loan from the Federal Reserve. However, as with other lending arrangements, these rights do not permit the Federal Reserve to participate in the ordinary business decisions of management. For example, the credit agreement requires AIG to submit to the Federal Reserve a significant number of financial statements and reports that address a broad range of topics relating to the financial condition and future prospects of the company. However, as a lender, the Federal Reserve is not in a position to review or approve all of the specific compensation or other expenditures related to the ongoing business operations of AIG and its subsidiaries. These types of decisions are within the authority of the company's senior management and, as noted below, are also to some degree within the authority of the Treasury as an equity owner.

Importantly, we routinely make our views known on key issues. Last fall, for example, we made clear to AIG's management our deep concern about reported incidents of corporate spending and questions surrounding certain executive compensation. We have also pressed the company to ensure that robust corporate governance surrounds all compensation actions--for example, internal vetting by its Human Resources division, review by the Compensation Committee of AIG's Board of Directors, and consultations with outside experts. We also supported the establishment of a Special Governance Committee within AIG, the issuance of a new Expense Policy Guidebook for all employees, and the cancellation of all meetings, conferences and other events that are not strictly justified by clear business needs. In December 2008, AIG established a strengthened internal reporting and oversight process for expenses, under the direction of a Senior Vice President. In addition to monitoring and reporting compliance with the recent Expense Guidebook, the objective of the new process is to establish targets for expense reductions consistent with the company's divestiture program and a reporting framework for the government and other constituencies.

We believe it is in the taxpayer's interest for AIG to provide reasonable, market-based compensation with a view toward attracting and retaining qualified staff in order to maintain the value of the businesses that AIG is seeking to sell in order to repay the federal financial assistance it has received. At the same time, we are mindful that the company must avoid excessive compensation and other unnecessary expenditures that do not further this objective. Operating under this oversight framework, and with our active encouragement, AIG has adopted voluntary limits to executive compensation that restrict salary and bonuses for 2008 and 2009 of the CEO, who was installed after the Federal Reserve extended credit, and of other senior managers. Moreover, AIG and the New York Attorney General have agreed to restrictions on certain compensation agreements involving a former CEO and its financial products subsidiary.

In addition to these voluntary restrictions, in connection with the U.S. Treasury's purchase in November 2008 of $40 billion of preferred stock of AIG under the TARP, the Treasury has imposed standards governing executive compensation on AIG that are more wide ranging than those established by the Secretary under the Capital Purchase Program established for banking organizations by the Treasury. None of the proceeds of the Treasury preferred stock or the funds provided by the Federal Reserve's Revolving Credit Facility may be used to pay annual bonuses or other future cash performance awards to AIG senior executives. The Treasury has also required a comprehensive written policy on corporate expenses that may be materially amended only with the prior written consent of the Treasury. Material deviations from the expense policy must be reported to the Treasury. Moreover, the Office of the Special Inspector General for the TARP has recently announced plans to focus on enforcement of the executive compensation limits required for TARP recipients and has begun preliminary data collection from TARP recipients.

We hope this information has been helpful.

Sincerely,

09-6100

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

May 15, 2009

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2009 MAY 19 A 10 16

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of May 1, 2009, expressing concern that some credit card issuers are adjusting credit lines and interest rates based on where consumers live or shop, what they buy, or who holds their mortgage. Based on the documents enclosed with your letter, it appears that at least one issuer has used some of this information as part of its risk management program.

As you know, the final credit card rules issued by the Board, the Office of Thrift Supervision, and the National Credit Union Administration prohibit credit card issuers from increasing the rates that apply to existing balances based on this type of information. Although these rules do not limit the information issuers may consider when setting or adjusting credit limits or the rates that will apply to new transactions, other legal limitations do apply, including the Equal Credit Opportunity Act's prohibition on discriminating against an applicant on a prohibited basis regarding any aspect of a credit transaction.

You have asked that the Board begin to comply with Chairwoman Waters' amendment to H.R. 627, which requires the Board--in consultation with the other federal banking agencies and the Federal Trade Commission--to report to Congress on the extent to which issuers have engaged in the practices described above over the past three years and the extent to which minority or low-income consumers have been adversely impacted. We have carefully reviewed the amendment and begun to consider how the Board would gather the information necessary to perform this analysis.

I hope that this letter addresses your concerns. Please do not hesitate to contact me if you require any additional information.

Sincerely,

(Signed) Ben Bernanke

Identical letters sent to: Chairwoman Maxine Waters, Subcommittee on Housing and Community Opportunity of House Financial Services Committee [Note: 3rd paragraph reads "...to comply with your amendment..."]; Congresswoman Carolyn B. Maloney; and Chairman Luis V. Gutierrez, Subcommittee on Financial Institutions and Consumer Credit of House Financial Services Committee.

09-4914

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 MAY 20 P 5:00

BEN S. BERNANKE
CHAIRMAN

May 19, 2009

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter of April 1, 2009, transmitting letters from Ranking Member Bachus concerning certain payments by the American International Group, Inc. (AIG) to its counterparties. In these letters, the Ranking Member raises questions about possible disparate treatment between foreign and domestic banks in payments by AIG after the company received government assistance to avoid a disorderly liquidation and resulting risk to the financial system.

The transactions cited by the Ranking Member involve AIG's participation, through its subsidiary AIG Global Real Estate (AIGGRE), in joint ventures with developers to purchase, construct, and hold real estate. One of these joint ventures is AIG Baker Company, a joint venture with an Alabama developer that holds a number of commercial real estate development projects in the Southeast and elsewhere in the U.S.

AIG has provided equity to support various AIG Baker projects. These projects have obtained financing from groups of bank lenders that vary with each project. The lender group for AIG Baker is comprised of several large money center institutions as well as a number of regional banks, and includes at least one bank that has a foreign parent company. AIG Baker is currently facing a cash flow shortfall and is in default on many of its bank loans. As a result, AIG Baker is negotiating with the lender banks to restructure its bank debt and is seeking concessions from the banks.

AIGGRE management has stated that, while AIG has for some time advanced funds to cover shortfalls at AIG Baker, AIG has no legal obligation under the joint venture agreement with AIG Baker to fund cash flow shortfalls at AIG Baker. AIG Baker is a separate, limited liability joint venture in which the real estate developer has a substantial ownership interest. This joint venture has no recourse to either AIGGRE or to AIG. AIG has not guaranteed any of AIG Baker's bank debt. Accordingly, any loans made to AIG Baker properties are the exclusive obligation of AIG Baker (not AIGGRE or AIG).

The Honorable Barney Frank
Page Two

After receiving federal assistance last year, AIG, with the help of an external adviser, began reviewing all of AIGGRE's investments to assess whether providing additional funding to support the investments best serves the economic interests of the company. This review, which is managed by an AIG steering committee, considers various factors, such as whether AIG has guaranteed obligations of the investment, whether the investments have positive equity value, and whether a failure to fund would result in a significant impairment of value.

It appears that the decisions made by AIG with regard to funding the most recent cash shortfall were based on what AIG believes, with the assistance of its advisers, are objective economic and financial considerations, not on the domestic or foreign status of bank counterparties.

The funding decisions by AIG with respect to AIG Baker differ from the payments referred to in the Ranking Member's letters that were made at the end of last year to certain domestic and foreign counterparties that held credit default swaps (CDS) written by AIG's Financial Products subsidiary on multi-sector collateralized debt obligations (CDOs). Those payments were related to obligations guaranteed by the parent company, AIG, and served to relieve AIG of the continuing obligation to post collateral with counterparties. Those CDS contracts were binding legal obligations of AIG and its failure to perform under their terms could very likely have resulted in the bankruptcy of the company, which would have posed substantial risk to already fragile credit and other financial markets. The decision to make payments to the CDS counterparties was based on the legal and financial circumstances relating to AIG's obligations under those contracts, and was not related in any way on the location of banks involved in the transactions. We note that at least one of the banking organizations that were CDS counterparties is among those being asked to make concessions as part of the renegotiation of bank debt to AIG Baker.

I hope this information has been helpful.

Sincerely,

(Signed) Ben Bernanke

09-6550

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 3, 2009

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I am responding to your letter of April 30, 2009, in which you requested our views about a proposal in which U.S. companies that repatriate profits from abroad would pay a reduced tax rate, provided that they deposit the funds with a U.S. depository institution. In that letter, you specifically asked for our views on how long the funds would need to be held on deposit in order to increase materially the lending capacity of depository institutions.

We do not believe that the proposal--regardless of the particular term of the deposits--is likely to boost materially lending by depository institutions. Currently, most institutions' willingness and ability to lend appears to be restrained more by concerns about their capital positions and the economic outlook rather than their lack of access to, or the high cost of, funds. Indeed, the U.S. government has taken a number of steps to ensure that depository institutions have access to funds, including the provision of ample liquidity by the Federal Reserve; the temporary increase in the deposit insurance ceiling to $250,000; and the FDIC's Temporary Liquidity Guarantee Program, under which the FDIC provides an unlimited guarantee of noninterest-bearing transaction accounts and guarantees selected senior obligations of participating depository institutions and their parent holding companies. Moreover, U.S. companies that repatriated profits under the proposed program could well deposit them with the strongest U.S. depository institutions, and those institutions are the least likely to need additional funding because they have the ability to raise funds in deposit and other markets.

It is also important to keep in mind that in the current environment, the weakness in lending appears to stem importantly from the low level of loan demand, a reflection of the uncertain economic outlook. Given the weak demand for loans, increasing the funds available to depository institutions may simply lead those institutions to increase their holdings of liquid assets rather than to increase lending. Of course, additional low-cost, long-term deposits from repatriated profits might reduce funding costs, thereby boosting the profits of depository institutions and, in turn, their capital. However, this channel seems a very indirect method for increasing the lending capacity of U.S. depository institutions.

Please do not hesitate to contact us with any additional questions.

Sincerely,

(Signed) Ben Bernanke

09-6999

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 3, 2009

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 JUN -9 P 5: 13

The Honorable Carolyn B. Maloney
Chair
Joint Economic Committee
United States Congress
Washington, D.C. 20515

Dear Madam Chair:

Thank you for your comments concerning the Board's proposed regulations under the Electronic Fund Transfer Act and Regulation E, which would give consumers the right to instruct their depository institutions whether to pay overdrafts for ATM withdrawals and one-time debit card purchases.

We appreciate receiving your views, which will be included in the rulemaking record along with those of the other commenters.

Sincerely,

(Signed) Ben Bernanke

Identical letters also sent to:

Chairman Barney Frank, Committee on Financial Services; and
Chairman Luis Gutierrez, Subcommittee on Financial Institutions and Consumer Credit of the Committee on Financial Services.

09-6104

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 8, 2009

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 JUN 16 P 6: 23

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I am responding to your letter of May 1, 2009, in which you request my views on the possibility of including commercial mortgage-backed securities (CMBS) in the list of eligible collateral for the Term Asset-Backed Securities Loan Facility (TALF) and providing TALF loans against those securities with five- to ten-year maturities. We agree that illiquid conditions in the market for CMBS have the potential to inhibit the origination or refinancing of commercial mortgages, and that accepting CMBS as collateral at the TALF may make commercial-mortgage credit more readily available. As you know, on May 1, 2009, the Board announced that newly issued high-quality CMBS would be accepted as collateral for TALF loans beginning in June, and that TALF loans with five-year maturities would be provided against CMBS collateral. Moreover, on May 19, 2009, the Board announced that older high-quality CMBS would be accepted as collateral for TALF loans beginning in July.

I hope this information is helpful. Please let me know if I can be of further assistance.

Sincerely,

(Signed) Ben Bernanke

Identical letters also sent to:
Congresswoman Melissa Bean and Congressman Joseph Crowley.

08 - 20027

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

June 11, 2009

BEN S. BERNANKE
CHAIRMAN

The Honorable Collin C. Peterson
Chairman
Committee on Agriculture
House of Representatives
Washington, D.C. 20515

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 JUN 16 P 6: 23

Dear Mr. Chairman:

I am writing in response to your letter, dated December 19, 2008, requesting the production of certain documents relating to the establishment and authorization of clearinghouses or central counterparties ("CCPs") to clear credit default swaps. On February 18, 2009, Federal Reserve staff provided the Committee with documents responsive to two priority areas that were highlighted by Committee staff. These responsive documents were provided to the Committee with the understanding that they will be given confidential treatment.

The Federal Reserve has additional documents that are relevant to the Committee's request, including, among other things, communications, reports and other supervisory materials relating to: the October 2008 on-site examination of ICE US Trust LLC ("ICE Trust") conducted by the Federal Reserve Bank of New York in connection with ICE Trust's application to become a member of the Federal Reserve System; the proposed merger between ICE Trust and The Clearing Corporation ("TCC") in December 2008; the proposal submitted to the Commodities Futures Trading Commission ("CFTC") by the Chicago Mercantile Exchange ("CME") to clear credit default swaps; as well as internal deliberations and communications between Federal Reserve staff and staff of the Department of the Treasury ("Treasury"), the Securities and Exchange Commission ("SEC"), the CFTC, and certain foreign regulatory bodies regarding various CCP proposals to clear credit default swaps.

The requested information contains bank examination materials, which traditionally have been regarded as highly confidential documents that should not be made public, especially in the case of institutions that continue to operate. Experience has shown that public disclosure of examination material threatens to impair cooperation with bank examiners, and thus threatens to turn the examination process into an adversarial proceeding. Comments in reports by examiners also may be misunderstood or exaggerated by the public, resulting in unwarranted harm to the institution.

With respect to the communications with foreign regulatory bodies regarding CCPs, U.S. supervisors rely on such communication to obtain information on activities in those jurisdictions that could impact the U.S. market or U.S. financial firms that participate in foreign

For files
P. Elliff

CCPs. Information obtained through these communications is invaluable in the supervision of U.S. financial institutions, oversight of U.S. markets, and for the management of systemic risk in the event of a cross-border financial crisis. Foreign regulators give U.S. supervisors access to such information only with the understanding that it will be kept confidential. The inability to keep the information confidential could cause U.S. supervisors to lose access to such information.

Based on discussions between Committee staff and Federal Reserve staff, we will make copies of all remaining documents available for inspection at our offices with the understanding that the Committee would treat this information as strictly-confidential and non-public, and make a written request for copies of any specific documents.

To schedule an appointment to review the responsive documents, you may contact Mr. Brian Gross of the Board's Congressional Liaison Office at (202) 452-2013, or Mr. Jason Gonzalez of the Legal Division of the Board at (202) 452-3275.

Sincerely,

(Signed) Ben Bernanke

Identical letter also sent to Ranking Member Bob Goodlatte, House Agriculture Committee.

CO-0101

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D.C. 20551

DIVISION OF BANKING
SUPERVISION AND REGULATION

August 4, 2009

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 AUG 13 P 6:58

The Honorable Carolyn Maloney
Chair
Joint Economic Committee
United States Congress
Washington, D.C. 20515

Dear Chair Maloney:

I am responding to a question you posed during my testimony on July 9, 2009. You asked how the Federal Reserve will address the concerns raised by Neil Barofsky, the Special Inspector General of the Troubled Asset Relief Program (SIGTARP), about borrowing by Public-Private Investment Funds (PPIFs) at the Federal Reserve's Term Asset-Backed Securities Loan Facility (TALF). As I will explain below, the Federal Reserve has fully addressed Mr. Barofsky's concerns.

PPIFs have been established by the Treasury as part of the Public-Private Investment Program to help address the legacy securities problem. PPIFs will be funded with private equity, a matching amount of equity provided by Treasury, and non-recourse debt provided by Treasury. The equity and debt are provided by Treasury under the TARP. A PPIF can elect to receive debt from Treasury equal to the full amount of the PPIF's equity (both private and Treasury), or equal to half of the equity. Only PPIFs receiving debt less than or equal to half of equity will be allowed to borrow from the TALF.

In the SIGTARP's *Quarterly Report to Congress* on April 21, 2009, Mr. Barofsky expressed concern about the potential "leverage upon leverage" that would result when a PPIF borrows from the TALF (p. 152). A TALF loan is always provided for an amount that is less than the value of securities collateralizing the loan by an amount referred to as the "haircut." The investors must contribute the funds for the haircut when purchasing the security, with the remaining financing provided by the TALF loan. The haircut both insulates taxpayers from losses and ensures that the investor has a strong incentive to verify that the security is of high quality. Mr. Barofsky's concern is that when the haircut is partly funded by Treasury-provided debt, the protection for taxpayers and the incentives for investor due diligence are both reduced. Consequently, he recommended that:

For files
P. Elliff

> "Treasury should not allow Legacy Securities PPIFs to invest in TALF, unless significant mitigating measures are included to address these dangers. These might include prohibiting the use of TARP leverage if the PPIF invests through TALF, or proportionately increasing haircuts for PPIFs that do so." (p. 152)

The Federal Reserve and Treasury have decided to increase the haircuts on TALF loans when PPIFs borrow. PPIFs that have received Treasury debt financing equal to or less than 50 percent of the PPIF's total equity may borrow from the TALF so long as the PPIF satisfies all TALF program requirements, including borrower eligibility requirements. The only securities that PPIFs may purchase that are eligible for collateralizing TALF loans are triple-A-rated legacy commercial mortgage-backed securities (CMBS). If a PPIF were to borrow at the TALF to purchase CMBS, the TALF haircuts would be 50 percent higher than for other borrowers. For example, if the TALF haircut applied to a specific pledge of legacy CMBS is 20 percent for other borrowers, it would be 30 percent for a PPIF. Because of the increased haircuts, the combination of Treasury- and TALF-supplied debt will not exceed the total amount of debt that would be available leveraging the PPIF equity alone.

The SIGTARP has indicated that the adjustment to the TALF haircuts addresses his concerns. The SIGTARP's Quarterly Report to Congress on July 21, 2009, states "This significant concession by Treasury adopts SIGTARP's recommendation and effectively ameliorates the leverage-on-leverage and 'skin-in-the-game' issues that were raised in the April Quarterly Report." (p. 174).

I hope that this information is helpful. Please let me know if I can be of further assistance.

Sincerely,

Jon D. Greenlee
Associate Director

09-11571

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

October 14, 2009

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of October 1, 2009, regarding a petition recently filed pursuant to the Administrative Procedures Act by the Poker Players Alliance, the National Thoroughbred Racing Association, and the American Greyhound Track Owners Association requesting a rulemaking to extend by twelve months the compliance date for the final rule implementing the Unlawful Internet Gambling Enforcement Act of 2006 that was promulgated jointly by the Board of Governors of the Federal Reserve System and the Department of the Treasury. In your letter, you urge the Board of Governors and the Treasury to respond favorably to the petition.

We are reviewing the petition and consulting with our colleagues at the Department of the Treasury. We will act upon the petition as soon as possible.

Sincerely,

(Signed) Ben Bernanke

Identical letters sent to the attached distribution list.

Distribution List
B-196, 09-11571
(outgoing dated October 14, 2009)

The Honorable Barney Frank, Chairman
Committee on Financial Services

The Honorable Luis V. Gutierrez, Chairman
Subcommittee on Domestic Monetary
Policy and Technology
Committee on Financial Services

The Honorable Ron Paul, Ranking Member
Subcommittee on Domestic Monetary
Policy and Technology
Committee on Financial Services

The Honorable Melvin L. Watt, Chairman
Subcommittee on Oversight and Investigations
Committee on Financial Services

The Honorable Judy Biggert, Ranking Member
Subcommittee on Oversight and Investigations
Committee on Financial Services

The Honorable Peter King
The Honorable Gary Ackerman
The Honorable Leonard Lance
The Honorable Michael Capuano
The Honorable William Lacy Clay
The Honorable Paul W. Hodes
The Honorable Ron Klein
The Honorable Ed Perlmutter
The Honorable Bill Foster
The Honorable André Carson
The Honorable Walt Minnick
The Honorable Steve Driehaus
The Honorable Jim Himes
The Honorable Dan Maffei
House of Representatives

09-11839

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

October 20, 2009

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 OCT 23 A 8:00

The Honorable Spencer Bachus
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter dated October 9, 2009, regarding the proposed legislation accelerating the effective dates in the Credit Card Accountability Responsibility and Disclosure Act of 2009 (Pub. L. No. 111-24) (Credit CARD Act or Act) to December 1, 2009. Please see our responses below.

1. **Will the Federal Reserve be able to revise its implementation timeline and publish rules with appropriate public comment periods in order to comply with the provisions of this legislation?**

The Credit CARD Act was enacted on May 22, 2009. The Act established three effective dates with respect to the provisions for which the Board has rulemaking authority: August 20, 2009; February 22, 2010; and August 22, 2010. As discussed below, the Board is currently in the process of implementing the Act consistent with this statutory timeline. Moving the Act's effective date to December 1, 2009, could benefit consumers by providing important protections earlier than scheduled (including protections against applying increased rates to existing credit card balances). However, it would also require the Board to implement the remainder of the Act without providing the public with advance notice and the opportunity to comment, which could lead to unintended consequences.

The Administrative Procedure Act (5 U.S.C. 551 et seq.) (APA) generally requires that the public receive notice and an opportunity to comment before the promulgation of final regulations. 5 U.S.C. 553(b). This process requires adequate time to: prepare proposed regulations and publish them in the Federal Register; provide a reasonable period for interested parties to review the proposal and prepare well-researched comments; analyze the comments submitted; and prepare final regulations sufficiently in advance of the effective date so that affected parties can come into compliance. The Board has found this process to be helpful, particularly in complex rulemakings where comments often raise unanticipated operational issues that need to be addressed in the final regulations.

For files
P. Elliff

However, the APA does provide a "good cause" exception when the notice-and-comment process would be "impracticable, unnecessary, or contrary to the public interest." 5 U.S.C. 553(b)(B). The Board found it necessary to rely on this exception when implementing the provisions of the Credit CARD Act that went into effect on August 20, 2009.[1] Although compliance is mandatory, the Board requested comments on these regulations and is currently considering whether any changes are necessary to address unanticipated issues.

The Board is currently planning to implement the remainder of the Credit CARD Act through notice-and-comment rulemaking. On September 29, 2009, the Board proposed implementing regulations for the provisions of the Credit CARD Act that go into effect on February 22, 2010.[2] The Board expects the comment period for this proposal to end on November 20. However, if the effective date for these provisions were moved to December 1, the Board would have to issue final regulations without waiting for comments.

The Board is also in the process of developing proposed regulations implementing the provisions of the Credit CARD Act that are scheduled to go into effect on August 22, 2010.[3] Because these provisions require the Board to make a number of difficult determinations (such as when a credit card penalty fee is reasonable and proportional to the violation of the account terms), public comment would be particularly helpful. However, if the effective date for these provisions were moved to December 1, the Board would also have to implement these provisions without advance public comment.

2. **Do you believe that large and small credit card issuers will be able to adapt their systems and business models by December 1, 2009, several months earlier than their original timelines?**

Creditors must make extensive changes to their systems and business models in order to comply with the Credit CARD Act. For example, because the Credit CARD Act limits the circumstances in which a creditor can increase interest rates based on an increased risk of loss, creditors must develop new methods of accounting for risk. Creditors must also revise underwriting systems for all new and existing credit card accounts, develop new systems for calculating interest charges when balances are partially paid during a grace period, create

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[1] Among other things, these provisions require creditors to provide 45 days' advance written notice of interest rate increases and to provide periodic statements at least 21 days before the due date.

[2] This rulemaking addresses the majority of the provisions in the Act for which the Board has rulemaking authority, including the limitations on rate increases for existing balances, the requirement that creditors consider a consumer's ability to make the required payments before opening a credit card account or increasing a credit limit, the provisions addressing extensions of credit to consumers who are under age 21, the limitations on the assessment of fees for exceeding the credit limit, the requirement that payments above the minimum generally be allocated first to that balance with the highest interest rate, and the prohibitions on double-cycle billing and on charging interest on amounts paid prior to expiration of the grace period.

[3] These provisions address fees and disclosures for gift cards and certain prepaid cards, the amount of credit card penalty fees, and the requirement that creditors' re-evaluate past credit card rate increases at least every six months.

procedures for submitting credit card agreements for publication on the Board's website, and design new disclosures regarding the consequences of making minimum payments.

The amount of time necessary to comply with the Credit CARD Act may vary by creditor and by provision. Board staff understands that many small institutions (such as community banks and credit unions) rely heavily on third-party vendors to adjust their systems and that these vendors are currently overwhelmed by the demand from all of the institutions they service.

Board staff also notes that creditors are not the only entities that must comply with the Credit CARD Act. In particular, the Act requires institutions of higher education to disclose agreements with credit card issuers regarding the marketing of credit cards to students. Many of these institutions may be unaware of the new requirement and will require some time to put procedures in place to make these agreements available.

3. **How will this change affect consumers? What is the likelihood that card issuers will respond to this legislation by rapidly escalating interest rates and reducing available credit?**

The Board cannot predict how an effective date of December 1, 2009, would affect credit card interest rates and credit availability. However, moving the Credit CARD Act's effective date to December 1, 2009, would mean that consumers would receive important benefits and protections earlier. For example, like the regulations adopted by the Board in December 2008, the Act will create greater transparency in credit card pricing by eliminating pricing practices that are deceptive or unfair (such as applying increased rates to existing balances when a consumer pays a few days' late or maximizing interest charges by allocating payments above the minimum first to the balance with the lowest rate). Greater transparency will enhance competition in the marketplace and improve consumers' ability to find products that meet their needs.

4. **During a March 2009 hearing on similar legislation, Sandra Braunstein testified:**

   "[T]his is one very large, sweeping, comprehensive package that is going to fundamentally change the way the industry does its business. And when we looked at, in terms of talking to the industry, but also looking ourselves at everything that would be required . . . to put everything in place to make this work well, we felt that 18 months was a reasonable time.

   "The danger is if you don't give sufficient time to the industry to get everything in place in a way that has been tested, that staff is trained, that it is running smoothly, if there is not sufficient confidence in the new risk models--which they are going to have to [redesign]--it could severely hamper the markets in terms of credit availability."

   Is this still the view of the Federal Reserve?

The testimony quoted above related to the credit card regulations adopted by the Board in December 2008, which are scheduled to go into effect in July 2010. Many of the provisions in the Board's regulations are also contained in the Credit CARD Act (such as limitations on double-cycle billing and applying increased rates to existing balances). However, the Board's regulations also contain several provisions that were not included in the Act (such as the revised disclosure requirements for credit card solicitations and periodic statements). Although a December 1 effective date could provide benefits for consumers, the Board continues to believe that, given the breadth of the changes required by the Credit CARD Act and its regulations, card issuers must be afforded sufficient time for implementation to allow for an orderly transition and to avoid unintended consequences, compliance difficulties, and potential liabilities.

We appreciate the opportunity to provide our views and hope that you find them helpful.

Sincerely,

(Signed) Ben Bernanke

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

November 16, 2009

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2009 NOV 20 A 5:25

The Honorable Darrell Issa
Ranking Member
Committee on Oversight and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Congressman:

This is in response to your letter of October 7, 2009, inquiring whether the Federal Reserve had knowledge of planned bonus payments by Merrill Lynch & Co. in the fourth quarter of 2008, prior to its acquisition by Bank of America Corporation. As you know, in connection with the Committee's inquiry into the acquisition of Merrill Lynch by Bank of America, the Federal Reserve has made available for review by majority and minority Committee staff an extensive set of documents relating to the acquisition, some of which were subsequently submitted to the Committee pursuant to subpoenas. And on June 25, I testified before this Committee explaining the Federal Reserve's role with respect to the merger.

Also, in response to specific questions posed by the Committee, I advised the Committee by letter dated April 30, 2009, among other things, that beginning on December 17, 2008, we participated in several discussions with the management of Bank of America at their request about the Merrill Lynch acquisition. As explained in my letter, these discussions did not encompass compensation levels or bonuses of Merrill Lynch employees.

In your October 7 letter, you state that information obtained by the Committee from Bank of America indicates that Bank of America provided a detailed financial document to the Federal Reserve and Treasury on December 17 or 18, 2008. The six-page document, attached to your letter, included two line items referencing budgeted expenses for "VICP" payments, which apparently represented payments for bonuses. In your view, the submission of this document to the Federal Reserve suggests that I knew or should have known about the bonus payments by December 18, 2008. It should also be noted that copies of the document referenced in your letter were among the documents that were made available by the Federal Reserve for review by Committee staff prior to my testimony before the Committee in June.

As I have indicated to the Committee, the bonuses due to Merrill Lynch employees were not discussed at the meetings or discussions I had with Bank of America representatives. As explained in my April 30 letter and in my June 25 testimony before the Committee, the discussion at the December 17 meeting and those that followed related to the potential impact of

For files
P. Elliff

losses at Merrill Lynch on Bank of America in light of the proposed acquisition, the likely market reaction if the acquisition was not completed, and whether the U.S. government should provide financial assistance. The discussions were focused on addressing potential systemic risks during a period of tremendous financial stress and uncertainty. We had a short window of time to assess the possible consequences and to craft a solution that would help stabilize the combined institution, and we all devoted our discussions to addressing those important matters. The testimony of the Bank of America official cited in your October 7 letter does not state that Merrill Lynch compensation or bonuses were the subject of the discussions between the Federal Reserve and Bank of America management.

As I also explained to the Committee, the Federal Reserve was not the federal supervisor for Merrill Lynch and had no regulatory authority or responsibility for Merrill Lynch's operations, bonuses, or governance practices when the bonuses were paid. Moreover, as you know, the bonuses paid by Merrill Lynch were agreed to and paid before Merrill Lynch was acquired by Bank of America.

Finally, let me reiterate the statement made in my April 30 letter to the Committee that at no time during our discussions with the Bank of America on the Merrill Lynch acquisition did I or any member of the Federal Reserve direct, instruct, or advise anyone at the Bank of America to withhold from public disclosure any information concerning Merrill Lynch, including its compensation packages or bonuses, or any other related matter.

I hope this information is helpful.

Sincerely,

(Signed) Ben Bernanke

cc: The Honorable Edolphus Towns, Chairman

10-3686

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

January 13, 2010

BEN S. BERNANKE
CHAIRMAN

The Honorable Christopher J. Dodd
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Chairman Dodd and Ranking Member Shelby:

Strengthening our financial regulatory system in ways that take the appropriate lessons from the crisis is essential for the long-term economic stability of our country. To this end, as you know, the Banking Committee has compiled an extensive hearing record and has begun considering specific reform proposals.

A number of your colleagues on the Committee have recently asked for the Board's views on the importance of the Federal Reserve's continued role in bank supervision and regulation. In response to these requests, I am enclosing for you and your colleagues a document that discusses (1) how the expertise and information that the Federal Reserve develops in the making of monetary policy enable it to make a unique contribution to an effective regulatory regime, especially in the context of a more systemic approach to consolidated oversight; and (2) how active involvement in supervising the nation's banking system allows the Federal Reserve to better perform its critical functions as a central bank.

Please let me know if you have any questions or if I can be of assistance. I look forward to working with you in the days ahead as the Committee continues its consideration of regulatory reform proposals.

Sincerely,

Enclosure
cc: Members, Committee on Banking, Housing, and Urban Affairs

January 13, 2010

The Public Policy Case for a Role for the Federal Reserve in Bank Supervision and Regulation

Like many other central banks around the world, the Federal Reserve participates with other agencies in supervising and regulating the banking system. The Federal Reserve's involvement in supervision and regulation confers two broad sets of benefits to the country.

First, the financial crisis has made clear that an effective framework for financial supervision and regulation must address both safety-and-soundness risks at individual institutions and macroprudential risks--that is, risks to the financial system as a whole. All individual financial institutions that are so large and interconnected that their failure could threaten the functioning of the financial system must be subject to strong consolidated supervision. Both effective consolidated supervision and addressing macroprudential risks require a deep expertise in the areas of macroeconomic forecasting, financial markets, and payments systems. As a result of its central banking responsibilities, the Federal Reserve possesses expertise in those areas that is unmatched in government and that would be difficult and costly for another agency to replicate.

Second, the Federal Reserve's participation in the oversight of the banking system significantly improves its ability to carry out its central banking functions. Most importantly, the Federal Reserve's ability to effectively address actual and potential financial crises depends critically on the information, expertise, and powers that it gains by virtue of being both a bank supervisor and a central bank. In addition, supervisory information and expertise significantly enhance the safety and soundness of the credit the Federal Reserve provides to depository institutions by allowing the Federal Reserve to independently evaluate the financial condition of institutions that want to borrow from the discount window as well as the quality and value of the collateral pledged by such institutions. Finally, its supervisory activities provide the Federal Reserve information about the current state of the economy and the financial system that, particularly during periods of financial crisis, is valuable in aiding the Federal Reserve to determine the appropriate stance of monetary policy. These benefits of the Federal Reserve's supervisory role proved particularly important during the financial crisis that emerged in 2007.

We recognize, of course, that bank supervision, including ours, needs to be more effective than in the past, and we have reviewed our performance and are making improvements at multiple levels. The Federal Reserve is working with other supervisors here and abroad to improve capital and liquidity regulation. In addition, we have begun to make changes to our oversight of large banking organizations, including the development of an enhanced quantitative surveillance program, improving data collection, strengthening financial infrastructure, and implementing a new, centralized approach to supervision that better supports identification and analysis of interconnected risks. These changes are intended to ensure that we fully employ our expertise to implement a more systemic and effective approach to our supervisory activities going forward.

The Benefits to Effective Supervision of the Federal Reserve's Unique Expertise

Two important lessons learned from the current financial crisis are that all financial firms that are so large and interconnected that their failure could threaten the functioning of the financial system must be subject to strong consolidated supervision; and that supervision of financial firms must take account of systemic, or "macroprudential" risks as well as the more traditional safety-and-soundness risks affecting individual firms.

Many of the large, complex, and interconnected financial firms whose collapse contributed importantly to the financial crisis avoided the more stringent consolidated supervision that is imposed on bank holding companies by the Federal Reserve. These firms--which included American International Group, Washington Mutual, Countrywide, Bear Stearns, and Lehman Brothers--were instead subject to consolidated supervision under statutory or regulatory schemes that were far less comprehensive than that applicable to bank holding companies. In addition, an unregulated shadow banking system (including, for example, unregulated mortgage brokers, structured investment vehicles, other asset-backed commercial paper conduits, and securities lenders) had emerged that generated mortgages for distribution, funded highly rated senior tranches of securitizations, and engaged in maturity transformation and other financial activities outside the view of any federal supervisor.

The system for regulating bank holding companies was, in important ways, inadequate as well. One issue of concern was that the Federal Reserve's consolidated supervision of such companies was, by statute, both narrowly focused on the safety and soundness of their bank subsidiaries and heavily reliant on functional supervisors of the bank and regulated nonbank subsidiaries of these companies; in turn, the functional supervisors themselves were statutorily focused only on the safety and soundness of the specific entities they regulated. None of the federal regulators had sufficient authority to focus on the systemic risk that large banking organizations posed.

While it is clear that the framework for financial supervision must address macroprudential risks, the Federal Reserve cannot and should not be responsible for oversight of the financial system as a whole; no agency has the breadth of expertise and information needed to survey the entire system. However, by virtue of the combination of experience and expertise it has developed as consolidated supervisor of bank holding companies and state member banks and as a central bank, the Federal Reserve is well suited to contribute significantly to an overall scheme of systemic regulation, particularly in the areas of consolidated supervision and macroprudential supervision.

It is especially important that consolidated supervision address *both* safety-and-soundness risks at individual institutions and macroprudential risks. Addressing safety-and-soundness risks requires the traditional skills of bank supervisors, including expertise in examinations and off-site surveillance of complex banking organizations. The Federal Reserve has acquired and maintained that expertise as the primary supervisor of banks of all sizes, including community banks, regional banks, and large banks that are state-chartered member banks, as the consolidated supervisor of all U.S. bank holding companies, and as the supervisor of the U.S. operations of globally active foreign banks. With many nonbank financial firms having reorganized as bank holding companies during the crisis, the Federal Reserve already is quite familiar with the risk profiles of the vast majority of the large interconnected financial firms.

Beyond traditional bank examination expertise, however, macroprudential supervision will require economic sophistication, including knowledge of the macroeconomic environment, as well as substantial expertise regarding money markets, capital markets, foreign exchange markets, and other financial markets. Expertise in these areas is essential for developing stress scenarios and identifying and addressing vulnerabilities to, and posed by, capital and other markets. The Federal Reserve has developed this expertise in the context of macroeconomic forecasting and monetary policymaking. Market knowledge is acquired through daily participation in financial markets to implement monetary policy and to execute financial transactions on behalf of the U.S. Treasury and foreign governments and central banks.

Macroprudential supervision also requires extensive knowledge of payment and settlement systems to understand the interconnections between financial institutions and markets. The Federal Reserve has developed this expertise through its operation of some of the world's largest payment and settlement systems (the Fedwire funds and securities transfer systems), its supervision of key providers of payment and settlement systems (the Depository Trust Company, the CLS Bank, and the government securities clearing banks), and its long-standing leadership role in the international Committee on Payment and Settlement Systems.

The Supervisory Capital Assessment Program, or SCAP, also known as the stress test, was critical to restoring confidence in the banking system and was a watershed event for modern macroprudential supervision. The Federal Reserve, which took the lead on the SCAP, drew on its macroeconomic and markets expertise to model potential credit losses and revenues at the SCAP banks. These analyses were essential to assess the amount of capital the SCAP banks would need to absorb potential losses and continue to meet the needs of creditworthy borrowers in a more adverse economic scenario. In the future, macroprudential supervision should feature both increased use of cross-firm, horizontal exams to assess common exposures and vulnerabilities as well as forward-looking stress testing based on alternative projections for the macroeconomy.

The Benefits of the Federal Reserve's Supervisory Role for Its Other Central Banking Functions

The Federal Reserve's central banking functions significantly enhance its ability to conduct its supervisory role, and offer considerable benefits for macroprudential supervision going forward. In addition, the complementarity between narrow central banking activities and supervision creates advantages in the other direction. The Federal Reserve's involvement in supervising banking institutions of a variety of sizes generates information and expertise that significantly improve the Federal Reserve's ability to effectively carry out its central-bank responsibilities and that cannot be obtained reliably through other means, such as relying on reports from other supervisors. Among the central-bank responsibilities that benefit from the Federal Reserve's supervisory role are crisis management, providing liquidity to depository institutions, and monetary policy. Especially since the start of the crisis in the summer of 2007, the information and expertise that the Federal Reserve has had as a result of its supervisory activities have been essential to its successful performance of these responsibilities.

Crisis Management

The Federal Reserve's supervisory authority has been of greatest importance to its management of financial crises. In particular, its ability to deal with diverse and hard-to-predict threats to financial stability depends critically on the information, expertise, and powers that it has by virtue of being both a bank supervisor and a central bank.[1]

An example of how the Federal Reserve's supervisory role contributed to its management of a crisis came in the context of the October 19, 1987, stock market crash. During that chaotic period, banks began to pull back from lending to major securities firms. However, because of increased demand for financing from their customers and the differences in the timing of payments to and receipts from the exchanges' clearing and settlement systems, those securities firms needed access to substantial bank credit in order to make payments and settle trades. As a result, the availability of bank credit was critical to the functioning of equity and securities markets as well as futures and options exchanges. A freezing up of these critical markets would have caused a deeper and more disruptive financial crisis, likely involving further declines in asset values and, ultimately, tighter credit conditions for households and businesses. To combat those risks, the Federal Reserve announced its willingness "to serve as a source of liquidity to support the economic and financial system." Subsequently, Federal Reserve examiners on-site in major banking organizations assessed funding pressures and potential credit losses to help identify emerging problems. Armed with the resulting knowledge and with the benefit of existing supervisory relationships, senior Federal Reserve officials contacted the managements of the major banks and urged them to use liquidity from the discount window to provide loans to creditworthy securities firms. Bank credit was provided to securities firms as requested, allowing those firms in turn to make required payments to counterparties and clearing houses.

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[1] In addition to the examples discussed here, the Federal Reserve has taken steps to address strains at financial institutions and in financial markets on a number of other occasions in recent decades, including following the bankruptcy of the Penn Central Railroad in 1970, the collapse of a speculative boom in the silver market in 1980, the failure of Continental Illinois in 1985, and the global financial strains that followed the Russian default and the collapse of Long-Term Capital Management in 1998. See Andrew F. Brimmer (1989). "Distinguished Lecture on Economics in Government: Central Banking and Systemic Risks in Capital Markets," *Journal of Economic Perspectives*, vol. 3 (Spring), pp. 3-16; and Ben S. Bernanke (2007), "Central Banking and Bank Supervision in the United States," speech delivered at the Allied Social Science Association Annual Meeting, Chicago, Ill., January 5, www.federalreserve.gov/newsevents/speech/bernanke20070105a.htm.

These actions allowed systemically critical stock, futures, and options exchanges to function normally, averting a more prolonged and deeper market crisis with its attendant adverse implications for the broader economy.

A similar example emerged in the case of the failure of Drexel Burnham Lambert in February 1990. Drexel's rapid collapse posed a risk of gridlock in the financial markets. Notably, because of their parent's failure, Drexel's solvent broker-dealer and government securities dealer subsidiaries experienced serious difficulties liquidating their positions. Because of its ongoing supervisory relationships with the banks that provided settlement services to Drexel's subsidiaries and its knowledge of the payment and settlement system's infrastructure, the Federal Reserve had the access, contacts, and in-depth knowledge that enabled it to obtain the information it needed to evaluate this complex problem and formulate a plan to address it. The Federal Reserve understood the potential problems of Drexel's counterparties and clearing banks and was able to work with the banks and securities firms to identify developing problems and fashion procedures that enabled an orderly winding down of Drexel without adverse effects on other market participants or further disruption to financial markets.

In the aftermath of the September 11, 2001, terrorist attacks, supervisory information and supervisory powers to compel the provision of information allowed the Federal Reserve to understand the damage incurred by, and estimate the recovery time for, a large banking institution that played a major role in key financial markets. Following the attacks, Federal Reserve examiners were sent to the institution's contingency site. This on-site supervisory presence proved crucial in helping to obtain necessary information and clarify conflicting information in a highly confused and uncertain situation. Similarly, on-site Federal Reserve examiners at other key institutions proved to be valuable sources of information about the difficulties those institutions were facing. With this information in hand, senior Federal Reserve policymakers took the lead in assessing the damage to specific financial institutions and the implications for the government securities market and in taking remedial actions--including the provision of liquidity by the Federal Reserve--to restore financial market functioning relatively quickly. The ability of the Federal Reserve to respond promptly and effectively mitigated the adverse effects on broader financial conditions and the national economy of those tragic events.

During the current crisis, the Federal Reserve's supervisory role has not only given it timely access to information about the banking sector, payments systems, and capital markets, but also has been essential to its understanding of the emerging strains on financial firms and their possible implications for financial markets and the broader economy. This information has been critical to the Federal Reserve's efforts to identify the difficulties facing depository institutions of all sizes and to take steps to address those problems. In particular, over the course of the crisis, the Federal Reserve has used supervisory information to monitor the liquidity needs of banking organizations in response to the disruptions in a range of short-term funding markets and mounting market pressures on firms perceived to be in a weak financial condition. This information allowed the Federal Reserve to take steps to address pressing liquidity needs with monetary policy and lending programs, thereby avoiding larger dislocations in financial markets and an even greater deterioration in economic conditions--which the Federal Reserve continues to monitor.

The Federal Reserve's supervisory information also contributed importantly to the design of a number of Federal Reserve credit programs. In particular, the development of the Primary Dealer Credit Facility was greatly aided by the understanding of the triparty repurchase agreement (repo) market and the information regarding its functioning that the Federal Reserve had as a result of its supervision of the banking organizations that handle the clearing and settlement of such transactions. In addition, its understanding of the workings of the credit markets along with its involvement in the supervision of banking institutions helped motivate the Federal Reserve's decision to implement the Term Asset-Backed Securities Loan Facility, which is a broad-based facility that provides liquidity to support auto lending, small business lending, credit card lending, student loans, and commercial real estate lending. The Federal Reserve's credit programs provided significant support to key financial institutions and markets, easing the impact of the financial crisis on the economy.

Liquidity Provision to Depository Institutions

Supervisory information and expertise also contribute to the Federal Reserve's management of the risks that it confronts in its role as liquidity provider to depository institutions, large and small--a critical central-bank function. Reserve Banks must be able to assess the financial condition of the institutions that want to borrow from the Federal Reserve and must be able to assess as well the quality and value of the collateral pledged by borrowing institutions. Active involvement in supervising financial institutions contributes significantly to such assessments because they require substantial knowledge of banking practices as well as the expertise gained from the hands-on review of loans and other assets at banking organizations. In addition, the Federal Reserve's assessment of the condition of an institution or the quality of its collateral may differ from that of other supervisory agencies.

Monetary Policy

The information that the Federal Reserve obtains in its supervisory role has been useful for the making of monetary policy, especially in periods of financial stress. For example, in the early 1990s, the Federal Reserve recognized that elevated loan losses were putting pressure on bank balance sheets, thereby contributing to very weak bank lending that was weighing on spending by households and businesses. In this context, mounting evidence of tightened lending standards and credit concerns at banks, much of it gained through the supervisory process, contributed to the Federal Reserve's decision to ease the stance of monetary policy more aggressively than it otherwise would have.

Supervisory information has played a particularly important role in monetary policymaking since the outbreak of the financial crisis in the summer of 2007. As the crisis intensified, supervisory information helped the policymaking Federal Open Market Committee (FOMC) to understand the extent of the dislocations in credit markets and led the Federal Reserve's monetary policy response to the crisis to be more timely and decisive than it otherwise might have been. For example, Federal Reserve staff calculated estimates of potential aggregate credit losses under alternative economic scenarios and drew on supervisory information and expertise to evaluate implications for the health of the banking system. This work helped the FOMC to assess the risks to the financial system and the economy arising from worsening credit conditions and to take such risks into account in its policy decisions.

More broadly, information and expertise obtained as a result of the Federal Reserve's supervisory role have been reflected in FOMC meeting discussions of economic conditions and the outlook. Supervisory staff has attended these meetings during the crisis, and in these discussions there have been regular references to information about banking institutions gained both from examination staff and from industry contacts resulting from the Federal Reserve's supervisory role. This information has contributed to the Committee's understanding of likely loan losses, the effects of such losses and other factors on bank lending behavior, and their implications for economic activity. Moreover, given the global nature of the financial crisis, the Federal Reserve's interactions with supervisors abroad, which reflect its role as a U.S. supervisor, have provided helpful information on the health of key foreign banking firms, allowing the FOMC to judge more accurately the likely strains on U.S. financial firms and markets emanating from outside the United States.

The Federal Reserve faces challenging decisions regarding the timing and pace of the exit from the considerable monetary accommodation put in place during the crisis. These critical policy decisions will require particularly careful assessments of developments at financial institutions and in financial markets, and their resulting implications for the real economy. For example, losses on commercial real estate loans may continue to undermine some community and regional banks and will have uneven effects across different regions of the country. At the same time, however, the improving economy may strengthen the balance sheets of other banks and conditions in many financial markets may continue to improve. Information from the supervisory process will help policymakers to assess overall credit conditions and the stability of the financial sector, and so to time appropriately the shift to reduced policy accommodation.

Could the Federal Reserve Obtain What It Needs from Another Supervisor?

A natural question is whether the Federal Reserve could obtain the supervisory information and expertise it needs for its central-bank responsibilities from other agencies. While it seems clear that this is possible to some extent--indeed, the Federal Reserve obtains information regarding the firms to which it lends from their primary supervisors--elimination of the Federal Reserve's role in supervision would severely undermine the Federal Reserve's ability to obtain in a timely way and to evaluate the information it needs to conduct its central banking functions effectively.

First, active involvement in supervision ensures that the Federal Reserve will have experts on its staff with significant knowledge of banking practices and financial instruments gained from the hands-on review of banking organizations and their operations, practices, activities and balance sheets. This expertise is critical to making effective use of information about financial firms and cannot be quickly created when needed. For example, without staff expertise in bank lending practices and evaluating bank asset quality, the Federal Reserve would be unable to assess independently and rapidly the condition of borrowing institutions and the value of the collateral they pledge at the discount window. This capability has been especially valuable since the Federal Reserve began providing credit at longer maturities during the crisis. Indeed, in some cases, it has been necessary for the Federal Reserve to deploy supervisory experts to provide up-to-date assessments of the condition of borrowing firms and to evaluate the collateral they were providing. Owing in part to the supervisory expertise it has been able to bring to bear in its discount window operations, the Federal Reserve has maintained its record of never bearing a loss on credit it has extended to depository institutions, despite the spike in such lending to more than $500 billion in early 2009.

Second, obtaining information from another agency would be slower and more cumbersome than obtaining it directly from financial firms. Information provided by other supervisory agencies may be stale or incomplete, particularly in a crisis, when the condition of institutions and the value of collateral can deteriorate rapidly. An independent supervisor would have its own concerns and priorities on which its supervisory staff would naturally focus, slowing the Federal Reserve's access to information in other areas. Even if the supervisory agency's staff were willing and able to provide assistance, the back-and-forth process in which the Federal Reserve must explain exactly what is needed, evaluate the information that is received, and return to the supervisor with clarifying questions and requests for additional information could slow the process appreciably.

Finally, having the legal authority to directly obtain information--through on-site examinations or otherwise--can prove critical to understanding and responding quickly to a financial crisis. While in some cases financial institutions that the Federal Reserve does not supervise may be willing to provide information to the Federal Reserve on a voluntary basis, in other cases they have not been willing, and there is no guarantee that they will be willing in future crises. For example, senior managers with relevant knowledge about the nature of the problems facing an institution or arising in financial markets may well be focused on those problems and therefore might not want to meet with, or provide information to, the Federal Reserve in a timely manner unless the Federal Reserve had the supervisory authority to require them to do so. Also, an institution may not readily recognize or acknowledge the possible adverse effects of its actions for other market participants or the financial markets and economy more generally, or it may expect the authorities to deal with such adverse effects. In such cases, it can be essential for the Federal Reserve to have the ability to compel the disrupted institution to provide timely information that would assist the Federal Reserve in addressing the crisis through its monetary policy, lending, and other policy and operational tools.

Besides the experience at the Federal Reserve, international developments suggest that a central-bank role in supervision can be important. For example, many have suggested that the problems with Northern Rock in the United Kingdom were compounded by a lack of clarity regarding the distribution of powers, responsibilities, and information among the Bank of England, the U.K. Financial Services Authority, and the U.K. Treasury. In response, the Bank of England was given statutory responsibilities in the area of financial stability, its powers to collect information from banks were augmented, and many have called for it to be given increased supervisory authority. In the European Union, a new European Systemic Risk Board is being established under which national central banks and the European Central Bank will play a central role in efforts to protect the financial system from systemic risk. More broadly, in most industrial countries today the central bank has substantial bank supervisory authorities, is responsible for broad financial stability, or both.

Steps the Federal Reserve Is Taking to Strengthen its Regulatory and Supervisory Performance

Supervision by financial regulators, including the Federal Reserve, clearly had significant shortcomings in the period leading up to the financial crisis. Among other things, regulators did not insist on sufficiently strong and comprehensive risk management by private firms, and inadequate attention was paid to the risks that could arise from the interactions of firms and markets, such as the collective dependence of many firms on similar wholesale funding sources or hedging strategies. The Federal Reserve has been and continues to be engaged in an intensive self-examination of its supervisory functions with two objectives: to address weaknesses in its supervisory function that became apparent as a result of the financial crisis, and to become a better supervisor in an environment that requires supervisors to be attentive to macroprudential as well as individual-institution safety-and-soundness risks.

The Federal Reserve is seriously engaged in measures to strengthen its regulatory and supervisory performance. For example, working through the Basel Committee on Bank Supervision and the Financial Stability Board, the Federal Reserve has played a key part in efforts to ensure that systemically critical financial institutions hold more and higher-quality capital and employ more robust liquidity management. The Federal Reserve also played a key role in international work to ensure that banks use compensation structures that provide appropriate performance and risk-taking incentives. Domestically, it has taken the lead in addressing flawed compensation practices, issuing proposed guidance that would require banking organizations to review their compensation practices to ensure that they do not encourage excessive risk-taking, are subject to effective controls and risk management, and are supported by strong corporate governance, including oversight by their boards of directors.

In the fall of 2008, the Federal Reserve updated its guidance on consolidated supervision, reaffirming the importance of such supervision, particularly for large complex firms, and emphasizing the importance of bringing a macroprudential perspective as well as an individual-institution safety-and-soundness perspective to consolidated supervision. Of considerable importance, the Federal Reserve has taken steps to ensure that, when risk-management shortcomings are identified, its supervisors hold managers accountable and make sure that weaknesses receive proper attention at senior levels and are resolved promptly. This requires routinely and promptly communicating important supervisory concerns to the highest levels of bank management, including through more frequent involvement of senior bank managers and boards of directors and senior Federal Reserve officials. This approach proved especially effective during the SCAP and in other circumstances when clear expectations for prompt remediation were forcefully communicated to large banking organizations.

The Federal Reserve has also begun to make fundamental changes to its supervision and regulation of large bank holding companies to include a macroprudential, as well as an individual-institution safety-and-soundness, perspective to supervision. For example, the Federal Reserve is developing a program of enhanced quantitative surveillance of large bank holding companies. Enhanced quantitative surveillance combines aggregate economic data, firm-level market-based indicators, and supervisory information to provide a fuller picture of the financial condition of firms, the risks they face, and their potential effects on the broader system. Examples of this approach are the indicative systemwide loss and pre-provision net revenue estimates that were developed for the SCAP and used in the subsequent analysis of Troubled Asset Relief Program redemption requests, and the firm-specific loss and revenue estimates that were developed by combining these systemwide estimates with supervisory information.

The Federal Reserve is working with other domestic and international regulators and market participants to overcome the collective action problems that often plague efforts to strengthen market infrastructure. Since 2005, the Federal Reserve has been leading efforts by market participants and domestic and international regulators to strengthen the infrastructure of the credit derivatives and other over-the-counter derivatives markets. While further progress is needed, without the progress that was achieved since 2005, the failures of major dealers and defaults by some of the very largest names traded in the credit derivatives markets surely would have been far more disruptive than they were. Likewise, this year the Federal Reserve took the lead in organizing a private-sector group that is developing recommendations for cooperative measures to strengthen margin and settlement practices in the triparty repo markets.

The Federal Reserve is also making changes designed to fully employ its expertise to effectively supervise large banking firms. The new supervisory framework will better accommodate a macroprudential orientation that goes beyond the traditional focus on individual institutions and better supports the identification and analysis of interconnected risks and sources of financial contagion. The new approach will implement a more centralized approach to the supervision of large, complex banks that are potentially systemically important.

In particular, strategic and policy direction for the supervision of large, complex financial institutions will be coordinated through a newly formed multidisciplinary committee led by senior officers representing various functions at the Board and Reserve Banks. Supervisors, economists, and market specialists, combined with officials responsible for quantitative surveillance activities, will define supervisory priorities and examination plans for large, complex banking organizations. Supervisory teams will be constructed around portfolios of firms with similar business lines and risks, and cross-firm examinations will consider interconnected risks, such as spillover and feedback effects.

As in the SCAP, representatives of primary and functional supervisors will be fully integrated in the process, participating in the planning and execution of horizontal exams and consolidated supervisory activities. As was evident in the recent crisis, interconnected risks can span several operating entities. Subprime mortgage exposures, for example, were dispersed across mortgage banks, broker-dealers, and off-balance-sheet vehicles, as well as insured depositories. Effective supervision of complex holding company structures must involve greater coordination among consolidated and functional supervisors and an integrated assessment of risks across the holding company, including bank and nonbank subsidiaries.

While supervisory authorities here and abroad are still developing the tools and instruments needed to fully implement a macroprudential approach to supervision, recent experience has shown that such an approach is critical to avoiding financial imbalances that can result in severe financial and economic dislocations. The Federal Reserve will continue to strengthen its supervisory efforts and to learn from events as they unfold, with the goal of doing all in its power to identify and address risks that may imperil the financial system.

11-002

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 18, 2011

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter of December 15, 2010 expressing your concerns as the Board develops the proposed rule on debit card interchange and routing. We are striving to implement regulations that effectively carry out the statutory provisions of Section 1075 of the Dodd-Frank Act. We appreciate your views, which we will take into consideration in formulating our final rule.

Sincerely,

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WASHINGTON, D. C. 20551

SCOTT G. ALVAREZ
GENERAL COUNSEL

February 2, 2011

The Honorable Darrell Issa
Chairman
Committee on Oversight and Government Reform
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Issa:

Enclosed are additional documents provided by the Federal Reserve Bank of New York that relate or refer to disclosure of information related to the assets of Maiden Lane, LLC. They are responsive to your letter to Chairman Bernanke of January 11, 2011. The documents are numbered FRBNY to ISSA00555044 to 00632739 and, as they contain pre-deliberative staff analyses and recommendations, are marked confidential. We request that the Committee maintain the confidentiality of this information.

Sincerely,

Scott G. Alvarez

cc: The Honorable Elijah Cummings

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 13, 2011

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the March 1, 2011, hearing before the Committee on Banking, Housing and Urban Affairs. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

<u>Questions for The Honorable Ben Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Johnson:</u>

1. Recognizing the critical need to reduce our structural deficit to avert the problems you were discussing with Senator Bennet, and given the importance of continuing to make selective investments in R&D, education and infrastructure, would defunding those areas now hurt the recovery and damage long-term U.S. growth?

The costs and risks to the U.S. economy will rise if the federal budget persistently runs large structural deficits. If global financial market participants were to lose confidence in the United States' ability to manage its fiscal policy, the historical experience of countries that have faced fiscal crises should warn us that interest rates could increase suddenly and quickly, which would impose substantial costs on our economy. The threat from our currently unsustainable fiscal policies is real and growing, which should be sufficient reason to put in place a credible plan to place fiscal policy on a sustainable path over the medium and longer term. Acting now to develop a credible program to reduce future structural deficits would not only enhance economic growth in the longer run, these policy actions would likely also yield near-term economic benefits from lower long-term interest rates and increased consumer and business confidence. Moreover, the sooner a credible fiscal plan is established, the more time affected individuals would have to adjust to the necessary policy changes, which would probably make those changes less painful and more politically feasible.

That said, economic growth is affected not only by the levels of spending and taxes, but also by their composition and structure. Changes in the government's tax policies and spending priorities could be made that not only reduce the deficit but also enhance the long-term growth potential of the economy--for example, by reducing disincentives to work and to save, by encouraging investment in the skills of our workforce as well as new machinery and equipment, by promoting research and development, and by encouraging and providing necessary infrastructure. In the current fiscal environment, policymakers will want to intensively review the effectiveness of all spending and tax policies and be willing to make changes in order to provide necessary programs more efficiently and at lower cost. These policy choices will certainly be difficult and will require tradeoffs to be made, but a more productive economy will ease the tradeoffs that we face.

2. Following up on Senator Moran's question to you at the hearing, what can the Federal Reserve do to help encourage, or direct banks to, increase lending to small businesses on Main Street that are responsible for so much job growth?

During the past few years, we have frequently received reports that small businesses are facing difficulty in obtaining credit. We share the Senator's concerns about the effect that tight credit conditions can have on Main Street and in response have taken several steps to foster access to loans by creditworthy businesses. Early in the crisis, the Federal Reserve and the other banking agencies recognized the possibility that bankers and examiners could over-correct for underwriting standards that had become too lax and issued guidance to instruct examiners to take a measured and balanced approach to reviews of banking organizations and to encourage efforts by these institutions to work constructively with existing borrowers that are experiencing financial difficulties. The Federal Reserve subsequently conducted significant training for its examiners on this guidance to ensure that it was carefully implemented. In addition, we continue to strongly reinforce the guidance with our examiners and are focusing on evaluating compliance with the guidance as part of our regular monitoring of the examination process, which includes local management vettings of examination findings in the district Reserve Banks, review of a sample of examination reports in Washington, and investigation of any specific instances of possible undue regulatory constraints reported by members of the public.

Our monitoring to date suggests that examiners are appropriately considering the guidance in evaluating supervised institutions. However, to the extent that a banking organization is concerned about supervisory restrictions imposed by Federal Reserve examiners, we have encouraged them to discuss their concerns with Reserve Bank or Federal Reserve Board supervisory staff. Bankers also have been advised that they can confidentially discuss these concerns with the Federal Reserve Board's Ombudsman, who works with bankers and supervisory staff to resolve such issues.

In addition to our efforts to encourage careful implementation of the interagency guidance, the Federal Reserve last year also completed a series of more than 40 meetings with community leaders from across the country to gather information to help the Federal Reserve and others better respond to the credit needs of small businesses. Emerging themes, best practices, and common challenges identified by the meeting series were discussed and shared at a conference held at the Federal Reserve Board in Washington in early July and are described in a summary report posted on the Federal Reserve's website at: http://www.federalreserve.gov/events/conferences /2010/sbc/downloads/small_business_summary.pdf The agenda for this meeting and remarks that address our plans for following-up on our findings are also available on the Federal Reserve's website.

More recently, the Federal Reserve has been working with staff at the U.S. Treasury and the other banking agencies to implement the Small Business Lending Fund created by the Small Business Jobs Act of 2010. This fund is intended to facilitate lending to creditworthy borrowers by providing affordable capital support to community banks that lend to small businesses.

3. We also want to ensure that individuals have appropriate access to credit. Is the Federal Reserve considering how its policies (both regulatory and monetary) impact consumer access to credit? If there is a negative impact on access to credit, what steps will the Federal Reserve take?

In the context of both monetary and regulatory or supervisory policy, the Federal Reserve regularly analyzes data and other information about the availability of credit to consumers. The availability of credit is a key factor pertaining to the outlook for consumer spending, which is, itself, a major component of aggregate demand in the U.S. economy. Therefore, when determining the appropriate stance of monetary policy, the Federal Open Market Committee considers consumers' access to credit along with many other factors that shape the macroeconomic outlook.

The Federal Reserve also considers the potential effects of its regulatory or supervisory policies on the availability of consumer credit. A recent example of this is the Comprehensive Capital Analysis and Review (CCAR) that was completed by the Federal Reserve on March 18, 2011. One element of the study of the capital plans of the 19 largest bank holding companies in the CCAR was to ascertain each firm's ability to hold sufficient capital to maintain access to funding, to continue to serve as credit intermediaries, to meet their obligations to creditors and counterparties, and to continue operations, even in an adverse macroeconomic environment. In other words, a key element of the review was to evaluate the capital plans of large bank holding companies in the context of their ability to support lending to consumers, even in an adverse macroeconomic environment.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 13, 2011

The Honorable Barney Frank
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your April 15, 2011, letter regarding the proposed rule released by the Board, the other Federal banking agencies, the U.S. Securities and Exchange Commission, the Federal Housing Finance Agency, and the Department of Housing and Urban Development, to implement the credit risk retention requirements of section 15G of the Securities Exchange Act of 1934 (15 U.S.C. § 78o-11), as added by section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

These six federal agencies have announced the extension of the comment period for the proposed rule in the attached press release. This will allow interested persons more time to analyze the issues and prepare their comments. We appreciate your views, which we will take into consideration in formulating our final rule. We will place your letter in the public comment file for this proposed rule.

Sincerely,

Enclosure

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 13, 2011

The Honorable Maxine Waters
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congresswoman:

Thank you for your April 15, 2011, letter regarding the proposed rule released by the Board, the other Federal banking agencies, the U.S. Securities and Exchange Commission, the Federal Housing Finance Agency, and the Department of Housing and Urban Development, to implement the credit risk retention requirements of section 15G of the Securities Exchange Act of 1934 (15 U.S.C. § 78o-11), as added by section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

These six federal agencies have announced the extension of the comment period for the proposed rule in the attached press release. This will allow interested persons more time to analyze the issues and prepare their comments. We appreciate your views, which we will take into consideration in formulating our final rule. We will place your letter in the public comment file for this proposed rule.

Sincerely,

Enclosure

Joint Release

Board of Governors of the Federal Reserve System
Department of Housing and Urban Development
Federal Deposit Insurance Corporation
Federal Housing Finance Agency
Office of the Comptroller of the Currency
Securities and Exchange Commission

For Immediate Release June 7, 2011

Agencies Extend Comment Period on Risk Retention Proposed Rulemaking

Six federal agencies have approved and will submit a Federal Register notice that extends the comment period on the proposed rules to implement the credit risk retention requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The comment period was extended to August 1, 2011, to allow interested persons more time to analyze the issues and prepare their comments. Originally, comments were due by June 10, 2011.

The proposed rule generally would require sponsors of asset-backed securities to retain at least 5 percent of the credit risk of the assets underlying the securities and would not permit sponsors to transfer or hedge that credit risk. The proposal was issued by the Office of the Comptroller of the Currency, the Federal Reserve, the Federal Deposit Insurance Corporation, the U.S. Securities and Exchange Commission, the Federal Housing Finance Agency, and the Department of Housing and Urban Development.

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Attachment

Media Contacts:

Federal Reserve	Barbara Hagenbaugh	(202) 452-2955
FDIC	David Barr	(202) 898-6992
FHFA	Stefanie Johnson	(202) 414-6376
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SEC	Office of Public Affairs	(202) 551-4120

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 24, 2011

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Thank you for your June 21, 2011, letter regarding the Board's proposed rule on debit card interchange fees and routing, which implements Section 1075 of the Dodd-Frank Act. We appreciate your views, which we will take into consideration in formulating our final rule. We will place your letter in the public comment file for this proposed rule.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

July 1, 2011

The Honorable Elijah E. Cummings
Ranking Member
Committee on Oversight and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Congressman:

This is in response to your letter, dated May 31, 2011, requesting documents related to the consent enforcement orders issued by the Federal Reserve and other federal bank regulatory agencies on April 13, 2011, against 14 financial institutions that engage in mortgage servicing activities, including several regulated by the Federal Reserve. These orders were imposed to address significant and pervasive compliance failures and unsafe and unsound practices by the servicers that were found during joint on-site examinations of the servicers by the regulators. In particular, you request copies of the engagement letters between each of the servicers and the independent consultants they retained to comply with the requirement of the consent orders to conduct an independent review of foreclosure actions taken by the servicers regarding individual borrowers.

The engagement letters, which are required to be approved by the Federal Reserve under the consent orders, and the process for approving those letters, are part of the bank examination process and therefore constitute confidential supervisory information that is protected by law from public disclosure. See 12 U.S.C. § 1905; 12 C.F.R. § 261.20. As the Board's General Counsel explained in his letter to you dated May 24, 2011, among other things, public disclosure of supervisory information concerning particular financial institutions that are open and operating impairs cooperation between the regulated institutions and the bank examiners. Private contract information is also protected from disclosure by the Trade Secrets Act. For these reasons, we are unable to provide the requested information.

As we have previously noted, however, we look forward to continue working with you, within the applicable restrictions on disclosure, to explain the enforcement actions taken by the Federal Reserve and the other federal regulatory agencies with regard to the foreclosure activities of mortgage servicers.

Sincerely,

cc: The Honorable Darrell E. Issa, Chairman
Committee on Oversight and Government Reform

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

July 21, 2011

The Honorable Debbie Stabenow
Chairwoman
Committee on Agriculture, Nutrition,
and Forestry
United States Senate
Washington, D.C. 20510

Dear Chairwoman:

Enclosed are my responses to the written questions you submitted following the June 15, 2011, hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Michael S. Gibson
Senior Associate Director
Division of Research and Statistics

Enclosure

<u>Questions for Dr. Michael S. Gibson, Senior Associate Director, Division of Research and Statistics, Board of Governors of the Federal Reserve System, from Chairwoman Stabenow:</u>

1. The prudential regulators' margin rule would classify financial end users into high and low risk categories. Do prudential regulators have any reliable estimates of the number of "high-risk" financial end users identified by the proposed rule?

As noted in the notice of proposed rulemaking, the number of counterparties and the extent to which certain types of firms are likely to be counterparties are unknown. For this and other reasons, the Agencies have requested comment in the proposal regarding the quantitative impact of the proposed margin requirements, including with respect to the number and types of counterparties affected. With respect to persons likely to be classified as high-risk financial end users under the proposed rule, the Agencies expect that a large number of such persons will be hedge funds.

2. Is it your intent to apply margin to non-financial end users and their captive finance affiliates?

For swaps with a nonfinancial end user counterparty, the proposed rule would not specify a minimum margin requirement. Rather, it would allow a banking organization that is a dealer or major participant to establish a threshold, based on a credit exposure limit that is approved and monitored as part of the credit approval process, below which the end user would not have to post margin. The proposed rule would not impose any caps on the credit exposure limits for nonfinancial end user counterparties. In effect, the proposed rule would maintain the status quo for a bank swap dealer, where the dealer conducts due diligence on its counterparty, determines a credit exposure limit with respect to the counterparty that is consistent with the dealer's risk appetite and is documented in a credit support agreement, and does not require margin payments from the nonfinancial end user as long as the exposure remains below the limit.

Captive finance companies would be classified as nonfinancial end users under the proposed rule if they did not meet the proposed rule's definition of "financial end user" (e.g., by being predominantly engaged in financial activities).

3. Will the prudential regulators allow the flexible use of noncash collateral for purposes of margin as directed in the statute?

The proposed rule identifies a limited set of securities as eligible non-cash collateral for the initial and variation margin requirements, consistent with the statutory requirement that the rule permit non-cash collateral while preserving the "financial integrity of markets trading swaps" and the "stability of the United States financial system."

Non-cash collateral can be consistent with market integrity and financial stability when an appropriate haircut can be established. An appropriate haircut is one that is large enough so that if the counterparty defaults, the non-defaulting counterparty can sell the collateral at a price that offsets the cost of replacing the defaulted counterparty's swap positions. An appropriate haircut also takes account of the likelihood that the value of many types of non-cash collateral will be under stress when a derivatives counterparty defaults.

The notice of proposed rulemaking asked public commenters to respond to several questions about possible expansions of the set of eligible collateral, including how to determine an appropriate haircut. We will carefully consider the comments received in response to these and other questions posed in the proposed rulemaking when moving forward with a final rule.

Finally, it should be noted that collateral posted by non-financial end users for exposures below the credit exposure limit (as discussed in the answer to the previous question) is not limited to the set of eligible collateral in the proposed rule, because the proposed rule only applies to exposures above the credit exposure limit. Bank swap dealers would be free to continue to accept whatever collateral they currently accept from non-financial end users as long as the exposure stays below the credit exposure limit.

4. The OCC's Inspector General recently released an estimate of the potential cost of imposing margin on swap transactions. Do prudential regulators have any reliable estimates of the impact of Dodd-Frank on economic growth and job creation due to increased margin requirements?

Before moving ahead with a final rule, the Federal Reserve expects to use any information submitted by public commenters on the proposed rule to more precisely assess the costs and benefits of the margin requirements that are required under Dodd-Frank. It was not possible to make a precise estimate of the quantitative costs of the proposed margin rule prior to issuing it for comment for several reasons. First, there are many changes that are occurring in the derivatives market as a result of regulatory reform that will affect the cost of the margin rule, including uncertainty with respect to (i) which entities will be classified as swap dealers or major swap participants; (ii) the extent to which existing derivatives would be rolled-over or renewed; and (iii) the extent to which derivatives currently traded on an over-the-counter basis will move to central clearing. Second, there are a number of specific and technical aspects of the proposed rule that are difficult to assess without a large amount of highly detailed data on the size of derivative positions as well as the underlying rationale of bank swap dealers for maintaining those positions.

5. As the prudential regulators have noted, the definition of a financial end user is "substantially similar to, the definition of a financial entity that is ineligible to use the end user exemption from the mandatory clearing requirements of sections 723 and 763 of the Dodd-Frank Act". While the proposed margin rule borrows from the Dodd-Frank Act's definition of financial entities, the definitions are not identical. Could you explain what "substantially similar" means in this context?

The proposed rule's definition of "financial end user," located as § __.2(h) of the proposed rule, contains seven prongs that, if met, would cause a person to be considered a financial end user for purposes of the proposed rule. The first four of these prongs, covering commodity pools, private funds, employee benefit plans, and persons predominantly engaged in financial activities, are identical to those used in the definition of "financial entity" for purposes of the mandatory clearing requirements added by sections 723 and 763 of the Dodd-Frank Act.

The latter three prongs of the proposed rule's definition are not included in the definition of "financial entity" for purposes of the mandatory clearing requirements. These prongs capture foreign commodity pools and private funds and foreign governments that the Agencies have proposed also to treat as financial end users, as well as any other entity that an Agency, in its discretion, designates as a financial end user for purposes of the proposed rule.

The definition of "financial entity" for purposes of the mandatory clearing requirements also contains two related provisions that are not included in the Agencies' proposed rule. First, the financial entity definition in sections 723 and 763 of the Dodd-Frank Act directs the CFTC and SEC to consider exempting small banks from the mandatory clearing requirement, savings associations, farm credit system institutions, and credit unions, which are otherwise covered by the definition because they are predominantly engaged in financial activities. Second, that financial entity definition includes a special "limitation" that excludes from the definition certain financing affiliates of commercial firms, if specified criteria are met.

6. The prudential regulators' margin rule would require all counterparties to document their "credit support arrangements." Would existing credit support arrangements meet the new requirements in the proposed rule and be deemed "appropriate"?

Whether an existing credit support arrangement would meet the requirements of the proposed rule will depend on the precise terms and conditions of that arrangement, in particular whether it specifies a covered swap entity's rights to collect initial and variation margin, the valuation methods for swaps, and dispute resolution procedures.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 23, 2012

The Honorable Collin Peterson
Ranking Member
Committee on Agriculture
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter dated January 12, 2012, inquiring as to the Board's authority, prior to the Dodd-Frank Act, to require entities under our jurisdiction to demand initial or variation margin from their counterparties in uncleared swap transactions.

In general, apart from the Dodd-Frank Act, the Board has broad and flexible authority to take supervisory and formal or informal enforcement actions to require entities under our jurisdiction to operate in a safe and sound manner. The Board has used this authority to require those entities to take a variety of actions to ensure that they monitor and manage the risks from their swap activities. In particular, the Board currently requires entities we supervise to manage the credit risk of the swaps aspect of their counterparty relationships, just as those entities are required to manage the risks of other credit relationships, and to manage the combined credit risks of each customer or counterparty on an aggregate basis. That credit risk management must include steps such as performing independent credit underwriting of new customers or counterparties to set a combined credit exposure limit for the particular customer or counterparty, measuring the credit exposure with appropriate metrics, monitoring the customer's or counterparty's financial condition and creditworthiness on an ongoing basis, and reporting all credit exposures with each customer or counterparty to management on an aggregate basis in a single report. A key aspect of this risk management also includes establishing appropriate margin and collateral haircut practices for all swap counterparties. The existing guidance does not specify requirements for initial and variation margin, but instead requires entities themselves to evaluate the risk of each counterparty and swap position and establish prudent collateral and other risk-mitigating protections as appropriate. A copy of recent Board (and other bank regulatory agency) guidance related to credit risk management is enclosed.

I hope this information is helpful to your deliberations.

Sincerely,

Enclosure

Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation
Board of Governors of the Federal Reserve System
Office of Thrift Supervision

Interagency Supervisory Guidance on Counterparty Credit Risk Management

June 29, 2011

Table of Contents

COUNTERPARTY CREDIT RISK MANAGEMENT

I. Introduction

This guidance discusses critical aspects of effective management of counterparty credit risk (CCR), and sets forth sound practices and supervisory expectations for an effective CCR management framework. CCR is the risk that the counterparty to a transaction could default or deteriorate in creditworthiness before the final settlement of a transaction's cash flows. Unlike the credit risk for a loan, when only the lending banking organization[1] faces the risk of loss, CCR creates a bilateral risk of loss because the market value of a transaction can be positive or negative to either counterparty. The future market value of the exposure and the counterparty's credit quality are uncertain and may vary over time as underlying market factors change. The guidance is intended for use by banking organizations, especially those with large derivatives portfolios, in setting their risk management practices, as well as by supervisors as they assess and examine such institutions' management of CCR. For other banking organizations without large derivatives portfolios, risk managers and supervisors should apply this guidance as appropriate, given the size, nature, and complexity of the CCR risk profile of the banking organization.

CCR is a multidimensional form of risk, affected by both the exposure to a counterparty and the credit quality of the counterparty, both of which are sensitive to market-induced changes. It is also affected by the interaction of these risks, for example the correlation[2] between an exposure and the credit spread of the counterparty, or the correlation of exposures among the banking organization's counterparties. Constructing an effective CCR management framework requires a combination of risk management techniques from the credit, market, and operational risk disciplines.

CCR management techniques have evolved rapidly over the last decade, along with increased complexity of derivative instruments under management. Banking organizations substantially improved their risk management practices during this time; however, in some cases, implementation of sound practices has been uneven across business lines and counterparty types. Further, the financial crisis of 2007-2009 revealed weaknesses in CCR management at many banking organizations, such as shortcomings in the timeliness and accuracy of exposure aggregation capabilities and inadequate measurement of correlation risks. The crisis also highlighted deficiencies in the ability of banking organizations to monitor and manage counterparty exposure limits and concentration risks, ranging from poor selection of CCR metrics to inadequate system infrastructure.

To address these weaknesses, this guidance reinforces sound governance of CCR management practices, through prudent board and senior management oversight, management reporting, and risk management functions. The guidance discusses relevant topics in risk measurement, including metrics, exposure aggregation and concentration management, stress testing, and associated characteristics of adequate systems infrastructure. It also covers risk control functions, such as counterparty limits, margin practices, validating and backtesting models and systems, managing close-outs,[3] managing

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[1] Unless otherwise indicated, "banking organizations" refers to national banks in the case of the Office of the Comptroller of the Currency (OCC); federal and state savings associations and savings and loan holding companies in the case of the Office of Thrift Supervision (OTS); state member banks and bank holding companies in the case of the Federal Reserve Board (Board); and state nonmember banks in the case of the Federal Deposit Insurance Corporation (FDIC). The U.S. branches and agencies of foreign banks supervised by the OCC, the Board and the FDIC also are considered to be banking organizations for purposes of this guidance.

[2] In this guidance, "correlation" refers to any form of linear or non-linear inter-relationship or dependence between factors.

[3] A close-out is the process undertaken by a banking organization following default of a counterparty to fully collect on all items due from that counterparty.

central counterparty exposures, and controlling legal and operational risks arising from derivatives activities.

CCR management guidelines and supervisory expectations are delineated in various individual and interagency policy statements and guidance,[4] which remain relevant and applicable. This guidance offers further explanation and clarification, particularly in light of developments in CCR management. However, this guidance is not all-inclusive and banking organizations should reference sound practices for CCR management, such as those advanced by industry, policymaking and supervisory forums.[5]

II. Governance

1. Board and Senior Management Responsibilities

The board of directors or a designated board-level committee (board) should clearly articulate the banking organization's risk tolerance for CCR, by approving relevant policies, including a framework for establishing limits on individual counterparty exposures and concentrations of exposures. Senior management should establish and implement a comprehensive risk measurement and management framework consistent with this risk tolerance that provides for the ongoing monitoring, reporting, and control of CCR exposures.

Senior management should adhere to the board's established risk tolerance and establish policies and risk management guidelines appropriately.[6] At a minimum, policies should outline CCR management standards that are in conformance with this guidance. More specifically, they should address the subjects discussed in this document, such as risk measurement and reporting, risk management tools, and processes to manage legal and operational risk. Policies should be detailed and contain a clear escalation process for review and approval of policy exceptions, especially those pertaining to transaction terms and limits.

2. Management Reporting

Banking organizations should report counterparty exposures to the board and senior management at a frequency commensurate with the materiality of exposures and the complexity of transactions. Reporting should include concentration analysis and CCR stress testing results, to allow for an understanding of exposures and potential losses under severe market conditions. Reports should also include an explanation of any measurement weaknesses or limitations that may influence the accuracy and reliability of the CCR risk measures.

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[4]See, for example, Supervisory Policy Statement on Investment Securities and End-User Derivatives Activities, 63 FR 20191, April 23, 1998. Examination guidance on CCR is contained in various agency publications including: FDIC, *Capital Markets Examination Handbook*; Federal Reserve, SR 99-03 and *Trading and Capital Market Activities Manual* (to be amended as appropriate to reflect this guidance); OTS, *Examiner Handbook*, Section 660, "Derivative Instruments and Hedging"; the OCC's Banking Circular 277, and "Risk Management of Financial Derivatives" (*Comptroller's Handbook, January*, 1997).

[5]Industry, policymaking, and supervisory groups include, but are not limited to, the Counterparty Risk Management Policy Group (CRMPG), Committee on Payment and Settlement Systems (CPSS), International Swaps and Derivatives Association (ISDA), Institute of International Finance (IIF), Group of Thirty (G30), Group of Twenty Finance Ministers and Central Bank Governors (G-20), International Organization of Securities Commissions (IOSCO), Senior Supervisors Group (SSG), and Basel Committee on Banking Supervision (BCBS). Documents produced by all of these groups were drawn upon in developing this guidance.

[6] Relevant supervisory guidance discusses establishment of CCR policies and procedures.

Senior management should have access to timely, accurate, and comprehensive CCR reporting metrics, including an assessment of significant issues related to the risk management aspects discussed in this guidance. They should review CCR reports at least monthly, with data that are no more than three weeks old. It is general practice for institutions to report:

- Total counterparty credit risk aggregated on a firm-wide basis and at significant legal entities.
- Counterparties with the largest exposures, along with detail on their exposure amounts.
- Exposures to central counterparties (CCPs).
- Significant concentrations, as outlined in this guidance.
- Exposures to weak or problem counterparties.
- Growth in exposures over time. As a sound practice, metrics should capture quarterly or monthly changes, supplemented (where relevant) by year-over-year trend data.
- Exposures from over-the-counter (OTC) derivatives. When they are material, additional product class break-outs (for example, traditional lending, securities lending) should be included.
- A sufficiently comprehensive range of CCR metrics, as discussed in the CCR metrics section.
- A qualitative discussion of key risk drivers of exposures or conditions or factors that would fundamentally change the risk profile of CCR. An example would be assessment of changes in credit underwriting terms and whether they remain prudent.

3. Risk Management Function and Internal Audit

A banking organization's board and senior management should clearly delineate the respective roles of business lines versus risk management, both in terms of initiating transactions that have CCR, and of ongoing CCR management. The board and senior management should ensure that the risk management functions have adequate resources, are fully independent from CCR related trading operations (in both activity and reporting), and have sufficient authority to enforce policies and to escalate issues to senior management and the board (independent of the business line).

The board should direct internal audit to regularly assess the adequacy of the CCR management framework as part of the regular audit plan. Such assessments should include credit line approval processes, credit ratings, and credit monitoring. Such an assessment should opine on the adequacy of the CCR infrastructure and processes, drawing where appropriate from individual business line reviews or other internal and external audit work. Please see the relevant section of this guidance regarding the role of CCR model validation or review. The board should review annual reports from internal audit and model validation or review, assessing the findings and confirming that management has taken appropriate corrective actions.

III. Risk Measurement

1. CCR Metrics

Given the complexity of CCR exposures (particularly regarding OTC derivatives), banking organizations should employ a range of risk measurement metrics to promote a comprehensive understanding of CCR and how it changes in varying environments. Metrics should be commensurate with the size, complexity, liquidity, and risk profile of the CCR portfolio. Banking organizations typically rely on certain metrics as a primary means of monitoring, with secondary metrics used to create a more robust view of CCR exposures. Banking organizations should apply these metrics to single counterparty exposures, groups of counterparties (for example, by internal rating, industry, geographical region), and the consolidated CCR portfolio. Banking organizations should assess their largest exposures, for instance their top 20 exposures, using each primary metric.

Major dealers and large, sophisticated banking organizations with substantial CCR exposure should measure and assess:

- Current exposure (both gross and net of collateral).
- Forward-looking exposure (that is, potential exposure).
- Stressed exposure (broken out by market risk factors, and/or by scenario).
- Aggregate and stressed credit valuation adjustment (CVA) as well as CVA factor sensitivities.
- Additional relevant risk measures, such as (for credit derivatives) jump-to-default risk on the reference obligor, and economic capital usage.
- The largest exposures by individual business line and product types.
- Correlation risks, such as wrong-way risk, as well as the credit quality of collateral.

Refer to Appendix A for definitions of basic metrics and descriptions of their purposes.

2. Aggregation of Exposures

Banking organizations should have the capacity to measure their exposure at various levels of aggregation (for example, by business line, legal entity, or consolidated by industry). Systems should be sufficiently flexible to allow for timely aggregation of all CCR exposures (that is, OTC derivatives, securities financing transactions (SFTs), and other pre-settlement exposures), as well as aggregation of other forms of credit risk to the same counterparty (for example, loans, bonds, and other credit risks). The following are sound CCR aggregation principles:

- Counterparty-level current exposure and potential exposure should be calculated daily, based on the previous day's position data and any exchange of collateral.
- For each organizational level of aggregation, all trades should be included.
- There should be sufficient flexibility to aggregate exposure at varying levels of granularity, including industries, regions, families of products (for example, OTC derivatives, SFTs), or other groupings to identify concentrations.
- While banking organizations are not required to express all forms of risk in a common metric or basis, management should be able to view the various forms of exposures to a given counterparty in a single report and/or system. Specifically, this could include current outstanding exposure across different categories (e.g., current exposure for OTC derivatives and drawn-down lines of commitment for loans). Exposure reports should also include the size of settlement and clearing lines.

- Banking organizations should be consistent in their choice of currency and exchange rate, and take into account the validity and legal enforceability of any netting agreements they may have with a counterparty.
- Management should understand the specific approach used to aggregate exposures for any given risk measure, in order to properly assess the results. For instance, some measures of risk (such as current exposure) may be readily added together, while others (such as potential exposure) are less meaningful when they are added to form an aggregate view of risk.
- Internal capital adequacy models should incorporate CCR.

3. Concentrations

Concentrated exposures are a significant concern, as CCR can contribute to sudden increases in credit exposure, which in turn can result in unexpectedly large losses in the event of counterparty default. Accordingly, banking organizations should have enterprise-wide processes to effectively identify, measure, monitor, and control concentrated exposures on both a legal entity and enterprise-wide basis.

Concentrations should be identified using both quantitative and qualitative means. An exposure or group of related exposures (for example, firms in the same industry), should be considered a concentration in the following circumstances: exposures (individually or collectively) exceed risk tolerance levels established to ensure appropriate diversification; deterioration of the exposure could result in material loss; or deterioration could result in circumstances that are detrimental to the banking organization's reputation. All credit exposures should be considered as part of concentration management, including loans, OTC derivatives, names in bespoke and index CDO credit tranches, securities settlements, and money market transactions such as fed funds sold. Total credit exposures should include the size of settlement and clearing lines, or other committed lines.

CCR concentration management should identify, quantify, and monitor:

- Individual counterparties with large potential exposures, when those exposures are driven by a single market factor or transaction type. In these circumstances, banking organizations should supplement statistical measures of potential exposure with other measures, such as stress tests, that identify such concentrations and provide an alternative view of risks associated with close-outs.
- Concentrations of exposures to individual legal entities, as well as concentrations across affiliated legal entities at the parent entity level, or in the aggregate for all related entities.
- Concentrations of exposures to industries or other obligor groupings.
- Concentrations of exposures to geographic regions or country-specific groupings sensitive to similar macroeconomic shocks.
- Concentrations across counterparties when potential exposure is driven by the same or similar risk factors. For both derivatives and SFTs, banking organizations should understand the risks associated with crowded trades,[7] where close-out risk may be heightened under stressed market conditions.

[7] For purposes of this guidance, a "crowded trade" is a large balance of open trading positions in a given asset or group of assets relative to its daily trading volume, when other market participants have similar positions that would need to be liquidated should any adverse price change occur. Coincident sale of these assets by a large number of market participants could lead to significant price declines and dramatic increases in uncollateralized exposures.

- Collateral concentrations, including both risk concentrations with a single counterparty, and risks associated with portfolios of counterparties. Banking organizations should consider concentrations of non-cash collateral for all product lines covered by collateral agreements;[8] including collateral that covers a single counterparty exposure and portfolios of counterparties.[9]
- Collateral concentrations involving special purpose entities (SPEs). Collateral concentration risk is particularly important for SPEs, because the collateral typically represents an SPE's paying capacity.
- Banking organizations should consider the full range of credit risks in combination with CCR to manage concentration risk, including; risks from on- and -off-balance-sheet activities, contractual and non-contractual risks, contingent and non-contingent risks, as well as underwriting and pipeline risks.

4. Stress Testing

Banking organizations with significant CCR exposures should maintain a comprehensive stress testing framework, which is integrated into the banking organization's CCR management. The framework should inform the banking organization's day-to-day exposure and concentration management, and it should identify extreme market conditions that could excessively strain the financial resources of the banking organization. Regularly, but no less than quarterly, senior management should evaluate stress test results for evidence of potentially excessive risk, and take risk reduction strategies as appropriate.

The severity of factor shocks should be consistent with the purpose of the stress test. When evaluating solvency under stress, factor shocks should be severe enough to capture historical extreme market environments and/or extreme but plausible stressed market conditions. The impact of such shocks on capital resources and earnings should be evaluated. For day-to-day portfolio monitoring, hedging, and management of concentrations, banking organizations should also consider scenarios of lesser severity and higher probability. When conducting stress testing, risk managers should challenge the strength of assumptions made about the legal enforceability of netting and the ability to collect and liquidate collateral.

A sound stress-testing framework should include:

- Measurement of the largest counterparty-level impacts across portfolios, material concentrations within segments of a portfolio (such as industries or regions), and relevant portfolio- and counterparty-specific trends.
- Complete trade capture and exposure aggregation across all forms of trading (not just OTC derivatives) at the counterparty-specific level, including transactions that fall outside of the main credit system. The time frame selected for trade capture should be commensurate with the frequency with which stress tests are conducted.
- Stress tests, at least quarterly, of principal market risk factors on an individual basis (for example, interest rates, foreign exchange, equities, credit spreads, and commodity prices) for all material counterparties. Banking organizations should be aware that some counterparties may be material on a consolidated basis, even though they may not be material on an individual legal entity basis.

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[8] Banking organizations should also track concentrations in volatile currencies.

[9] This analysis is particularly important with repo-style transactions and other forms of SFTs for which the ability of market participants to liquidate large collateral positions may be difficult during periods of market turbulence.

- Assessment of non-directional risks (for example, yield curve exposures and basis risks) from multi-factor stress testing scenarios. Multi-factor stress tests should, at a minimum, aim to address separate scenarios: severe economic or market events; significant decrease in broad market liquidity; and the liquidation of a large financial intermediary of the banking organization, factoring in direct and indirect consequences.
- Consideration, at least quarterly, of stressed exposures resulting from the joint movement of exposures and related counterparty creditworthiness. This should be done at the counterparty-specific and counterparty-group (for example, industry and region) level, and in aggregate for the banking organization. When CVA methodologies are used, banking organizations should ensure that stress testing sufficiently captures additional losses from potential defaults.[10]
- Basic stress testing of CVA to assess performance under adverse scenarios, incorporating any hedging mismatches.
- Concurrent stress testing of exposure and non-cash collateral for assessing wrong-way risk.
- Identification and assessment of exposure levels for certain counterparties (for example, sovereigns and municipalities), above which the banking organization may be concerned about willingness to pay.
- Integration of CCR stress tests into firm-wide stress tests.[11]

5. Credit Valuation Adjustments (CVA)

CVA refers to adjustments to transaction valuation to reflect the counterparty's credit quality. CVA is the fair value adjustment to reflect CCR in valuation of derivatives. As such, CVA is the market value of CCR and provides a market-based framework for understanding and valuing the counterparty credit risk embedded in derivative contracts. CVA may include only the adjustment to reflect the counterparty's credit quality (a one-sided CVA or just CVA), or it may include an adjustment to reflect the banking organization's own credit quality. The latter is a two-sided CVA, or CVA plus a debt valuation adjustment (DVA). For the evaluation of the credit risk due to probability of default of counterparties, a one sided CVA is typically used. For the evaluation of the value of derivatives transactions with a counterparty or the market risk of derivatives transactions, a two-sided CVA should be used.

Although CVA is not a new concept, its importance has grown over the last few years, partly because of a change in accounting rules that requires banking organizations to recognize the earnings impact of changes in CVA.[12] During the 2007-2009 financial crisis, a large portion of CCR losses were because of CVA losses rather than actual counterparty defaults.[13] As such, CVA has become more important in risk management, as a mechanism to value, manage, and make appropriate hedging

[10] Exposure testing should include single-factor, multi-factor and material non-directional risks.
[11] CCR stress testing should be consistent with overall banking organization-wide stress testing and follow the principles set forth in the "Principles for Sound Stress Testing Practices and Supervision" issued by the Risk Management and Modeling Group of the Basel Committee in May 2009.
[12] Accounting literature pertinent to CVA includes FAS Statement 157, and Accounting Standards Codification (ASC) Topic 820. In addition, other transaction fair value adjustments should be conducted. For example, those involving a banking organization's own credit risk, or differences in funding costs based on whether transactions are collateralized or not.
[13] Basel Committee on Banking Supervision, "Strengthening the resilience of the banking sector – consultative document," December 2009. http://bis.org/publ/bcbs164.htm

decisions, to mitigate banking organizations' exposure to the mark-to-market (MTM) impact of CCR.[14] The following are general standards for CVA measurement and use of CVA for risk management purposes:

- CVA calculations should include all products and counterparties, including margined counterparties.
- The method for incorporating counterparty credit quality into CVA should be reasonable and subject to ongoing evaluation. CVA should reflect the fair value of the counterparty credit risk for OTC derivatives, and inputs should be based on current market prices when possible.
    - Credit spreads should be reflected in the calculation where available, and banking organizations should not overly rely on non-market-based probability of default estimates when calculating CVA.
    - Banking organizations should attempt to map credit quality to name-specific spreads rather than spreads associated with broad credit categories.
    - Any proxy spreads should reasonably capture the idiosyncratic nature of the counterparty and the liquidity profile.
    - The term structure of credit spreads should be reflected in the CVA calculation
- The CVA calculation should incorporate counterparty-specific master netting agreements and margin terms; for example, the CVA calculation should reflect margin thresholds or minimum transfer amounts stated in legal documents.
- Banking organizations should identify the correlation between a counterparty's credit-worthiness and its exposure to the counterparty, and seek to incorporate the correlation into their respective CVA calculation.

Management of CVA

CVA management should be consistent with sound risk management practices for other material mark-to-market risks. These practices should include the following:

- Business units engaged in trades related to CVA management should have independent risk management functions overseeing their activities.
- Systems that produce CVA risk metrics should be subject to the same controls as used for other MTM risks, including independent validation or review of all risk models, including alternative methodologies.[15]
- Upon transaction execution, CVA costs should be allocated to the business unit that originates the transaction.
    - As a sound practice, the risk of CVA should be incorporated into the risk-adjusted return calculation of a given business.

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[14] An accurate measure of CVA is critical to prudent risk-taking, as part of effectively understanding the risk-reward tradeoff in a given derivatives transaction. The more comprehensively CVA is measured, the more transparent the economics of a given transaction.

[15] Liquidity in credit markets has varied significantly over time. As liquidity conditions change, banking organizations should calculate CVA using methodologies appropriate to the market pricing information available for each counterparty and transaction type.

- CVA cost allocation provides incentive for certain parties to make prudent risk-taking decisions, and motivates risk-takers to support risk mitigation, such as requiring strong collateral terms.

- Banking organizations should measure sensitivities to changes in credit and market risk factors to determine the material drivers of MTM changes. On a regular basis, but no less frequently than quarterly, banking organizations should ensure that CVA MTM changes are sufficiently explained by these risk factors (for example, through profit and loss attribution for sensitivities, and backtesting for value at risk (VaR)).

- Banking organizations hedging CVA MTM should gauge the effectiveness of hedges through measurements of basis risk or other types of mismatches. In this regard, it is particularly important to capture non-linearities, such as the correlation between market and credit risk, and other residual risks that may not be fully offset by hedging.

<u>CVA VaR</u>

Banking organizations with material CVA should measure the risk of associated loss on an ongoing basis. In addition to stress tests of the CVA, banking organizations may develop VaR models that include CVA to measure potential losses. While these models are currently in the early stages of development, they may prove to be effective tools for risk management purposes. An advantage of CVA VaR over more traditional CCR risk measures is that it captures the variability of the CCR exposure, the variability of the counterparty's credit spread, and the dependency between them.

Developing VaR models for CVA is significantly more complicated than developing VaR models for a banking organization's market risk positions. In developing a CVA VaR model, a banking organization should match the percentile and time horizon for the VaR model to those appropriate for the management of this risk, and include all significant risks associated with changes in the CVA. For example, banking organizations may use the same percentile for CVA VaR as they use for market risk VaR (for example, the 95^{th} or 99^{th} percentile). However, the time horizon for CVA VaR may need to be longer than for market risk (for example, one quarter or one year) because of the potentially illiquid nature of CVA. The following are important considerations in developing a CVA VaR model:

- All material counterparties covered by CVA valuation should be included in the VaR model.

- A CVA VaR calculation that keeps the exposure or the counterparty probability of default static is not adequate. It will not only omit the dependence between the two variables, but also the risk arising from the uncertainty of the fixed variable.

- CVA VaR should incorporate all forms of CVA hedging. Banking organizations and examiners should assess the ability of the VaR measure to accurately capture the types of hedging used by the banking organization.

6. Wrong-Way Risk

Wrong-way risk occurs when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself. Specific wrong-way risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself because of the nature of the transactions with the counterparty. General wrong-way risk arises when the probability of default of counterparties is positively correlated with general market risk factors. Wrong-way risk is an important aspect of CCR that has caused major losses at banking organizations.

Accordingly, a banking organization should have a process to systematically identify, quantify, and control both specific and general wrong-way risk across its OTC derivative and SFT portfolios.[16] To prudently manage wrong-way risk, banking organizations should:

- Maintain policies that formally articulate tolerance limits for both specific and general wrong-way risk, an ongoing wrong-way risk identification process, and the requirements for escalation of wrong-way risk analysis to senior management.
- Maintain policies for identifying, approving, and otherwise managing situations when there is a legal connection between the counterparty and the underlying exposure or the associated collateral.[17] Banking organizations should generally avoid such transactions because of their increased risk.
- Perform wrong-way risk analysis for OTC derivatives, at least at the industry and regional levels.
- Conduct wrong-way risk analysis for SFTs on broad asset classes of securities (for example, government bonds, and corporate bonds).

IV. Systems Infrastructure Considerations

Banking organizations should ensure that systems infrastructure keeps up with changes in the size and complexity of their CCR exposures, and the OTC derivatives market in general. Systems should capture and measure the risk of transactions that may be subject to CCR as a fundamental part of the CCR management framework.

Banking organizations should have strong operational processes across all derivatives markets, consistent with supervisory and industry recommendations.[18] Management should strive for a single comprehensive CCR exposure measurement platform.[19] If not currently possible, banking organizations should minimize the number of system platforms and methodologies, as well as manual adjustments to exposure calculations. When using multiple exposure measurement systems, management should ensure that transactions whose future values are measured by different systems are aggregated conservatively.

To maintain a systems infrastructure that supports adequate CCR management, banking organizations should:

Data Integrity and Reconciliation

- Deploy adequate operational resources to support reconciliations and related analytical and remediation processes.

[16] A standard way of quantifying general wrong-way risk is to design and apply stress scenarios that detect wrong-way risk in the portfolio, record counterparty exposures most affected by the scenarios, and assess whether the creditworthiness of such counterparties is also negatively affected by the scenario.
[17] Examples of this situation are single-name credit derivatives when there is a legal relationship between the counterparty and the reference entity underlying the transaction, and financing transactions when the counterparty pledges an affiliate's security as collateral.
[18] Examples are recommendations made by the Senior Supervisors Group (SSG) and the Counterparty Risk Management Policy Group (CRMPG).
[19] A single platform may in practice contain a number of separate systems and models. These would be considered a cohesive framework if they are operationally stable and accurate in risk estimation, particularly with regard to proper reflection of collateral and netting. A common programming language for these systems facilitates an effective measurement framework.

- Reconcile positions and valuations with counterparties.
  - Large counterparties should perform frequent reconciliations of positions and valuations (daily if appropriate).[20]
  - For smaller portfolios with non-dealer counterparties where there are infrequent trades, large dealers should ensure the data integrity of trade and collateral information on a regular (but not necessarily daily) basis, reconciling their portfolios according to prevailing industry standards.
- Reconcile exposure data in CCR systems with the official books and records of the financial institution.
- Maintain controls around obligor names at the point of trade entry, as well as reviews of warehoused credit data, to ensure that all exposures to an obligor are captured under the proper name and can be aggregated accordingly.
- Maintain quality control over transfer of transaction information between trade capture systems and exposure measurement systems.
- Harmonize netting and collateral data across systems to ensure accurate collateral calls and reflection of collateral in all internal systems. Banking organizations should maintain a robust reconciliation process, to ensure that internal systems have terms that are consistent with those formally documented in agreements and credit files.
- Remediate promptly any systems weaknesses that raise questions about the appropriateness of the limits structure. If there are a significant number of limit excesses, this may be a symptom of system weaknesses, which should be identified and promptly remediated.
- Eliminate or minimize backlogs of unconfirmed trades.

Automation and Tracking

- Automate legal and operational information, such as netting and collateral terms. Banking organizations should be able to adjust exposure measurements, taking into account the enforceability of legal agreements.
- Automate processes to track and manage legal documentation, especially when there is a large volume of legal agreements.
- Increase automation of margin processes[21] and continue efforts to expand automation of OTC derivatives post-trade processing. This should include automation of trade confirmations, to reduce the lag between trade execution and legal execution.
- Maintain systems that track and monitor changes in credit terms and have triggers for relevant factors, such as net asset value, credit rating, and cross-default.
- Maintain default monitoring processes and systems.

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[20] Large dealer counterparties should perform portfolio reconciliation on a daily basis, as set forth in relevant industry standards, such as the ISDA "Collateralised Portfolio Reconciliation Best Operational Practices" (January, 2010).
[21] Banking organizations should consider the recommendations in the "Standards of Electronic Exchange of OTC Derivative Margin Calls," issued by ISDA Collateral Committee on November 12, 2009.

Add-Ons

For large derivatives market participants, certain trades may be difficult to capture in exposure measurement systems, and are therefore modeled outside of the main measurement system(s). The resulting exposures, commonly referred to as add-ons, are then added to the portfolio potential exposure measure. In limited cases, the use of conservative add-on methodologies may be suitable, if the central system cannot reflect the risk of complex financial products. However, overreliance on add-on methodologies may distort exposure measures. To mitigate measurement distortions, banking organizations should:

- Review the use of add-on methodologies at least annually. Current or planned significant trading activity should trigger efforts to develop appropriate modeling and systems, prior to or concurrent with these growth plans.
- Establish growth limits for products with material activities that continue to rely on add-ons. Once systems are improved to meet a generally accepted industry standard of trade capture, these limits can be removed.

V. Risk Management

1. Counterparty Limits

Meaningful limits on exposures are an integral part of a CCR management framework, and these limits should be formalized in CCR policies and procedures. For limits to be effective, a banking organization should incorporate these limits into an exposure monitoring system independent of relevant business lines. It should perform ongoing monitoring of exposures against such limits, to ascertain conformance with these limits, and have adequate risk controls that require action to mitigate limit exceptions. Review of exceptions should include escalation to a managerial level that is commensurate with the size of the excess or nature of mitigation required. A sound limit system should include:

- Establishment and regular review of counterparty limits by a designated committee. Further, a banking organization should have a process to escalate limit approvals to higher levels of authority, depending on the size of counterparty exposures, credit quality, and tenor.
- Establishment of potential future exposure limits, as well as limits based on other metrics. It is a sound practice to limit the market risk arising through CVA, with a limit on CVA or CVA VaR. However, such limits do not eliminate the need to limit counterparty credit exposure with a measure of potential future exposure.
- Individual CCR limits should be based on peak exposures rather than expected exposures.
  - Peak exposures are appropriate for individual counterparty limit monitoring purposes because they represent the risk tolerance for exposure to a single counterparty.
  - Expected exposure is an appropriate measure for aggregating exposures across counterparties in a portfolio credit model, or for use within CVA.
- Consideration of risk factors such as the credit quality of the counterparty, tenor of the transactions, and the liquidity of the positions or hedges.
- Sufficiently automated monitoring processes to provide updated exposure measures at least daily.

- Monitoring of intra-day trading activity for conformance with exposure limits and exception policies. Such controls and procedures can include intra-day limit monitoring, trade procedures and systems that assess a trade's impact on limit utilization prior to execution, limit warning triggers at specific utilization levels, and restrictions by credit risk management on allocation of full limits to the business lines.

2. Margin Policies and Practices

Collateral is a fundamental CCR mitigant. Indeed, significant stress events have highlighted the importance of sound margining practices. With this in mind, banking organizations should ensure that they have adequate margin and collateral "haircut"[22] guidelines for all products with CCR.[23] Accordingly, banking organizations should:

- Maintain CCR policies that address margin practices and collateral terms, including, but not limited to:
  - Processes to establish and periodically review minimum haircuts.
  - Processes to evaluate the volatility and liquidity of the underlying collateral. Banks should strive to ensure that haircuts on collateral do not decline during periods of low volatility.
  - Controls to mitigate the potential for a weakening of credit standards from competitive pressure.
- Set guidelines for cross-product margining. Banking organizations offer cross-product margining arrangements to clients to reduce required margin amounts. Guidelines to control risks associated with cross-product margining would include limiting the set of eligible transactions to liquid exposures, and having procedures to resolve margin disputes.
- Maintain collateral management policies and procedures to control, monitor and report:
  - The extent to which collateral agreements expose a banking organization to collateral risks, such as the volatility and liquidity of the securities held as collateral.
  - Concentrations of less liquid or less marketable collateral asset classes.
  - The risks of re-hypothecation or other reinvestment of collateral (both cash and noncash) received from counterparties, including the potential liquidity shortfalls resulting from the re-use of such collateral.
  - The CCR associated with the decision whether to require posted margin to be segregated. Organizations should perform a legal analysis concerning the risks of agreeing to allow cash to be commingled with a counterparty's own cash and of allowing a counterparty to re-hypothecate securities pledged as margin.
- Maintain policies and processes for monitoring margin agreements involving third-party custodians. As with bilateral counterparties, banking organizations should:
  - Identify the location of the account to which collateral is posted, or from which it is received.

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[22] A haircut is the difference between the market value of an asset being used as collateral for a loan and the amount of money that a lender will advance against the asset.

[23] See guidelines issued by ISDA, SIFMA and MFA, including the "Market Review of OTC Derivative Bilateral Collateralization Practices (Release 2.0)," March 2010, and "Best Practices for Collateral Management," June 30, 2010.

- Obtain periodic account statements or other assurances that confirm the custodian is holding the collateral in conformance with the agreement.
- Understand the characteristics of the account where the collateral is held (for example, whether it is in a segregated account), and the legal rights of the counterparty or any third-party custodian regarding this collateral.

3. Validation of Models and Systems:

A banking organization should validate its CCR models initially and on an ongoing basis. Validation of models should include: an evaluation of the conceptual soundness and developmental evidence supporting a given model; an ongoing monitoring process that includes verification of processes and benchmarking; and an outcomes-analysis process that includes backtesting. Validation should identify key assumptions and potential limitations, and it should assess their possible impact on risk metrics. All components of models should be subject to validation along with their combination in the CCR system.

Evaluating the conceptual soundness involves assessing the quality of the design and construction of the CCR models and systems, including documentation and empirical evidence that supports the theory, data, and methods used.

Ongoing monitoring confirms that CCR systems continue to perform as intended. This generally involves process verification, an assessment of model data integrity and systems operation, and benchmarking to assess the quality of a given model. Benchmarking is a valuable diagnostic tool in identifying potential weaknesses. Specifically, it is the comparison of a banking organization's CCR model estimates with those derived using alternative data, methods, or techniques. Benchmarking can also be applied to particular CCR model components, such as parameter estimation methods or pricing models. Management should investigate the source of any differences in output, and determine whether benchmarking gaps indicate weakness in the banking organization's models.

Outcomes analysis compares model outputs to actual results during a sample period not used in model development. This is generally accomplished using backtesting. It should be applied to components of CCR models (for example the risk factor distribution and pricing model), the risk measures, and projected exposures. While there are limitations to backtesting, especially for testing the longer time horizon predictions of a given CCR model, it is an essential component of model validation. Banking organizations should have a process for the resolution of observed model deficiencies detected by backtesting. This should include further investigation to determine the problem, and appropriate course of action, including changing a given CCR model.

If the validation of CCR models and infrastructure systems is not performed by staff that is independent from the developers of the models, then an independent review should be conducted by technically competent personnel to ensure the adequacy and effectiveness of the validation. The scope of the independent review should include: validation procedures for all components, the role of relevant parties, and documentation of the model and validation processes. This review should document its results, what action was taken to resolve findings, and its relative timeliness.

Senior management should be notified of validation and review results and should take appropriate and timely corrective actions to address deficiencies. The board should be apprised of summary results, especially unresolved deficiencies. In support of validation activities, internal audit should review and test models and systems validation, and overall systems infrastructure as part of their regular audit cycle.

For more details on validation, please see Appendix B.

4. Close-Out Policies and Practices

Banking organizations should have the ability to effectively manage counterparties in distress, including execution of a close-out. Policies and procedures outlining sound practices for managing a close-out should include:

- Requirements for hypothetical close-out simulations at least once every two years for one of the banking organization's most complex counterparties.
- Standards for the speed and accuracy with which the banking organization can compile comprehensive counterparty exposure data and net cash outflows. Operational capacity to aggregate exposures within four hours is a reasonable standard.
- The sequence of critical tasks, and decision-making responsibilities, needed to execute a close-out.
- Requirements for periodic review of documentation related to counterparty terminations, and confirmation that appropriate and current agreements that specify the definition of events of default and the termination methodology that will be used are in place.
    - Banking organizations should take corrective action if documents are not current, active and enforceable.
    - Management should document their decision to trade with counterparties that are either unwilling or unable to maintain appropriate and current documentation.
- Established closeout methodologies that are practical to implement, particularly with large and potentially illiquid portfolios. Dealers should consider using the "close-out amount" approach for early termination upon default in inter-dealer relationships.[24]
- A requirement that the banking organization transmit immediate instructions to its appropriate transfer agent(s) to deactivate collateral transfers, contractual payments, or other automated transfers contained in "standard settlement instructions" for counterparties or prime brokers that have defaulted on the contract or for counterparties or prime brokers that have declared bankruptcy.

VI. Managing Central Counterparty Exposures

A central credit counterparty (CCP) facilitates trades between counterparties in one or more financial markets by either guaranteeing trades or novating contracts, and typically requires all participants to be fully collateralized on a daily basis. The CCP thus effectively bears most of the counterparty credit risk in transactions, becoming the buyer for every seller and the seller to every buyer. Well-regulated and soundly-managed CCPs can be an important means of reducing bilateral counterparty exposure in the OTC derivatives market. However, CCPs also concentrate risk within a single entity. Therefore, it is important that banking organizations centrally clear through regulated CCPs with sound risk management processes, and strong financial resources sufficient to meet their obligations under extreme stress conditions.

[24] The close-out amount approach is defined in CRMPG III, Containing Systemic Risk: Road to Reform (August 6, 2008), pp. 122-125. Also, ISDA has published a closeout amount protocol to aid in the adoption of the close-out amount approach.

To manage CCP exposures, banking organizations should regularly, but no less frequently than annually, review the individual CCPs to which they have exposures. This review should include performing and documenting due diligence on each CCP, applying current supervisory or industry standards[25] (and any subsequent standards) as a baseline to assess the CCP's risk management practices.

- For each CCP, an evaluation of its risk management framework should at a minimum include membership requirements, guarantee fund contributions, margining practices, default-sharing protocols, and limits of liability.
- Banking organizations should also consider the soundness of the CCP's policies and procedures, including procedures for handling the default of a clearing member, obligations at post-default auctions, and post-default assignment of positions.
- Banking organizations should also maintain compliance with applicable regulatory requirements, such as ensuring contingent loss exposure remains within a banking organization's legal lending limit.

VII. Legal and Operational Risk Management

Banking organizations should ensure proper control of, and access to, legal documentation and agreements. In addition, it is important that systems used to measure CCR incorporate accurate legal terms and provisions. The accessibility and accuracy of legal terms is particularly critical in close-outs, when there is limited time to review the collateral and netting agreements. Accordingly, banking organizations should:

- Have a formal process for negotiating legal agreements. As a best practice, the process would include approval steps and responsibilities of applicable departments.
- At least annually, conduct a review of the legal enforceability of collateral and netting agreements for all relevant jurisdictions.
- Maintain policies on when it is acceptable to trade without a master agreement,[26] using metrics such as trading volume or the counterparty's risk profile.
  - o Trading without a master agreement may be acceptable in cases of minimal volume or when trading in jurisdictions where master agreements are unenforceable. As applicable, policies should outline required actions, to undertake and monitor transactions without an executed master agreement.
- Use commonly recognized dispute resolution procedures.[27]

[25] For instance, "Recommendations for Central Counterparties," a consultative report issued by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions under the auspices of the Bank for International Settlements (March 2004).
[26] The capital rules in the United States refer to master agreements. These include: The Federal Reserve's "Risk-Based Capital Standards: Advanced Capital Adequacy Framework — Basel II", 12 CFR 208; Appendix F, and 12 CFR 225; Appendix G." For the FDIC, it is 12 CFR 325, Appendix D. For the OCC, it is 12 CFR Part 3, Appendix C. For the OTS, it is 12 CFR Parts 559, 560, 563, and 567.
[27] An example of such procedures would be the ISDA "2009 Dispute Resolution Protocol" (September 2009).

- o Banking organizations should seek to resolve collateral disputes within recommended timeframes.
  - o Senior management should receive reports listing material and aged disputes, as these pose significant risk.

- Include netting of positions in risk management systems, only if there is a written legal review (either internally or externally) that expresses a high level of confidence that netting agreements are legally enforceable.
- Maintain ongoing participation in both bilateral and multilateral portfolio compression efforts. Where feasible, banking organizations are encouraged to elect compression tolerances (such as post-termination factor sensitivity changes and cash payments) that allow the widest possible portfolio of trades to be terminated.
- Adopt and implement appropriate novation protocols.[28]

1. Legal Risk Arising from Counterparty Appropriateness[29]

While a counterparty's ability to pay should be evaluated when assessing credit risk, credit losses can also occur when a counterparty is unwilling to pay, which most commonly occurs when a counterparty questions the appropriateness of a contract. These types of disputes pose not only risk of a direct credit loss, but also risk of litigation costs and/or reputational damage. Banking organizations should maintain policies and procedures to assess client and deal appropriateness. In addition, banking organizations should:

- Conduct initial and ongoing due diligence, evaluating whether a client is able to understand and utilize transactions with CCR as part of assessing the client's sophistication, investment objectives, and financial condition.
  - o For example, although some clients may be sophisticated enough to enter into a standardized swap, they may lack the sophistication to fully analyze the risks of a complex OTC deal.
  - o Banking organizations should be particularly careful to assess appropriateness of complex, long-dated, off-market, illiquid, or other transactions with higher reputational risk.
- Include appropriateness assessments in the new product approval process. Such assessments should determine the types of counterparties acceptable for a new product, and what level of counterparty sophistication is required for any given product.
- Maintain disclosure policies for OTC derivative and other complex transactions, to ensure that risks are accurately and completely communicated to counterparties.
- Maintain guidelines for determination of acceptable counterparties for complex derivatives transactions.

[28] An example would be the ISDA novation protocol.
[29] For guidance on counterparty appropriateness, see the Federal Reserve's "Trading and Capital Markets Activity Manual," section 2070, pp. 6-7, and the "Interagency Statement on Sound Practices Concerning Elevated Risk Complex Structured Finance Activities" (January 11, 2007).

VIII. Conclusion

For relevant banking organizations, CCR management should be an integral component of the risk management framework. When considering the applicability of specific guidelines and best practices set forth in this guidance, a banking organization's senior management and supervisors should consider the size and complexity of its securities and trading activities. Banking organizations should comprehensively evaluate existing practices against the standards in this guidance and implement remedial action as appropriate. A banking organization's CCR exposure levels and the effectiveness of its CCR management are important factors for a supervisor to consider when evaluating a banking organization's overall management, risk management and credit and market risk profile.

Appendix A

GLOSSARY

This glossary describes commonly used CCR metrics. As discussed above, banking organizations should employ a suite of metrics commensurate with the size, complexity, liquidity, and risk profile of the organization's CCR portfolio. Major broker - dealer banking organizations should employ the full range of risk measurement metrics to enable a comprehensive understanding of CCR and how it changes in varying environments. Banking organizations of lesser size and complexity should carefully consider which of these metrics they need to track as part of their exposure risk management processes. At a minimum, all banking organizations should calculate current exposure and stress test their CCR exposures. Definitions marked with an asterisk are from the Bank for International Settlements.

Exposure Metrics:

<u>Current Exposure</u>

Definition: Current exposure is the larger of zero, or the market value of a transaction or a portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty, assuming no recovery on the value of those transactions in bankruptcy. Current exposure is often also called replacement cost. Current exposure may be reported gross or net of collateral.

Purpose: Allows banking organizations to assess their CCR exposure at any given time, that is, the amount currently at risk.

<u>Jump-to-Default (JTD) Exposure</u>

Definition: JTD exposure is the change in the value of counterparty transactions upon the default of a reference name in CDS positions.

Purpose: Allows banking organizations to assess the risk of a sudden, unanticipated default before the market can adjust.

<u>Expected Exposure</u>

Definition: Expected exposure is calculated as average exposure to a counterparty at a date in the future.

Purpose: This is often an intermediate calculation for expected positive exposure or CVA. It can also be used as a measure of exposure at a common time in the future.

<u>Expected Positive Exposure (EPE)</u>

Definition: EPE is the weighted average over time of expected exposures when the weights are the proportion that an individual expected exposure represents of the entire time interval.*

Purpose: Expected positive exposure is an appropriate measure of CCR exposure when measured in a portfolio credit risk model.

<u>Peak Exposure</u>

Definition: Peak exposure is a high percentile (typically 95 percent or 99 percent) of the distribution of exposures at any particular future date before the maturity date of the longest transaction in the netting set. A peak exposure value is typically generated for many future dates up until the longest maturity date of transactions in the netting set.*

Purpose: Allows banking organizations to estimate their maximum potential exposure at a specified future date, or over a given time horizon, with a high level of confidence. For collateralized counterparties, this metric should be based on a realistic close-out period, considering both the size and liquidity of the portfolio. Banking organizations should consider peak potential exposure when setting counterparty credit limits.

Expected Shortfall Exposure

Definition: Expected shortfall exposure is similar to peak exposure, but is the expected exposure conditional on the exposure being greater than some specified peak percentile.

Purpose: For transactions with very low probability of high exposure, the expected shortfall accounts for large losses that may be associated with transactions with high tail risk.

Sensitivity to Market Risk Factors

Definition: Sensitivity to market risk factors, is the change in exposure because of a given market risk factor change (for example, DV01).

Purpose: Provides information on the key drivers of exposure to specific counterparties and on hedging.

Stressed Exposure

Definition: Stressed exposure is a forward-looking measure of exposure based on pre-defined market factor movements (non-statistically generated). These can include single-factor market shocks, historical scenarios, and hypothetical scenarios.

Purpose: Allows banking organizations to consider their counterparty exposure under a severe or stressed scenario. This serves as a supplemental view of potential exposure, and provides banking organizations with additional information on risk drivers. It is best practice to compare stressed exposure to counterparty credit limits.

CVA Related Metrics:

Credit Valuation Adjustment (CVA)

Definition: The credit valuation adjustment is an adjustment to the mid-market valuation (average of the bid and asked price) of the portfolio of trades with a counterparty. This adjustment reflects the market value of the credit risk resulting from any failure to perform on contractual agreements with a counterparty. This adjustment may reflect the market value of the credit risk of the counterparty or the market value of the credit risk of both the banking organization and the counterparty.*

Purpose: CVA is a measure of the market value of CCR, incorporating both counterparty creditworthiness and the variability of exposure.

CVA VaR

Definition: CVA VaR is a measure of the variability of the CVA mark-to-market value and is based on the projected distributions of both exposures and counterparty creditworthiness.

Purpose: Provides banking organizations with an estimate of the potential CVA mark-to-market loss, at a certain confidence interval and over a given time horizon.

CVA Factor Sensitivities

Definition: CVA factor sensitivities is the mark-to-market change in CVA resulting from a given market risk factor change (for example, CR01).

Purpose: Allows banking organizations to assess and hedge the market value of the credit or market risks to single names and portfolios and permits banking organizations to monitor excessive buildups in counterparty concentrations.

Stressed CVA

Definition: Stressed CVA is a forward-looking measure of CVA mark-to-market value based on pre-defined credit or market factor movements (non-statistically generated). These can include single market factor shocks, historical scenarios, and hypothetical scenarios.

Purpose: Serves as an informational tool, and allows banking organizations to assess the sensitivity of their CVA to a potential mark-to-market loss under defined scenarios.

Appendix B:
DETAIL ON MODEL VALIDATION AND SYSTEMS EVALUATION

A banking organization should validate its CCR models, initially and on an ongoing basis. Validation should include three components: an evaluation of the conceptual soundness of relevant models (including developmental evidence); an ongoing monitoring process that includes verification of processes and benchmarking; and an outcomes-analysis process that includes backtesting. The validation should either be independent, or subject to independent review.

Validation is the set of activities designed to give the greatest possible assurances of CCR models' accuracy and systems' integrity. Validation should also identify key assumptions and potential limitations, and assess their possible impact on risk metrics. CCR models have several components:

- Statistical models to estimate parameters, including the volatility of risk factors and their correlations;
- Simulation models to convert those parameters into future distributions of risk factors;
- Pricing models that estimate value in simulated scenarios; and
- Calculations that summarize the simulation results into various risk metrics.

All components of each model should be subject to validation, along with analysis of their interaction in the CCR system. Validation should be performed initially as a model first goes into production. Ongoing validation is a means of addressing situations where models have known weaknesses and ensuring that changes in markets, products, or counterparties do not create new weaknesses. Senior management should be notified of the validation results and should take corrective actions in a timely manner when appropriate.

A banking organization's validation process should be independent of the CCR model and systems development, implementation, and operation. Alternately, the validation should be subject to independent review, whereby the individuals who perform the review are not biased in their assessment because of involvement in the development, implementation, or operation of the processes or products. Individuals performing the reviews should possess the requisite technical skills and expertise to provide critical analysis, effective challenge, and appropriate recommendations. The extent of such reviews should be fully documented, sufficiently thorough to cover all significant model elements, and include additional testing of models or systems as appropriate. In addition, reviewers should have the authority to effectively challenge developers and model users, elevate concerns or findings as necessary, and either have issues addressed in a prompt and substantial manner or reject a model for use by the banking organization.

Conceptual Soundness and Developmental Evidence

The first component of validation is evaluating conceptual soundness, which involves assessing the quality of the design and construction of CCR models. The evaluation of conceptual soundness includes documentation and empirical evidence supporting the theory, data, and methods used. The documentation should also identify key assumptions and potential limitations and assess their possible impact. A comparison to industry practice should be done to identify areas where substantial and warranted improvements can be made. All model components are subject to evaluation, including simplifying assumptions, parameter calibrations, risk-factor diffusion processes, pricing models, and risk metrics. Developmental evidence should be reviewed whenever the banking organization makes material changes in CCR models. Evaluating conceptual soundness includes independent evaluation of whether a model is appropriate for its purpose, and whether all underlying assumptions, limitations, and shortcomings have been identified and their potential impact assessed.

Ongoing Monitoring, Process Verification and Benchmarking

The second component of model validation is ongoing monitoring to confirm that the models were implemented appropriately and continue to perform as intended. This involves process verification, an assessment of models, and benchmarking to assess the quality of the model. Deficiencies uncovered through these activities should be remediated promptly.

Process verification includes evaluating data integrity and operational performance of the systems supporting CCR measurement and reporting. This should be performed on an ongoing basis and includes:

- The completeness and accuracy of the transaction and counterparty data flowing through the counterparty exposure systems.
- Reliance on up-to-date reviews of the legal enforceability of contracts and master netting agreements that govern the use of netting and collateral in systems measuring net exposures, and the accuracy of their representations in the banking organization's systems.
- The integrity of the market data used within the banking organization's models, both as current values for risk factors and as sources for parameter calibrations.
- The operational performance of the banking organization's counterparty exposure calculation systems, including the timeliness of the batch-run calculations, the consistent integration of data coming from different internal or external sources, and the synchronization of exposure, collateral management and finance systems.

"Benchmarking" means comparing a banking organization's CCR measures with those derived using alternative data, methods, or techniques. It can also be applied to particular model components, such as parameter estimation methods or pricing models. It is an important complement to backtesting and is a valuable diagnostic tool in identifying potential weaknesses. Differences between the model and the benchmark do not necessarily indicate that the model is in error because the benchmark itself is an alternative prediction. It is important that a banking organization use appropriate benchmarks, or the exercise will be compromised. As part of the benchmarking exercise, the banking organization should investigate the source of the differences and whether the extent of the differences is appropriate.

Outcomes Analysis Including Backtesting

The third component of validation is outcomes analysis, which is the comparison of model outputs to actual results during a sample period not used in model development. Backtesting is one form of out-of-sample testing. Backtesting should be applied to components of a CCR model, for example the risk factor distribution and pricing model, as well as the risk measures and projected exposures. Outcomes analysis includes an independent evaluation of the design and results of backtesting to determine whether all material risk factors are captured and to assess the accuracy of the diffusion of risk factors and the projection of exposures. While there are limitations to backtesting, especially for testing the longer horizon predictions of a CCR model, banking organizations should incorporate it as an essential component of model validation.

Typical examples of CCR models that require backtesting are expected exposure, peak exposure, and CVA VaR models. Backtesting of models used for measurement of CCR is substantially different than backtesting VaR models for market risk. Notably, CCR models are applied to each counterparty facing the banking organization, rather than an aggregate portfolio. Furthermore, CCR models should project the distribution over multiple dates and over long time horizons for each counterparty. These complications make the interpretation of CCR backtesting results more difficult than that for market risk. Because backtesting is critical to providing feedback on the accuracy of CCR models, it is particularly important that banking organizations exert considerable effort to ensure that backtesting provides effective feedback on the accuracy of these models.

Key elements of backtesting include the following activities:

- Back-testing programs should be designed to evaluate the effectiveness of the models for typical counterparties, key risk factors, key correlations and pricing models. Backtesting results should be evaluated for reasonableness as well as for statistical significance. This may serve as a useful check for programming errors, or cases in which models have been incorrectly calibrated.
- Backtesting should be performed over different time horizons. For instance, the inclusion of mean reversion parameters or similar time varying features of a model can cause a model to perform adequately over one time horizon, but perform very differently over a different time horizon. A typical large dealer should, at a minimum, perform backtesting over one day, one week, two weeks, one month and every quarter out to a year. Shorter time periods may be appropriate for transactions under a collateral agreement when variation margin is exchanged frequently, even daily, or for portfolios that contain transactions that expire or mature in a short timeframe.
- Backtesting should be conducted on both real counterparty portfolios and hypothetical portfolios. Backtesting on fixed hypothetical portfolios provides the opportunity to tailor backtesting portfolios to identify whether particular risk factors or correlations are modeled correctly. In addition, the use of hypothetical portfolios is an effective way to meaningfully test the predictive abilities of the counterparty exposure models over long time horizons. Banking organizations should have criteria for their hypothetical portfolios. The use of real counterparty portfolios evaluates whether the models perform on actual counterparty exposures, taking into account portfolio changes over time.

It may be appropriate to use back-testing methods that compare forecast distributions of exposures with actual distributions. Some CCR measures depend on the whole distribution of future exposures rather than a single exposure percentile (for example, EE and EPE). For this reason, sole reliance on backtesting methods that count the number of times an exposure exceeds a unique percentile threshold may not be appropriate.

Exception counting remains useful, especially for evaluating peak or percentile measures of CCR, but these measures will not provide sufficient insight for expected exposure measures. Hence, banking organizations should test the entire distribution of future exposure estimates and not just a single percentile prediction.

Banking organizations should have policies and procedures in place that describe when back-testing results will generate an investigation into the source of observed backtesting deficiencies, and when model changes should be initiated as a result of backtesting.

Documentation

Adequate validation and review are contingent on complete documentation of all material aspects of CCR models and systems. This should include all model components and parameter estimation or calibration processes. Documentation should also include the rationale for all material assumptions underpinning its chosen analytical frameworks, including the choice of inputs; distributional assumptions; and weighting of quantitative and qualitative elements. Any subsequent changes to these assumptions should also be documented and justified.

The validation or independent review should be fully documented. Specifically, this would include results, the scope of work, conclusions and recommendations, and responses to those recommendations. This includes documentation of each of the three components of model validation, discussed above. Complete documentation should be done initially and updated over time to reflect ongoing changes and model performance. Ability of the validation (or review) to provide effective challenge should also be documented.

Internal Audit

A banking organization should have an internal audit function, independent of business-line management, which assesses the effectiveness of the model validation process. This assessment should ensure the following: proper validation procedures were followed for all components of the CCR model and infrastructure systems; required independence was maintained by validators or reviewers; documentation was adequate for the model and validation processes; and results of validation procedures are elevated, with timely responses to findings. Internal audit should also evaluate systems and operations that support CCR. While internal audit may not have the same level of expertise as quantitative experts involved in the development and validation of the model, they are particularly well suited to evaluate process verification procedures. If any validation or review work is out-sourced, internal audit should evaluate whether that work meets the standards discussed in this section.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 25, 2012

The Honorable Kevin Brady
Vice Chairman
Joint Economic Committee
United States Senate
Washington, D.C. 20510

Dear Mr. Vice Chair:

Enclosed are my responses to the written questions you submitted following the October 4, 2011, hearing before the Joint Economic Committee. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Vice Chairman Brady:

1. From 1981 to 2003, the Federal Reserve phased-out federal agency debt and mortgage-backed securities from the System Open Market Account to separate monetary policy from credit allocation by conducting open market operations entirely through Treasuries. During the first round of quantitative easing in 2009, the Federal Reserve bought $169 billion of federal agency debt securities and $1.1 trillion of federal agency mortgage-backed securities. At the time, the Federal Reserve said that it would allow these securities to run off as principal was repaid. On Wednesday, September 21, 2011, the Federal Reserve reversed course, stating that it will now reinvest any repaid principal into new federal agency mortgage-backed securities.

- **Does this policy change mean that the Federal Reserve is allocating credit to the housing sector?**

In August 2010, the Federal Open Market Committee (FOMC) began reinvesting principal received from agency debt and agency mortgage-backed securities in longer-term Treasury securities in order to support economic recovery in the context of price stability. At the time, the Committee sought to avoid the upward pressure on longer-term interest rates that might result if the maturing agency holdings were permitted to reduce the size of the System Open Market Account (SOMA) portfolio. (For more details, see the minutes of the August 2010 meeting, p. 8: http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20100810.pdf.)

At its meeting on September 20-21, 2011, the FOMC decided to change its reinvestment policy with respect to agency debt and agency mortgage-backed securities, directing reinvestment to agency mortgage-backed securities rather than longer-term Treasury securities. This change in reinvestment policy was expected to help reduce the spread between yields on mortgage-backed securities and those on comparable-maturity Treasury securities and so contribute to lower mortgage rates. In addition, the change in reinvestment policy could help prevent the shares of outstanding longer-term Treasury securities held by the Federal Reserve from reaching levels high enough to result in a deterioration in Treasury market functioning. The FOMC believed that this action would help to support conditions in mortgage markets and thereby contribute to a stronger economic recovery.

- **Does the Federal Reserve intend to make federal agency mortgage-backed securities a permanent feature of the System Open Market Account going forward?**

As noted in the minutes of the June 2011 FOMC meeting (http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20110622.pdf), as the economy recovers, the Federal Reserve will need to reduce the current substantial degree of monetary accommodation in order to avoid an undesirable increase in inflation. As it does so, the Committee intends to normalize the size and composition of the System Open Market Account (SOMA) portfolio, including by selling of our holdings of agency securities. Such sales will likely commence sometime after the first increase in the target for the federal funds rate. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted up or down in response to material changes in the economic outlook or financial conditions. Once sales begin, the pace of sales is expected to be aimed at eliminating Federal Reserve holdings of agency securities over a period of three to five years, thereby minimizing the extent to which our holdings might affect the allocation of credit across sectors of the economy.

➢ **Does allocating credit to the housing sector compromise the independence of the Federal Reserve to conduct monetary policy consistent with long-term price stability?**

The continuing difficulties in the housing market have broad implications for the U.S. economy and financial system. To address these issues, the FOMC has taken actions to support conditions in mortgage markets in order to better foster its dual mandate from the Congress of maximum employment and price stability. The Federal Reserve's actions have involved the purchase of agency-guaranteed mortgage-backed securities through a competitive process. While the guarantee provided for these mortgage-backed securities by the housing-related government-sponsored agencies has encouraged the flow of credit to the housing sector over many decades, the Federal Reserve's recent purchases of such securities have been aimed at reducing mortgage rates and other long-term interest rates relative to what they would otherwise be in order to foster a stronger economic recovery in the context of price stability.

2. The following questions relate to the foreign exchange value of the U.S. dollar:

➢ **Does the Federal Reserve's monetary policy affect the foreign exchange value of the U.S. dollar?**

All else equal, changes in the stance of U.S. monetary policy would normally be expected to lead to some change in the foreign exchange value of the dollar, and a tightening of policy would lead to some appreciation. However, the Federal Reserve's policies are only one of many macroeconomic and financial factors that influence the foreign exchange value of the dollar. Other factors include U.S. fiscal policy, foreign monetary and fiscal policies, risk sentiment, and market expectations for relative growth outlooks and relative inflation rates. Because monetary policy actions can also influence some of these other factors, such as risk sentiment or expectations for growth, the overall effect of Federal Reserve policy on the value of the dollar can be complex.

➢ **Is it fair to say that while a depreciating U.S. dollar may help exports, it also results in higher U.S. dollar prices for internationally traded commodities like oil? And does this put upward pressure on prices for consumer goods like gasoline?**

The economic effects of exchange rate movements will depend in part on the factors behind them. For example, if dollar depreciation were caused by a weaker outlook for U.S. growth, then one might expect to see commodity prices fall, whereas if dollar depreciation were caused by a diminished perception of risk in financial markets, then commodity prices might be expected to rise. Nonetheless, holding these other factors constant, a depreciation of the dollar should make

U.S. goods cheaper abroad and foreign goods more expensive in the United States. Over time this should have several effects. First, it should increase the exports of the United States and reduce imports, increasing U.S. aggregate demand and economic activity. Second, it should put some upward pressure on import prices, including the prices of imported commodities, and eventually may put some upward pressure on prices of some consumer goods. In practice, many of these effects are smaller for the United States than for other economies, because the United States is relatively large and international trade comprises a small share of U.S. GDP.

- **Which is better for the U.S. economy over the long term: (1) a weaker dollar, (2) a stronger dollar, or (3) a dollar with stable purchasing power?**

The Treasury Department has the lead role in U.S. exchange rate policy and has for some time emphasized that a strong dollar is in the interest of the United States, as well as of the global economy. This position is not meant to suggest that any particular level of the dollar is desired or targeted, and U.S. policy seeks to foster global conditions that allow currencies be traded in free and competitive markets.

In the long run, allowing exchange rates to be freely determined by market forces permits them to respond to changing economic conditions and to act as a stabilizing force in the economy. Ultimately, the real exchange value of the dollar will depend upon the fundamental strength of the U.S. economy and confidence in its markets. Economic policies that promote price stability, sustainable economic growth, and financial stability will support both the fundamental vitality of our economy and a strong dollar.

3. As dollars are being created and sent throughout the world, the search for a place to deploy them is affecting other countries, such as Brazil and Switzerland, in significant ways. For example, Switzerland is being forced to print more of its currency to offset its rising value against the U.S. dollar. This practice will eventually affect the United States as dollars recycle back into our economy.

- **Are you considering how this phenomenon might play out?**

- **If so, how do you see things evolving?**

First, I should begin by noting that the Swiss National Bank has set a ceiling on the exchange value of the Swiss franc against the euro, not the U.S. dollar, in order to combat the sharp rise in the value of the franc against the euro that had occurred over the first half of this year. The appreciation of the Swiss franc against the euro largely reflected investor concerns about continuing fiscal and financial pressures in the euro area, leading them to seek Swiss financial assets as a safe haven, and these factors have little to do with the Federal Reserve's policies.

Second, while the Federal Reserve's monetary policies can influence capital flows by affecting domestic rates of return, other factors are also important. For example, the strong rates of growth in many emerging market economies over the last decade have provided a natural incentive to investors to seek investment opportunities in those countries. In addition, when countries fix or manage their exchange rates, this can affect their current account balance and their pattern of capital flows; this has been the key factor behind the large amounts of reserve accumulation by certain emerging market countries in recent years.

Over the longer term, the G-20 countries have pledged to take actions that should promote a more balanced international system, with countries with large current account surpluses implementing policies to shift to growth based more on domestic demand and allow greater exchange rate flexibility and those with large current account deficits implementing policies to increase national savings. Such steps should materially lessen the net flow of capital from many emerging market economies to the United States and other advanced economies.

4. The Federal Reserve performs an essential function for financial stability by serving as lender-of-last-resort to (1) prevent the unnecessary failures of otherwise solvent U.S. banks and other financial institutions; (2) reduce the likelihood of financial contagion and disruptions in U.S. financial markets; and minimize any adverse effects on real output and employment in the U.S. economy.

➢ **Is there any affirmative reason why the Federal Reserve--in its 98-year history--has never clearly articulated its lender-of-last-resort policy?**

Because the appropriate policy actions tend to be very specific to the situation at hand, policymakers rarely provide detailed statements indicating exactly how they will utilize their policy tools to address crisis situations. National governments, for example, do not provide ex-ante policy statements about their potential use of tax and expenditure policies to address financial crises. Similarly, central banks do not generally commit to a particular course of action in advance of a crisis. Instead, many central banks have adopted broad principles that will guide their actions in a crisis. In the case of the Federal Reserve, Congress has already provided many of the broad principles underlying the Federal Reserve's long-standing approach to its lender-of-last-resort responsibility in Title XI of the Dodd-Frank Wall Street Reform Act. The Dodd-Frank Act provides that emergency lending should be for the purpose of providing liquidity to the financial system, and not to aid a failing financial institution. The Federal Reserve may only provide emergency credit as part of a broad-based lending program. Emergency credit may not be extended to insolvent firms. The security for emergency loans must be sufficient to protect taxpayers from losses; in particular, the Federal Reserve must follow sound risk management practices in valuing and margining collateral so that taxpayers are protected and the Federal Reserve is adequately secured. Any emergency lending program must be terminated in a timely and orderly fashion.

➢ **Is Allan Meltzer correct when he states that the absence of an official lender-of-last-resort policy has led to (1) increased economic uncertainty because no one knows with certainty how the Federal Reserve may act; (2) financially distressed firms seeking political solutions in the form pressure from Congress or the Administration being placed on the Federal Reserve to act to save them; and (3) a moral hazard problem from financial**

institutions taking greater risks based upon assumptions of how the Federal Reserve will act, though there is no guarantee of Federal Reserve action?

It is difficult to directly verify these assertions, but it seems very unlikely that the Federal Reserve's lender-of-last-resort policy is a significant factor in the three areas noted. On the first point, many would argue that economic uncertainty is unusually elevated at present. Among the major sources of economic uncertainty, most point to the continuing weakness in the housing market, the sluggish recovery in the labor market, the highly unsettled situation in Europe, and the potential for repercussions in the financial sector. On the second point, as discussed in the answer above, the Federal Reserve can only provide emergency credit as part of a broad-based lending program to support the financial system and cannot provide emergency credit to insolvent firms. On the third point, the Federal Reserve has utilized its emergency lending authorities in two periods: the Great Depression and the financial crisis of 2007-2009. Based on this history, it seems very unlikely that firms would actively take on greater risks now given the very small likelihood that the Federal Reserve would utilize its emergency lending authorities to provide liquidity assistance. Moreover, with the passage of the Dodd-Frank Act, the Federal Reserve is more constrained in its ability to provide emergency credit than it was in 2008. In addition, the Dodd-Frank Act put in place new tools that the government can use to resolve failing systemically important institutions in an orderly manner. Finally, regulators are more attuned than ever to potential liquidity risks and are actively taking steps to ensure that financial institutions maintain adequate liquidity buffers. All of these factors suggest that moral hazard associated with the Federal Reserve's lender-of-last-resort power is likely to be minimal.

- **Is mitigating the risks of moral hazards a positive in terms of economic stability?**

Economic stability is promoted through sound monetary and fiscal policies, and a well-regulated financial system. Taken together, these policies increase efficiency, reduce incentives for excessive risk-taking, and mitigate moral hazard. However, there could be exceptional circumstances--such as those that existed in 2008--when the federal government would be justified in pursuing extraordinary actions. In these unusual situations, the Federal Reserve's lender-of-last-resort policies may be necessary to restore economic stability.

The Dodd-Frank Wall Street Reform and Consumer Protection Act strengthened financial regulation and oversight, and created the Financial Stability Oversight Council to monitor developments in the financial system, identify emerging risks, and take action as appropriate to address such risks. These reforms have strengthened the financial system and reduced both the probability and severity of future crises.

- **After fulfilling its lender-of-last-resort role, should the Federal Reserve, in an orderly way, sell any acquired debt securities not normally held in its System Open Market Account?**

In fulfilling its responsibilities as lender-of-last-resort, the Federal Reserve provided a substantial volume of loans through a number of emergency lending programs. Almost all of this emergency credit has already been repaid with interest. We have suffered no losses on the loans we provided during the crisis, and we do not anticipate any losses on the loans that are still outstanding.

In addition to providing liquidity, the Federal Reserve used its monetary policy tools to support the economy during and after the crisis. Our monetary policy actions included reducing the federal funds rate, our usual policy interest rate, to very low levels by the end of 2008. Since that time, we have provided additional monetary policy accommodation through the purchase of longer-term securities, including Treasury securities and agency debt and mortgage-backed securities. These purchases have put downward pressure on longer-term interest rates and supported functioning in the mortgage and other private credit markets, thereby helping to foster the Federal Reserve's dual mandate from the Congress of maximum employment and price stability.

As the economy recovers, the Federal Reserve will need to remove this policy accommodation at an appropriate time in order to avoid an undesirable increase in inflation. As noted in the minutes of the June 2011 FOMC meeting (http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20110622.pdf), the move to less accommodative monetary policy will include the normalization of the size and composition of the Federal Reserve's balance sheet, including sales of our holdings of agency securities. Such sales will likely commence sometime after the first increase in the target for the federal funds rate. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted up or down in response to material changes in the economic outlook or financial conditions. Once sales begin, the pace of sales is expected to be aimed at eliminating Federal Reserve holdings of agency securities over a period of three to five years, thereby minimizing the extent to which our holdings might affect the allocation of credit across sectors of the economy.

5. As you know, there is some debate in Congress over whether the inflation measure used to price index federal programs and the tax code should be changed to another measure such as Chained CPI.

- **Which of the following indices do you believe is the best measure of overall consumer price inflation in the economy:**
- **CPI-U,**
- **Chained CPI-U,**
- **Personal Consumption Expenditures (PCE) Price Index,**
- **The market based version of the PCE Price Index,**
- **Or some measure?**

The choice of price measure for indexation purposes depends on what the Congress hopes to achieve, and there is no unambiguously best choice. That said, considering consumer price measures for the nation as a whole, economists generally believe that the CPI-U tends to overstate changes in the cost of living, in part because it does not fully account for consumers' substitution in response to changes in relative prices. The C-CPI-U (or chained CPI) uses a formula that does account for such substitution and so probably comes closer to measuring changes in the cost of living than the CPI-U does.

Like the chained CPI, the PCE price index also uses a formula that accounts for consumer substitution across in response to relative price changes. The PCE price index differs from the CPIs in a variety of ways, importantly including the fact that it is somewhat broader in scope than either CPI measure: The CPIs are limited to expenditures made by individuals out of pocket, whereas the PCE index also includes (a) the full weight of medical expenditures in the economy, whether paid by individuals, their employers, or governments, (b) expenditures by nonprofit institutions, and (c) a variety of items for which market-based prices are not available (such as the provision of ATM use and other banking services provided without explicit charge). Often, the CPI's out-of-pocket scope is viewed as most appropriate for indexation of programs affecting households, but there is no unambiguous answer to that question and it is a decision that the Congress will need to make.

I should note that all of the measures on your list other than the CPI-U, including the chained CPI, are revised over time. Such revisions complicate the use of these measures for indexation purposes (though by no means are those complications insurmountable), and Congress may wish to take those complications into account in making its decisions.

6. President George W. Bush and your predecessor Alan Greenspan repeatedly warned Congress about the systemic dangers that Fannie Mae and Freddie Mac posed to the global financial system. These warnings went unheeded. On September 6, 2008, Fannie Mae and Freddie Mac were found insolvent and placed into receiverships. So far, U.S. taxpayers have pumped $104 billion into Fannie Mae and $65 billion into Freddie Mac just to keep these GSEs alive. Standard & Poor's estimated that another $405 billion will be needed to capitalize new entities to replace Fannie Mae and Freddie Mac.

- **Has the failure to resolve Fannie Mae and Freddie Mac once and for all increased the total cost of resolution that taxpayers will eventually bear?**

The conservatorships for Fannie Mae and Freddie Mac facilitated the provision of mortgage credit during a very severe U.S. housing downturn, the worst housing downturn since the Great Depression. The continued flow of mortgage credit, even under stressed financial conditions, has likely been a force for stability in U.S. housing markets. In turn, housing market stabilization has likely not only reduced the total cost of resolution that taxpayers will eventually bear for these organizations, but also reduced the costs associated with resolving other financial institutions that have failed because of mortgage defaults, thereby helping to protect the deposit insurance fund. That said, it is difficult to estimate on net cost, the influence of the decision not to resolve Fannie Mae and Freddie Mac since these entities can influence virtually all aspects of mortgage finance, including underwriting standards, servicing costs and revenues, real estate prices through their dispositions of foreclosed properties, secondary prices for mortgage-backed securities, and hedging costs.

➢ **Has this failure deterred private financial services firms from investing in housing finance and offering financially sound mortgage loan products?**

Steep declines in house prices, relatively high unemployment rates, and a lack of certainty with respect to government's future involvement in mortgage finance have heightened risks and uncertainties associated with investing in housing finance. Investors have been extremely cautious about investing in private-label mortgage loan products, even including securities that are backed by loans that have been underwritten to high standards. Furthermore, investors are hesitant to act until the ongoing uncertainty about the future of Fannie Mae and Freddie Mac is resolved. The Administration's white paper on the future of mortgage finance laid out three possibilities for the future of Fannie Mae and Freddie Mac, and I hope that these possibilities will focus the discussion on how best to go forward.

➢ **Has this failure delayed the bottoming of the housing market and any recovery in housing prices?**

House prices have recovered in some locations, but not in others. Home prices depend on both demand and supply, and housing demand is only partly driven by the availability and terms of mortgage credit. Potential homeowners also factor in rental costs, local housing market liquidity and the potential for house price appreciation in the future, as well as their current debt and their income prospects. Housing supply is also only partly driven by the actions of government-sponsored enterprises. Recently, however, Fannie Mae and Freddie Mac have become significant sellers of real estate in some locations because of mortgage defaults and foreclosures. These entities have an obligation to conserve their assets on behalf of the taxpayers and the Congress may want to consider whether this is the best method of handling these properties. Regardless, it is unlikely that the conservatorships of Fannie Mae and Freddie Mac have significantly delayed the bottoming of housing markets. In some locations, there simply remains too much housing stock for current housing demand.

7. The Basel Committee on Banking Regulation promulgated capital standards for banks in 1988, 2004, and 2010, giving risk weights to various assets and off-balance-sheet items.

➢ **Did the low risk-weight given to residential mortgages and residential securities have the unintended consequence of encouraging U.S. banks to have excessive exposures to housing loans and housing-related securities prior to 2008?**

Under the general risk-based capital rules, first lien residential mortgages that meet certain criteria, such as being prudently underwritten, performing in accordance with their original terms, and not being 90 days or more past due, are assigned to the 50 percent risk weight category. Prudent underwriting standards include a conservative ratio of the loan balance to the value of the property. Residential mortgages that do not meet these criteria or that are made for the purpose of speculative property development are assigned to the 100 percent risk weight category, together with most wholesale and retail credits. With respect to residential mortgage-backed securities (RMBS) that are externally rated, those of relatively high credit quality, as evidenced by a triple-A rating, are assigned to the 20 percent risk weight category, while lower quality RMBS (e.g., rated BB) are assigned to the 200 percent risk weight category. Thus, the risk weights are designed to reflect the relative risks of the exposures.

Many factors influence banks' portfolio allocation decisions. While regulatory capital requirements may have some influence, more predominant factors include investment yield, perceived risk and return tradeoffs, liquidity, and fees and profits associated with lending volume.

➢ **Did the extremely low risk-weight given to bills, notes, and bonds of developed country governments have the unintended consequence of encouraging European banks to have excessive exposures to Greek, Irish, Italian, Portuguese, and Spanish government debt, which are now threatening the financial stability of the euro-zone?**

It is difficult to generalize about the impact of Basel Accord risk weights because of differences in details of implementation across nations and because of the changes that have occurred over time. It is roughly correct that, under both Basel I and Basel 2, European Union banks could use a zero risk-weight on the debt of any European Union government. However, a zero risk weight does not encourage holding concentrated exposures to any particular sovereign. And national banking systems usually have substantial exposures to the debt of their own sovereign for various practical reasons, including to serve as collateral at the central bank and because such debt is usually liquid within the nation.

➢ **Should capital standards be more neutral toward the credit allocation decisions that banks make?**

It is important that regulatory capital requirements ensure that banks hold capital commensurate with the risk of their exposures, including off-balance sheet items. Prior to 1989, regulatory capital requirements were credit neutral and every asset had the same capital requirement regardless of its risk. Banks thus had an incentive to hold higher risk assets, which generated more yield per unit of required regulatory capital. In response, U.S. and international bank regulators developed risk-sensitive risk-based capital ratios so as not to disincentivize banks from holding more liquid, lower risk assets. The banking agencies' use of both leverage and risk-based regulatory capital ratios help to limit gaming opportunities associated with each type of ratio.

8. Earlier this year, I introduced legislation that would reduce non-interest spending over the next decade relative to the size of the economy to 16.5% of potential GDP, slightly below the average of the Clinton Administration's 16.7%. In addition, the legislation provided a number of other tools to enforce fiscal discipline. Without asking you to endorse any specific provisions of the legislation, I would like your views on the various approaches the legislation takes from an economic perspective.

As I mentioned, the legislation utilizes potential GDP as estimated by the Congressional Budget Office as the denominator in calculating a cap on federal spending. Using potential GDP is intended to focus policy decisions on non-cyclical, structural issues. Therefore, this metric would eliminate the need to implement significant spending reductions in an economic downturn, but would also act as a restraint on spending in periods of economic expansion.

- **If Congress chose to enact spending limitations based on the size of the economy, what do you see as the policy advantages and disadvantages of using potential GDP as the metric instead of nominal GDP?**

Formal fiscal rules do not replace the need for policymakers to make the difficult choices necessary to put the federal budget on a sustainable path, but they can help the process by setting clear and transparent goals that may establish the credibility of changes in policy and reduce uncertainty. Although fiscal rules have not always proven successful, a number of countries seem to have found budget rules – sometimes, but not always, including a spending limit – helpful in achieving greater budget discipline. In practice, spending limits often have been based on cyclically-adjusted measures of spending or spending relative to potential GDP. As a result, spending decisions are based on factors that can be more directly controlled by policymakers rather than the near-term performance of the economy. This strategy does present some challenges since potential GDP is not measured directly and estimates of it are subject to revision.

9. The legislation also utilizes non-interest spending as the numerator in calculating the cap. The policy reason for utilizing non-interest spending was based on three principles: (1) Congress cannot directly control interest rates and should focus on what it can control; (2) excluding interest payments eliminates the effect of interest rate volatility over both the long term and short term on the cap; and (3) excluding interest payments insulates the Federal Reserve from undue pressure to keep interest rates artificially low to help implement fiscal policy.

- **Do you agree that this approach would create a more stable environment for policymakers?**

The experience in the United States and other countries suggests that fiscal rules focusing on budget measures that policymakers can control more directly tend to work better than budget measures that are affected significantly by the near-term performance of the economy and other factors outside of fiscal policymakers' direct control. That experience suggests that spending targets that exclude interest payments on the public debt would be more likely to work in practice than spending targets that include interest payments.

- **Do you believe insulating the Federal Reserve from pressure to keep interest rates artificially low is appropriate?**

There is substantial evidence from many different countries that the independence of decision-making by the central bank from short-term political considerations is important for achieving good economic performance. The Federal Reserve will continue to make monetary policy decisions in order to best meet our legislatively-determined dual mandate of promoting maximum employment and price stability.

10. The legislation also contains a sequestration metric that would reduce all discretionary spending by a maximum of 10% in any year and limit mandatory spending reductions to the elimination of cost-of-living escalators. I recognize that this approach would in some years not reduce spending sufficiently to reach the spending cap.

- **Is it more important that a spending control mechanism achieve a particular cap in a specific year or that it keeps you on a path toward the stated objective even if it were to take a few more years to reach the stated cap?**

Putting the federal budget on a sustainable path is a long-run problem, and it will require many years of difficult choices. Accordingly, it is probably more important for fiscal policy to achieve sustainable long-term goals than to necessarily meet particular annual targets.

- **Would removing uncertainty regarding government shutdowns through some type of permanent continuing resolution law be viewed as a positive or a negative by financial markets?**

Uncertainty about the budget process and government operations has almost certainly contributed to financial market volatility at various times. Taking steps to eliminate both actual and potential disruptions in government operations should help reduce the uncertainty of financial market participants about budget policies.

11. The legislation that I introduced also contains a couple of budget process reforms designed to force prioritization of spending. It would require the President's budget submission not only to meet caps required by law, but also to prioritize all non-interest federal spending into five categories with at least 12% in each category.

- **Without asking you to comment on the choice of five categories with a minimum of 12% in each category, do you believe that requiring some prioritization of spending in the budget process would be a positive development in the eyes of financial markets?**

Putting the federal budget on a sustainable path will require that the Congress, the Administration, and the American people make difficult policy choices that ultimately lead to the prioritization of some policies over others. That prioritization process could probably be achieved in a number of different ways. Nevertheless, the choices that are made with regard to federal spending and tax policy will affect a wide range of economic incentives that will be part of determining the future economic performance of our nation.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 30, 2012

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your August 2, 2011, letter concerning the risk retention proposal issued for public comment by the Board of Governors of the Federal Reserve System ("Board"), the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the U.S. Securities and Exchange Commission, the Federal Housing Finance Agency, and the Department of Housing and Urban Development, under section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). The agencies have received substantial public comments and are presently considering enhancements to the proposal. Your letter will be considered as we develop the final rule.

We appreciate your views with respect to the premium capture cash reserve account ("PCCRA") discussed in the proposed rule. Section 15G(a)(1)(A) provides that the risk retention regulations prescribed shall prohibit a securitizer from directly or indirectly hedging or otherwise transferring the credit risk that the securitizer is required to retain with respect to an asset. Consistent with this statutory directive, the PCCRA was proposed to help achieve the goals of risk retention by addressing the potential that a sponsor might effectively negate or reduce the economic exposure it is required to retain under the proposed rules.

The agencies have requested comments on all aspects of the risk retention proposal, including the design and need for the PCCRA and its potential effects on securitizations. The Federal Reserve will carefully consider all comments as we move forward with finalizing the risk retention rule.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 9, 2012

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in reply to your letter of November 9, 2011, regarding the importance of conducting an evaluation of the costs and benefits of rulemakings conducted by the Federal banking regulators under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). The attached responses provide detail about our efforts to assess the benefits and costs of rules.

As your letter points out, Congress enacted the Dodd-Frank Act to address a number of deficiencies that contributed to the worst financial crisis in many years for the U.S. and to enhance protections for consumers, investors and taxpayers. It is critical that the agencies, including the Federal Reserve, implement this Act in a thoughtful manner that gives full effect to the Congressional intent behind the statute and does so in a manner that responsibly balances the costs and benefits of our implementation efforts.

In this spirit, let me assure you that the Federal Reserve takes quite seriously the importance of evaluating the burdens imposed by our efforts to issue rules implementing the Dodd-Frank Act and adopting an approach that balances costs and burdens within the requirements of each statutory mandate. We do this in a variety of ways, and at several different stages in the regulatory process.

For example, before the Federal Reserve develops a regulatory proposal, we often collect information through surveys and meetings directly from the parties that we expect will be affected by the rulemaking. This helps us to become informed about the benefits and costs of the proposed rule and craft a proposal that is both effective and minimizes regulatory burden. During the rulemaking process, we also specifically seek comment from the public on the benefits and costs of our proposed approach as well as on a variety of alternative approaches to the proposal. In adopting the final rule, we aim for a regulatory alternative that faithfully reflects the statutory provisions and the intent of Congress while minimizing regulatory burden. We also provide an analysis of the costs to small organizations of our rulemaking consistent with the Regulatory Flexibility Act and compute the anticipated costs of paperwork consistent with the Paperwork Reduction Act.

Measuring the impact of agency regulations on affected persons and the overall economy is very challenging, especially in the context of the numerous related rules required by the Dodd-Frank Act to be issued during the same time period by a number of agencies. The Federal Reserve believes strongly that public comment can enlighten our regulatory actions and inform our implementation of our statutory responsibilities. Consequently, the Federal Reserve has long followed the practice of providing the public a minimum of 60 days to comment on all significant rulemaking proposals, with longer periods permitted for especially complex or significant proposals, such as our recent proposal on enhanced prudential standards. We also have extended the comment period in cases where we believe additional time helps to promote the public's interest, such as in the case of the Volcker Rule and risk retention proposals. Similarly, we also favor seeking public comment on significant statements of regulatory guidance, and typically invite the public to comment on major statements of supervisory guidance, such as our guidance regarding incentive compensation. In addition, we make available to the public our examination manuals, supervisory letters, transaction approvals (and denials), and other matters of interest to the public related to implementation of our statutory responsibilities.

We also consult regularly with our fellow bank regulatory agencies on matters that might affect their institutions as well as on matters of common interest where a single regulatory approach across banking organizations of different charters would reduce compliance burden and risk. We accomplish this in many ways. The Federal Reserve participates in the Federal Financial Institutions Examination Council and in the Financial Stability Oversight Council, both of which facilitate interagency consultation and cooperation. Moreover, members of the Board as well as staff at senior levels have long established working associations with their peers at other agencies and have regular meetings to discuss policies of common interest and applicability. These many avenues of consultation at multiple levels increase the coordination and consistency of regulation across a banking industry that has many regulators and charters. We have expanded these channels to include regular consultation with the SEC, CFTC, CFPB and other agencies as changes in the law have caused our spheres of regulatory responsibilities increasingly to overlap.

The Federal Reserve also has for many years had a policy of conducting a zero-based review of each of its regulations on a periodic basis--typically every five years. The purpose of this review is to update each rule, reduce unnecessary burden, and streamline regulatory requirements based on our experience in implementing the rule and where permitted by the authorizing statutory provisions that motivated the rule.

Through these steps, more fully explained in the attached responses, the Federal Reserve seeks to carry out our statutory duties in a manner that is both consistent with the legislation enacted by Congress and maximizes benefits and minimizes costs associated with our implementation efforts.

Sincerely,

Enclosure

Attachment

1. Provide a detailed description of your agency's rulemaking process, including the variety of economic impact factors considered in your rulemaking. Please note to what degree you consider the benefits from your rulemaking, including providing certainty to the marketplace and preventing catastrophic costs from a financial crisis. Also describe any difficulties you may have in quantifying benefits and costs, as well as any challenges you may face in collecting the data necessary to conduct economic analysis of your rulemaking.

For every new regulation put forth by the Federal Reserve alone or jointly with other agencies, including those promulgated under the Dodd-Frank Act, it is the policy of the Federal Reserve to consider the various options available consistent with the statutory mandate being implemented; analyze the possible economic impact of implementing proposals to the extent permitted by available data; evaluate the compliance, record-keeping, and reporting burdens; and recommend the best course of action consistent with the statutory mandate based on an evaluation of the alternatives. If the regulation concerns an area where considerable information is available, a correspondingly more exhaustive regulatory analysis will be undertaken. For significant Dodd-Frank regulations, we assemble interdisciplinary teams, bringing together economists, supervisors, legal staff, and other specialists to help develop sensible policy alternatives and to help avoid unintended consequences. During the proposal stage, we specifically seek comment from the public on the costs and benefits of our proposed approach through surveys and meetings, as well as on alternative approaches to our proposal. This helps us to become informed about the benefits and costs of the proposed rule and craft a proposal that both is consistent with the Congressionally established mandate and minimizes regulatory burden. In adopting the final rule, we aim for a regulatory alternative that faithfully reflects the statutory provisions and the intent of Congress while minimizing regulatory burden. In addition, the Board is subject to two laws that require specific types of analysis--the Paperwork Reduction Act ("PRA") and the Regulatory Flexibility Act ("RFA"). The PRA and RFA require evaluations of the rulemaking's paperwork burden and effect on small entities, respectively. The Federal Reserve includes a separate analysis under each of these laws in its rulemaking publications.

Federal financial regulators face considerable challenges in quantifying all potential benefits and costs of a particular rule, such as the benefits from marketplace certainty or the prevention of a future financial crisis, especially in the context of the numerous related rules required by the Dodd-Frank Act to be issued during the same time period by a number of agencies. The GAO recently noted that the difficulty of reliably estimating the costs of regulations to the financial services industry and the nation has long been recognized, and the benefits of regulation generally are regarded as even more difficult to measure.[1] This task is further complicated by the need for the Federal Reserve to write rules that are often focused primarily on ensuring the safety and soundness of financial institutions. The benefits of a safe and secure financial system are clear, but they are difficult to quantify. Like other agencies, the Federal Reserve must often rely on information from regulated firms and from other affected parties for information regarding potential costs and benefits of a rulemaking. These parties often cannot quantify costs

[1] GAO Report GAO-12-151, p.19; *See also* p. 36.

or benefits and, even where that is possible, may not have the incentive to provide that information or may be concerned about providing that information, which may reveal confidential business practices, in a public rulemaking.

2. Provide your agency's current and future plans to regularly review and, when appropriate, modify regulations to improve their effectiveness while reducing compliance burdens. Please include a description of actions your agency has taken, or plans to take, to streamline regulations; for example, the Consumer Financial Protection Bureau's "Know Before You Owe" effort drastically simplifies mortgage and student loan disclosure requirements. Also note statutory impediments, if any, that prevent your agency from streamlining any duplicative or inefficient rules under your purview.

The Federal Reserve has for many years had a policy of conducting a zero-based review of each of its regulations on a periodic basis--typically every five years. The purpose of this review is to update each rule, reduce unnecessary burden, and streamline regulatory requirements based on our experience in implementing the rule and where permitted by the authorizing statutory provisions that motivated the rule. In selecting regulations to be reviewed, we consider such factors as the length of time since the last evaluation of the regulation, our experience in administering the rule, the continued need for the rule, the type and number of complaints and suggestions received, the direct and indirect burdens imposed by the regulation, and the need to simplify or clarify the regulation and eliminate duplication.

With respect to rules adopted as a result of the Dodd-Frank Act, the Federal Reserve will review the impact of Dodd-Frank Act regulations once they are completed and firms have had a reasonable opportunity to implement these provisions. As part of this review, we will consider ways to reduce burdens that appear over time in the Dodd-Frank rules.

3. Provide details of how your agency encourages public participation in the rulemaking process, including through administrative procedures, public accessibility, and informal supervisory policies and procedures.

We are committed to soliciting and considering the comments of the public in the rulemaking process. We believe strongly that public participation in the rulemaking process improves our ability to identify and resolve issues raised by our regulatory proposals. During the proposal stage, we specifically seek comment from the public on the benefits and costs of our proposed approach, as well as on alternative approaches to our proposal. The Federal Reserve has long followed the practice of providing the public a minimum of 60 days to comment on all significant rulemaking proposals, with longer periods permitted for especially complex or significant proposals, such as our capital rules and our recent proposal on enhanced prudential standards. We also have extended our comment periods when it appears that the public interest would be served by allowing additional time for comment. Recently, for example, we extended the comment periods for our risk retention and Volcker rule proposals. We also favor seeking public comment on significant statements of regulatory guidance, and typically invite the public to comment on major statements of supervisory guidance, such as our guidance regarding incentive compensation and stress tests.

We also encourage public participation in the rulemaking process by making it easy for the public to find, review, and submit comments on any proposal that we have opened for comment and published in the *Federal Register*. All of these proposals can be found on our public website and at Regulations.gov. Public comments are accepted electronically and by mail. The rules and proposed rules that the Board expects to issue during the next six months are summarized in the Unified Agenda (also known as the Semiannual Regulatory Agenda), which is published twice each year in the Federal Register and posted on the Board's website. To ensure the public has sufficient notice of our rulemaking efforts under the Dodd-Frank Act, we also have published an anticipated schedule of these proposals on our website.

Moreover, Federal Reserve staff have participated in more than 300 meetings with outside parties and their representatives, including community and consumer groups, in connection with rulemakings required by the Dodd-Frank Act. To promote transparency, we post on our website a memorandum describing the attendees and subjects covered in any meetings involving non-governmental participants at which Dodd-Frank Act rulemakings are discussed. These summaries are posted on the Federal Reserve Board's website on a weekly basis.

To further transparency in the rulemaking process, the Federal Reserve also posts on its website all comments received on each proposed rule. Comments can also be viewed in person at the Board between 9:00 a.m. and 5:00 p.m. weekdays and can be obtained by formal request under the Freedom of Information Act. In addition, we make available to the public our examination manuals, supervisory letters, transaction approvals (and denials) and other matters of interest to the public related to our regulatory responsibilities.

4. Provide details of how your agency addresses the unique challenges facing smaller institutions when dealing with regulatory compliance, including any related advisory committees your agency may have or other opportunities for small institutions to be heard by your agency. Please also detail how your agency responds to concerns raised by small institutions.

The Federal Reserve has paid particular attention to reducing regulatory burden on community banking organizations. We have taken a number of steps to remain aware of the challenges faced by and the burdens of our proposals on community banks. For example, the Federal Reserve has established a set of community depository institution advisory councils at each of the 12 Federal Reserve banks for the purpose of gathering input from community depository organizations on ways to reduce regulatory burden and improve the efficiency of our supervision as well as to collect information about the economy from the perspective of community organizations throughout the nation. A representative from each of these 12 advisory councils serves on a national Community Depository Institution Advisory Council that meets semiannually with the Board of Governors to bring together the ideas of all the advisory groups.

The Board of Governors has also established a committee of Board members for the purpose of reviewing all regulatory matters from the perspective of community depository organizations. These reviews are intended to find ways to reduce the burden on community depository organizations from our regulatory policies without reducing the effectiveness of those policies in improving the safety and soundness of depository organizations of all sizes.

In addition, we are taking steps to reduce the burden on community depository organizations from our regulatory initiatives. For example, in its recent rulemaking proposals, the Federal Reserve has proposed and adopted streamlined approaches that reduce burden on community depository organizations that engage in fewer risky activities and have less complex structures. The Federal Reserve has also begun to separately and prominently identify which rulemakings apply to community depository organizations and what portions of particular rulemaking proposals are germane to community depository organizations, thereby reducing the attention community depository organizations pay to the many rulemaking proposals that are currently pending.

Moreover, for every new rule, the Board conducts an assessment and takes account of the potential impact that the rule may have on small businesses, small governmental jurisdictions, and small organizations as required under the Regulatory Flexibility Act ("RFA") (5 U.S.C. 601 et seq.). The Board prepares and makes available for public comment in the *Federal Register* an initial regulatory flexibility analysis for any rule that will have a significant economic impact on a substantial number of small entities. A final regulatory flexibility analysis is prepared for every rule that may have a significant economic impact on a substantial number of small entities and published in the *Federal Register*.

5. Describe how regulatory interagency coordination has improved since the creation of the Financial Stability Oversight Council established by the Wall Street Reform Act. Provide specifics of how coordination has helped, either formally or informally, in your rulemaking process.

The Dodd-Frank Act requires that the financial regulatory agencies consult or coordinate action on rulemakings under that Act in many cases. The Federal Reserve has actively worked with the other agencies in these joint and consultative rulemakings, both through direct contact with other agencies and through the FSOC. The FSOC has provided a ready forum for interagency consultation on rulemakings. These consultations have helped highlight the interaction between rulemakings under development by the Board and the broader set of rulemakings by other agencies under the Dodd-Frank Act, as well as improving our understanding of the interplay between proposed policy alternatives and existing regulation. The interagency consultation process has included staff discussions during the initial policy development stage, sharing of draft studies and regulatory text in the interim phases, and dialogue among agency principals in the advanced stages of several rulemakings.

The Federal Reserve also consults regularly with its fellow bank regulatory agencies on matters that might affect institutions supervised by the other bank regulatory agencies as well as on matters of common interest where a single regulatory approach across banking organizations of different charters would reduce compliance burden and risk. Members of the Board as well as staff at senior levels have established working associations with their peers at other agencies that include regular meetings to discuss policies of common interest and applicability. These many avenues of consultation at multiple levels increase the coordination and consistency of regulation across a banking industry that has multiple regulators and charters. We have expanded these channels to include regular consultation with the SEC, CFTC, CFPB and other agencies as changes in law have caused our spheres of regulatory responsibility to increasingly overlap.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 2, 2012

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

During my testimony before your Committee on February 24, 2010, questions were raised about whether the Federal Reserve had been subject to inappropriate political influence related to the 1972 Watergate Burglary and Iraq weapons purchases in the 1980s. Following the hearing, you asked me by letter dated March 3, 2010, to investigate these allegations. In response, I contacted our Inspector General ("IG") to conduct an independent analysis of the matters raised in your letter. As you know, the Board's Inspector General's office was established by Congress for the purpose of creating an independent and objective unit to conduct and supervise audits and investigations relating to the programs and operations of the Federal Reserve Board. The IG has conducted its own review of these matters. The Federal Reserve System, including the Board and the Federal Reserve Banks of Philadelphia and Atlanta, provided the IG with complete access to records and staff in order to facilitate a complete investigation. After an extensive review, the IG has completed its report. The IG has concluded that there is no evidence that the Federal Reserve was subjected to undue political influence or took improper actions in relation to the Watergate or Iraq weapons purchase incidents.

I am particularly pleased at the depth of the IG's investigation. As the section on "Objective, Scope, and Methodology" shows, the IG's office invested a significant amount of time in this investigation and produced a report that is unequivocal in its conclusions and comprehensive in its diligence. Given the very detailed review the IG conducted, readers of this report can be confident that had evidence of undue influence or improper action existed, the IG would have uncovered it and reported it.

The Honorable Barney Frank
Page Two

A copy of the report is enclosed for your review. Thank you for your interest in this matter.

Sincerely,

Enclosure

cc: The Honorable Spencer Bachus
The Honorable Tim Johnson
The Honorable Richard Shelby

Office of Inspector General

Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s

Board of Governors of the Federal Reserve System

March 2012

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

OFFICE OF INSPECTOR GENERAL

March 30, 2012

The Honorable Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System
Washington, D.C. 20551

Dear Chairman Bernanke:

The Office of Inspector General (OIG) of the Board of Governors of the Federal Reserve System (Board) is pleased to present its report on the *Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s.* During your February 2010 "Humphrey-Hawkins" testimony before the House Committee on Financial Services (Committee), Representative Ron Paul alleged that "the cash used in the Watergate scandal came through the Federal Reserve," and that "investigators . . . were always stonewalled" by the Federal Reserve. In addition, Representative Paul alleged that the Federal Reserve "facilitated a $5.5 billion loan to Saddam Hussein, who then bought weapons from our military industrial complex. . . ." Following the hearing, the Chairman of the Committee, Representative Barney Frank, sent a letter to you that referred to Representative Paul's statements. In his letter, Representative Frank requested a full investigation into allegations that inappropriate political interference with the Federal Reserve System "result[ed] in hidden transfers of resources to [1] facilitate crimes during the Watergate scandal in the 1970s, and [2] Iraq for weapons purchases during the 1980s." You referred the matter to the OIG, and our office initiated this inquiry in response to your request.

We performed this inquiry to identify and assess any available evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary and Iraq weapons purchases during the 1980s. In assessing undue political interference, our review sought to identify any available evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Specifically, we focused our analysis on allegations that (1) the cash found on the Watergate burglars came through the Federal Reserve, (2) the Federal Reserve "stonewalled" congressional members and staff investigating the source of the cash found on the burglars, and (3) the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s.

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, regarding the first Watergate allegation, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. Our office also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the second Watergate allegation (i.e., that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars). The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office for the District of Columbia advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. With regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Saddam Hussein or Iraq for weapons purchases during the 1980s.

We provided a draft of our report to the Board's General Counsel for review and comment. In his response, included as appendix 1, the General Counsel stated that our report confirmed past statements by Federal Reserve officials in relation to these incidents and indicated his appreciation for the thoroughness of our review.

We appreciate the cooperation that we received from the Board; the Federal Reserve Banks of Atlanta, Philadelphia, and New York; as well as the Federal Bureau of Investigation (FBI), the Georgia Department of Banking and Finance, and the U.S. Department of Agriculture (USDA) during our review. We are providing copies of this report to Board management; officials at the Federal Reserve Banks of Atlanta, Philadelphia, and New York; the FBI; and the USDA. The report will be added to our public website and will be summarized in our next semiannual report to Congress. Please contact me if you would like to discuss this report or any related issues.

Sincerely,

Mark Bialek

Mark Bialek
Inspector General

Enclosure

cc: Mr. Scott Alvarez

Office of Inspector General

Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s

Board of Governors of the Federal Reserve System

March 2012

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Background

The Chairman of the Board of Governors of the Federal Reserve System (Board) testifies semiannually before the House Committee on Financial Services (Committee) on monetary policy and the state of the economy. This is commonly referred to as the "Humphrey-Hawkins" testimony. During Chairman Ben Bernanke's semi-annual testimony before the Committee on February 24, 2010, Representative Ron Paul alleged that "the cash used in the Watergate scandal came through the Federal Reserve," and that "investigators . . . were always stonewalled" by the Federal Reserve. In addition, Representative Paul alleged that the Federal Reserve "facilitated a $5.5 billion loan to Saddam Hussein, who then bought weapons from our military industrial complex. . . ."

Following the hearing, the Chairman of the Committee, Representative Barney Frank, sent a letter to Chairman Bernanke that referred to Representative Paul's statements. In his letter, Representative Frank requested a full investigation into allegations that inappropriate political interference with the Federal Reserve System "result[ed] in hidden transfers of resources to [1] facilitate crimes during the Watergate scandal in the 1970s, and [2] Iraq for weapons purchases during the 1980s."

By letter dated April 16, 2010, Chairman Bernanke responded that he had "no knowledge that the Federal Reserve on its own or as a result of political or other interference facilitated any crimes or transfers in either of these matters." Chairman Bernanke referred the allegations to the Office of Inspector General (OIG) and requested that the OIG perform an investigation. Congress established the OIG as an independent oversight authority within the Board. The OIG conducts audits, investigations, and other reviews related to the Board under the authorities and responsibilities of the Inspector General Act of 1978, as amended.

Objective, Scope, and Methodology

We performed this inquiry in response to Chairman Bernanke's request. Our objective was to identify and assess any available evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary and Iraq weapons purchases during the 1980s. In assessing undue political interference, our review sought to identify any available evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Based upon our review of the February 2010 hearing record, and discussions with the staffs of Representative Frank and Representative Paul, we focused our analysis on the following allegations: (1) the cash found on the Watergate burglars came through the Federal Reserve, (2) the Federal Reserve "stonewalled" congressional members and staff investigating the source of the cash found on the burglars, and (3) the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s.

We reviewed the February 2010 hearing record and contacted the staffs of Representative Frank and Representative Paul, as well as Board staff, to obtain further detail regarding these allegations. At the suggestion of Representative Paul's staff, we reviewed a discussion of these allegations in a book by a professor at the University of Texas at Austin and contacted the professor for any additional information regarding these allegations.

Methodology for Analyzing Watergate Burglary Allegations

To identify any evidence regarding the Watergate allegations, our office performed searches of voluminous Board and Federal Reserve Bank archives, as well as Federal Bureau of Investigation (FBI) and congressional records. We also obtained documents related to the cash found on the Watergate burglars from the Board's electronic and hard-copy records systems and the Board's collection of Board meeting minutes from that time period.

We contacted the FBI to request any Watergate investigative materials that mention or relate to the Federal Reserve. In response, the FBI made available, and we reviewed, over 10 boxes of Watergate-related documents consisting of status memorandums, photographs, investigative summaries, and transaction records. Our office examined the final report of the Senate Select Committee on Presidential Campaign Activities, which consisted of over 1,200 pages, and examined the related congressional Watergate hearings transcript, consisting of 3,000 pages of transcribed testimony from 37 witnesses testifying over a five-week time span. We also reviewed the Government Accountability Office's (GAO's) reports on Watergate and the *Washington Post*'s online archive of Watergate articles.

We conducted employee interviews and examined documentation at the Federal Reserve Banks of Philadelphia and Atlanta and the National Archives and Records Administration. During on-site visits to the Federal Reserve Banks of Philadelphia and Atlanta, we reviewed the Federal Reserve Banks' boards of directors' meeting minutes and archived records for any additional information related to the cash found on the Watergate burglars. We also interviewed employees about the cash process in the 1970s. Our interviews included employees at the Federal Reserve Bank of Philadelphia and the Federal Reserve Bank of Atlanta, including its Miami branch, who had worked at these locations since before the Watergate scandal, as well as current Board staff who were also employed by the Board at the time. Additionally, we visited the Gerald R. Ford Presidential Library and Museum in Ann Arbor, Michigan, to review the library collection of Arthur Burns, Board Chairman at the time of the Watergate burglary. The collection includes Chairman Burns' handwritten journals, which contain his personal account of private interactions, staff meetings, and other information.

Based on information available in Board and FBI documents, our office developed a chronology of the Board's actions following the Watergate burglary to evaluate the Board's responses for any evidence that, as a result of undue political interference, the Board "stonewalled" congressional members or staff about the source of the cash found on the burglars. To develop the chronology, we utilized Board correspondence with Congress, Board staff chronologies written shortly after the burglary, press releases, and FBI investigative information. We analyzed the chronology to determine the extent to which various information was available to different individuals within the Federal Reserve System and externally, including Congress and the FBI. The detailed chronology is contained in appendix 3.

We also identified that, prior to the Watergate burglary, there was a well-publicized theft at the Federal Reserve Bank of Philadelphia involving its Cash Verification and Destruction (CV&D) process. Because of the relative proximity of the date of this theft to the Watergate burglary, and since it occurred at one of the Federal Reserve Banks that had distributed some of the $100 bills found on the Watergate burglars, our office also searched for any available evidence of a connection between this theft and the Watergate burglary. At the Federal Reserve Bank of Philadelphia, we analyzed the FBI report of investigation on the theft and other related documents and spoke with current Federal Reserve Bank of Philadelphia employees with knowledge of the incident. We also reviewed Board documents and interviewed current and former Board employees familiar with the theft and the resulting changes to cash procedures and controls.

Methodology for Analyzing Iraq Weapons Purchases Allegation

To identify any evidence regarding the Iraq allegation, we performed multiple searches through Federal Reserve archives from the late 1980s and early 1990s. We also conducted numerous interviews of Federal Reserve officials. We identified that, during the 1980s, the Atlanta office of an Italian Foreign Banking Organization (FBO), Banca Nazionale del Lavoro (BNL-Atlanta), was involved in extending $5.5 billion in unauthorized loans and letters of credit that largely benefited Iraq. We searched for any evidence of undue political interference with Federal Reserve officials related to BNL-Atlanta. As discussed below, BNL-Atlanta, as a U.S. office of an FBO, was primarily examined by the Georgia Department of Banking and Finance (State of Georgia), and the Federal Reserve had umbrella supervisory authority.

To identify any evidence that the Federal Reserve facilitated BNL-Atlanta's loans to Iraq, our office examined voluminous documents, including government reports, correspondence files, and internal memorandums. We reviewed transcripts of 15 congressional hearings, congressional staff reports, and GAO reports related to BNL-Atlanta. We also reviewed multiple reports by the Department of Justice (DOJ) regarding its investigation and prosecution of BNL-Atlanta employees. Additionally, we reviewed the Board's records concerning BNL-Atlanta, which included congressional correspondence, status memorandums, and internal reports.

To obtain information on the Federal Reserve's supervision of BNL-Atlanta, our office performed multiple searches of Board and Federal Reserve Bank archives and interviewed examination staff. We obtained documents from the Board's records systems, including BNL-Atlanta examination reports, and from the Board's collection of Board meeting minutes. At the Federal Reserve Bank of Atlanta and the Federal Reserve Bank of New York, we reviewed records and interviewed examination staff for additional information on the supervision of BNL-Atlanta. We also interviewed bank examiners from the State of Georgia, which had primary examination authority for BNL-Atlanta. We reviewed examination reports for BNL-Atlanta for any evidence of unusual supervisory practices, such as inadequately addressed examination areas, or insufficient responses by BNL-Atlanta to identified deficiencies or recommendations. We also consulted with legal staff at the Board and the Federal Reserve Banks about changes to the supervision of foreign banks due to the enactment of the Foreign Bank Supervision and Enforcement Act of 1991.

We also reviewed whether the Federal Reserve directly provided funds to BNL-Atlanta through its discount window lending program. Our office interviewed staff in the Federal Reserve Bank of Atlanta's credit department and reviewed related congressional testimony by Federal Reserve officials. We also analyzed publicly available Federal Reserve information pertaining to the discount window lending program.

While conducting our inquiry, we determined that BNL-Atlanta participated in a government export guarantee program run by the U.S. Department of Agriculture's (USDA's) Commodity Credit Corporation (CCC), and the Board was a member of an advisory body to the CCC called the National Advisory Council on International Monetary and Financial Policies (NAC).[1] To gain an understanding of BNL-Atlanta's participation in the CCC and the Board's actions on the NAC, our office reviewed public reports and spoke with officials knowledgeable about the program. We obtained substantial information from DOJ reports documenting the results of its BNL-Atlanta investigation, including the use of CCC-guaranteed funds by Iraq. Our office interviewed USDA and various Board and Federal Reserve Bank officials, including a Board Governor, about the CCC program, BNL-Atlanta's participation, and the Board's role on the NAC. We also reviewed Board records and GAO reports about the CCC and the NAC's deliberations regarding Iraq's participation in the CCC during the 1980s.

We conducted our evaluation fieldwork from April 2010 through July 2011 in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

Findings and Conclusions

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, related to the Watergate allegations, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. We also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the allegation that the Federal Reserve officials "stonewalled" congressional members and staff regarding the source of the cash found on the burglars. With regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Saddam Hussein or Iraq for weapons purchases during the 1980s. We also did not find evidence of any loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s.

[1] The Board's Chairman was the Board's principal representative on the NAC. The NAC also had a Committee of Alternates, composed of representatives from the member agencies who were empowered to act for their principals. The day-to-day work of the NAC was handled by a Staff Committee composed of economists and other professionals from the member agencies.

I. Allegations Regarding the Watergate Burglary

The Washington, D.C., Metropolitan Police Department arrested five individuals who had illegally entered the Democratic National Committee headquarters located at the Watergate office building in Washington, D.C., on June 17, 1972. At the time of the arrest and the subsequent search of the burglars' hotel rooms at the Watergate Hotel, 44 new $100 bills were discovered, some of which were sequentially numbered. Thereafter, the five burglars were indicted and found guilty on charges arising from the burglary. The Watergate burglary led to a political scandal that eventually led to the resignation of President Richard Nixon.

The Watergate scandal was the subject of multiple investigations by the FBI, the U.S. Attorney's Office for the District of Columbia (U.S. Attorney's Office), DOJ's Criminal Division, and GAO. Congress also held public hearings during spring and summer 1973 to investigate the Watergate burglary and illegal and improper practices during the 1972 presidential campaign. Congress' final report, published in June 1974, included findings and recommendations based on its investigation.

To assess undue political interference related to the Watergate burglary allegations, we searched for any evidence of the improper use of the political process or authority that could have affected the conduct or decision-making of Federal Reserve officials. Based on these allegations, our review focused on the cash found on the burglars, the cash distribution process, and the Board's response to congressional members and staff about the source of the cash found on the burglars.

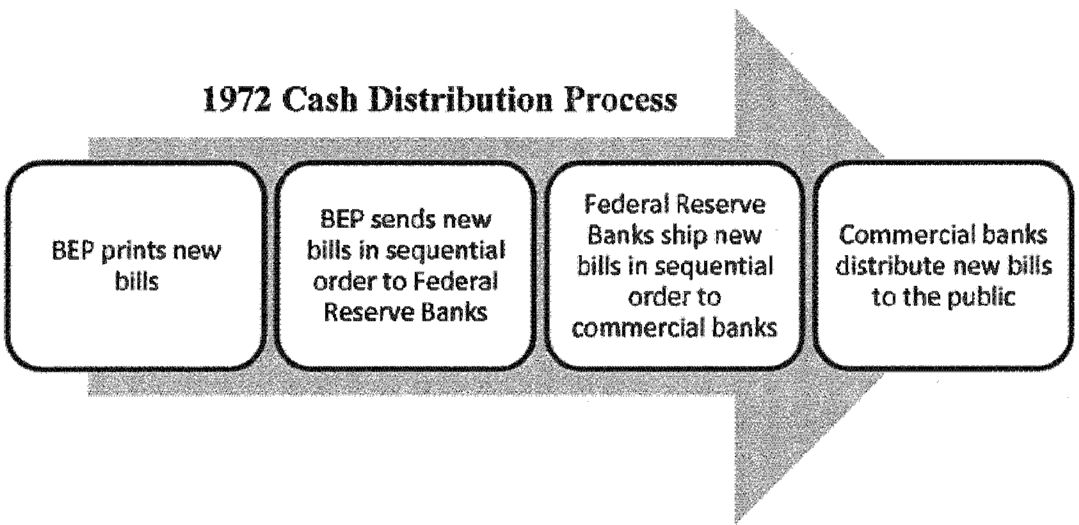
Our review did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. With regard to the allegation that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars, we found no evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials. The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office advising the Board at the time to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution.

Our office also analyzed a well-publicized theft that occurred prior to the Watergate burglary at the Federal Reserve Bank of Philadelphia involving its CV&D process. We did not identify any evidence of a connection between the cash stolen during this theft and the cash found on the Watergate burglars.

The Federal Reserve and the Cash Found on the Watergate Burglars

According to an FBI report on Watergate, the authorities found 44 new $100 bills, some of which were in sequential order, belonging to the Watergate burglars. The FBI investigation that traced the serial numbers of the bills revealed that the Bureau of Engraving and Printing (BEP) distributed some of these $100 bills to the Federal Reserve Bank of Philadelphia and the Federal Reserve Bank of Atlanta's Miami branch. Through tracing the serial numbers on the bills, the FBI report indicated that the Federal Reserve Bank of Philadelphia's records disclosed that the bills had been shipped to the Girard Bank and Trust Company in Philadelphia, and the Federal Reserve Bank of Atlanta's Miami branch confirmed to the FBI that its bills were part of a shipment to the Republic National Bank in Miami.

As depicted in the following figure, the cash distribution process for new bills in the 1970s involved a number of steps before the bills were dispersed to the general public. BEP printed new bills and then distributed them to Federal Reserve Banks and their district branches around the country. The Federal Reserve Banks and district branches then shipped the new bills to commercial banks. The Federal Reserve Banks only issued new bills to commercial banks and did not provide them directly to individuals. Lastly, the commercial banks distributed the new bills to the public through teller windows and other means.



New bills were kept in sequential order by "series" and distributed to commercial banks from the Federal Reserve Banks in "straps" of 100 bills of the same denomination. As such, commercial banks that distributed new bills could distribute such bills in sequential order. As new bills circulated, sequential bills became separated. Circulated bills that were deposited into commercial banks were eventually returned to the Federal Reserve Banks through normal commerce. The Federal Reserve Banks counted and authenticated the bills, and then determined whether the bills were "fit" or "unfit." Bills that were torn, soiled, or too worn for recirculation were deemed unfit and destroyed. Fit (reusable) bills were stored in the Federal Reserve Banks' vaults until they were recirculated through the commercial banks.

We reviewed this process to identify any evidence of undue political interference with Federal Reserve officials in relation to the distribution of the cash found on the Watergate burglars. Specifically, our office searched Federal Reserve records relating to the burglary and interviewed staff employed at the Board, the Federal Reserve Bank of Philadelphia, and the Federal Reserve Bank of Atlanta, as well as its Miami branch, at the time of the burglary. None of the records or interviewees revealed anything unusual or improper about the Federal Reserve's role in the distribution process that existed at the time of the Watergate burglary. The documentation indicated that the Federal Reserve Banks delivered the bills to the commercial banks. While the Federal Reserve Banks recorded the serial numbers of new $100 bills distributed to commercial banks, the commercial banks did not record the serial numbers of new bills distributed to the public. As such, the FBI traced the new $100 bills found on the Watergate burglars to commercial banks in Philadelphia and Miami, but it was unable to determine when or how the bills were distributed from these commercial banks. We did not find any evidence of undue political interference or that the Federal Reserve provided the new $100 bills directly to the burglars.

In addition to our review of the cash found on the burglars and the cash distribution process, we identified a well-publicized theft of unfit bills from the Federal Reserve Bank of Philadelphia that occurred prior to the Watergate burglary. We analyzed the details of the theft to identify any evidence of a connection to the Watergate burglary. In this incident, known as the "CV&D theft," several Federal Reserve Bank of Philadelphia employees conspired and stole a total of $1.4 million in unfit bills over a period of time, prior to their arrest in February 1972. Because of the relative proximity of the date of this theft to the Watergate burglary, and since it occurred at one of the Federal Reserve Banks that had distributed some of the new $100 bills found on the Watergate burglars, our office searched for any evidence of a potential connection between the cash involved in the CV&D theft and the cash found on the Watergate burglars. We found that the CV&D theft involved only unfit bills, while the Watergate burglars possessed new bills. Our review of documentation on the theft and interviews with Federal Reserve officials did not identify any evidence of a connection between the unfit cash stolen during the CV&D theft and the new cash found on the Watergate burglars.

The Federal Reserve's Responses to Congressional Members and Staff

To evaluate the Board's responses to congressional members and staff during the days subsequent to the Watergate burglary regarding the source of the cash found on the burglars, we developed a chronology based upon various documents written shortly after the burglary. The documents that we identified and analyzed included four written accounts by Board staff, several items of correspondence from the Board and from Congress, press releases, and FBI investigative files.

To better understand the chronology, it is helpful to explain the structure of the Federal Reserve System. As the central bank of the United States, the Federal Reserve System includes the Board of Governors of the Federal Reserve System, which is an independent federal agency located in Washington, D.C. The Federal Reserve Act provides that the Board shall consist of seven members, called governors, who are appointed by the President and confirmed by the Senate.

The Federal Reserve System also includes 12 regional Federal Reserve Banks. As previously mentioned, Federal Reserve Banks distribute cash to commercial banks, which then circulate the cash to the public. Federal Reserve Banks combine both public and private elements in their makeup and organization. Each Federal Reserve Bank has a nine-member board of directors that oversees its operations. Additional information on the structure and function of the Federal Reserve System is contained in appendix 2.

To address the allegation that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars, we assessed the Board's responses to congressional information requests for any evidence of undue political interference. Based on our analysis of the chronology and available documentation, we did not identify any evidence that the Board's initial or subsequent responses to congressional requests regarding its knowledge about the $100 bills were inaccurate or the result of undue political interference.

The documentation we reviewed did not contain any indications that the Board was aware of any information about the source of the cash found on the burglars at the time of its initial responses to congressional members and staff. The documentation showed that on June 19, 1972, two days after the Watergate burglary, Senator William Proxmire, Chairman of the Financial Affairs Subcommittee of the Joint Economic Committee, made a request to the Board in Washington, D.C., for the name(s) of the Federal Reserve Bank(s) involved in issuing the $100 bills found on the burglars, the name(s) of the person(s) receiving them, and the source of the check or financial instrument used to purchase the bills. That day, Board Chairman Burns responded by letter, "We at the Board have no knowledge of the Federal Reserve [B]ank which issued those particular notes or of the commercial bank to which they were transferred. Without this information, there is nothing we can do to comply with your request." Chairman Burns' letter also stated that once the investigative authorities provided that information to the Board, "we shall of course be glad to cooperate in every possible way." Board staff also told Senator Proxmire's office that day that the Board "had an obligation to ascertain whether anything the Federal Reserve might disclose would interfere with the investigations that were being carried on by the law enforcement authorities." The documentation we reviewed did not contain any Board communications about the Watergate burglary prior to the receipt of Senator Proxmire's June 19 request, including any communications with the investigative authorities or the Federal Reserve Banks. We also did not find any indications that Chairman Burns or any Board staff were aware of the issuing Federal Reserve Banks or the serial numbers of the $100 bills when they responded on June 19 to Senator Proxmire's request.[2]

We noted from documentation that a Board staff member initiated contact with the FBI on the evening of June 19 and learned which two Federal Reserve Banks had issued the bills. However, the documentation did not indicate that the FBI shared any other investigative information that evening, including whether the FBI had contacted the two Federal Reserve Banks. The next morning, the Board staff member provided the names of the two Federal Reserve Banks to the other Board staff who were in communication with Senator Proxmire's office.

In response to the Board's initial statements regarding its lack of information concerning the $100 bills found on the Watergate burglars, we noted several statements by congressional members and staff that the Board was not cooperating with their request. For example, Senator Proxmire's press release of June 20, 1972, stated:

> At the same time that the FBI told my staff on Monday [June 19] they had already been in touch with the Federal Reserve to identify where the bills came from, Chairman Arthur Burns wrote me that 'We at the Board have no knowledge of the Federal Reserve [B]ank which issue[d] those particular notes'.

[2] Each bill contains a series number and a serial number, which together make the bill unique. Bills can be traced to the issuing Federal Reserve Bank using the serial numbers on each bill.

According to Board staff accounts, Chairman Burns' letter (referenced in Senator Proxmire's press release) was sent on June 19 at 4:20 p.m. At 5:00 p.m. that evening, the Board's Director of Reserve Bank Operations learned from the FBI the names of the two Federal Reserve Banks that issued the $100 bills. We noted that the Board staff accounts indicated that they learned throughout the day of June 20 from the Federal Reserve Bank of Philadelphia and, the Federal Reserve Bank of Atlanta, and its Miami branch, that the previous day (June 19) the Federal Reserve Banks had provided the FBI with detailed information about the $100 bills found on the Watergate burglars. We did not identify any evidence that the Board was aware of the contacts between the Federal Reserve Banks and the FBI when it responded to Senator Proxmire's request on June 19.

After the Board's initial responses to congressional members and staff that it would cooperate with their information request, the Board subsequently decided that it should not provide the requested information. Based on our review of available documentation, the Board's decision not to provide the information was consistent with the Board being advised by the U.S. Attorney's Office to not disclose it. Senator Proxmire's final letter about this matter to Chairman Burns, on August 1, 1972, stated, "I now find that the U.S. Attorney did not ask in any formal way that you withhold the information from me. . . ." In our evaluation of the Board's responses to congressional members and staff, we noted that the Board staff accounts written shortly after the Watergate burglary contained multiple references to discussions in which the U.S. Attorney's Office requested that Board officials not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. For example, the account by the Board's General Counsel stated that when he called the U.S. Attorney's Office to ask about disclosing the information to congressional members and staff, the U.S. Attorney responded that "with respect to any case in his office, his firm policy was that, subject to contrary directive from the Attorney General, there would be no disclosure of investigative evidence prior to presentation of facts to a Grand Jury. . . ."

Our office compared the Board staff's written accounts with FBI records relating to discussions between the Board and the investigative authorities. The FBI investigative files confirmed that the FBI referred the Board staff to the U.S. Attorney's Office regarding the disclosure of information to Congress. The files also indicated that the FBI responded to similar requests by stating that the information was part of its investigation and that the FBI could not share the information with Congress. In our review of the available documentation, we did not find any evidence of undue political interference in the Board's decision not to provide the requested information, and we noted that the documentation indicated that the Board's actions were consistent with the U.S. Attorney's Office advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution.

II. Allegation Regarding Iraq Weapons Purchases

To address the allegation that the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s, we searched for any evidence of undue political interference with Federal Reserve officials related to BNL-Atlanta. BNL-Atlanta, one of five U.S. offices operated by Banca Nazionale del Lavoro, a large Italian bank headquartered in Rome, was involved in $5.5 billion of unauthorized credit activity largely to benefit Iraq in the 1980s. BNL-Atlanta did not document the purposes of all of its loans to Iraq, leading to allegations that Iraq used the funds for weapons purchases. BNL-Atlanta employed 19 staff, and received its license to operate as an office of an FBO from the State of Georgia on April 14, 1982. It was primarily examined by the State of Georgia, and the Federal Reserve had umbrella supervisory authority. BNL-Atlanta offered banking services to Italian companies that had relationships with other Banca Nazionale del Lavoro offices and was involved in extending loans. BNL-Atlanta did not accept deposits, nor did it offer deposit insurance through the Federal Deposit Insurance Corporation.

On August 4, 1989, the FBI, assisted by Federal Reserve representatives, executed a search warrant on BNL-Atlanta and uncovered evidence that it had engaged in unauthorized credit transactions with Iraq. The federal authorities initiated the search of BNL-Atlanta based on information provided by two BNL-Atlanta employees. The U.S. Attorney's Office for the Northern District of Georgia created and led an investigative task force (BNL Task Force), which consisted of representatives from the FBI, the Federal Reserve, Customs and Border Protection, USDA's OIG, and the Internal Revenue Service. Bank examiners from the Federal Reserve Bank of Atlanta were detailed to the BNL Task Force to contribute their knowledge and experience in banking and regulatory compliance. The BNL Task Force conducted an extensive investigation into the size and scope of BNL-Atlanta's unauthorized transactions and identified $5.5 billion in unauthorized credit activity largely to benefit Iraq.

The investigation revealed that many of the unauthorized transactions were neither recorded on BNL-Atlanta's official books and records nor reported to banking regulators or the parent bank in Rome. The unauthorized activities were concealed by BNL-Atlanta employees through a variety of means, including maintaining a parallel set of secret books and records, utilizing the names of legitimate customers to record loans not authorized by the parent bank, and removing records of unauthorized transactions from the office and moving them between employees' homes and cars. BNL-Atlanta employees also created fake documentation to conceal the transactions from internal and external auditors, as well as bank examiners, and filed false reports with the parent bank in Rome, Banca Nazionale del Lavoro, and with federal and state regulators. These transactions violated BNL-Atlanta's lending limits, which were established by its parent bank.

The purpose of some of BNL-Atlanta's loans to Iraq was to finance the export of U.S. agricultural products through a USDA export guarantee program run by the CCC. The Board participated, along with the Department of the Treasury and other federal agencies, on the NAC, which was an advisory body to the CCC.

The BNL Task Force investigation spanned several years and ultimately resulted in criminal charges and prosecutions of multiple BNL-Atlanta employees, including the manager, Christopher Drogoul, as well as Vice Presidents Paul Von Wedel, Thomas Fiebelkorn, and Therese Barden. The Federal Reserve imposed a consent cease and desist order that required Banca Nazionale del Lavoro to maintain an additional reserve deposit equivalent to a reserve deficiency payment of $5.2 million at the Federal Reserve Bank of Atlanta for 18 months. Congress held multiple hearings related to BNL-Atlanta's activities. The BNL Task Force final report, published in October 1994, reviewed criminal allegations relating to BNL-Atlanta's credit extensions to Iraq and government actions taken in connection with exports to Iraq. The BNL Task Force final report stated, "We did not find evidence that U.S. agencies or officials illegally armed Iraq or that crimes were committed through bartering of CCC commodities for military equipment."

To assess undue political interference with Federal Reserve officials related to Iraq weapons purchases during the 1980s, we searched for evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Specifically, we analyzed (1) the Federal Reserve's supervisory role and actions regarding BNL-Atlanta, (2) whether BNL-Atlanta borrowed any funds from the Federal Reserve Bank of Atlanta through the Federal Reserve's discount window lending program, and (3) the Board's participation on the NAC.

We did not find any evidence of undue political interference with Federal Reserve officials related to Iraq weapons purchases during the 1980s or any indications that the Federal Reserve facilitated any loans to Iraq through BNL-Atlanta for weapons purchases during the 1980s. Also, we did not find any evidence of loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s. Details of our review follow.

Foreign Bank Supervision in the 1980s

Based on the documents we reviewed, during the 1980s the International Banking Act of 1978 (IBA) governed the supervisory responsibilities for FBOs, such as Banca Nazionale del Lavoro. The IBA granted primary examination authority for FBOs' U.S. branches and agencies to the responsible licensing authorities (the state or the Office of the Comptroller of the Currency) and provided the Federal Reserve with umbrella supervisory authority. This umbrella supervisory authority included residual examination authority, but emphasized that the Federal Reserve was to use, to the extent possible, the examination reports of the primary examination authorities.

In accordance with the IBA, the Board developed a supervisory program in which each FBO with U.S. operations was assigned to a responsible Federal Reserve Bank. The Federal Reserve Bank of New York was identified as the responsible Federal Reserve Bank for the U.S. operations of Banca Nazionale del Lavoro. This responsibility involved evaluating the FBO's condition and strength by analyzing reports on its financial condition, periodically contacting the parent bank's managers and the home country banking authorities, and reviewing examination reports by the U.S. office's primary regulators. The Federal Reserve Bank of Atlanta assisted the Federal Reserve Bank of New York by ensuring that all offices of Banca Nazionale del Lavoro in the southeast region were examined on a timely basis and by providing copies of the examination reports to the Federal Reserve Bank of New York after each examination was completed.

BNL-Atlanta Supervision and Examinations

Based on our review of State of Georgia and Federal Reserve examination reports from 1986 to 1990 and BNL Task Force reports, interviews with State of Georgia bank examiners who participated in examinations of BNL-Atlanta, and discussions with Federal Reserve bank examiners, we did not identify any evidence of any undue political interference with Federal Reserve officials in the examination and supervision of BNL-Atlanta. Consistent with the regulatory structure described above, the State of Georgia was the primary examination authority for BNL-Atlanta. The State of Georgia conducted annual examinations of BNL-Atlanta with limited participation by the Federal Reserve Bank of Atlanta. The Federal Reserve Bank of Atlanta's participation was generally limited to a review of compliance with federal laws and regulations, such as ensuring consistency between the quarterly financial reports submitted by BNL-Atlanta to banking regulators and BNL-Atlanta's official books and records.

Prior to the FBI's execution of the search warrant on BNL-Atlanta in August 1989, the State of Georgia conducted the bank examinations of BNL-Atlanta and determined its overall safety and soundness rating, while Federal Reserve Bank of Atlanta examiners provided assistance as requested throughout the examination process.[3] From 1986 through January 1989, the State of Georgia assigned BNL-Atlanta overall ratings of 1, indicating that it was in satisfactory condition and that no violations of laws or regulations were identified during the examinations. After the search in August 1989, when the unauthorized lending activities were uncovered, the Federal Reserve performed independent examinations of BNL-Atlanta and assigned overall ratings of 5 (significant concern). Our review of examination reports from 1986 through 1990 did not identify any unusual examination procedures, and we noted that the BNL Task Force investigation of BNL-Atlanta's activities also did not identify any unusual examination practices.

We interviewed State of Georgia and Federal Reserve examination officials who participated in examinations of BNL-Atlanta and did not find any evidence of undue political interference regarding their supervision and examinations of BNL-Atlanta. The State of Georgia examination officials stated that they did not experience any undue political interference with their duties and did not recall any unusual practices in the examinations of BNL-Atlanta. Similarly, Federal Reserve examination officials did not report any unusual activity or undue political interference regarding the supervision of BNL-Atlanta. During the time that BNL-Atlanta conducted the unauthorized transactions, it was also subject to internal and external audits. According to a BNL Task Force report, none of the audits or examinations led anyone to suspect the unauthorized, off-book activities. The BNL Task Force investigation, as well as the officials from the Federal Reserve and the State of Georgia who we interviewed, indicated that it was unlikely that BNL-Atlanta's unauthorized activity would have been detected through audits or

[3] The examination procedures focused on safety and soundness by evaluating management and supervision, asset quality and credit administration, liquidity and funds management, earnings, and trading activities, to determine an overall rating. The overall rating was expressed on a scale from 1 to 5, with 1 being the highest rating (indicating minimal concern) and 5 being the lowest rating (indicating significant concern).

bank examinations due to the extent of fraudulent documentation and false statements by BNL-Atlanta employees, as well as collusion by a number of BNL-Atlanta employees.

Following the events at BNL-Atlanta, the Federal Reserve recommended legislation to respond to the perceived need for more federal oversight resulting from misconduct by a few foreign banks operating in the United States. Congress passed the Foreign Bank Supervision Enhancement Act of December 1991, which established minimum standards for foreign bank entry and expansion into the United States and gave the Federal Reserve enhanced supervisory and regulatory authority over foreign banks operating in the United States.

The Federal Reserve's Discount Window and BNL-Atlanta

In addition to analyzing the Federal Reserve's supervisory role and actions regarding BNL-Atlanta, we also examined the Federal Reserve's discount window lending program for any evidence that it was used to facilitate BNL-Atlanta's loans. We did not identify any evidence that funding was provided to BNL-Atlanta. The Board does not engage in lending or providing any direct funds to commercial banks. The Federal Reserve Banks, the operating arm of the Federal Reserve System, have the authority to extend loans through the discount window to member banks in their districts. The discount window lending program serves as a contingency source of liquidity for eligible banks by providing temporary funding, generally when banks are experiencing short-term liquidity pressures. The loans are generally provided on an overnight basis and must be secured by collateral that is approved by the lending Federal Reserve Bank.

The IBA amended the Federal Reserve Act to provide the U.S. operations of FBOs that maintained reserves in the United States access to their district Federal Reserve Bank's discount window lending program on the same terms as access was provided to domestic depository institutions. To be eligible, offices of FBOs, such as BNL-Atlanta, had to meet requirements similar to those required of domestic depository institutions, including reserve requirements. We discussed BNL-Atlanta's discount window activity with Federal Reserve Bank of Atlanta staff responsible for the operations and reviewed related congressional testimony by Federal Reserve officials. We found no evidence that BNL-Atlanta requested or received any loans through the Federal Reserve Bank of Atlanta's discount window.

BNL-Atlanta's Participation in the CCC and the Board's Participation on the NAC

To finance some of its loans to Iraq, BNL-Atlanta participated in an export guarantee program run by the CCC. During the 1980s, the CCC was a federal corporation within the USDA that promoted the export of U.S. agricultural commodities by providing repayment guarantees to U.S. banks, which financed the exported commodities on behalf of the foreign importer's bank. The CCC export guarantee program was used primarily by developing countries, such as Iraq, where credit was necessary to increase or maintain U.S. export levels and private banks were less willing to provide financing without such a repayment guarantee. As the USDA was responsible for the operations and oversight of the CCC, the Federal Reserve did not have any direct involvement or decision-making authority over the CCC export guarantee program. The Board participated, along with the Department of the Treasury and other federal agencies, on the NAC, which was an advisory body to the CCC.

Some of BNL-Atlanta's unauthorized credit arrangements with Iraq were financed through the CCC export guarantee program. BNL-Atlanta's parent bank in Rome determined BNL-Atlanta's credit policies and limited its individual authority over lines of credit, including CCC-guaranteed loans, to less than $2.5 million. The BNL Task Force reported, however, that BNL-Atlanta entered into approximately $1.89 billion in concealed credit arrangements with Iraq to purchase U.S. agricultural commodities through the CCC.

Following the discovery of BNL-Atlanta's unauthorized transactions with Iraq, members of Congress, as well as various newspaper articles, questioned Iraq's use of the funds, including allegations of falsified CCC transactions and possible weapons purchases. According to the BNL Task Force final report, several of these allegations grew out of reports that Iraq may have acquired military equipment by bartering agricultural commodities that it obtained through the CCC export guarantee program. The BNL Task Force final report concluded that there was no evidence that U.S. agencies, or their officials, illegally armed Iraq or that crimes had been committed through the bartering of CCC agricultural commodities in exchange for military equipment. In addition, the USDA conducted an administrative review of the CCC export guarantee program for Iraq that focused on four operational problem areas identified by the USDA, none of which involved the Federal Reserve.

Congress created the NAC as an advisory group and assigned it the responsibility of evaluating policies and practices of government agencies that made loans or issued guarantees as part of foreign lending programs. The NAC advised the USDA on its agricultural export guarantee programs, such as the CCC, with various countries, including Iraq. However, the NAC itself did not directly make any loans or issue guarantees. The NAC membership consisted of the Board; the Departments of the Treasury, State, and Commerce; the U.S. Trade Representative; the U.S. Export-Import Bank; and the U.S. International Development Cooperation Agency.[4] While the NAC's advisory decisions were not binding, the USDA generally obtained NAC approval before issuing credit guarantees. According to congressional testimony by a Board governor, the Board's principal contribution to the NAC was sharing its expertise with the other members and objectively assessing the financial and economic soundness of proposals brought before the NAC.

The documentation we reviewed showed that the Board repeatedly raised concerns about Iraq's creditworthiness and the amount of proposed CCC guarantees for Iraq during NAC deliberations. For instance, in August 1988, the Board, along with the Department of the Treasury, objected to the USDA's proposal for $1.1 billion in CCC guarantees to Iraq for fiscal year 1989 because it felt the level was too high given Iraq's creditworthiness. Similarly, in fall 1989, the Board again expressed concerns regarding the extension of $1.2 billion in CCC guarantees to Iraq for fiscal year 1990. While a majority of NAC members supported the fiscal year 1990 proposal, the Board was concerned about Iraq's creditworthiness and the increased amount of the proposal. The unfolding BNL-Atlanta matter also reinforced the Board's reservations and opposition to additional CCC guarantees to Iraq for fiscal year 1990. Previously, the Board had opposed increasing CCC guarantees to Iraq in January 1987 and supported limiting the amount of CCC

[4] Refer to footnote 1 for additional NAC membership information.

guarantees to Iraq for fiscal years 1986 and 1987. Our review of internal documents and external reports, and interviews with Federal Reserve officials familiar with the NAC, did not identify any evidence of undue political interference with Federal Reserve officials related to the Board's participation on the NAC. In addition, we did not find any indications that the Board used its role on the NAC to facilitate BNL-Atlanta's unauthorized transactions with Iraq.

Overall Conclusion

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, regarding the first Watergate allegation, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. Our office also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the second Watergate allegation (i.e., that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars). The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. Finally, with regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s. We also did not find evidence of any loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s.

Analysis of Comments

We provided a draft of our report to the Board's General Counsel for review and comment. In his response, the General Counsel stated that our report confirmed past statements by Federal Reserve officials in relation to these incidents and indicated his appreciation for the thoroughness of our review. His full response is included as appendix 1.

Appendixes

Appendix 1 – Management's Comments

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D.C. 20551

SCOTT G. ALVAREZ
GENERAL COUNSEL

March 29, 2012

Mark Bialek, Inspector General
Board of Governors of the Federal Reserve System
20^{th} & C Streets, N.W.
Washington, D.C. 20551

Dear Mr. Bialek:

This is in response to your request for our comment on the draft report titled "Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s". Your report confirms past statements by Federal Reserve officials that no Federal Reserve official was subjected to undue political influence or acted improperly in relation to these incidents. I am particularly grateful for the thoroughness of the investigation by the staff of the Office of the Inspector General and for the detailed and complete report. We appreciate the opportunity to review the draft and have no comments to offer.

Sincerely,

Scott G. Alvarez

Appendix 2 – The Federal Reserve System's Structure and Function

The Federal Reserve System serves as the central bank of the United States. It was established by Congress in 1913 and includes 12 regional Federal Reserve Banks and an independent federal agency called the Board of Governors of the Federal Reserve System. The OIG is an independent oversight authority within the Board.

Board of Governors of the Federal Reserve System

The Board is an independent federal government agency located in Washington, D.C. The Federal Reserve Act provides that the Board shall consist of seven members, called governors, who are appointed by the President and confirmed by the Senate. In addition to conducting research, analysis, and policymaking related to domestic and international financial and economic matters, the Board plays a major role in the supervision and regulation of the U.S. banking system. It also has broad oversight responsibility for the nation's payments system, which includes ensuring that enough cash is in circulation to meet demand, and oversees the operations and activities of the Federal Reserve Banks.

Federal Reserve Banks

The Federal Reserve Banks are the operating arms of the nation's central banking system. Congress chartered the Federal Reserve Banks for a public purpose; however, they combine both public and private elements in their makeup and organization. Each Federal Reserve Bank has a nine-member board of directors that oversees its operations. For the purpose of carrying out the day-to-day operations of the Federal Reserve, there are 12 Federal Reserve districts, each managed by a separate Federal Reserve Bank: Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas City, Dallas, and San Francisco.

Many of the services that the Federal Reserve Banks provide to depository institutions and the government are similar to services provided by banks to business customers and individuals. Federal Reserve Banks hold the cash reserves of depository institutions and make loans to depository institutions at the discount window. They move currency and coin into and out of circulation; collect and process millions of checks each day; and operate automated clearinghouses, which are computerized facilities that allow for electronic exchange of payments among participating depository institutions. They maintain the U.S. Treasury's operating cash account to support the Treasury's transactions, issue and redeem government securities, and serve as a fiscal agent for the U.S. government. Under delegated authority from the Board, they supervise and examine the safety and soundness of state-chartered banks that are members of the Federal Reserve System, as well as bank holding companies and foreign bank offices in the United States.

Office of Inspector General

Pursuant to the 1988 amendments to the Inspector General Act of 1978, Congress established the OIG as an independent oversight authority for the Board, the government agency component of the broader Federal Reserve System. In addition, the Dodd-Frank Wall Street Reform and

Consumer Protection Act established the OIG as an independent oversight authority for the Bureau of Consumer Financial Protection (CFPB). Within this framework, the OIG conducts audits, investigations, and other reviews of the Board's and the CFPB's program functions. Through this work, the OIG promotes integrity, economy, efficiency, and effectiveness; helps prevent and detect fraud, waste, abuse, and mismanagement; and strengthens the agencies' accountability to Congress and the public.

Appendix 3 – OIG Chronology of the Board's Responses to Congressional Inquiries Related to the Watergate Burglary

Chronology of Board Correspondence (1972)

June 17 Watergate burglary and arrest of the burglars.

June 19 (9:45 a.m.) The Board's Special Assistant receives a phone call from Senator Proxmire's staff requesting information about the bills found on the Watergate burglars and responds that he will look into it. That afternoon, Chairman Burns receives a letter from Senator Proxmire reiterating this request.

June 19 (12:37 p.m.) Board staff state during a conversation with Senator Proxmire's staff that the Board has an obligation to ascertain from law enforcement authorities whether disclosing the requested information would interfere with the investigation.

June 19 (4:20 p.m.) Chairman Burns replies in a letter to Senator Proxmire that the Board does not have knowledge of the Federal Reserve Bank that issued the bills or of the commercial bank to which they were transferred. He also states that once the investigative authorities provided that information, he would be glad to cooperate.

June 19 (5:00 p.m.) The Board's Director of Reserve Bank Operations (DRBO) calls the FBI and is advised of the names of the two Federal Reserve Banks that issued the bills.

June 20 (9:50 a.m.) The Board's DRBO tells other Board staff the names of the two Federal Reserve Banks that he was told issued the bills and states he does not know whether the Federal Reserve Banks have been contacted by the FBI.

June 20 (10:05 a.m.) The Federal Reserve Bank of Philadelphia notifies the Board's DRBO of contact with the FBI. The Federal Reserve Bank of Philadelphia also states it has been contacted by Senator Proxmire's staff and requests guidance as to how to handle the congressional request.

June 20 (10:10 a.m.) The Board's Special Assistant calls Senator Proxmire's office. Senator Proxmire's staff member states that he learned the FBI had contacted "the Federal Reserve" and that the Board is not being responsive. The Board's Special Assistant affirms that no one at the Board "had been contacted by the FBI."

June 20 (10:10 a.m.) Upon conclusion of the above phone call, the Board's DRBO tells the Board's Special Assistant about his discussion with the Federal Reserve Bank of Philadelphia, in which the Federal Reserve Bank of Philadelphia reported contact with the FBI and requested guidance in handling the congressional request.

June 20 (11:00 – 11:30 a.m.) Board staff meet with Chairman Burns for an update. The Board's DRBO is directed to obtain the position of the FBI with respect to the release of information and also asked to contact the two Federal Reserve Banks to ensure they are cooperating with the investigative authorities and to obtain available information.

June 20 (11:55 a.m.) The Board's Special Assistant confirms the Federal Reserve Bank of Philadelphia's contact with the FBI to Senator Proxmire's staff, but states he does not have any details. He says that the situation is fluid and further information will be provided when it is more definite.

June 20 (before 12 p.m.) The Board's DRBO calls the FBI regarding the release of information and is referred to the U.S. Attorney's Office for the District of Columbia (U.S. Attorney's Office).

Chronology of Board Correspondence (1972)

June 20 (12 p.m.) The Board's DRBO calls the Federal Reserve Bank of Philadelphia and learns that the bank informed the FBI on the afternoon of June 19 that 10 of the bills found on the burglars had been shipped by the Federal Reserve Bank of Philadelphia to the Girard Bank and Trust Company in Philadelphia.

June 20 (after 12 p.m.) The Federal Reserve Bank of Atlanta's Miami branch contacts the Board's DRBO to report contact with the FBI on the afternoon of June 19. The Miami branch states that it advised the FBI that the serial numbers on the bills described had not been paid out of the bank. The Board's DRBO suggests that the Miami branch re-contact the FBI to clarify the matter.

June 20 (after 12 p.m.) The Board's DRBO contacts the Federal Reserve Bank of Atlanta, which reports it had been contacted by the FBI on June 19 and told the agent that the bills described had been forwarded to its Miami branch.

June 20 (2:20 p.m.) The Board's General Counsel contacts the U.S. Attorney's Office to discuss the disclosure of the information to Congress. The U.S. Attorney opposes the disclosure to Senator Proxmire or any other congressional members as such prior disclosure may impede the investigation and potentially jeopardize the conduct of a fair trial.

June 20 (after 2:20 p.m.) The Board notifies the Federal Reserve Bank of Philadelphia and the Federal Reserve Bank of Atlanta's Miami branch of the U.S. Attorney's Office's advice to not share information regarding the bills found on the burglars with anyone other than the investigative authorities. During this conversation, the Miami branch reveals that it reviewed its records and determined that seven of the $100 bills described by the FBI had been paid by the branch to the Republic National Bank in Miami. It reports that it already provided the corrected information to the FBI.

June 20 (3:45 p.m.) The Board's Special Assistant reads a prepared statement to Senator Proxmire's staff indicating that the Board contacted the FBI and the U.S. Attorney's Office and was advised that the information should not be released to anyone other than the investigative authorities.

June 20 (after 4:00 p.m.) Senator Proxmire issues a press release stating that the Board has avoided his calls requesting information on the bills found on the burglars. The Senator further asserts that the purpose of the Board's refusal to cooperate with his request is to cover up for the Executive Branch. The press release states, "At the same time that the FBI told my staff on Monday [June 19] they had already been in touch with the Federal Reserve to identify where the bills came from, Chairman Arthur Burns wrote to me that 'We at the Board have no knowledge of the Federal Reserve [B]ank which issue[d] those particular notes'."

June 21 The Board issues a press statement to address Senator Proxmire's claims, which states that it was advised by the U.S. Attorney's Office to not disclose information other than to responsible law enforcement agencies.

July 28 Chairman Burns sends Senator Proxmire a letter stating that Board staff contacted the U.S. Attorney's Office twice, as well as consulted with the Board's legal advisors and members of the Board. The letter states that the Board's legal advisors recommend that the Board follow the U.S. Attorney's Office's advice by not disclosing the requested information. The letter also denies Senator Proxmire's claim that the Board is covering up for someone high in the Executive Branch.

August 1 Senator Proxmire sends a letter to Chairman Burns stating that he is now aware that the ". . . U.S. Attorney did not ask in any formal way" that Chairman Burns withhold the information from him. Senator Proxmire states that much of the information he sought is now public and it clearly ties in the President's Re-election Committee with the bugging incident.

Appendix 4 – Abbreviations

BEP	Bureau of Engraving and Printing
BNL-Atlanta	Atlanta office of Banca Nazionale del Lavoro
Board	Board of Governors of the Federal Reserve System
CFPB	Bureau of Consumer Financial Protection
CCC	Commodity Credit Corporation
Committee	House Committee on Financial Services
CV&D	Cash Verification and Destruction
DOJ	Department of Justice
DRBO	Board's Director of Reserve Bank Operations
FBI	Federal Bureau of Investigation
FBO	Foreign Banking Organization
Federal Reserve	Federal Reserve System (includes Federal Reserve Board and Federal Reserve Banks)
GAO	Government Accountability Office
IBA	International Banking Act of 1978
NAC	National Advisory Council on International Monetary and Financial Policies
OIG	Office of Inspector General
State of Georgia	Georgia Department of Banking and Finance
U.S. Attorney's Office	U.S. Attorney's Office for the District of Columbia
USDA	U.S. Department of Agriculture

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

May 16, 2012

The Honorable Darrell Issa
Chairman
Committee on Oversight
and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed is my response to the written question you submitted following the March 21, 2012, hearing before the Committee on Oversight and Government Reform. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

cc: The Honorable Elijah Cummings

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Issa:

1. The United States has considerable investments in the sovereign and commercial sectors within Europe. With reference to the table below, can you confirm the total U.S. direct and potential exposure to the European Market?

Exposures as provided by CRS in U.S. dollars from September 2011 figures

	U.S. Direct Exposure	U.S. Potential Exposure	Total
Portugal	$5.2 billion	$48.6 billion	$53.9 billion
Ireland	$53.5 billion	$57.7 billion	$111.3 billion
Italy	$46.8 billion	$262.8 billion	$309.7 billion
Greece	$8.3 billion	$48 billion	$48.4 billion
Spain	$66.7 billion	$177.3 billion	$244 billion
Germany	$234.7 billion	$400.4 billion	$635.2 billion
France	$271.6 billion	$412.8 billion	$684.5 billion
Total	$686.8 billion	$1.4 trillion	$2.08 trillion

Response to Question 1

U.S. banks' credit exposure to residents of Europe

Table 1 shows the credit exposure of U.S. banks to residents of selected European countries. Credit exposure is the sum of bank lending and bonds held, net of third-country guarantees and certain liquid collateral, and is reported to the U.S. bank supervisory agencies on the Country Exposure Report, or FFIEC 009 report. Aggregate data for U.S.-headquartered banks are sent to the Bank for International Settlements (BIS), which publishes the data along with that of other countries. The table corresponds to the column titled "U.S. Direct Exposure" provided by the CRS.[1] It is important to be aware that the FFIEC 009 report provides a broad measure of exposure. For example, exposures to counterparties to resale agreements and securities lending are not adjusted for the collateral backing these claims, even though these are collateralized transactions. In addition, claims arising from long positions in the trading book are not adjusted for offsetting short positions. As a result, the exposures shown in the table can greatly overstate what realized cross-border losses would be.

Table 1
Credit Exposures of U.S. Banks to Residents of Europe
as of end-December 2011

	billions of dollars
Greece	4
Ireland	44
Portugal	5
France	182
Germany	175
Italy	37
Spain	46
Total	**493**

Source: Bank for International Settlements, Table 9E at http://www.bis.org/statistics/consstats.htm.

[1] The numbers are not identical, because the CRS figures were as of end-June 2011, whereas Table 1 shows data as of end-December 2011.

Table 2 shows the sources of contingent credit exposures of U.S. banks to residents of selected European countries. Column 1 shows undrawn credit commitments to European borrowers, which exceeds $10 billion only for borrowers in Germany and France. Column 2 shows the positive fair value of all types of derivatives contracts (interest rate, foreign exchange, equity, commodity, and credit derivatives) with European counterparties, which exceeds $10 billion only for counterparties in Germany, France, and Italy. Column 3, guarantees, is composed primarily of the *gross notional* amount of credit default swaps (CDS) sold on European borrowers. Because column 3 takes no account of CDS protection that U.S. banks have *purchased* on European borrowers, it provides a very inaccurate measure of the likely effect on U.S. banks of the triggering of CDS on European borrowers. The banks that report large amounts in column 3 tend to be market-makers with large CDS trading books, which means they have also purchased significant CDS protection on the same borrowers. Column 4 is the total of the first three columns and corresponds to the column titled "U.S. Potential Exposure" provided by the CRS. Column 3 is the largest component--85 percent, on average--of column 4, and as a result, column 4 greatly overstates the contingent credit exposure of U.S. banks to Europe.

Table 2
Contingent Exposures of U.S. Banks to Residents of Europe
in billions of dollars, as of end-December 2011

	Undrawn credit commitments (1)	Derivatives contracts (2)	Guarantees, primarily CDS sold (3)	Total of columns (1), (2), and (3) (4)
Greece	0	1	45	46
Ireland	4	10	37	52
Portugal	0	2	52	55
France	35	37	384	456
Germany	29	60	347	436
Italy	5	27	264	295
Spain	8	6	168	182
Total	**81**	**143**	**1,296**	**1,520**

Source: Bank for International Settlements, Table 9E at http://www.bis.org/statistics/consstats.htm.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

May 24, 2012

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the February 29, 2012, hearing before the Committee on Financial Services. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Bachus:

- **Section 165 of the Dodd-Frank Act requires that the Federal Reserve establish prudential standards for the largest banking institutions that are more stringent than those that apply to smaller banks. In doing so, the Board may differentiate among companies on an individual basis or by category, taking into consideration their capital structure, riskiness, complexity, financial activities, size, and any other risk-related factors that the Board deems appropriate. Congress included this provision to give you the flexibility to differentiate between the largest and most complex bank holding companies, and those with more traditional activities that nevertheless exceed $50 billion in assets.**

    - **Has the Board established a way to tailor its application of enhanced prudential standards based on the riskiness or complexity of a company's activities? Will the Board establish a tiered approach to enhanced standards, with increasingly stringent standards or capital surcharges being applied to the most complex institutions?**

On December 20, 2011, the Board of Governors of the Federal Reserve System ("Board") invited public comment on a package of proposed rules to implement sections 165 and 166 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act") for nonbank financial companies that the Financial Stability Oversight Council has designated for supervision by the Board and bank holding companies with consolidated assets of $50 billion or more (collectively "covered companies"). See Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies; Proposed Rule, 77 Fed. Reg. 593 (Jan. 5, 2012). The package includes proposals for risk-based capital and leverage requirements, liquidity requirements, single-counterparty credit limits, stress testing, risk-management requirements, and an early remediation regime. The Board's proposal generally includes standards that are calibrated to take account of a covered company's capital structure, risk profile, complexity, activities, size, and any other appropriate risk-related factors.

The public comment period on the proposed rules closed on April 30, 2012, and the Board received nearly 100 comment letters from individuals, trade and financial industry groups, community groups, and financial institutions. Many commenters provided views on how the Board could further tailor application of the proposed standards to covered companies based on their systemic footprint and risk characteristics. The Board is currently reviewing comments received on the proposal carefully, and will take the views expressed by commenters into consideration as it works to develop final rules to implement sections 165 and 166 of the Dodd-Frank Act.

- **Has the FSOC recommended that the Board use a tiered approach in applying enhanced standards?**

Section 115 of the Dodd-Frank Act provides that the Financial Stability Oversight Council ("Council") may make recommendations to the Board concerning the establishment and refinement of prudential standards and reporting and disclosure requirements applicable to covered companies. 12 U.S.C. 5325(a)(1). The Board consulted with the Council, including by providing periodic updates to members of the Council and their staff on the development of the proposal the Board issued in December 2011. The proposal reflects comments provided to the Board as a part of this consultation process.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 15, 2012

The Honorable Debbie Stabenow
Chairwoman
Committee on Agriculture, Nutrition
and Forestry
United States Senate
Washington, D.C. 20510

Dear Madam Chair:

Thank you for your letter of May 18, 2012, regarding the implementation of derivatives market reform, including the establishment of capital and margin requirements for swaps. In particular, you have stressed the importance of implementing the reforms governing various derivatives activities mandated by Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Act").

As you know, the Federal Reserve Board, the Office of the Comptroller of the Currency ("OCC"), the Federal Deposit Insurance Corporation ("FDIC"), the Federal Housing Finance Agency and the Farm Credit Administration (together, the "prudential regulators") issued a joint proposal last year to implement the Act's requirements for margin and capital on uncleared swaps by swap dealers, major swap participants, security-based swap dealers and major security-based swap participants ("swap entities") for which those agencies are the prudential regulators. The Commodity Futures Trading Commission ("CFTC") also issued a proposal last year to implement the Act's requirements for margin and capital on uncleared swaps for swap entities under the CFTC's jurisdiction. We are currently considering the comments received on those proposals as we work to finalize implementing rules.

Margin and capital requirements governing swaps activities would be most effective in reducing risk to the financial system if coordinated on an international basis. To this end, the Board, the OCC, the FDIC, the CFTC, and the Securities Exchange Commission are participating on the Working Group on Margin Requirements ("WGMR"), an international group of regulators that was constituted last fall to reach a consensus on margin requirements for uncleared swaps. The WGMR is supported by members of the Basel Committee on Banking Supervision, the International Organization of Securities Commissions, the Committee on Payment and Settlement Systems, and the Committee on the Global Financial System. The WGMR has been meeting regularly since October to formulate a global proposal for margin requirements on uncleared derivatives and expects to release its proposal shortly. Creating comparable regulatory regimes across borders and among different types of market participants will help achieve the goals of systemic risk reduction and market participant safety and soundness.

Your comments on these issues have been, and will continue to be, carefully considered as we work with the other agencies and foreign regulatory counterparts to develop implementing regulations. The Board shares your goal that the Dodd-Frank Act be effectively implemented, and we are working to achieve this goal with respect to all our new authority, including in the derivatives area.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

July 2, 2012

The Honorable Kevin Brady
Vice Chairman
Joint Economic Committee
United States Senate
Washington, D.C. 20510

Dear Mr. Vice Chairman:

Enclosed are my responses to the written questions you submitted following the June 7, 2012, hearing before the Joint Economic Committee. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Vice Chair Brady:

1. On January 25, 2012 the Federal Open Market Committee, which controls our nation's monetary policy, released a statement describing its longer-run goals and policy strategy. In that policy statement, the FOMC judged that "inflation at the rate of 2%, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer-run with the Federal Reserve's statutory mandate."

- **How did you choose a 2 percent inflation target? Why was it not 1 percent or zero percent?**

As noted in the Committee's statement of its *Longer-Run Goals and Policy Strategy,* the Committee is firmly committed to fulfilling its statutory mandate from the Congress of promoting both maximum employment and price stability. The Committee judges that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with our statutory mandate. Over time, a higher inflation rate would reduce the public's ability to make accurate longer-term economic and financial decisions, leading to costly misallocations and inefficiency.

However, the Committee judged that a significantly lower inflation goal, such as 1 or 0 percent, would be associated with more adverse outcomes for employment and growth. Nominal interest rates, which are ultimately tied to the level of inflation, cannot fall below zero, and so a lower inflation goal could limit the Federal Reserve's ability to provide monetary stimulus in periods of economic weakness. The result would be an elevated probability of falling into deflation, which can have severely negative consequences for economic growth that are difficult to reverse. Reflecting these concerns, central banks across the globe typically target levels of inflation that are above minimum levels in order to provide themselves adequate margin against the risk of deflation.

- **Is the 2 percent inflation target a floor or a ceiling? Or, is the 2 percent inflation target an average over a specific period of time?**

The FOMC's 2 percent long-term goal for inflation is a symmetric target, not a ceiling. Because the FOMC does not have perfect control of the economy, inflation can be either below or above the Committee's goal. The FOMC's objective in these cases is to bring inflation back to 2 percent over time.

- **How would you articulate the FOMC's tolerance for short-term, medium-term, and long-term deviations from its 2 percent inflation target?**

In setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessment of its maximum level. Because the FOMC does not have perfect control of inflation, there will naturally be circumstances in which inflation deviates from its 2 percent target for a time, and in such circumstances the FOMC's objective would be to bring inflation back to 2 percent. In doing so, it will follow a balanced approach in promoting its dual objectives.

- **Would you be willing to deviate from the 2 percent target to goose employment in the short term?**

As noted above, in setting monetary policy, the Committee seeks to mitigate deviations of inflation from its longer-run goal and deviations of employment from the Committee's assessment of its maximum level. These objectives are generally complementary. However, under circumstances in which the Committee judges that the objectives are not complementary, it would follow a balanced approach in promoting these two objectives, taking into account the magnitude of the deviations and potentially different time horizons over which inflation and employment are projected to return to levels the FOMC judges to be consistent with its objectives.

2. Can you please describe the benefits provided by an explicit inflation target?

Announcing an explicit longer-term goal for inflation to the public, as the Federal Open Market Committee (FOMC) did in its January 25, 2012 statement, has important benefits. As the Committee noted in its statement, "the Committee seeks to explain its monetary policy decisions to the public as clearly as possible. Such clarity facilitates well-informed decision-making by households and businesses, reduces economic and financial uncertainty, increases the effectiveness of monetary policy, and enhances transparency and accountability, which are essential in a democratic society."

3. Can you describe why you chose to use the price index for personal consumption expenditures as the basis for your inflation target?

The PCE price index covers a wide range of household spending, and therefore serves as a reasonable measure of the cost of living faced by households over time. While the same is also true of the Consumer Price Index (CPI), which is an alternative measure of consumer prices, the PCE price index has some advantages, including the fact that the PCE measure employs a formula for aggregating prices that better accounts for the changes in consumers' purchasing patterns that occur when relative prices change.

- **What measurement biases (either upward or downward) are associated with the PCE?**

Any price statistic (or economic statistic more generally) will suffer from some amount of measurement error, and there are probably several sources of measurement error in the PCE price index that keep it from being a perfect measure of the cost of living. These sources of measurement error are mostly inherited from the disaggregated CPIs and Producer Price Indexes (PPIs) that the Bureau of Economic Analysis uses to construct the PCE price index, and include the treatment of changes in the quality of goods; the introduction of new goods; changes in the mix of retail outlets; and changes in buying patterns in response to changes in relative prices.

The Committee chose the PCE price index because it deals with these challenging measurement issues better than other available estimates of the cost of living. Price measurement remains an active area of academic research.

- **Are there times when the inflationary pressure from an overly accommodative monetary policy does not flow evenly down the goods and services channel, which is measured by the PCE price index, and the asset channel? Under such circumstances, would the PCE price index fail to reflect all of the price inflation that is occurring in the economy?**

It will generally be the case that monetary policy actions will have different effects on the prices of goods and services and on asset prices. (Indeed, policy actions can even have different effects across different goods and services, where this difference depends on things like the demand or cost structure of the industry producing the good or service.) In particular, prices for goods and services are *current* prices--that is, prices currently charged by producers for their output. Asset prices, by contrast, often incorporate expectations about *future* price movements--for example, the holder of a long-term bond will care about future inflation rates, while the price of a share of a company's stock will depend on the company's earnings prospects, which in turn depend on the prices that the company will have to pay for its inputs and the prices it will receive for its output in the future. The PCE price index attempts to measure current prices for a wide range of goods and services purchased by households, and does not seek to capture changes in asset prices. In formulating the stance of monetary policy, we pay close attention to a wide range of asset prices. We do this in order to ascertain the state of credit and financial markets as well as to understand and predict the evolution of the economy.

- **What supplemental measures of price inflation will the Federal Reserve use to make sure some price inflation is not escaping the PCE price index's net?**

In addition to the PCE price index, the Federal Reserve monitors (and will continue to monitor) a host of other price measures, including--but not limited to--the following.

- The consumer price index (CPI), which provides an alternative gauge of consumer price inflation.

- The producer price index (PPI), which reports wholesale prices for finished consumer and capital goods and which also reports separate price indexes for raw materials, semi-finished goods, and services.

- The price deflator for the Gross Domestic Product, which measures prices for domestically produced output (and which therefore includes prices for capital goods, government purchases, and exports in addition to consumption prices).

In addition, the Federal Reserve monitors a number of measures of labor costs, along with "core" inflation measures that exclude volatile prices such as those for food and energy (and which can therefore provide a better read of underlying inflation trends in real time). Finally, the Federal Reserve keeps track of various commodity price measures (such as oil, crop, and industrial materials prices).

The reason for monitoring so many price measures is that alternative measures include different types of goods and services; moreover, even price measures with roughly similar scopes can be calculated in different ways. We believe that considering many different price measures imparts a degree of robustness to our analysis that would be absent if we focused on just one index.

4. In your testimony, you said:

> ***To the fullest extent possible, federal tax and spending policy should increase incentives to work and save, encourage investment in workforce skills, stimulate private capital formation: promote research and development, and provide necessary public infrastructure.***

Economists widely acknowledge that the current federal income tax system is biased against saving and investment through the system's multiple layers of taxation of the same stream of income and the system's requirement that most business investments must be depreciated over time instead of expensed. The current system of worldwide taxation with foreign tax credits penalties U.S. multinational firms that are successfully selling American goods and services overseas.

- **Given these antigrowth biases of the present federal income tax system, if Congress were to replace the present individual and corporate income tax system with either (1) a Hall-Rabushka flat tax, or (2) a broad-based, single-rate consumption tax (such as the FAIR tax) with the initial rate set on a revenue-neutral basis, would such a fundamental tax reform achieve that objectives that you set in your testimony to increase the long:-term growth potential of the U.S. economy by increasing incentives to work and save, stimulating private capital formation, and promoting research and development?**

The decisions about the size and structure of our tax system have important consequences on economic efficiency, fairness, and the size of government. These decisions entail balancing many factors to implement policies that reflect our values and priorities as a nation. There is widespread agreement that our tax code is overly complicated and inefficient. A basic principle of public finance is that the economic efficiency of a tax system can usually be enhanced if tax rates can be lowered while at the same time the tax base is broadened in order to raise the same amount of revenue. Reforms that simplify the tax system and consequently lower effective tax rates could provide tangible economic benefits by reducing the resources necessary for households and businesses to comply with the tax code and by improving incentives to work and save.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

July 9, 2012

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter of May 17, 2012, regarding the reorganization by Deutsche Bank AG of its U.S. operations. My staff has prepared a response to each of your questions. Please let me know if you have any further questions.

Sincerely,

Attachment

1. Please provide an analysis of the impact of the reorganization of Deutsche Bank on the application of U.S. financial regulatory requirements to Deutsche Bank AG's U.S. operations.

As explained in greater detail below, Deutsche Bank did not derive any immediate regulatory capital advantage from the recent reorganization of its U.S. operations. The reorganization would allow part of Deutsche Bank's U.S. operations (the reorganized Taunus Corporation (Taunus)) to avoid a change in its regulatory capital requirements in 2015. Deutsche Bank's U.S. operations, including Taunus, remain subject to supervision and examination by the Federal Reserve and other federal functional regulators. In addition, Deutsche Bank, like other large U.S. and foreign banking organizations doing business in the United States, will be subject to enhanced prudential standards as required by section 165 of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act").

Deutsche Bank AG, Frankfurt, Germany, is a bank holding company that owns U.S. depository institutions, as well as a U.S. broker-dealer and other nonbank companies. Prior to its recent reorganization, Taunus, a wholly-owned subsidiary of Deutsche Bank, was the top-tier U.S. bank holding company in Deutsche Bank's organizational structure, controlling both the depository institution and non-bank subsidiaries of Deutsche Bank in the United States.

Deutsche Bank terminated Taunus' status as a bank holding company by reorganizing the ownership of its U.S. depository institutions. Pursuant to the reorganization, Deutsche Bank's U.S. bank subsidiary and immediate parent bank holding company are no longer subsidiaries of Taunus. Because Deutsche Bank AG has remained a bank holding company following the reorganization, Taunus, as a subsidiary of a bank holding company, remains subject to supervision and regulation by the Federal Reserve. Taunus also remains the top-tier U.S. parent company of most of Deutsche Bank's U.S. nonbank operations, including its broker-dealer subsidiary.

Following the reorganization, Deutsche Bank AG's remaining U.S. bank holding company and bank subsidiaries remain subject to minimum U.S. capital requirements. The most significant impact of the reorganization is that Taunus is no longer a bank holding company, and accordingly, is not required to calculate consolidated regulatory capital ratios under the Board's capital adequacy guidelines. Intermediate U.S. bank holding company subsidiaries of foreign banking organizations, such as Taunus, were eligible for an exemption from the Board's minimum capital requirements in certain circumstances. Under Supervision and Regulation Letter 01-01 (SR 01-01), as a general matter, an intermediate U.S. bank holding company that is owned or controlled by a foreign bank that is itself a financial holding company that the Board has determined to be well-capitalized and well-managed is not required to comply with the minimum requirements set forth in the Board's capital adequacy guidelines. A bank holding company relying on SR 01-01 is still required to calculate its regulatory capital ratios, and on a case-by-case basis, the Federal Reserve may require the bank holding company to meet a minimum capital requirement.

Section 171 of the Dodd-Frank Act (12 U.S.C. 5371) provides that intermediate bank holding company subsidiaries of foreign banking organizations that have relied on SR 01-01 must meet certain minimum capital requirements applicable to depository institutions beginning on July 21, 2015. By its terms, section 171 does not apply to a top-tier foreign banking organization, such as Deutsche Bank AG, which is itself subject to consolidated capital rules by its home country supervisor, the BaFin in Germany.

Before Deutsche Bank AG completed the reorganization of its U.S. operations, its then U.S.-domiciled bank holding company, Taunus, relied on SR 01-01. Accordingly, there was no immediate regulatory capital advantage to Taunus to de-register as a bank holding company. Without the reorganization, however, on and after July 21, 2015, Taunus would have become subject to minimum capital requirements in the United States.

2. Would non-U.S. BHCs obtain a competitive advantage over U.S. BHCs by restructuring their U.S. operations in this or some other fashion?

Generally, non-U.S. BHCs would not obtain a competitive advantage over U.S. BHCs by restructuring their U.S. operations. As a U.S.-domiciled nonbank subsidiary of a bank holding company, Taunus remains subject to the same activity limitations that it was subject to as an intermediate bank holding company. Further, Taunus and the individual U.S. nonbank entities controlled by Taunus continue to be subject to supervision and regulation by functional regulators and/or the Federal Reserve, consistent with the functional regulation and supervision of U.S. nonbank subsidiaries of U.S.-domiciled bank holding companies.

Deutsche Bank AG's remaining U.S. bank holding company also remains subject to supervision and regulation by the Federal Reserve, and both the intermediate bank holding company and bank subsidiaries remain subject to the same capital requirements applicable to U.S. bank holding companies and banks, as well as to supervision and regulation by the Federal banking agencies. Deutsche Bank's U.S. branches and agencies, Taunus, and Deutsche Bank's other U.S. nonbank operations also remain subject to supervision and regulation by the Federal Reserve and other functional regulators, and the Securities and Exchange Commission remains responsible for the supervision of the broker-dealer subsidiary. In addition, Deutsche Bank AG will be subject to enhanced prudential standards under section 165 of the Dodd-Frank Act. Finally, the Federal Reserve's existing program for the supervision of foreign banking organizations requires that the firm be subject to comprehensive consolidated supervision and monitoring by its home country supervisor, and that the foreign banking organization be able to serve as a source of strength for its U.S. operations.

3. Would section 117 of the Dodd-Frank Act, which provides for the continued application of certain prudential standards to firms that cease to be bank holding companies, apply to Deutsche Bank AG's U.S. subsidiary, Taunus?

Section 117 of the Dodd-Frank Act (12 U.S.C. 5317) provides that a bank holding company with $50 billion or more in total consolidated assets that received financial assistance under or participated in the Capital Purchase Program established under the Troubled Asset Relief Program (TARP) authorized by the Emergency Economic Stabilization Act of 2008 (EESA) remains subject to the Board's supervision and regulation as if the holding company had been designated by the FSOC as a nonbank financial company supervised by the Board even if the company ceases to be a bank holding company. "Financial Assistance" is not defined under the Dodd-Frank Act, nor is the term used in EESA. However, section 101 of EESA (12 U.S.C. 5211) authorized the Secretary of the Treasury to carry out the purposes of TARP by purchasing "troubled assets" from any financial institution, including equity and/or debt instruments in connection with the various programs implemented under TARP.

To the knowledge of the Federal Reserve, neither Deutsche Bank AG nor any of its subsidiaries issued equity or debt instruments to Treasury under the TARP Capital Purchase Program, or otherwise received financial assistance under EESA. Accordingly, Deutsche Bank AG does not appear to be subject to the requirements under section 117 of the Dodd-Frank Act.

BOARD OF GOVERNORS
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FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

August 13, 2012

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your comment requesting an extension of the comment period on the three notices of proposed rulemaking (NPRs) that would revise and replace the current capital rules. On August 8, 2012, the Federal Reserve, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency extended the comment period on the NPRs until October 22, 2012. As noted in the release, the comment period was extended to allow interested persons more time to understand, evaluate, and prepare comments on the proposals.

I hope you find this information helpful.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

August 22, 2012

The Honorable Darrell E. Issa
Chairman
Committee on Oversight
and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of August 1, 2012, concerning monetary policy. Attached, please find responses to the questions posed in your letter. Please let me know if I can be of further assistance.

I hope this information is helpful to you.

Sincerely,

Enclosure

cc: The Honorable Elijah Cummings

Attachment

1. Given the extraordinarily low interest rates across the entire Treasury yield curve, can further easing cure "the country's sluggish growth and stubbornly high unemployment rate"?

There is scope for further action by the Federal Reserve to ease financial conditions and strengthen the recovery. However, because short-term interest rates are already at very low levels, additional monetary accommodation requires the use of nontraditional policy tools, such as balance sheet actions or communication about the likely future course of policy. The expected benefits of these tools need to be balanced against their potential costs and risks when the Federal Open Market Committee ("FOMC" or "Committee") decides whether additional action is appropriate. Moreover, as I have noted many times in congressional testimony and elsewhere, monetary policy is not a panacea, and policymakers in many different arenas should carefully examine the steps they could take to foster a more vigorous recovery. That said, as noted in the July FOMC statement, the Committee will closely monitor incoming information on economic and financial market developments and will provide additional accommodation as needed to promote a stronger economic recovery and sustained improvement in labor market conditions in a context of price stability.

2. Is the $1.5 trillion of cash in excess of the banks' reserve requirements "far more than enough to meet any unsatisfied demand" for prudent loans?

The volume of excess reserves currently on the balance sheet of banks is a consequence of the Federal Reserve's asset purchases. By putting downward pressure on longer-term interest rates and contributing to a broader easing in financial market conditions, these asset purchases have helped to promote a stronger recovery than otherwise would have occurred, and to forestall the possibility of a slide into deflation.

3. Does the $500 billion of reserves "that remain on bank balance sheets" substantially help the U.S. economy?

The monetary accommodation provided by the Federal Reserve has substantially helped the U.S. economy by easing financial conditions relative to the conditions that would have prevailed otherwise. The easing in financial conditions has promoted economic activity through a variety of channels, including reducing the cost of capital, boosting the aggregate wealth of U.S. households, and improving the competitiveness of U.S. businesses in the global marketplace. In addition, the easing has helped the economy by preventing a dangerous slide into deflation.

4. Does $100 billion or so held by foreign central banks significantly help the U.S. economy?

Consistent with statute, the Federal Reserve provides a range of basic banking services to foreign official institutions, including deposit accounts and overnight placements of deposit balances in reverse repurchase agreements. In the current environment, foreign official institutions have elected to maintain substantial balances with the Federal Reserve. Although these balances do not directly affect the implementation of monetary policy, they are helpful in their role as a counterpart to a portion of the Federal Reserve's securities holdings. As noted in earlier answers, by putting downward pressure on longer-term interest rates and contributing to a broader easing in financial market conditions, the Federal Reserve's asset purchases have helped to promote a stronger recovery than otherwise would have occurred, and to forestall the possibility of a slide into deflation.

5. Given that monetary policy operates with long and variable lags, is the impact of Operation Twist complete at this time? If not, is it not premature to consider the next installation of quantitative easing?

The influence of the initial phase of the maturity extension program is still working its way through the economic system, and monetary policy changes typically take several quarters to achieve their full effect on economic activity. Of course, the extension of the maturity extension program--announced at the conclusion of the FOMC's June meeting--is still in the very early phases of having its effect on the economy. Because monetary policy actions operate with a lag, the stance of policy must necessarily be set in light of a forecast of the future performance of the economy. Policymakers aim to ensure that the stance of policy is appropriate, given the latest indicators regarding the state of the economy and the health of the financial system.

6. It appears that at the first sign of bad economic data, many market participants immediately begin calling for further easing. Does this reflect a learned behavior resulting from the Federal Reserve's prior apparent willingness to yield to market demands?

As noted in the preceding answer, monetary policy must necessarily be set in light of a forecast of the future performance of the economy. Market participants understand that basic fact; as a result, when new information becomes available regarding the future state of the economy, they draw their own inferences regarding the likely future course of policy. The Federal Reserve engages in its own independent analysis of incoming information and sets the stance of policy in a way that will best promote, in its judgment, the dual mandate given by the Congress--to promote price stability and maximum sustainable employment.

7. Does the Federal Reserve continue to maintain that it can raise interest rates sufficient to stop any inflation? Does political pressure limit the Federal Reserve's ability to sufficiently increase interest rates?

The Federal Reserve will be steadfast in its adherence to the task of promoting the dual mandate given by the Congress--to promote price stability and maximum sustainable employment. We are confident that we have the tools to normalize the stance of policy at the appropriate time as the strength of the recovery improves. The Federal Reserve's independence gives it the latitude which is crucially important to pursue its statutory mandate without consideration of political factors.

8. Will the Federal Reserve consider re-adopting the Taylor Rule approach to normalize monetary policy and prevent furthering risks to our economic stability in the long run?

The Federal Reserve will use the entire repertoire of analytical tools currently exercised by central banks around the world in pursuit of its dual mandate. As part of the policy-setting process, the Federal Reserve consults a range of statistical and econometric tools that have been useful over the years for assessing the appropriate stance of policy. One set of tools consists of rules in the form of the ones commonly called "Taylor Rules." It is worth noting that some variants of these simple rules suggest that the Federal Reserve should maintain a highly accommodative stance of policy for some time. The Federal Reserve also consults other simple rules and other empirical frameworks in order to enhance the robustness of its policy-setting process.

9. These statements are highly critical of recent Federal Reserve policies and constitute serious allegations. Does twisting the yield curve to push down long term interest rates obscure signals for potential economic growth, hide risks of inflation and alter returns on investment across the entire economy?

The FOMC sets the stance of policy with a firm eye on the dual mandate given by the Congress--namely, to promote price stability and maximum sustainable employment. In setting the stance of policy, the Committee is keenly attuned to the risks of inflation and other factors that could affect the future performance of the economy. The FOMC noted in its recent statement that it anticipates that inflation over the medium term will run at or below the rate that it judges most consistent with its dual mandate.

10. Does reduced interest income to savers resulting from quantitative easing act as a tax on savers? Is it a transfer payment to debtors, including the U.S. government? Please note that in your response to Question No. 14 of my letter last year, you responded that the Federal Reserve's actions are intended to benefit everyone.

It is in everyone's interest--savers and borrowers alike--to have an economy that is performing at the highest level of its capacity. The returns to long-term investment depend critically on the vitality of economic activity, the pace of inflation, and the stability of the financial system. The Federal Reserve is striving to promote these factors that bear so critically on economic well-being.

11. If the answer to Question No. 10 is that you believe that reduced interest income does act as a tax then will the Federal Reserve calculate the extent of such a tax so that the current Administration can accurately evaluate the revenue associated with this tax when considering further tax policy recommendations?

Please see my response for question 10.

12. Do you expect that if the financial institutions lose confidence in the Federal Reserve's ability or willingness to continue to manipulate long term interest rates downward, then long-term interest rates would rise quickly and substantially?

Maintaining credibility and confidence is critically important to the maintenance of the Federal Reserve's effectiveness. To that end, the Federal Reserve acts in ways that are transparent, predictable, and readily understandable in light of the dual mandate given by the Congress--to promote price stability and maximum sustainable employment.

13. Do you expect that lenders would tend to defer providing long term loans until after the market corrects, particularly if the loan under consideration would be considered relatively less liquid?

Lenders will determine the profitability of extending long-term loans based on a complex set of considerations, including not only the rate on the loan but also the cost of funds to the lender and the creditworthiness of the borrower. To the extent that lenders anticipate that the Federal Reserve will take the steps necessary to foster its dual mandate of maximum employment and stable prices, they will be more willing to provide credit to would-be borrowers.

14. Given the changes to the derivatives markets stemming from the Dodd-Frank Act and CFTC and SEC regulation, have the regulatory compliance costs associated with hedging transactions increased dramatically?

Most compliance costs associated with CFTC and SEC regulations relate to the business conduct and risk management standards of the dealer offering swap contracts to its clients rather than to the clients themselves. The agencies issuing these regulations would be in a better position to assess any compliance costs.

15. To the extent that Dodd-Frank requires trading on clearing exchanges or posting margin, does this create substantial cash flow challenges that may act as an additional barrier to hedging transactions?

Non-financial entities that use swaps for hedging business risks are exempt from clearing requirements that would require the posting of margin. Financial entities will be required to post initial and variation margin in their swap activities. Variation margin requirements that crystallize both gains and losses that have already occurred do not represent a drain on overall cash flow. Initial margin requirements which result in liquid resources being tied up for the duration of a swap contract may represent a cash flow challenge to some hedging transactions. At the same time, however, the provision of initial margin effectively secures the transaction in a way that may result in more favorable pricing terms that will at least in part offset the cash flow burden, making the net effect unclear.

16. Does the increased interest rate and credit risk that would result from an anticipated bond market correction, or, alternatively, the use of more expensive hedges to mitigate that risk, impose a substantial barrier to new loan issuance today?

Long-term interest rates embed expectations about the future course of short-term interest rates. To the extent that short-term rates are expected *today* to rise *in the future*, those expectations will be reflected in the rates offered on longer-term loans. Survey evidence indicates that one important impediment to increased lending today is lack of demand for new loans by qualified borrowers. By supporting the economic recovery, the Federal Reserve's asset purchases should help to ease loan supply and strengthen loan demand and so boost overall bank lending. While the strains in the housing market continue to hamper the growth of mortgage credit, bank loans to businesses have been expanding at a solid pace for several quarters.

17. As a result of the scenarios described in Question Nos. 13 through 16 above, do Federal Reserve policies create incentives to invest in Treasury bonds and avoid issuing riskier and less-liquid loans to businesses?

Federal Reserve policies currently in place have the effect of driving *down* prospective yields on very safe assets such as Treasury securities. If the yields and prices on alternative assets (aside from Treasuries) did not adjust, then those alternative assets would suddenly have become a relatively better deal in the financial marketplace. Accordingly, an important collateral effect of Federal Reserve policies is to encourage investors to shift out of Treasuries and into other asset classes. Through this process, the initial impulse of the Federal Reserve's move to increase its holdings of Treasury securities is transmitted into other assets.

18. Are financial institutions executing carry trades on U.S. Treasuries, wherein these institutions rely on short term repo transactions to fund investments in longer-dated Treasury notes and bonds?

A significant volume of Treasury securities are financed in repo markets. However, the bulk of this activity does not reflect investors engaged in traditional carry trades, which exploit differences between shorter-term and longer-term interest rates, but rather the funding of inventories by securities dealers as part of their normal market-making activities. Nonetheless, as evidenced during the crisis, maturity mismatches stemming from the repo financing of Treasuries can expose securities firms and other financial institutions to significant liquidity and funding risks. However, the volume of Treasuries financed in the repo market has declined since the crisis, and financial institutions have strengthened their capital and liquidity positions and so are better able to manage such risks.

The Federal Reserve and other federal regulators are actively working to further strengthen the risk management at financial firms through enhanced supervision and structural reforms.

19. Will the central banks be able to [buy on an emergency basis], given that they have already expanded their balance sheets?

Such situations are quite unlikely. That said, the Federal Reserve continues to have the necessary tools to deal with any foreseeable emergency situation.

20. Is a bond market correction likely to occur when the Federal Reserve reduces the size of its portfolio?

The Committee has indicated that it will normalize the size of its balance sheet through gradual pre-announced sales in order to ensure that markets have an appropriate amount of time to make adjustments. Nonetheless, yields on longer-term assets are lower now than they will be once the economy has returned to a cyclically more-normal position. The Federal Reserve will calibrate the stance of its policy, including the level of the federal funds rate and the size of its securities holdings, to the state of the economy, aiming always to promote the mandate given by the Congress--namely, to promote price stability and maximum sustainable employment.

21. Is Mr. Kessler's view on the impact of Staples and Google on our economy accurate?

The continual regeneration of the structure of the economy and the composition of business activity is a critical part of a capitalist economy. Without that regeneration, the productivity of the economy and the efficiency of capital allocation would be severely damaged.

22. Is productivity enhanced through creative destruction?

Productivity is enhanced by maintaining a flexible and dynamic economy that allows for the continual reallocation of capital toward its most efficient uses. Productivity is also affected by a range of government actions, including the characteristics of the tax code and the quality of education that society provides, to name just two.

BOARD OF GOVERNORS
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FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

DANIEL K. TARULLO
MEMBER OF THE BOARD

August 27, 2012

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the June 6, 2012 hearing before the Committee on Banking, Housing, and Urban Affairs. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Daniel K. Tarullo

Enclosure

<u>Questions for the Honorable Daniel K. Tarullo, Member, Board of Governors of the Federal Reserve System, from Chairman Johnson:</u>

1. You have stated that your agency is in the process of internally reviewing the transactions involved in the JP Morgan Chase & Co. (JPMorgan) trading loss, including identifying any "potential gaps within the firm's overall risk management." Mr. Curry has additionally stated that the Office of the Comptroller of the Currency (OCC) will be assessing how it can improve supervisory processes at the OCC. What gaps have you identified at the bank and as supervisors? How many staff members are ordinarily involved in supervising JPMorgan, and how many additional staff have you dedicated to this review?

JPMorgan Chase did not have appropriate reporting and risk limits in place within the CIO function to manage a large long/short credit derivatives portfolio. Furthermore, the limits that did exist were too large in magnitude in several instances, and sustained limit exceptions appear to have been tolerated. Independent control functions failed to properly challenge the CIO front office, and there were observed deficiencies in the firm's risk model governance. In other words, the behavior of the CIO represented a significant risk management failure.

As further discussed in the response to question 2, this matter highlights the challenge that supervisors face in identifying evolving risk profiles when a bank's internal risk reporting is deficient – this can also have the effect of rendering the firm itself unable to monitor and escalate emerging risks and vulnerabilities.

Regarding the staffing of the JPMC on-site team and CIO review, there are approximately forty-three staff members of the Federal Reserve Bank of New York on-site at the firm, including two analysts on rotations and exclusive of administrative support. There are approximately twenty staff members of the Reserve Bank involved in the CIO review, including those working on the review on a part-time basis. Fourteen of these twenty staff members are part of the on-site team and six are from other parts of the bank supervision function. In addition, senior members throughout the Federal Reserve's supervision function – who have responsibilities for JPMC broadly via the Federal Reserve's internal governance/committee structure – have been engaged on the CIO review on a part-time basis. Two staff members at the Board of Governors have dedicated significant time to the CIO review. The Federal Reserve staff has been working closely with the staff of the OCC in reviewing this matter.

2. Both you and Scott Alvarez, the Federal Reserve Board's General Counsel, made statements indicating that the Fed's supervisory abilities were limited because of flawed information from the bank and that "unless there is reporting on more specific products...our normal look at market information would not have revealed this...It has to come internally [from the institution]." What is the role of institution-generated information in your agency's assessment of an institution's risk management? Please describe the process and importance of how your agency independently verifies that any information a company provides is accurate.

The role of "institution-generated" information is vital to our assessment of an institution's risk management and financial position. Along with regulatory reports required by the Federal Reserve, internal risk information and reporting are among the primary sources by which the Federal Reserve monitors changes in the risk profiles of the institutions that it supervises. Supervisors conduct exams to assess the robustness of firms' internal systems and controls, and, based on these exams, perform transaction testing on a sample basis to validate the veracity of information received. Supervisors also compare information provided by firms to other sources when available - e.g., DTCC, other supervised institutions who serve as trading counterparties, etc. However, it is not possible for supervisors to independently source or verify all information required to gain insights into every position a large institution may take. Accordingly, the Federal Reserve and other supervisors must, to a greater or lesser degree, rely on the same information and reports that are provided to senior management so that it may monitor, assess, and address risks in the organization.

The recent trading losses at JPMorgan Chase have served to remind us of the fundamental importance of capital regulation in our prudential oversight of the largest financial firms. While robust bank capital requirements cannot alone ensure the safety and soundness of the financial system, they are central to appropriate financial regulation precisely because a company with adequate capital will be able to absorb a variety of losses, including those that are unexpected.

3. In a response before this Committee to a question on risk modeling, you suggested that the type of modeling that financial firms do to understand their risk of losses are not oriented toward tail risks. What do you mean by tail risk, and what are the expectations of the Federal Reserve Board for institutions to manage its tail risk? What should the role of modeling be in an institution's risk management?

Tail risk involves vulnerabilities to future states of the world that are very severe yet plausible. Given that such scenarios are rather unlikely, they are not generally considered or captured using traditional statistical techniques such as value-at-risk. Currently the largest institutions use a range of practices that attempt to capture and manage tail risk. My comment referred to the fact that, on balance, the industry is still relatively reliant on statistical risk measures and could do more to focus efforts on understanding and managing the potential for extreme outcomes.

With respect to the role of modeling within risk management, models are a necessary tool for managing a bank's market risk. However, trading limits around modeled losses should be complemented with limits on other metrics, such as balance sheet size and notional values of positions. Furthermore, an institution should not be overly reliant on a single risk metric. Rather, limits should exist for a variety a metrics, both at the individual business unit level and for the firm in the aggregate.

4. At the Committee's hearing where Jamie Dimon, Chairman of the Board, President and Chief Executive Officer of JPMorgan testified, Mr. Dimon indicated that while the company has a compensation clawback policy in place, that authority has not been exercised. For the largest bank holding company the Federal Reserve regulates, are you

aware of any bank exercising a clawback of compensation when major mistakes are made? Is it important for Boards of Directors of bank holding companies to utilize their clawback authority to deter other employees from making the same mistakes, and correct some of the misaligned pay incentives we saw leading up to the recent financial crisis?

Incentive compensation arrangements are critical tools in the successful management of financial institutions. However, these compensation arrangements can also provide employees with incentives to take imprudent risks that are inconsistent with the long-term health of a firm. Recognizing this risk, the federal banking agencies developed joint Guidance on Sound Incentive Compensation Policies ("Guidance") that is intended to assist banking organizations in designing and implementing incentive compensation arrangements and related policies and procedures that effectively consider potential risks and outcomes.

Firms use several tools in meeting this purpose including clawback clauses that operate to recover awards/monies previously paid to and received by employees. Clawback clauses are distinct from deferral arrangements, which operate to cancel awards or reduce payouts that have not been paid to the employee.

Historically, clawback clauses have been limited to cases of misconduct or significant financial restatements, while deferral arrangements have addressed a broader range of risk-taking behaviors. In recent years, in part in response to our Guidance and supervisory efforts, firms have broadened the scope and application of both clawback clauses and deferral arrangements to address a broader range of risk-taking behaviors. In our efforts to implement the Guidance, the FRB encourages firms to utilize these broader considerations in both clawback clauses and deferral arrangements to balance employees' risk-taking incentives. We agree that it is important for Boards of Directors of bank holding companies to utilize their clawback authority to deter other employees from making the same mistakes and to correct some of the misaligned pay incentives.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

October 17, 2012

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the March 1, 2012, hearing before the Committee on Banking, Housing, and Urban Affairs. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Johnson:

1. Before the House Financial Services Committee on February 29th, in a response to Representative Velazquez, you said that "There are some reasons why lending has fallen, which no doubt will improve over time. But I think it's still the case that we're a little bit too far on this side of the -- the pendulum has swung a little bit too far." To strengthen the economic recovery, I think it is important to find the right balance between safe and sound lending and making loans to credit worthy borrowers. What steps has the Fed taken to ensure the pendulum is swinging in the right direction? Is there anything else the Fed can do?

A critically important step taken by the Federal Reserve to support the economic recovery and improve the pace of lending has been to ease the stance of monetary policy. The easing has taken three main forms: First, we aggressively reduced the interest rate that we traditionally have relied on as our main policy tool. Since late 2008, that rate--known as the federal funds rate--has been essentially at its zero lower bound. Second, we have provided participants in financial markets much greater clarity about where we see the federal funds going in the future. In the statement released after its September meeting, the Federal Open Market Committee stated that "exceptionally low levels for the federal funds rate are likely to be warranted at least through mid-2015." Third, we have purchased longer-term Treasury and agency securities, with the goal of bringing down longer-term interest rates and improving conditions in markets in which many households and businesses borrow, including mortgage markets. In our judgment, these steps have caused financial and economic conditions to be much better than they otherwise would have been.

The Federal Reserve has also taken several actions using its supervisory authority to promote lending to creditworthy households and businesses:

- In conjunction with other federal banking regulators, we issued interagency policy statements to reinforce our position that, while maintaining appropriately prudent standards, lenders should do all they can to meet the legitimate needs of creditworthy borrowers (Interagency Statement on Meeting the Needs of Creditworthy Borrowers, November 12, 2008; Interagency Statement on Meeting the Credit Needs of Creditworthy Small Business Borrowers, February 5, 2010). We also issued guidance that encourages banks to work constructively with borrowers experiencing financial distress and provides specific examples of ways in which banks can prudently restructure commercial real estate transactions to the benefit of both banks and their borrowers (Supervision and Regulation Letter 09-4, "Prudent Commercial Real Estate Loan Workouts," October 30, 2009).

- To support these statements, we have held training sessions for lenders in order to promote awareness about both the credit environment and available lending guidance and resources (Addressing the Financing Needs of Small Businesses, July 12, 2010). And we have continued to train bank examiners to use a balanced approach to reviewing banks' credit policies and practices with respect to lending.

- Along with the other federal banking agencies, the Federal Reserve assisted the Treasury Department in implementing its Small Business Lending Fund program (SBLF), which was established by the Small Business Jobs Act of 2010. The SBLF is intended to facilitate new lending to creditworthy small business borrowers by providing affordable capital support to community banks.

- We have also looked into specific concerns raised about the examination process and its effect on banks' willingness to lend. For example, during 2011, we reviewed commercial real estate loan classification practices to assess whether examiners were properly implementing the interagency policy statement on workouts of commercial real estate loans. We analyzed documentation for more than 300 loans with identified weaknesses in six Federal Reserve Districts. We found that Federal Reserve examiners were appropriately implementing the guidance and were consistently taking a balanced approach in determining loan classifications. Moreover, the documentation we reviewed indicated that examiners were carefully considering the full range of information provided by bankers, including relevant mitigating factors, in determining the regulatory treatment for the loans. More recently, we investigated reports from some banks that examiners were inappropriately criticizing performing commercial loans. We found no evidence that Federal Reserve examiners were deviating from well-established supervisory practices and rules for classifying commercial loans.

- During 2012, we issued guidance to examiners stressing the importance of promptly upgrading a bank's supervisory rating when warranted by a sustainable improvement in its condition and risk management (Supervision and Regulation Letter 12-4, "Upgrades of Supervisory Ratings for Banking Organizations with $10 Billion or Less in Total Assets," March 1, 2012). Some analysis has indicated that, all else being equal, banks with lower supervisory ratings tend to lend less; prompt upgrades by supervisors when such upgrades are appropriate may thus ease an unnecessary constraint on lending.

The Federal Reserve continues to evaluate options to improve credit conditions and is committed to taking additional steps as needed to facilitate a balanced lending climate that ensures access to loans for credit worthy borrowers.

2. I have heard some concerns about the liquidity coverage ratios promulgated under the Basel III Committee and specifically the exclusion of agency debt from Level 1 assets. Some suggest that this might encourage U.S. financial institutions to bulk-up on Treasuries and cash. Also, there are concerns that small financial institutions will have to hold and buy Treasuries at much higher levels than they currently do, further impacting their ability to lend. What do you think about these concerns? And would this exclusion put U.S. institutions at a disadvantage to their European counterparts?

The Board, in conjunction with the other U.S. federal banking agencies, anticipates undertaking a domestic rulemaking in the United States based on the international liquidity standards established by the Basel Committee on Banking Supervision (BCBS) in 2010 (Basel III liquidity framework). The Basel III liquidity framework, like BCBS capital standards, applies to "internationally active" institutions. In the U.S., these are banking organizations with $250 billion or more in consolidated assets or $10 billion or more in foreign exposure. The Board has not determined that it is appropriate to apply the Basel III liquidity framework to community banking organizations.

The Board, along with the other U.S. federal banking agencies, carefully considers the appropriate scope of application when implementing any Basel standard or other prudential standard in the United States, including the impact of such standard on institutions of various sizes and complexity. In addition, the particular characteristics of U.S. markets and the U.S. banking system and the impact of new prudential standards on relevant markets, including competitive factors, are important concerns the Board takes into account when developing a rulemaking. In this respect, the Board would carefully consider the appropriate categorization of assets when implementing the Basel III liquidity framework.

Any proposal the Board puts forth to implement the Basel III liquidity standards would be subject to a notice and comment process. We will carefully consider your comments and any others we receive regarding these proposals.

3. As regulators implement the Wall Street Reform Act -- which I believe is critical to returning our economy to sustainable growth -- I've heard a wide range of concerns about the proposed Volcker Rule. Specifically, once the rule is finalized, which agency will take the lead to interpret, supervise, and ultimately enforce the final rule?

Section 619(b)(2) of the Dodd-Frank Act itself divides authority for developing and adopting regulations to implement its prohibitions and restrictions between the Federal Reserve, the OCC, FDIC, SEC, and CFTC based on the type of entities for which each agency is explicitly charged or is the primary financial regulatory agency. The statute also requires these agencies, in developing and issuing implementing rules, to consult and coordinate with each other for the purposes of assuring that such rules are comparable and to provide for consistent application and implementation. Under the statutory framework, the CFTC is the primary federal regulatory agency with respect to a swap dealer and the SEC is the primary financial regulatory agency with respect to a security-based swap dealer; the Federal Reserve is explicitly charged with issuing regulations with respect to companies that control an insured depository institution, including bank holding companies. The OCC, Federal Reserve, and FDIC must jointly issue rules to implement section 619 with respect to insured depository institutions.

To enhance uniformity in both rules that implement section 619 and administration of the requirements of section 619, the Federal Reserve, OCC, FDIC, SEC and CFTC have been regularly consulting with each other in the development of rules and policies that implement section 619. The rule proposed by the agencies to implement section 619 contemplates that firms will develop and adopt a single, enterprise-wide compliance program and that the agencies would strive for uniform enforcement of section 619.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

December 14, 2012

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in response to your letter of October 16, 2012, concerning the results of the Office of Inspector Generals' audit of the small community bank examination process. As you note in your letter, the results of the audits revealed a number of positive indicators.

The August 2012 audit report prepared by the Board of Governors of the Federal Reserve System's Inspector General ("OIG") concluded that our examination oversight and structure is designed to ensure consistency of state member bank examinations. The audit also found that, on average, Reserve Banks are issuing examination reports within the time frames required by the Board's *Commercial Bank Examination Manual*. The OIG report included one recommendation to improve the reliability of the data in the National Examination Data System database, which I discuss below.

The OIG recommended that we improve the controls for verifying the accuracy of the data entered into the National Examination Data System database. We agree with the recommendation. Beginning this year we have incorporated a review of our data maintenance practices within the Federal Reserve System into our Reserve Bank Operations Review program. As part of that initiative, we will be enhancing our management reporting that pertains to data quality. We intend to use these measures on an ongoing basis within the Reserve Banks to improve our quality assurance measures and provide increased reporting to management. These new initiatives are in addition to our ongoing data monitoring in which we continually modify and strengthen our data editing processes.

You also asked that we discuss any other planned enhancements to supervisory processes for community banks. In recent years, the Board has taken a number of steps to enhance its communication with community banks to ensure that their views on the supervisory process are considered. In 2009, the Board established a subcommittee to focus on supervisory approaches to community and regional banks. A primary goal of the subcommittee is to ensure that the development of supervisory guidance is informed by an understanding of the unique characteristics of community and regional banks and consideration of the potential for excessive burden and adverse effects on lending. In addition, in 2010, the Board established the Community Depository Institutions Advisory Council to provide input on the economy, lending conditions, and other issues of interest to community banks. Members include representatives of banks, thrift institutions, and credit unions.

Feedback from community bankers has consistently pointed to increasing regulatory burden as a concern. Last year, the Board's subcommittee on community and regional banks asked that a series of initiatives be developed to clarify regulatory expectations, alleviate burdens where possible, and reduce the potential that supervisory actions could curtail lending. In response, Federal Reserve staff initiated a number of projects to enhance supervision practices and alleviate some of the burdens that have been of concern.

Several of these projects aimed to revise or clarify guidance. We issued guidance that reiterated to our examiners when supervisory rating upgrades may be considered for community banks recovering from the effects of the recent crisis.[1] We also issued guidance to enhance the transparency and consistency of assessments of the adequacy of banks' allowances for loan and lease losses, and to clarify capital planning expectations for community banks.[2] Other projects are intended to improve our examination processes by reviewing exam preparation procedures to ensure that report findings are clearly communicated and fully consistent with information provided to bankers during exit meetings, developing and adopting common technology tools across the System to improve efficiency and potentially reduce burden on supervised companies, and evaluating applications-processing procedures to enhance transparency and identify opportunities for streamlining.[3]

With regard to appeals, you asked for feedback on why the formal usage of the appeals process is low and any plans by the Federal Reserve to improve awareness of the appeals process by regulated institutions. We agree that institutions prefer to work out issues informally with their regulators, which contributes to the low volume. In addition,

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[1] On March 1, 2012, the Federal Reserve issued guidance describing the factors that examiners are to consider when evaluating whether to upgrade an institution's supervisory ratings. The guidance (SR letter 12-4) is accessible at: http://www.federalreserve.gov/bankinforeg/srletters/sr1204.pdf.

[2] On May 14, 2012, the Federal Reserve issued guidance on stress testing requirements that clarified that it does *not* apply to community banking organizations, defined as institutions supervised by the Federal Reserve with consolidated assets of less than $10 billion. The guidance (SR letter 12-7) is accessible at: http://www.federalreserve.gov/bankinforeg/srletters/sr1207.htm.

[3] On July 11, 2012, the Federal Reserve established an optional process for community banks to request advance guidance and feedback from the Federal Reserve prior to filing a formal application, when considering bank and nonbank acquisitions, and other types of proposals. The guidance (SR letter 1-12 CA12-11) is accessible at: http://www.federalreserve.gov/bankinforeg/srletters/sr1212.pdf.

the Board's Ombudsman receives a broad range of inquiries from supervised institutions that serves to address concerns or problems outside of the appeal mechanism.

You also asked if we routinely ensure that institutions are made aware of the ability to appeal at the examination exit meeting. This is not currently a required practice, and communications are handled individually by Reserve Banks. That said, the Board's Ombudsman publishes information about the Federal Reserve's appeals policy on the Board's public website and works very hard to inform supervised institutions of the policy requirements and deadlines for filing an appeal. In a small number of instances where an appeal deadline would not have been met, the Federal Reserve worked with the supervised institution to provide an extension for the filing deadline. We are in the process of evaluating ways to improve our overall communications on the appeals process, and there are policy revisions under consideration to increase transparency and establish greater consistency across Reserve Banks with regard to the consideration of appeals.

I hope this information is helpful to you.

Sincerely,

Office of the Comptroller of the Currency
Board of Governors of the Federal Reserve System

March 1, 2013

The Honorable Darrell E. Issa
Chairman
Committee on Oversight and Government Reform
United States House of Representatives
Washington, DC 20515-6143

Dear Chairman Issa:

Thank you for your letter dated January 4, 2013, regarding the Independent Foreclosure Review (IFR) requirement of the April 2011 Consent Orders entered into with the major mortgage servicers.

As you know, the Office of the Comptroller of the Currency (OCC) and the Federal Reserve Board (FRB) announced an agreement in principle last month with 13 servicers that will bring the IFR to a resolution and distribute $3.6 billion in payments directly to eligible borrowers. The agreement requires the largest cash payout directly to borrowers of any foreclosure-related federal regulatory action to date. In addition, it requires participating servicers to provide $5.7 billion in other assistance to borrowers. The resolution of the IFR marks an important milestone and, combined with the other corrective measures in our Consent Orders, a major step toward improving mortgage servicing in this country.

As a result of the agreement, approximately 4.2 million eligible borrowers at the participating servicers, which include the "in-scope" borrowers under the IFR for the 13 servicers, will receive some direct compensation and may benefit from the billions in additional assistance that we are requiring from the servicers.

In your January 4th letter, you had requested that the OCC and FRB provide a staff briefing prior to the conclusion of the reported settlement agreement. This letter was received on Friday during a period of intensive negotiations with the servicers. The OCC and FRB reached an agreement in principle with several of the participating servicers on Monday morning, January 7, 2013. Later that day, the OCC and FRB briefed majority and minority staff of the Oversight and Government Reform Committee to provide details regarding the agreement and to answer questions from Committee staff. We hope that your staff found the information we provided timely and beneficial.

We believe the agreement provides significant benefit to consumers and ensures that a sizeable number of borrowers receive compensation more quickly than would have occurred under the IFR.

We thank you for your interest in the matter.

Sincerely,

Thomas J. Curry
Comptroller of the Currency

Ben S. Bernanke
Chairman, Board of Governors
of the Federal Reserve System

Office of the Comptroller of the Currency
Board of Governors of the Federal Reserve System

March 1, 2013

The Honorable Elijah Cummings
Ranking Member
Committee on Oversight and Government Reform
United States House of Representatives
Washington, DC 20515-6143

Dear Ranking Member Cummings:

Thank you for your letter dated January 4, 2013, regarding the Independent Foreclosure Review (IFR) requirement of the April 2011 Consent Orders entered into with the major mortgage servicers.

As you know, the Office of the Comptroller of the Currency (OCC) and the Federal Reserve Board (FRB) announced an agreement in principle last month with 13 servicers that will bring the IFR to a resolution and distribute $3.6 billion in payments directly to eligible borrowers. The agreement requires the largest cash payout directly to borrowers of any foreclosure-related federal regulatory action to date. In addition, it requires participating servicers to provide $5.7 billion in other assistance to borrowers. The resolution of the IFR marks an important milestone and, combined with the other corrective measures in our Consent Orders, a major step toward improving mortgage servicing in this country.

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We believe the agreement provides significant benefit to consumers and ensures that a sizeable number of borrowers receive compensation more quickly than would have occurred under the IFR.

We thank you for your interest in the matter.

Sincerely,

Thomas J. Curry
Comptroller of the Currency

Ben S. Bernanke
Chairman, Board of Governors
of the Federal Reserve System

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 5, 2013

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United State Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the July 17, 2012, hearing before the Committee on Banking, Housing, and Urban Affairs. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

__Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Chairman Johnson:__

2. Critics of Wall Street Reform claim that the law is holding back the economic recovery. What has had a greater impact on high unemployment today – the Wall Street Reform Act or the ineffective regulations that led to the financial crisis? Can you offer examples of how the financial system is now safer as a result of policies that the Fed has implemented pursuant to the Wall Street Reform Act?

The recent financial crisis demonstrated that some financial companies had grown so large, leveraged, and interconnected, that their failure could pose a threat to overall financial stability. The crisis also exposed significant weaknesses in banking organizations' internal management and stress testing practices, as well as deficiencies in the regulators' toolkit to address them. In addition, the amount of high-quality capital held by banking organizations globally was insufficient to absorb losses that banking organizations experienced during that period. Insufficient liquidity and associated risk management practices also directly contributed to the failure or near failure of many companies and exacerbated the crisis. To address these and other weaknesses, the Federal Reserve has taken various steps to improve the regulation and supervision of individual firms to enhance their resiliency in times of stress, as well as the resiliency of the financial system as a whole. These measures have been taken pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), as well as the Federal Reserve's authority as the supervisor of various financial institutions.

For example, in January 2012, the Board published for comment proposed rules that would implement the enhanced prudential standards and early remediation requirements of sections 165 and 166 of the Dodd-Frank Act. The proposal generally applies to all U.S. bank holding companies with total consolidated assets of $50 billion or more and nonbank financial companies that the Financial Stability Oversight Council has designated for supervision by the Board (covered companies). The proposal addresses issues such as capital, liquidity, single counterparty credit limits, stress testing, risk management, and early remediation requirements. The Board intends to supplement the enhanced risk-based capital and leverage requirements proposed in January 2012 with a subsequent proposal to implement a quantitative risk-based capital surcharge for covered companies or a subset of covered companies. To further implement the provisions of sections 165 and 166 of the Dodd-Frank Act, the Board issued proposed rules in December 2012 to strengthen the oversight of the U.S. operations of large foreign banking organizations, including measures regarding early remediation, capital stress testing, overall risk management, and enhanced risk-based and leverage requirements for these organizations. These proposals are aimed at strengthening the regulatory framework to address the risks that large, interconnected financial institutions pose to U.S. financial stability.

In addition, in June 2012, the Board and the other federal banking agencies issued three notices of proposed rulemaking that would effectively result in increasing the quantity and quality of capital held by banking organizations. The proposed rules would introduce a new common equity tier 1 capital requirement, raise existing minimum tier 1 capital requirements, and implement a capital conservation buffer to increase the resiliency of all banking organizations during times of economic and financial stress. The proposed rules would also be incorporated into the enhanced standards for covered companies discussed above. These measures are designed to help address the shortcomings in the international capital standards exposed during the crisis and build additional capacity into the banking system to absorb losses in times of future market and economic stress. The proposals also would enhance the risk-sensitivity of the agencies' capital requirements by revising the calculation of risk-weighted assets for certain exposures to address weaknesses identified in the capital framework in recent years.

The Federal Reserve has also been working to embed its supervisory practices within a broader macroprudential framework that focuses not only on the conditions of individual firms but also on the health of the financial system as a whole. Even before the enactment of the Dodd-Frank Act, the Federal Reserve had begun to overhaul its approach to supervision to better achieve both microprudential and macroprudential goals. For example, in 2009, the Federal Reserve created the Large Institution Supervision Coordinating Committee, which oversees the supervision of the most systemically important financial firms. Another important example of the Federal Reserve's strengthened, cross-firm supervisory approach is the Comprehensive Capital Analysis and Review, through which the Federal Reserve assesses the internal capital planning processes of the largest bank holding companies and evaluates their capital adequacy under a very severe hypothetical stress scenario. Largely as a result of these efforts and the Federal Reserve's action during the crisis, the aggregate amount of tier 1 common for the 19 largest bank holding companies increased by more than $300 billion between 2009 and 2012. The Federal Reserve also routinely uses macroprudential tools in analyzing the potential consequences of significant economic events for the individual firms it supervises and for the financial system as a whole.

The proposed enhanced prudential standards and regulatory capital requirements, as well as other additional steps that the Federal Reserve has taken in response to the crisis and pursuant to the Dodd-Frank Act, are designed to strengthen the banking system and the financial system as a whole by strengthening regulatory requirements and the supervision of the most systemically important financial firms.

3. Do you think that the policy changes announced at the recent E.U. summit go far enough toward solving the European financial crisis? How will U.S. banks be affected by the proposed Eurozone banking union?

At their late June summit, European leaders agreed on a number of measures to address the financial crisis. These included, among other steps, establishing a single supervisory mechanism for European banks and, once such a mechanism is in place, enabling the European Stability Mechanism (ESM), the permanent euro-area backstop facility, to recapitalize banks directly. Subsequently, European leaders have also made progress in enhancing regional policy support for vulnerable euro-area countries. The European Central Bank (ECB) has announced a program that would enable it to purchase sovereign debt in order to address market distortions and contain bond yields. Countries benefitting from ECB support will have to enter into assistance programs and commit to achieving appropriate conditions prior to ECB assistance.

These developments have helped ease stresses in European financial markets and hold out the hope of further progress toward resolution of the crisis. However, European leaders must follow through on their commitments by agreeing to specific, detailed plans and then implementing them. Market participants have reacted favorably to announcements of the ECB's new bond purchase framework, but more work must be done to operationalize this strategy. By the same token, further agreements among European authorities will be required before the single supervisory mechanism for banks can be put in place. Additionally, if a full resolution of Europe's difficulties is to be achieved, these regional initiatives must be complemented by further actions in the vulnerable countries themselves to improve public finances, strengthen banking systems, and promote pro-growth structural reforms.

Euro-area banks currently are supervised by 17 national supervisors. Establishing a single supervisory mechanism should help to streamline supervisory compliance costs, further the integration of the European financial market and make it easier for international banks, including U.S. banks, to conduct business within and across euro area countries. Moreover, tougher and more consistent bank supervision in Europe should reduce the frequency and severity of financial distress of European banks and hence contribute to global financial stability.

4. What are the barriers preventing homeowners who are current on their mortgage payments from refinancing? Could legislation address those barriers, and how would such legislation help with economic recovery?

Low credit scores or levels of home equity make it difficult for many borrowers to refinance their mortgages. Initiatives such as the Home Affordable Refinance Program (HARP) and the streamlined refinance program offered by the Federal Housing Administration (FHA) have reduced or eliminated these barriers for many borrowers with loans guaranteed or insured by Fannie Mae, Freddie Mac, or FHA. However, borrowers whose loans are held in bank portfolios or private-label mortgage-backed securities, as well as borrowers who have already refinanced through HARP, often face significant obstacles to refinancing if their credit scores or home equity fall below certain levels. The *Monetary Policy Report* submitted to the Congress on July 17, 2012, and the staff housing paper sent to the Committee on Banking, Housing, and Urban Affairs on January 4, 2012, provide further discussion of these issues.

The Congress could facilitate refinancing for these borrowers by legislating changes to HARP or the FHA refinancing program or by creating a new refinancing program. In designing such legislation, the Congress would have to consider how to balance the interests of borrowers, taxpayers, and investors. A refinancing program might provide a small boost to aggregate consumer spending, decrease the incidence of mortgage default, and improve consumer confidence, but the size of such effects is difficult to predict.

5. The Fed is proposing a set of rules implementing Sections 165 and 171 of the Wall Street Reform Act and the Basel III agreements. These rules would apply to insurance companies organized as thrift holding companies or designated as nonbank financial SIFIs. Did the Fed consult with the Federal Insurance Office (FIO)? Do you anticipate that you will

consult regularly with FIO as you engage in rulemakings that impact insurance companies? What else is the Fed doing to develop its insurance expertise? As part of these rulemakings, what steps did the Fed take to analyze the differences between banks and insurance companies and to incorporate those findings into the rulemakings? Do you think that the recent actions and rulemakings of the Fed appropriately recognize the differences between insurance companies and banks?

Board staff has consulted with the Federal Insurance Office on issues related to capital requirements, stress testing, and insurance matters generally. Board staff also met with industry representatives and with the National Association of Insurance Commissioners on several occasions to discuss insurance-related issues. The Board also sought public comment on capital and accounting issues as well as on regulatory and supervisory requirements for savings and loan holding companies when it published a notice of intent regarding these institutions on April 22, 2011. The Board expects to continue this practice of consultations with other regulators and standard-setters, as well as the industry and the public, to further the Board's expertise and to gain additional perspectives on the regulation and supervision of insurance companies as appropriate.

In June 2012, the Board and the other federal banking agencies proposed to revise risk-based and leverage capital requirements in three notices of proposed rulemaking. In proposing the regulatory capital requirements, the Board sought to meet several legal requirements and policy goals. Section 171 of the Dodd-Frank Act, requires that the Board establish minimum consolidated risk-based and leverage capital requirements for savings and loan holding companies that are not less than the "generally applicable" risk-based and leverage capital requirements for insured depository institutions. Accordingly, the proposals include consistent treatment for similar types of exposures, whether held at a depository institution or a savings and loan holding company, as well as provide flexibility for certain insurance-related assets that generally are not held by depository institutions. For example, the proposals include specific risk-weights for policy loans and non-guaranteed separate accounts, which are typically held by insurance companies but not depository institutions.

The Board has received numerous comments from the public on the proposals with regard to the application of the proposed rules to insurance-centric savings and loan holding companies. The Board will carefully consider all the comments received while finalizing the regulatory capital rules.

6. The recent losses at JP Morgan have renewed focus on risk management practices. Additionally, JP Morgan has stated that the firm changed its risk models and trading positions in anticipation of new capital requirements under Basel III. Please provide your comments on how new capital requirements will strengthen the financial system, as well as any potential risks that may arise from these new capital standards. If the new standards encourage institutions to shift their activities into other risky activities, or have other unintended consequences, please comment on how you plan to address those shifts. In your

answer, please also include any expectations you may have regarding institutional risk management and the Fed's supervision of risk management at institutions.

In June 2012, in addition to issuing the proposed rules described in the answer to question two above, the federal banking agencies approved a final rule to implement changes to the market risk capital rule that applies to banking organizations with significant trading activity.[1] The changes are primarily designed to ensure appropriate capital is held against trading positions, reduce the procyclicality of the capital requirements, and enhance the measure of credit risk of traded positions. Thus, the rule is expected to help ensure that banking organizations maintain stronger capital positions and improve the resilience of the U.S. banking system in times of stress, thus contributing to the overall health of the U.S. economy.

There are risks that banking organizations may alter their practices and engage in different activities as a result of new and proposed capital rules. However, the Federal Reserve has a comprehensive supervisory framework and regulations beyond the regulatory capital rules to help address these risks. For example, a supervisory assessment of banking organizations' capital adequacy takes into account a banking organization's internal processes for capital adequacy, as well as risks and other factors that can affect the banking organization's financial condition, including the level and severity of problem assets and the organization's exposure to operational and interest rate risk.[2] For internationally-active institutions, the supervisory review process for capital adequacy (the so-called Pillar 2 approach based on the international Basel II standards) is even more rigorous and comprehensive as it emphasizes the need for these institutions to look beyond the regulatory capital standards and to help institution's ensure that they maintain adequate capital levels in relation to their risk profiles. Further, for the largest U.S. bank holding companies, the Federal Reserve has established regulatory requirements for regular stress testing and capital planning and conducts supervisory assessments of the capital planning processes and capital adequacy of these firms.

The Federal Reserve has also put forth other guidance for banking organizations related to risk management in Supervision and Regulation Letters. For example, the federal banking agencies finalized stress testing guidance in May 2012 for banking organizations with total consolidated assets of more than $10 billion that focuses on the importance of banking organizations conducting forward-looking assessments of their risks to better equip them to address a range of adverse outcomes. The supervisory guidance on model risk management, issued in April 2011, describes key aspects of the effective model risk management, as well as key principles of sound governance and internal controls governing the use of models. These and other supervisory guidance and regulations are designed to improve banking organizations' risk management practices, as well as the supervisory toolkit to enforce robust procedures and sound risk management so that banking organizations manage their risks effectively and hold adequate capital commensurate with their risk profiles.

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[1] 77 FR 53060.

[2] See, for example, SR 09-04, "Applying Supervisory Guidance and Regulations on the Payment of Dividends, Stock Redemptions, and Stock Repurchases at Bank Holding Companies"; see also June 2012 proposed regulatory capital rule, 77 FR 52792).

Office of the Comptroller of the Currency
Board of Governors of the Federal Reserve System
Federal Deposit Insurance Corporation
Securities and Exchange Commission
Commodity Futures Trading Commission

March 18, 2013

The Honorable Spencer Bachus
Chairman Emeritus
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

The Honorable Jeb Hensarling
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Chairmen Bachus and Hensarling:

This correspondence is in response to your letter regarding section 619 of the *Dodd-Frank Wall Street Reform and Consumer Protection Act*. As you know, the Board of Governors of the Federal Reserve System, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, and the Commodity Futures Trading Commission (collectively, "the Agencies") previously proposed rules to implement section 619.

The proposed rules invited comment on a multi-faceted regulatory framework to implement the statute consistent with the statutory language. In addition, the Agencies invited comments on the potential economic impacts of the proposed rule and posed a number of questions seeking information on the costs and benefits associated with each aspect of the proposal, as well as on any significant alternatives that would minimize the burdens or amplify the benefits of the proposal. The Agencies also encouraged commenters to provide quantitative information and data about the impact of the proposal not only on entities subject to section 619, but also on their clients, customers, and counterparties, specific markets or asset classes, and any other entities potentially affected by the proposed rule, including non-financial small and mid-size businesses. The Agencies received more than 18,000 comments regarding the proposed implementing rules and are carefully considering these comments as we work toward development of final rules.

As noted in your letter, by its terms, section 619 became effective on July 21, 2012. As provided by section 619, the Federal Reserve, in consultation with the other Agencies, issued rules governing the period for conforming with section 619 ("Conformance Rule") and, along with the other Agencies, indicated that banking entities are expected to fully conform their activities to the statutory provisions and any final agency rules by the end of the statutory compliance period, which is July 21, 2014 unless extended by the Federal Reserve. The Federal Reserve also explained that it would revisit the Conformance Rule, as necessary, in light of the requirements of the final rules implementing the substantive provisions of section 619. In doing so, the Federal Reserve will carefully consider your suggestions to extend the conformance period.

The Agencies continue to devote significant time and resources to reviewing the comments submitted during the rulemaking process and developing final rules consistent with the statutory language. To ensure, to the extent possible, that the rules implementing section 619 are comparable and provide for consistent application, the Agencies have been regularly consulting with each other and will continue to do so.

We will carefully consider the issues you note, including the economic impact of any implementing rules, as we continue to develop final rules consistent with the requirements of section 619.

Sincerely,

Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System

Martin J. Gruenberg
Chairman
Federal Deposit Insurance Corporation

Thomas J. Curry
Comptroller of the Currency
Office of the Comptroller of the Currency

Elisse B. Walter
Chairman
Securities and Exchange Commission

Gary Gensler
Chairman
Commodity Futures Trading Commission

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

SANDRA F. BRAUNSTEIN
DIRECTOR
DIVISION OF CONSUMER
AND COMMUNITY AFFAIRS

CA 13-7

April 25, 2013

TO THE OFFICER IN CHARGE OF SUPERVISION AT EACH FEDERAL RESERVE BANK AND TO STATE MEMBER BANKS:

SUBJECT: Statement on Deposit Advance Products

Applicability to Community Banking Organizations: This guidance applies to all state member banks, including those with $10 billion or less in consolidated assets.

The Federal Reserve is issuing the attached policy statement, *Statement on Deposit Advance Products*, to emphasize to state member banks the significant consumer risks associated with deposit advance products in light of the Consumer Financial Protection Bureau's April 24, 2013 white paper entitled "Payday Loans and Deposit Advance Products: A White Paper of Initial Data Findings."[1] State member banks are expected to consider the risks associated with deposit advance products, including potential consumer harm and the potential for elevated compliance risk, when designing and offering such products.

Federal Reserve Banks are asked to distribute this letter and the accompanying guidance to state member banks, as well as to supervisory and examination staff. Questions on the attached guidance should be directed to Carol Evans, Assistant Director, at (202) 452-2051; or Amy Henderson, Managing Counsel, at (202) 452-3140. In addition, questions may be sent via the Board's public website.[2]

Sincerely,

Attachment: Statement on Deposit Advance Products

[1] http://files.consumerfinance.gov/f/201304_cfpb_payday-dap-whitepaper.pdf

[2] See http://www.federalreserve.gov/apps/contactus/feedback.aspx.

STATEMENT ON DEPOSIT ADVANCE PRODUCTS

The Board of Governors of the Federal Reserve System (Board) is issuing this statement to emphasize to state member banks the significant consumer risks associated with deposit advance products in light of the Consumer Financial Protection Bureau's (CFPB) April 24, 2013 white paper entitled "Payday Loans and Deposit Advance Products: A White Paper of Initial Data Findings."[1]

Background

A deposit advance product is a type of short-term, small-dollar credit product offered by depository institutions to consumers with a deposit account or reloadable prepaid card. The depository institution allows a customer to obtain an advance on expected future deposits. Such advances and any associated fees are generally required to be repaid when the next deposit occurs.

The CFPB white paper sets forth the CFPB's initial data findings regarding the costs and patterns of deposit advance product usage by consumers. In particular, the CFPB white paper raises concerns about the significant costs associated with sustained repeat usage of deposit advance products. On April 25, 2013, the CFPB issued a press release indicating that it sees significant consumer risks and that the CFPB expects to use its full authorities to provide protections to consumers once it completes further analysis of the short-term, high-cost loan market later this spring.

Potential Risks Associated with Deposit Advance Products

The Board encourages state member banks to respond to their customers' small-dollar credit needs with products that meet this demand in a responsible manner. However, state member banks should take into consideration the significant risks associated with deposit advance products, including potential consumer harm and the potential for elevated compliance risk when designing such products.

In designing and offering deposit advance products, state member banks must comply with all applicable federal laws and regulations, including but not limited to requirements under the Truth in Lending Act (TILA), the Electronic Fund Transfer Act (EFTA), the Truth in Savings Act (TISA), and the Equal Credit Opportunity Act (ECOA). In addition to these laws, institutions must act in accordance with Section 5 of the FTC Act, which prohibits unfair or deceptive acts and practices (UDAP), and Section 1036 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which prohibits unfair, deceptive, or abusive acts or practices. Depository institutions must also comply with state laws and regulations.

The prohibition against UDAP applies broadly to every stage of the deposit advance product, including marketing, servicing, and collections. The Board expects institutions to analyze the legal risks of any deposit advance products before offering such products. The Board expects Federal Reserve examiners to thoroughly review any deposit advance products offered by supervised institutions for compliance with Section 5 of the FTC Act, as well as other applicable laws.

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[1] http://files.consumerfinance.gov/f/201304_cfpb_payday-dap-whitepaper.pdf

State member banks that rely upon outside vendors to offer deposit advance products remain responsible for compliance with applicable laws and regulations. Inadequate management or oversight of third-party vendors by depository institutions presents additional consumer and compliance risks. In addition, fee sharing or similar arrangements that create an incentive for third party vendors to increase product usage create particular risk in connection with deposit advance products given that they may lead vendors to encourage inappropriate sustained usage of such products by consumers. Accordingly, the Board expects institutions to develop procedures to closely monitor vendor practices and outcomes. State member banks should mitigate and manage such risks, consistent with applicable regulations and guidance, in connection with the design and marketing of any deposit advance products that they might offer.

08-5133

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

April 15, 2008

The Honorable Max Baucus
Chairman
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in response to your letter of March 26, 2008, requesting that the Federal Reserve Board and Federal Reserve Bank of New York provide certain information and answers to preliminary questions regarding a financing transaction by the Federal Reserve Bank of New York in connection with the acquisition of The Bear Stearns Companies, Inc. by JPMorgan Chase & Co. The responses on behalf of the Federal Reserve to questions 1, 2, and 4 of your letter are enclosed. The New York Reserve Bank is also providing these responses separately. The responses on behalf of the Federal Reserve to the remaining questions were provided to you by letter dated April 3, 2008.

Sincerely,

(Signed) Laricke Blanchard

Laricke Blanchard
Assistant to the Board

For files
P. Elliff

Enclosure
Identical letter also sent to Ranking Member Charles E. Grassley.

Federal Reserve responses to requests made by the Senate Committee on Finance by letter dated March 26, 2008, concerning the financing transaction in connection with the acquisition by JPMorgan Chase & Co. of The Bear Stearns Companies, Inc.

1. Please provide us with a memorandum of the transaction detailing all steps taken to date and steps that remain to be taken. Please include all pertinent dates.

Please see the attachment.

2. Please provide us with a memorandum describing the assets to be secured by the Federal Reserve in relation to the transaction, including, but not limited to the type of assets, face value and book value of the assets, types of mortgages underlying the assets (e.g., adjustable rate, alt-A, subprime, etc.).

The assets comprising the collateral portfolio consist largely of mortgage-related assets and their associated hedges. More specifically, the portfolio is composed of

- collateralized mortgage obligations (CMOs), the majority of which are obligations of government-sponsored entities (GSEs), such as the Federal Home Loan Mortgage Corporation ("Freddie Mac"),
- residential and commercial mortgages,
- asset-backed securities (ABS),
- commercial mortgage-backed securities (CMBS),
- various other loan obligations, and
- various hedges on the above assets.

We applied the following selection parameters:

- Only U.S. Dollar denominated assets,
- Only U.S. domiciled assets,
- Only residential and commercial mortgages that were classified "performing" as of March 14; "performing" is defined to include mortgages that are current as to principal and interest as of the last payment date plus the grace period, as documented in the servicer report, and
- Only investment grade securities, (i.e., those rated BBB- or higher by at least one of the three principal credit rating agencies and no lower than that by the others as of March 14).

As a result of the application of our selection parameters, we excluded a significant portion of the portfolio originally proposed. The following is a list of some specific assets that were excluded:

- No assets domiciled in London and Japan (ABS, CMBS, and collateralized debt/loan obligations (CDO/CLO)),
- No unrated corporate loans,
- No unrated securities,
- No residuals (e.g., equity from CDOs, ABS, CMOs).

These assets were valued by Bear Stearns as of the close of business on March 14, 2008, with a market value of $30 billion. Our asset manager (BlackRock) is currently in the process of determining the best approach to derive an independent estimate of the fair value of these assets.

4. Please provide us with copies of all documents that have been or that the parties intend to file with the U.S. Securities and Exchange Commission or any other regulatory body and any term sheets that relate to the transaction.

We have not filed and do not intend to file any documents with the SEC relating to this transaction. Additionally, please see the summary of Terms and Conditions, dated March 28, 2008, attached to our answer to question 1.

Attachment

MEMORANDUM DESCRIBING STEPS TAKEN AND TO BE TAKEN BY THE FEDERAL RESERVE SYSTEM WITH RESPECT TO THE FINANCING TRANSACTION IN CONNECTION WITH THE ACQUISITION BY JPMORGAN CHASE & CO. OF THE BEAR STEARNS COMPANIES, INC.[1]

I. Steps Taken To Date with Respect to the Transaction

On the evening of Thursday, March 13, 2008, representatives from the Securities and Exchange Commission (SEC), the Board of Governors of the Federal Reserve System (Board), the Federal Reserve Bank of New York (New York Fed), and the Treasury Department took part in a conference call. On that call, the SEC staff informed the participants that the funding resources of The Bear Stearns Companies (Bear Stearns) were inadequate to meet its obligations and that the firm had concluded that it would have to file for bankruptcy protection the next morning. The SEC said it concurred in that judgment, and it would spend the evening discussing with Bear Stearns what kind of bankruptcy filing was appropriate.

The conference call that evening took place against the backdrop of an extraordinarily challenging period in the U.S. financial system. This context was critical to the decisions the Federal Reserve made over the next several days. It is important to start with an explanation of the broad risks to the economy posed by the crisis now working through the financial system.

The intensity of the crisis faced in U.S. and global financial markets is a function of the size and character of the financial boom that preceded it. This was a period of rapid financial innovation -- particularly in credit risk transfer instruments such as credit derivatives and securitized and structured products. There was considerable growth in leverage, greater reliance on ratings on structured credit products, and a marked deterioration in underwriting standards.

The innovation in financial products was accompanied by a dramatic increase in the amount of financial intermediation occurring outside the core banking system. The importance of securities broker-dealers, hedge funds, and mutual funds in the financial system rose steadily. Off-balance-sheet vehicles of various forms proliferated, and increased concentrations of longer-dated assets were held in funding vehicles with substantial liquidity risk.

The deterioration in the U.S. housing market late in the summer of 2007 precipitated a sharp rise in uncertainty about the value of securitized or structured assets. Demand for these assets contracted dramatically and the securitization market for mortgages and other credit assets stopped working. This, in turn, increased funding pressures for a diverse mix of financial institutions. Uncertainty about the magnitude and

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[1] This text is derived from testimony delivered before the Senate Committee on Banking, Housing, and Urban Affairs on April 3, 2008.

the level of losses for financial institutions fueled concern about credit risk in exposure to those institutions.

Part of the dynamic at work was that banks were forced to provide financing for -- or take over -- the assets in a range of structured investment vehicles and conduits financed by asset-backed commercial paper. As some investors attempted to liquidate their holdings of these assets, many of the traditional providers of unsecured funding to banks pulled back from their counterparties in anticipation of the potential withdrawals of funds by their own investors.

Market participants' willingness to provide term funding even against high-quality collateral declined dramatically. As a consequence, the cost of unsecured term funding rose precipitously and the volume shrunk. Banks were funding themselves at shorter and shorter maturities. As unsecured term funding markets deteriorated, the premium on liquid, marketable collateral -- such as Treasury securities -- rose considerably. Even with the dramatic actions by the Federal Reserve and other central banks to address these liquidity pressures, the strains in financial markets persisted. In many respects, conditions worsened materially in February and March. Credit spreads on financial institutions widened, equity prices declined, and market functioning deteriorated sharply. By the early part of March, the threat of a disorderly adjustment was growing.

What was being observed in U.S. and global financial markets was similar to the classic pattern in financial crises. Asset price declines -- triggered by concern about the outlook for economic performance -- led to a reduction in the willingness to bear risk and to margin calls. Borrowers needed to sell assets to meet the calls; some highly leveraged firms were unable to meet their obligations, and their counterparties responded by liquidating the collateral they held. This put downward pressure on asset prices and increased price volatility. Dealers raised margins further to compensate for heightened volatility and reduced liquidity. This, in turn, put more pressure on other leveraged investors. A self-reinforcing downward spiral of higher haircuts forced sales, lower prices, higher volatility, and still lower prices.

This dynamic poses a number of risks to the functioning of the financial system. It reduces the effectiveness of monetary policy, as the widening in spreads and risk premia worked to offset part of the reduction in the Fed Funds rate. Contagion spreads, transmitting waves of distress to other markets, from subprime to prime mortgages and even to agency mortgage-backed securities, to commercial mortgage-backed securities, and to corporate bonds and loans. In the current situation, effects were felt in the municipal and student loan markets.

The most important risk is systemic: if this dynamic continues unabated, the result would be a greater probability of widespread insolvencies, severe and protracted damage to the financial system and, ultimately, to the economy as a whole. This is not theoretical risk, and it is not something that the market can solve on its own. It carries the risk of significant damage to economic activity. Absent a forceful policy response, the consequences would be lower incomes for working families, higher borrowing costs for housing, education, and the expenses of everyday life, lower value of retirement savings, and rising unemployment.

The Federal Reserve has taken a series of policy actions to help contain the risks to the economy posed by this financial crisis. The Federal Open Market Committee (FOMC) has reduced the nominal federal funds rate target by 300 basis points since August of 2007. Alongside these appropriately aggressive monetary actions, the Federal Reserve has taken a series of initiatives aimed at improving market liquidity and overall market functioning.

These actions are designed to allow financial intermediaries to finance with the central bank assets they can no longer finance as easily in the market. In this way these liquidity facilities reduce the need for those institutions to take the types of actions, such as selling other assets into distressed markets or withdrawing credit lines extended to other financial institutions, that would serve to amplify the pressures in markets.

In addition to these monetary policy and liquidity actions, the Federal Reserve has been working with community groups and housing advocates across the country to help homeowners navigate the complex challenges of higher resets and falling home prices. The Federal Reserve is actively working with homeowners and communities to identify solutions to avoid foreclosures and their negative effects, support appropriate consumer protection and responsible lending practices, and apply our expertise in research and evaluation to provide community groups, counseling agencies, regulators, and others with detailed analysis to support efforts to help troubled borrowers and communities.

The Federal Reserve System's response has helped reduce the risk of systemic damage to the financial system, and thereby helped mitigate a potential source of downside risk to growth. This in turn has helped mitigate the risks to the broader economy. It is important to recognize that a substantial adjustment, recognition of losses, and reduction in risk has already taken place. A range of different prices of financial assets now reflect a very cautious view of the future. The severity of the pressures in markets evident over the last few months are in part a reflection of the speed and force with which markets and institutions in our financial system adapt to fundamental changes in the outlook. This capacity to adjust and adapt is one of the great strengths of our system. Nevertheless, we still face a number of challenges ahead. The seeds of this crisis took a long time to build up, and they will take some time to work through.

With this important context, the Federal Reserve's response to the situation that arose at Bear Stearns was shaped in roughly four stages: (1) the decision on the morning of March 14 to extend a non-recourse loan through the discount window to JPMorgan Chase & Co. (JPMorgan Chase) so that JPMorgan Chase could in turn lend that money to Bear Stearns; (2) the decision on March 16 by JPMorgan Chase and Bear Stearns for JPMorgan Chase to acquire Bear Stearns and guarantee certain of its liabilities, along with an agreement in principle that the New York Fed would provide certain financing in the context of that acquisition; (3) the launching of the Primary Dealer Credit Facility; and (4) the events of the following week, culminating in the March 24 announcement of revised merger agreement and guaranty terms between JPMorgan Chase and Bear Stearns, and the finalizing of the terms and structure of the associated loan from the New York Fed.

With regard to the market situation in which Bear Stearns was operating in the days leading up to March 13, fixed income traders had begun hearing rumors that European financial institutions had stopped doing fixed income trades with Bear Stearns. Fearing that their funds might be frozen if Bear Stearns wound up in bankruptcy, a number of U.S.-based fixed-income and stock traders that had been actively involved with Bear Stearns had reportedly decided to halt such involvement. Many firms started pulling back from doing business with Bear Stearns. Some hedge funds that had used Bear Stearns to borrow money and clear trades were withdrawing cash from their accounts. Some large investment banks stopped accepting trades that would expose them to Bear Stearns, and some money market funds reduced their holdings of short-term Bear Stearns-issued debt. The rumors of Bear Stearns' failing financial health caused its balance of unencumbered liquidity on March 13 to decline sharply to levels that were not adequate to cover maturing obligations and funds that could be withdrawn freely. This precipitated the phone call with representatives of the Federal Reserve, the SEC, and the Treasury on the evening of March 13.

The news that Bear Stearns' liquidity position was so dire that a bankruptcy filing was imminent presented a very difficult set of policy judgments. In our financial system, the market sorts out which companies survive and which fail. However, under the circumstances prevailing in the markets the issues raised in this specific instance extended well beyond the fate of one company. It became clear that Bear Stearns' involvement in the complex and intricate web of relationships that characterize our financial system, at a point in time when markets were especially vulnerable, was such that a sudden failure would likely lead to a chaotic unwinding of positions in already damaged markets. Moreover, a failure by Bear Stearns to meet its obligations would have cast a cloud of doubt on the financial position of other institutions whose business models bore some superficial similarity to Bear Stearns', without due regard for the fundamental soundness of those firms.

The sudden discovery by Bear Stearns' derivatives counterparties that important financial positions they had put in place to protect themselves from financial risk were no longer operative would have triggered substantial further dislocation in markets. This would have precipitated a rush by Bear Stearns' counterparties to liquidate the collateral they held against those positions and to attempt to replicate those positions in already very fragile markets.

In short, a sudden, disorderly failure of Bear Stearns would have brought with it unpredictable but severe consequences for the functioning of the broader financial system and the broader economy, with lower equity prices, further downward pressure on home values, and less access to credit for companies and households.

Following that initial call with the SEC on March 13, staff at the Federal Reserve in New York and in Washington spent the night focusing on the implications of a large-scale default by Bear Stearns and how the consequential damage might be contained. Bear Stearns renewed conversations that began earlier that day with JPMorgan Chase, which is Bear's clearing bank for its repo arrangements, to explore a range of possible financing options. The New York Fed dispatched a team of examiners to Bear Stearns to look at its books so that the Federal Reserve could get a better handle on what could be done. The Federal Reserve gathered the best information it could, evaluated the risks involved, and explored a range of possible actions.

At 5:00 a.m., representatives of the Board, the New York Fed, and the Treasury took part in a conference call to review the options and decide on the way forward. After careful deliberation, together the participants decided on a course of action that would at least buy some time to explore options to mitigate the foreseeable damage to the financial system. With the support of the Secretary of the Treasury, Chairman Bernanke and the Board of Governors agreed that the New York Fed would extend an overnight non-recourse loan through the discount window to JPMorgan Chase, so that JPMorgan Chase could then "on-lend" that money to Bear Stearns.

This action was designed to allow the parties to get to the weekend, and to enable them to pursue work along two tracks: first, for Bear Stearns to continue to explore options with other financial institutions that might enable it to avoid bankruptcy; and second, for policymakers to continue the work begun on Thursday night to try to contain the risk to financial markets in the event no private-sector solution proved possible.

Over the course of that day, March 14, Bear Stearns was downgraded by the credit rating agencies, and the flight of customer business from Bear Stearns accelerated. This set in motion a chain of decisions across the financial system as market participants prepared for the possibility that Bear Stearns would not be open for business once Asian markets opened on Sunday night. This highlighted the urgency of working toward a solution over the weekend, ideally a solution that would definitively address the prospect of default by Bear Stearns.

Bear Stearns approached several major financial institutions, beginning on March 13. Those discussions intensified on Friday and Saturday. Bear Stearns' management provided the Federal Reserve with periodic progress reports about a possible merger. Although several different institutions expressed interest in acquiring all or part of Bear Stearns, it was clear that the size of Bear Stearns, the apparent risk in its balance sheet, and the limited amount of time available for a possible acquirer to conduct due diligence compounded the difficulty. Ultimately, only JPMorgan Chase was willing to consider an offer of a binding commitment to acquire the firm and to stand behind Bear's substantial short-term obligations.

As JPMorgan Chase and other institutions conducted due diligence, staff of the Federal Reserve in New York and Washington continued to examine ways to contain the effects of a default by Bear Stearns. As part of these discussions, the Federal Reserve began to design a new facility that would build on other liquidity initiatives taken by the Federal Reserve System, and provide a more powerful form of liquidity to major financial institutions.

Following the announcement on March 11 of the Term Securities Lending Facility, which allowed primary dealers to pledge a wider range of collateral in order to borrow Treasury securities, the Federal Reserve had consulted with market participants on how to structure the auctions to maximize their potential benefits to market functioning. Those discussions yielded a number of helpful suggestions. In view of those suggestions, and after considering the greater risks to the financial system posed by the Bear Stearns situation, the Federal Reserve was able to work quickly on a companion facility that would transmit liquidity to parts of the market where it could be most powerful.

This is what led the Board to approve the establishment of the Primary Dealer Credit Facility on March 16. Under Section 13(3) of the Federal Reserve Act, the Board is empowered to authorize a Federal Reserve Bank like the New York Fed to lend to a corporation, such as an investment bank, in extraordinary circumstances under which there is evidence that the corporation cannot "secure adequate credit accommodations from other banking institutions." The Board needed to make the statutory finding that the circumstances were exigent and extraordinary, and it did so, based on the situation prevailing in the financial markets and the distinct possibility that absent an assurance of liquidity to major investment banks the deterioration in financial conditions likely would have continued with substantial effects on the economy.

On Sunday morning, executives at JPMorgan Chase informed us that they had become significantly more concerned about the scale of the risk that Bear Stearns and its many affiliates had assumed. They were also concerned about the ability of JPMorgan Chase to absorb some of Bear Stearns' trading portfolio, particularly given the uncertainty ahead about the ultimate scale of losses facing the financial system. In this context, the Federal Reserve began to explore ways in which we could help facilitate a more orderly solution to the Bear Stearns situation. The Federal Reserve did not have the authority to acquire an equity interest in either Bear Stearns or JPMorgan Chase, nor were we prepared to guarantee Bear Stearns' very substantial obligations. The only feasible option for buying time would have required open-ended financing by the Federal Reserve to Bear Stearns into an accelerating withdrawal by Bear' Stearns' customers and counterparties.

We did, however, have the ability to lend against collateral, as in the back-to-back non-recourse arrangement that carried Bear Stearns into the weekend. After extensive discussion between Chairman Bernanke, President Geithner of the New York Fed, and Secretary Paulson, and with their full support, the New York Fed and JPMorgan Chase reached an agreement in principle that the New York Fed would assist with non-recourse financing. Using section 13(3) of the Federal Reserve Act, with the approval of the Board, the New York Fed on March 16 agreed in principle to lend $30 billion to JPMorgan Chase and to secure the lending with a pledge of Bear Stearns assets valued by

Bear Stearns on March 14 at approximately $30 billion. This step made it possible for JPMorgan Chase to agree to acquire Bear Stearns and to step in immediately to guarantee all of Bear Stearns' short-term obligations. This guarantee was especially important to stave off the feared systemic effects that would be triggered by the panic of a Bear Stearns bankruptcy filing and of the failure to honor its obligations. Agreeing to lend against a portfolio of securities reduced the risk that those assets would be liquidated quickly, exacerbating already fragile conditions in markets.

On the evening of Sunday the 16th, President Geithner sent a letter to James Dimon, the CEO of JPMorgan Chase, to memorialize the fact that a preliminary agreement had been reached that the New York Fed would assist the acquisition with $30 billion in financing, with the understanding that the parties would continue working during the week towards a formal contract. The Federal Reserve also provided regulatory approvals, including under section 23A of the Federal Reserve Act, to assist with the merger and a transitional period for phasing in the assets under our capital rules.

The announcement of the agreement between Bear Stearns and JPMorgan Chase and the announcement of the Primary Dealer Credit Facility were finalized just before Asian markets opened on Sunday night, and the announcement of these actions helped avert the damage that would have accompanied default.

On Monday morning, March 17, the approximately $13 billion back-to-back non-recourse loan through JPMorgan Chase to Bear Stearns was repaid to the Fed, with weekend interest of nearly $4 million. The Primary Dealer Credit Facility was made available to the market. And at the request of and with the full cooperation of the SEC, examiners from the New York Fed were sent into the major investment banks to give the Federal Reserve the direct capacity to assess the financial condition of these institutions.

Discussions were also continuing regarding the details of the Federal Reserve's financial arrangement with JPMorgan Chase. The legal teams engaged in the meticulous work of finalizing the legal structure of the lending arrangement that had been agreed to in principle, including defining the precise pool of collateral and related hedges that would secure the $30 billion loan.

At the same time, several infirmities became evident in the agreement between JPMorgan Chase and Bear Stearns during the week of March 17th that needed to be cured.

Negotiations between the two sets of counterparties proceeded almost immediately between the New York Fed and JPMorgan Chase on the one hand, and between JPMorgan Chase and Bear Stearns on the other. The New York Fed and JPMorgan Chase discussed the details for the secured financing. Bear Stearns and JPMorgan Chase continued to negotiate changes to the merger agreement that would tighten the guarantee and provide the necessary certainty that the merger would be consummated. All the parties shared an overriding common interest: to move toward a successful merger and avoid the situation in which they found themselves on March 14.

The extended Easter weekend saw intense sets of bilateral negotiations among the three parties. The deal, finally struck in the early morning hours on March 24, held benefits for all parties. That deal included a new, more precise guaranty from JPMorgan Chase, which lifted the cloud of default risk that had been hanging over the transaction. Bear Stearns stockholders were to receive a higher share price. In addition to fixing the guaranty, JPMorgan Chase gained assurance that its merger with Bear Stearns would take place. The New York Fed obtained significant downside protection on the loan and a tighter guaranty on its exposure. The new Federal Reserve financing facility will be in place for a maximum of ten years, though it could be repaid earlier, at the discretion of the Federal Reserve. This is an important feature: the assets that are being pledged as collateral can be managed on a long-term basis so as to minimize the risks to the market and the risk of loss. They can be held or disposed of at any time over the next decade.

In keeping with the traditional role of a lender of last resort, the extensions of credit to Bear Stearns that the Federal Reserve made to facilitate the merger were secured by collateral. The $29 billion loan will be extended only when and if JPMorgan Chase and Bear Stearns merge. The Federal Reserve will be protected from loss by three different risk mitigants: first, a substantial pool of professionally-managed collateral that, as of March 14, was valued at $30 billion; second, the agreement on the part of JPMorgan Chase to absorb the first $1 billion of any loss that ultimately occurs in connection with this arrangement; and third -- and perhaps most importantly -- a long-term horizon during which the collateral will be safe-kept and, if sold, will be sold in an orderly fashion that is not affected by the unnaturally strong downward market pressures that have been associated with the recent liquidity crisis.

On April 1, the Board approved under the Bank Holding Company Act the proposal by JPMorgan Chase to acquire Bear Stearns Bank & Trust, a Bear Stearns subsidiary.

II. Steps To Be Taken with Respect to the Transaction.

Assuming that the JPMorgan Chase/Bear Stearns merger takes place, several administrative actions must be taken to implement the Federal Reserve financing transaction described in the following Summary of Terms and Conditions relating to the transaction, dated March 28, 2008. A Delaware limited liability company and two common law trusts, which will, directly or indirectly, hold the collateral and associated hedges for the loan, must be organized. The parties to the transaction must execute and deliver satisfactory loan and security and other documentation and various corporate organizational steps must be completed. The terms of the contract between the New York Fed and the asset manager, BlackRock Financial Management, Inc., which will manage the collateral pool relating to the loan, must be finalized. Required opinions relating to specific parts of the transaction must be provided by the parties.

EXECUTION COPY

Summary of Terms and Conditions

March 28, 2008

Concurrently with, and subject to the consummation of the merger (the "Merger") in all material respects on the terms described in the Agreement and Plan of Merger, dated as of March 16, 2008 (as amended, the "Merger Agreement"), between The Bear Stearns Companies Inc. ("Bear Stearns") and JPMorgan Chase & Co., a newly formed Delaware limited liability company (the "Borrower") will enter into an agreement with Bear Stearns and/or certain of its subsidiaries and/or affiliates (collectively, the "Seller") pursuant to which the Borrower will acquire (whether directly or through participations) the Portfolio (as defined below) and the Pre-Closing Date Proceeds Amount (as defined below) from the Seller pursuant to an asset acquisition agreement (the "Asset Acquisition Agreement") in consideration of the payment of a cash Purchase Price (as defined below) and the assumption of certain liabilities, the source of the funding of which shall be the proceeds of (a) borrowings under a Tranche A senior secured loan facility (the "Tranche A Loan Facility") provided by the Federal Reserve Bank of New York (the "NY Fed") in an aggregate principal amount, not to exceed $29,000,000,000, equal to the Purchase Price plus the par value of the Unfunded Forward Commitments (as defined below) less $1,000,000,000 and (b) borrowings under a Tranche B subordinated secured loan facility (the "Tranche B Loan Facility" and, together with the Tranche A Loan Facility, the "Loan Facilities") provided by JPMorgan Chase Bank, N.A (the "JPMC") in an aggregate principal amount equal to $1 billion. In addition, the NY Fed will be entitled to a residual interest in the Portfolio (such interest, the "Residual Interest"). Set forth below is a summary of the terms and conditions for the Loan Facilities.

1. PARTIES

Borrower:	The Borrower (as defined above).
Administrative Agent, Collateral Agent and Depositary Bank:	An entity (or entities) to be determined by the NY Fed (in such capacities, the "Agent").
Tranche A Lender:	The NY Fed (the "Tranche A Lender").
Tranche B Lender:	JPMC (the "Tranche B Lender" and, together with the Tranche A Lender, the "Lenders").
Asset Manager:	Blackrock Financial Management, Inc. and its affiliates (in such capacity, the "Asset Manager"). The Asset Manager will be solely the agent of the NY Fed, but will owe the other Secured Parties (as defined below) and the Borrower a duty of good faith and fair dealing. The Asset Manager shall be paid fees as determined by the NY Fed and notified to JPMC.

2. DESCRIPTION OF ASSET ACQUISITION AGREEMENT

Seller:	The Seller.
Buyer:	The Borrower.

Asset Acquisition Agreement: Pursuant to the Asset Acquisition Agreement, the Seller will sell to the Buyer (whether directly or through participations) without recourse (but subject to, and with full recourse for the breach of, representations and warranties relating to good title and authority to transfer) the assets identified by JPMC, the NY Fed and the Asset Manager as described on Schedule A hereto (the "Scheduled Collateral Pool"), together with the hedges identified by JPMC, the NY Fed and the Asset Manager as described on Schedule B hereto (the "Related Hedges") and including the Pre-Closing Date Proceeds Amount. For the avoidance of doubt, the Related Hedges include the amount that the Borrower would have to pay to, or the amount that the Borrower would receive from, the applicable counterparty if the Borrower had entered into an identical transaction on March 14, 2008 based on the Bear Stearns marks as of such date (the "Transfer Value"), as well as all accumulated mark to market gains or losses thereafter and any cash proceeds as a result of Related Hedges' being unwound.

Purchase Price: The purchase price (the "Purchase Price") for the Scheduled Collateral Pool and the Related Hedges (including the Pre-Closing Date Proceeds Amount) is an amount, not to exceed $30 billion, determined as provided in "Pricing of the Scheduled Collateral Pool and Related Hedges" below minus the par value of the total unfunded forward commitments, whether contingent or non-contingent (the "Unfunded Forward Commitments") included in the Scheduled Collateral Pool.

Seller Payment: On the Closing Date, the Seller will pay (the "Seller Payment") to the Borrower, in consideration of the Borrower's assumption of the Seller's liabilities under the Unfunded Forward Commitments, an amount equal to the difference (if positive) between (x) the par value of such commitments and (y) the market value of such commitments as of March 14, 2008 or, if such market value is unavailable, the market value shall be determined by reference to the market value of the related funded portion of any such commitment as of March 14, 2008, but, if no related funded portion exists and there is otherwise no market value associated with such commitment, the market value shall be determined based on "haircuts" to par as shall be mutually agreed between the NY Fed, JPMC and the Asset Manager. Such amount will be deposited into the Reserve Account.

Related Hedges: As of the Closing Date, the Borrower will assume as an economic matter the obligations under the Related Hedges and receive the benefits thereof by entering into a total return swap with the Seller, such total return swap having an initial fair value as of the Closing Date equal to the fair value of the Related Hedges as of the Closing Date. The Controlling Party (as defined below) shall have the right to make all determinations related to the underlying hedges (e.g., whether and when to terminate) that are subject to the total return swap. At the request of the NY Fed, the Seller will use its commercially reasonable efforts to replace the total return swap with direct hedges with underlying counterparties through novation.

Guaranty:	JPMC will irrevocably and unconditionally guaranty the obligations of the Seller under the Asset Acquisition Agreement and the total return swap.

3. AGREEMENTS IN EFFECT PRIOR TO THE CLOSING DATE

Pricing of the Scheduled Collateral Pool and Related Hedges:	The price of the Scheduled Collateral Pool shall equal the sum of (i) the value of such collateral pool on the books of the Seller as of March 14, 2008 (including with respect to the assumption of liabilities for Unfunded Forward Commitments), irrespective of any mark-downs or mark-ups in such collateral after March 14, 2008 and irrespective of when such collateral pool is actually pledged to secure the Loan Facilities and (ii) the Transfer Value of the Related Hedges.
Management of Scheduled Collateral Pool and Related Hedges:	Prior to the Closing Date and upon final determination of each particular asset or hedge comprising a part of the Scheduled Collateral Pool or the Related Hedges, JPMC will delegate management rights with respect to such assets or hedges to the NY Fed which in turn will delegate such rights to the Asset Manager, and the NY Fed and the Asset Manager will have the right to liquidate assets in the Scheduled Collateral Pool and Related Hedges or both in their discretion at any time.
Pre-Closing Date Proceeds Amount:	On the Closing Date, the Pre-Closing Date Proceeds Amount (to the extent such amount is positive) will be deposited into the Reserve Account. The "Pre-Closing Date Proceeds Amount" means an amount, determined as of the Closing Date, equal to the sum (without duplication) of the following amounts paid or received in respect of the assets and liabilities in the Portfolio during the period from March 14, 2008 to the Closing Date: (i) the cash proceeds from the sale of assets comprising a portion of the Scheduled Collateral Pool; plus (ii) all amounts received from the amortization or prepayment of principal on any assets comprising a portion of the Scheduled Collateral Pool; plus (iii) the interest payments on the Scheduled Collateral Pool; plus (iv) all periodic, termination and other payments (excluding the

posting of margin) received from counterparties on the Related Hedges; minus

(v) all periodic, termination and other payments (excluding the posting of margin) made to counterparties on the Related Hedges; minus

(vi) allocated funding costs (at the Primary Credit Rate (as defined below)).

It is understood that prior to the Closing Date, the NY Fed has no responsibility to provide any margin or other credit support for any hedge.

Guaranty: JPMC will enter into, and keep in full force and effect, the Guarantee, dated as of March 23, 2008, in favor of the NY Fed.

NY Fed Commitment: The NY Fed commits to provide the financing described herein in connection with JPMC's acquisition of Bear Stearns to address the extraordinary circumstances in the market on March 14, 2008 and the surrounding days. The NY Fed has not committed to make a similar facility to any other party or under any different circumstances.

Confidentiality: The transactions contemplated by this Summary of Terms and Conditions and all other materials, information, documents and discussions regarding this Summary of Terms and Conditions and the transactions contemplated hereby shall be kept confidential by JPMC.

4. TYPES AND AMOUNTS OF LOAN FACILITIES

Loan Facilities: The Lenders hereby agree to provide financing to the Borrower as follows:

Type and Amount: Loan Facilities (the loans thereunder, the "Loans") as follows:

Tranche A Loan Facility: A ten-year term loan facility (subject to extension as provided below) provided by the Tranche A Lender to the Borrower in a principal amount equal to the Purchase Price plus the par value of the Unfunded Forward Commitments minus $1,000,000,000, but in any case not to exceed $29,000,000,000 (the loan thereunder, the "Tranche A Loan"). The Tranche A Loan shall be repayable or be terminated in the manner described under the section below entitled "Cash Flow Waterfall".

Tranche B Loan Facility: A ten-year term loan facility (subject to extension as provided below) provided by the Tranche B Lender to the Borrower in a principal amount of $1,000,000,000 (the loan thereunder, the "Tranche B Loan"). The Tranche B

Loan will be subordinate in right of payment to the Tranche A Loan and shall be repayable or be terminated in the manner described under the section below entitled "Cash Flow Waterfall".

Availability: The Loans shall be made in a single drawing on the Closing Date (as defined below).

Maturity Date: The Loans will mature on the tenth anniversary of the Closing Date; *provided* that the NY Fed may in its sole discretion at any time and from time to time extend the maturity date of either or both of the Loan Facilities; *provided, further*, that the NY Fed may not extend the maturity date of the Tranche B Loan after the Tranche A Loan is paid in full or to a maturity date later than the maturity date of the Tranche A Loan without the consent of the Tranche B Lender.

Purpose: The proceeds of the Loans shall be used to finance the acquisition of the Portfolio and the Pre-Closing Date Proceeds Amount from the Seller and to fund the Delayed Draw Account (as defined below).

5. INTEREST PAYMENT PROVISIONS

Interest Rates: The Tranche A Loans shall bear interest at a rate per annum equal to the Primary Credit Rate in effect from time to time.

The Tranche B Loans shall bear interest at a rate per annum equal to the Primary Credit Rate plus 450 bps in effect from time to time.

As used herein, the "Primary Credit Rate" means the discount rate charged by the NY Fed for loans under its primary credit program from time to time in effect.

Interest Payment Dates: Interest shall accrue and be compounded on a quarterly basis and be payable on payment dates as set forth under the section below entitled "Cash Flow Waterfall".

6. COLLATERAL, RESERVE ACCOUNT AND DELAYED DRAW ACCOUNT

Collateral: The obligations of the Borrower in respect of the Loan Facilities and the hedge agreements entered into by the Borrower shall be secured by a first priority perfected security interest in (a) all of its assets including the Scheduled Collateral Pool and the Related Hedges (collectively, the "Portfolio"), (b) the Reserve Account (as defined below) and related investments, (c) the Delayed Draw Account and related investments and (d) all proceeds of the foregoing (collectively, the "Collateral"). The

Lenders and the counterparties under the hedge agreements shall collectively be referred to herein as the "Secured Parties".

All of the above described security interests will be created on terms, and pursuant to documentation (including custody and control agreements), satisfactory to the NY Fed, and none of the Collateral will be subject to any other pledges, liens or security interests.

Reserve Account:

On the Closing Date, the Pre-Closing Date Proceeds Amount (to the extent such amount is positive) and the proceeds of the Seller Payment, if any, will be deposited into the Reserve Account. On and after the Closing Date, all cash flow generated by the Collateral and any other income or proceeds earned or received by the Borrower shall be deposited with the Agent and credited to a reserve account (the "Reserve Account") and held in such Reserve Account for the benefit of the Secured Parties pending distribution to the Secured Parties in accordance with the Cash Flow Waterfall as hereinafter provided. Notwithstanding the foregoing, except to the extent funds are required to make a Seller Distribution (as defined below) or to pay any Operating Expenses that were accrued on or prior to the Closing Date and remain unpaid, amounts on deposit in the Reserve Account may not be distributed (other than in respect of payments required under the hedge agreements) to the extent that the amount on deposit therein will be less than the Unfunded Swap Exposure (the "Minimum Balance Requirement"). "Unfunded Swap Exposure" means the maximum total liability of the Borrower under all hedge agreements minus all amounts posted as collateral to the related hedge counterparties.

Amounts on deposit in the Reserve Account shall be invested in certain eligible investments at the discretion of the Controlling Party (as defined below).

Subject to the Minimum Balance Requirement, the Controlling Party (and its agents, including the Asset Manager) shall control in its sole discretion all decisions regarding the Collateral, the proceeds on deposit in the Reserve Account and decisions as to timing and amounts of distributions from the Reserve Account.

Delayed Draw Account:

On the Closing Date, a portion of the proceeds from the Loans equal to the amount of Unfunded Forward Commitments shall be deposited with the Agent and credited to a delayed draw account (the "Delayed Draw Account").

Amounts on deposit in the Delayed Draw Account shall be withdrawn from time to time by the Agent in order to satisfy any payment obligations of the Borrower in respect of any such commitments when and as such obligations become due.

Amounts on deposit in the Delayed Draw Account shall be invested in certain eligible investments at the discretion of the Controlling Party (as defined below).

To the extent any such Unfunded Forward Commitments expire or amounts remain on deposit in the Delayed Draw Account in excess of any remaining Unfunded Forward Commitments, the Agent shall transfer such amounts from the Delayed Draw Account to the Reserve Account.

7. CASH FLOW WATERFALL

Funds in the Reserve Account shall be paid on any business day as determined by the Controlling Party in its sole discretion in the following order of priority, subject, except as set forth in the last paragraph of "Waterfall Priority", to the Minimum Balance Requirement:

Waterfall Priority:

(a) First, to pay Operating Expenses that are then due and payable.

"Operating Expenses" mean all costs and expenses of administering the Portfolio, the Reserve Account, the other Collateral, the Loan Facilities and Loan Documentation (as defined below) and the Borrower, including all fixed fees and expenses of the Asset Manager and the Agent, all legal, accounting and other professional fees and expenses and other administrative costs and expenses of the Borrower, all legal, accounting and other professional fees and expenses and other administrative costs and expenses (other than those of the Tranche B Lender, the Seller or any of their respective advisors or agents) associated with the negotiation, preparation, execution and delivery of this term sheet and the Loan Documentation (as defined below) and with the administration of the Loan Documentation and any amendment or waiver or enforcement action with respect thereto (including the fees, disbursements and other charges of counsel), taxes that are determined to be payable from time to time, all amounts payable in respect of hedges (including, without limitation, periodic payments and termination payments), the costs of entering into any additional hedges as may be determined to be necessary or appropriate by the Controlling Party and any indemnity claims.

(b) Second, beginning on or after the second anniversary of the Closing Date or such earlier date as shall be determined by the Controlling Party (the period from the Closing Date until the second anniversary of the Closing Date or such earlier date the "Accumulation Period"), to pay all or any portion of the outstanding principal amount of the Tranche A Loan Facility; *provided* that, if the Controlling Party elects to pay any of the outstanding principal amount of the Tranche A Loan Facility prior to the second anniversary of the Closing Date, the full outstanding principal amount of the Tranche B Loan Facility, together with all accrued and unpaid interest thereon, shall be simultaneously repaid.

(c) Third, after the Accumulation Period, but so long as the entire outstanding principal amount of the Tranche A Loan Facility has been repaid in full, to pay all or any portion of the accrued but unpaid interest outstanding under the Tranche A Loan Facility.

(d) Fourth, after the Accumulation Period, but so long as the entire outstanding principal amount, all accrued and unpaid interest and all other outstanding amounts, in each case under the Tranche A Loan Facility have been repaid in full, to pay all or any portion of the outstanding principal amount of the Tranche B Loan Facility.

(e) Fifth, after the Accumulation Period, but so long as the entire outstanding principal amount, all accrued and unpaid interest and all other outstanding amounts, in each case under the Tranche A Loan Facility have been paid in full and so long as the entire outstanding principal amount of the Tranche B Loan Facility has been repaid in full, to pay all or any portion of the accrued but unpaid interest outstanding under the Tranche B Loan Facility.

(f) Sixth, after the Accumulation Period, but so long as the entire outstanding principal amount, all accrued and unpaid interest and all other outstanding amounts, in each case under both the Tranche A Loan Facility and the Tranche B Loan Facility have been paid in full, all hedges have been terminated and all amounts payable under the hedges have been paid in full, to pay any fees and expenses or other amounts owing to the extent not constituting Operating Expenses.

(g) Seventh, after the Accumulation Period, but so long as the entire outstanding principal amount, all accrued and unpaid interest and all other outstanding amounts, in each case under both the Tranche A Loan Facility and the Tranche B Loan Facility have been paid in full, all hedges have been terminated and all amounts payable under the hedges have been paid in full, and any fees and expenses or other amounts owing to the extent not constituting Operating Expenses have been paid in full, to pay all remaining amounts to the NY Fed as holder of the Residual Interest.

Notwithstanding the foregoing on any business day (including the Closing Date) as determined in the sole discretion by the Controlling Party, (i) to the extent that the Pre-Closing Date Proceeds Amount is negative, funds in the Reserve Account shall be withdrawn, from time to time if necessary, to make a payment or payments to the Seller in an amount equal to the absolute value of the Pre-Closing Date Proceeds Amount (the "Seller Distribution") and (ii) after giving effect to all payments required by clause (i), funds in the Reserve Account shall be withdrawn, from time to time if necessary, and used to pay all Operating Expenses that accrued on or prior to the Closing Date and remain unpaid.

Once prepaid, Loans may not be reborrowed.

Termination: Regardless of whether any amounts remain outstanding thereunder, each of the Loan Facilities and the Residual Interest shall be terminated on the date on which the entire Portfolio has been fully liquidated and all proceeds thereof, including all amounts on deposit in the Reserve Account and the Delayed Draw Account, have been distributed in the manner set forth above.

8. CERTAIN CONDITIONS

Initial Conditions: The availability of the Loan Facilities shall be conditioned upon the satisfaction of the following conditions (the date upon which all such conditions precedent shall be satisfied, the "Closing Date"): the execution and delivery by the Agent, the Lenders, the Borrower and the Asset Manager of Loan Documentation satisfactory to the NY Fed, the closing of the Merger in all material respects on the terms set forth in the Merger Agreement, the consummation of the sale of the Portfolio (including the Pre-Closing Date Proceeds Amount) on the terms set forth in the Asset Acquisition Agreement and the creation and perfection of security interests in the Collateral pursuant to arrangements satisfactory to the NY Fed.

9. CERTAIN DOCUMENTATION MATTERS

The documentation for the Facilities (the "Loan Documentation") shall contain representations, warranties, covenants and events of default (in each case, applicable to the Borrower) customary for financings involving special, limited purpose borrowers and with other terms deemed appropriate by the NY Fed.

Voting and Control: The NY Fed shall be the "Controlling Party" on and after the Closing Date and shall be permitted to make all decisions regarding the Collateral, the Reserve Account, the Delayed Draw Account and the Loan Documentation, including the timing and amounts of distributions and whether or not a default or event of default has occurred and whether or not to begin the exercise of remedies.

In addition the Controlling Party will have complete discretion with respect to all decisions regarding the management of the Collateral (which it may elect to delegate to the Asset Manager), including decisions as to when to liquidate Collateral and as to when or if to terminate hedges or enter into hedges. In exercising such control the Controlling Party and its agents shall have no duty to maximize returns on the Collateral or to take into account the interests of the Tranche B Lender.

Notwithstanding the foregoing, the consent of (i) each Lender directly affected thereby shall be required with respect to (a) reductions in the outstanding principal amount of any Loan (except as otherwise expressly permitted above) and (b) any amendment to the Loan Documentation or any other transaction document that is materially adverse to such Lender and (ii) each Secured Party directly affected thereby shall be required with respect to any materially adverse change in such Secured Party's position in the cash flow waterfall.

Assignments and Participations:	The Tranche B Lender shall not be permitted to assign all or a portion of its Tranche B Loan or sell participations in its Tranche B Loan except to its affiliates.
Indemnification and Exculpation:	The Agent, the Asset Manager, the Controlling Party and the Lenders (and their affiliates and their respective officers, directors, employees, advisors and agents) will have no liability for, and will be indemnified by the Borrower and held harmless against, any losses, claims, damages, liabilities or expenses (collectively, "Liabilities") incurred in respect of, or arising out of, or in connection with, the financing contemplated hereby (including in connection with the management of the Portfolio and other Collateral) or the use or the proposed use of proceeds thereof, except to the extent they are found by a final, non-appealable judgment of a court of competent jurisdiction to arise from the gross negligence, bad faith or willful misconduct of such person. Each Secured Party agrees not to assert or claim that the Agent, the Asset Manager, the Controlling Party or any other Secured Party (and their affiliates and their respective officers, directors, employees, advisors and agents) has any liability for any Liabilities incurred in respect of, or arising out of, or in connection with, the financing contemplated hereby (including in connection with the management of the Portfolio and other Collateral) or the use or the proposed use of proceeds thereof, except to the extent they are found by a final, non-appealable judgment of a court of competent jurisdiction to arise from the gross negligence, bad faith or willful misconduct of such

person.

Governing Law and Forum: State of New York.

Accepted and agreed to as of
March 28, 2008:

This Summary of Terms and Conditions may be executed in counterparts.

THE FEDERAL RESERVE BANK OF NEW YORK

By: ____________________
Name: Timothy F. Geithner
Title: President

JPMORGAN CHASE & CO.

By: ____________________
Name:
Title:

[Term Sheet]

Accepted and agreed to as of
March 28, 2008:

This Summary of Terms and Conditions may be executed in counterparts.

THE FEDERAL RESERVE BANK OF NEW YORK

By: ____________________
Name:
Title:

JPMORGAN CHASE & CO.

By: ____________________
Name: James Dimon
Title: Chairman and Chief Executive Officer

[Term Sheet]

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 3, 2008

The Honorable Max Baucus
Chairman
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in response to your letter of March 26, 2008, requesting that the Federal Reserve Board and Federal Reserve Bank of New York provide certain information and answers to preliminary questions regarding a financing transaction by the Federal Reserve Bank of New York in connection with the acquisition of The Bear Stearns Companies, Inc. by JPMorgan Chase & Co. The Board of Governors approved this transaction on March 16, 2008. Based on discussions with Committee staff, we are at this time providing the responses on behalf of the Federal Reserve to questions 3, 5, and 6 of your letter. The responses to the remaining questions will be provided by April 15 or earlier as that information is developed in final form.

Sincerely,

(Signed) Ben Bernanke

Enclosure

For files
P. Elliff

Identical letter also sent to Ranking Member Charles E. Grassley.

Federal Reserve responses to requests made by the Senate Committee on Finance by letter dated March 26, 2008, concerning the financing transaction in connection with the acquisition by JPMorgan Chase & Co. of The Bear Stearns Companies, Inc.

3. Please confirm all the parties (including private and government agencies that participated in negotiations) (collectively referred to herein as "Parties") to the transaction.

The Board of Governors authorized the Federal Reserve Bank of New York to enter into the transaction under section 13(3) of the Federal Reserve Act. The members of the Board are Ben S. Bernanke, Chairman; Donald L. Kohn, Vice Chairman; Kevin M. Warsh, Randall S. Kroszner, and Frederic S. Mishkin. The Federal Reserve Bank of New York will be a party to the credit extension collateralized by the assets of The Bear Stearns Companies, Inc.

5. Please provide us with the names of all the negotiators who represented the Parties to the transaction.

The Federal Reserve Bank of New York was represented by Timothy F. Geithner, President and CEO, and Thomas C. Baxter, Jr., Executive Vice President and General Counsel. The Board of Governors was represented by Scott G. Alvarez, General Counsel. These individuals were assisted by staff members of the Reserve Bank and Board respectively.

6. Please provide us with the names of all in-house counsel, outside counsel, accountants, employees and any other professionals who represented the Parties to the transaction.

The Federal Reserve Bank of New York was represented by Thomas C. Baxter, Jr., Executive Vice President and General Counsel, and many members of the Bank's Legal Department; by David M. Eisenberg, Gary Rice, Philip Ruegger, and other attorneys from the firm of Simpson Thacher & Bartlett LLP; and Laurence D. Fink, Peter R. Fisher, and other representatives of BlackRock Inc., an investment management firm. The Reserve Bank also consulted with Jim Mountain, Carol Larson, and Andre Saltz of Deloitte & Touche LLP, the external auditors of the Reserve Bank and the Board of Governors. The Board of Governors was represented by Scott G. Alvarez, General Counsel, and members of the Board's Legal Division.

08-3644

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

SCOTT G. ALVAREZ
GENERAL COUNSEL

APR 28 2008

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

Dear Senator:

I am pleased to enclose my responses to the questions you submitted following the October 4, 2007, hearing on the regulation and supervision of industrial loan companies. The questions that were sent shortly after the hearing were returned to the Committee by the Postal Service. For this reason, I did not receive your questions until last month.

Please let me know if I can be of further assistance.

Sincerely,

Scott G. Alvarez

Enclosures

cc: Ms. Elizabeth Hackett, Deputy Clerk
Committee on Banking, Housing, and Urban Affairs

For files
P. Ellif

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

SCOTT G. ALVAREZ
GENERAL COUNSEL

APR 28 2008

The Honorable Michael D. Crapo
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

Dear Senator:

I am pleased to enclose my responses to the questions you submitted following the October 4, 2007, hearing on the regulation and supervision of industrial loan companies. The questions that were sent shortly after the hearing were returned to the Committee by the Postal Service. For this reason, I did not receive your questions until last month.

Please let me know if I can be of further assistance.

Sincerely,

Scott G. Alvarez

Enclosures

cc: Ms. Elizabeth Hackett, Deputy Clerk
Committee on Banking, Housing, and Urban Affairs

08-296

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 9, 2008

The Honorable John M. Spratt, Jr.
Chairman
Committee on the Budget
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of January 3, 2008, inviting me to testify before the Committee on the Budget regarding the economic outlook.

I am pleased to inform you that, as requested, I will appear on Thursday, January 17, 2008, at 10:00 a.m.

Sincerely,

(Signed) Ben Bernanke

08-4213

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

March 19, 2008

The Honorable Charles E. Schumer
Chairman
Joint Economic Committee
Washington, D.C. 20510

Dear Mr. Chairman:

Thank you for your letter of March 13, 2008, inviting me to testify before the Committee regarding the economic outlook.

I am pleased to inform you that, as requested, I will appear on Wednesday, April 2, 2008, at 9:30 a.m.

Sincerely,

(Signed) Ben Bernanke

08-5659

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 4, 2008

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of April 3, 2008, inviting the Board to testify before the Committee at a hearing titled, "Using FHA for Housing Stabilization and Homeownership Retention."

I am pleased to advise you that Governor Randall S. Kroszner will appear on Wednesday, April 9, 2008, at 10:00 a.m.

Sincerely,

(Signed) Ben Bernanke

08-6325

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

May 6, 2008

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of April 21, 2008, regarding regulations implementing the Unlawful Internet Gambling Enforcement Act. In your letter, you cite the substantial problems in crafting regulations to implement the Act in a manner that does not have a substantial adverse effect on the efficiency of the nation's payment system, and suggest that it would be imprudent for the Federal Reserve Board and the Treasury Department to devote additional agency resources to promulgating final regulations, especially as you intend to pursue legislation to prevent implementation of the regulations. While the challenges in developing regulations to implement the Act effectively are substantial, the law currently requires the Board and the Treasury to promulgate joint implementing regulations and we are obligated to continue our efforts to do so, absent a change in the statute.

I appreciate you focusing attention on the difficulty of using the nation's payments system to combat illegal Internet gambling activity. We will include your letter in the public record of comments received on this matter.

Sincerely,

(Signed) Ben Bernanke

Identical letters also sent to: Chairman Luis V. Gutierrez and Ranking Member Ron Paul, House Financial Services Subcommittee on Domestic and International Monetary Policy, Trade and Technology; and Congressman Peter King.

OR-...

Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation
Board of Governors of the Federal Reserve System
Office of Thrift Supervision

June 6, 2008

The Honorable Barney Frank
Chairman
Committee on Financial Services
U.S. House of Representatives
2129 Rayburn Housing Office Building
Washington, DC 20515

Dear Chairman Frank:

Thank you for your letter dated April 28, 2008, regarding proposed changes to the Interagency Questions and Answers Regarding the Community Reinvestment Act (CRA). Your letter raises a specific concern about a question and answer proposed by our agencies in July 2007 about information that could be used to demonstrate that an investment in a national fund meets the geographic requirements of the CRA regulation. (*See* proposed Q&A §__.23 (a)-2.)

Your letter expresses the view that the proposed question and answer limits the amount of favorable CRA consideration a financial institution may receive for its investments in multi-bank community development funds only to those activities that it can document fall within its assessment area(s). Your letter further states the view that the question and answer represents a change in policy, and that previously the agencies provided CRA consideration for such investments without regard to geography, provided that the financial institution is satisfactorily meeting the credit needs within its assessment area.

The agencies have long recognized the important role served by community development funds, and the fact that many of these funds operate on a statewide or multistate basis. In the Interagency Questions and Answers Regarding Community Reinvestment published in 2001,[1] the agencies indicated that they would give favorable consideration to a financial institution's involvement in community development activities that benefit a broader statewide or regional area that includes the institution's assessment area. (*See* Q&A §§__.12(i) and 563e.12(h)-5.)[2] The agencies further stated in Q&A §§ __.12(i) and

[1] *See* 66 Fed. Reg. 36620 (July 12, 2001).
[2] *See* 66 Fed. Reg. 36626-27.

For files
P. Elliff

563e.12(h)-6 that the term "broader statewide or regional area" could be as large as a multistate area, for example, the Mid-Atlantic states.[3]

As you know, the Community Reinvestment Act encourages financial institutions "to help meet the credit needs of the local communities in which they are chartered consistent with the safe and sound operation of such institutions." 12 U.S.C. 2901(b). The goal of the proposed Interagency Q&A referenced in your letter, Q&A §__.23(a)-2, was to provide guidance to the industry and examiners alike on the type of information that could be used to show that a loan or investment in such a fund meets the necessary geographic requirements of the CRA statute and implementing regulations. The agencies did not intend to suggest a change in position on the regulatory requirements regarding CRA consideration for a financial institution's investments outside of its assessment area(s), or a modification of those requirements.

We appreciate your taking the time to write to us and bring your interest in this matter to our attention. Please be assured that your comments are being seriously considered by the agencies. We will be happy to notify you as soon as possible after we have made a decision on any final guidance on this issue.

If you have any additional questions or concerns, please do not hesitate to contact us.

Sincerely,

Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System

John C. Dugan
Comptroller
Office of the Comptroller of the Currency

Sheila C. Bair
Chairman
Federal Deposit Insurance Corporation

John M. Reich
Director
Office of Thrift Supervision

[3] *See* 66 Fed. Reg. 36627.

08-0058

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

FREDERIC S. MISHKIN
MEMBER OF THE BOARD

June 9, 2008

The Honorable John F. Kerry
Chairman
Committee on Small Business
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I am pleased to enclose for inclusion in the hearing record my responses to the written questions you and Senator Snowe submitted following the hearing before the Committee on "The Impact of the Credit Crunch on Small Business." I have also written Senator Snowe providing her with my responses.

Please let me know if I can be of further assistance.

Sincerely,

Enclosures

Governor Frederic Mishkin subsequently submitted the following in response to a written question received from Chairman Kerry in connection with the April 16, 2008, hearing on "The Impact of the Credit Crunch on Small Business":

During your oral testimony, you indicated that you could not comment on the April 2008 Federal Reserve Senior Loan Officer Opinion Survey. Since that survey will likely have been released before you respond to the Committee's questions for the record, please comment on the results of the April 2008 survey and what they say about the current state of the small business credit market.

In the April Senior Loan Officer Opinion Survey, domestic and foreign banking institutions reported having further tightened their lending standards and terms on a broad range of loan categories, including business loans, over the previous three months. The net fractions of domestic banks reporting tighter lending standards were close to, or above, historical highs for nearly all loan categories in the survey.

About 55 percent of domestic banks--up from about 30 percent in the January survey--reported tightening lending standards on C&I loans to large and middle-market firms over the past three months. Significant majorities of respondents reported tightening price terms on C&I loans to these firms, and in particular, on net, about 70 percent of banks--up from about 45 percent in the January survey--indicated that they had increased spreads of loan rates over their cost of funds. In addition, smaller but significant net fractions of domestic banks reported tightening non-price-related terms on C&I loans to these firms over the past three months.

Regarding C&I loans to small firms, about 50 percent of domestic respondents reported tightening their lending standards on such loans over the survey period, compared with about 30 percent who reported doing so in the January survey. On net, about 65 percent of banks--up from about 40 percent in the January survey--also noted that they had increased spreads of C&I loan rates over their cost of funds for these firms. In addition, large net fractions of domestic respondents reported tightening other price-related terms, and smaller fractions tightened non-price-related terms on C&I loans to small firms.

Although the April Senior Loan Officer Opinion Survey shows that banks, on net, continued to tighten lending standards, the available data overall do not suggest that small businesses are in a severe credit crunch. In particular, recent surveys by the National Federation of Independent Business (NFIB) show that the net percent of small businesses that found credit more difficult to obtain over the past three months has generally been well below its highs in the early 1990s. NFIB surveys also show that only a small fraction of borrowers identify credit access as their most important problem.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 13, 2008

The Honorable Robert A. Brady
Chairman
Committee on House Administration
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your recent letter inviting me to speak at the 2008 Summer Intern Lecture Series, which will run through August 8. Regrettably, my calendar for the summer months is already heavily committed, and I will have to decline your kind invitation.

With regards.

Sincerely,

(Signed) Ben Bernanke

Identical letter also sent to Chairman Dianne Feinstein, Senate Committee on Rules and Administration.

For files
P. Elliff

08-7689

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

June 26, 2008

The Honorable Herb Kohl
Chairman
Special Committee on Aging
United States Senate
Washington, D.C. 20510-6400

Dear Mr. Chairman:

Thank you for including the Federal Reserve in your request for submissions of aging-related research for the Committee's report on *Recognition of Excellence in Aging Research* to be issued this fall. The Federal Reserve does not have any submissions for inclusion in the report.

Sincerely,

(Signed) Laricke Blanchard

Laricke Blanchard
Assistant to the Board

Identical letter also sent to Ranking Member Gordon H. Smith.

08- 7932

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 27, 2008

The Honorable Paul D. Ryan
Ranking Republican
Committee on the Budget
House of Representatives
Washington, D.C. 20515

Dear Congressman:

This letter is in response to the report, "A Roadmap for America's Future," that you recently sent to me. Your report addresses some of the most important long-term fiscal and economic challenges faced by our nation. In coming years, many factors will influence our economy, but it is likely that two of the most pervasive issues will be developments in our health care system and the aging of our population. Indeed, fast-rising health care costs and the demographic transition associated with population aging are the primary sources of the unsustainable long-term budget paths projected by federal budget analysts. These developments will require the nation to choose among reductions in federal spending for health and retirement programs, cuts in other types of federal outlays, higher taxes, or some combination thereof, in order to avoid the economic costs and risks associated with the sharply higher budget deficits that would result from failing to make these difficult choices. In turn, the decisions that are made regarding federal budget and tax policies will affect the pace of future economic growth, incomes and living standards, how the costs of federal government programs are distributed within and across generations, along with many other features of our economy.

Improving our health-care system to make it less costly, more efficient, and more accessible is important for our nation and is the biggest challenge faced by fiscal policy makers. Last year, health care accounted for about one-quarter of total federal spending. The Congressional Budget Office projects that health spending will account for almost one-half of all federal non-interest outlays by 2050 under current policies. Such a projection underscores the importance of giving timely consideration to the reform of the federal health-care programs as part of an overall plan to move the federal budget onto a track that is sustainable.

The unavoidable trend in the aging of our population will put increasingly large financial strains on the Social Security program as the number of people expected to be working and paying taxes into the system rises more slowly than the number of people projected to be receiving benefits. This year, as the first members of our baby-boom generation reach the minimum age for receiving Social Security benefits, there are about five working-age people--between the ages of twenty and sixty-four--for each person age sixty-five and older. The intermediate projections of the Social Security Trustees show that by the time most of the baby boomers will have retired in 2030 the ratio of those of working age to those aged sixty-five and older will have declined to around three. Further expected increases in the average life expectancy of our population, along with projections of steady rates of fertility and immigration, will tend to push this ratio down even a little more in the years after the baby boomers have all retired. While the projected fiscal imbalances associated with the Social Security system are not as large as those that will likely arise from the federal health-care programs, they still are significant and present an important challenge to fiscal policy makers.

Finally, your report also notes the fairly widespread agreement that our tax code is often complicated, inefficient and inequitable. Reforms that simplify the tax system could provide tangible economic benefits by reducing the resources necessary for households and businesses to comply with the tax code. Also, a general economic principle of tax reform is that the economic efficiency of a tax system can usually be enhanced if tax rates can be lowered while at the same time broadening the tax base in order to raise the same amount of revenue. However, reforming the tax structure is not easy as it involves not only choosing to lower tax rates but also the difficult decisions of how to broaden the tax base. Indeed, changes to the structure of the tax system that may improve its efficiency may not be judged to be equitable. Nevertheless, the choices that are made regarding both the size and structure of the federal tax system will affect a wide range of economic incentives that will be part of determining the future economic performance of our nation.

I hope you find these comments helpful.

Sincerely,

(Signed) Ben Bernanke

08-8571

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

July 8, 2008

The Honorable Spencer Bachus
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter of June 26, 2008, regarding regulations implementing the Unlawful Internet Gambling Enforcement Act. In your letter, you urge the Department of the Treasury and the Federal Reserve Board to swiftly finalize the joint proposed rules.

As part of our consideration of the public comments received on the proposed rules, staff from the Federal Reserve and the Treasury are working together as expeditiously as possible in conducting further outreach and research on the issues raised by the comments and developing appropriate revisions to the rules. As noted by many of the commenters to the proposed rules and in our Congressional testimony this year, this is a complex and challenging undertaking.

Thank you for your interest in the regulations. We will include your letter in the public record of comments received on this matter.

Sincerely,

(Signed) Ben Bernanke

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

July 17, 2008

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter dated July 11, 2008, concerning the Memorandum of Understanding (MOU) recently entered into between the Board and the Securities and Exchange Commission. I appreciate your support for the MOU, and I look forward to working with you and the Committee in exploring what changes to the current financial regulatory system might be appropriate for Congress to enact in light of recent events. We will continue to keep you and your staff apprised of our views on these important issues as our thinking develops.

Sincerely,

(Signed) Ben Bernanke

08-11115

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

September 12, 2008

The Honorable Barney Frank
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your letter inviting the Federal Reserve to testify before your Committee at a hearing titled, "The Implementation of the HOPE for Homeowners Program and a Review of Foreclosure Mitigation Efforts."

I am pleased to advise you that Governor Elizabeth A. Duke will testify on Wednesday, September 17, 2008, at 10:00 a.m.

Sincerely,

(Signed) Ben Bernanke

For files
P. E[illegible]

08 - 18176

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

November 26, 2008

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION
2008 NOV 32 P 6: 23

The Honorable Joe Barton
Ranking Member
Committee on Energy and Commerce
House of Representatives
Washington, D.C. 20515

Dear Congressman:

I am replying to your letter of November 19, 2008, in which you ask a number of questions with respect to the temporary reciprocal currency arrangements (i.e., swap lines) between the Federal Reserve and certain foreign central banks. Please find responses to your questions in the subsequent pages.

As requested, Federal Reserve staff will be contacting the Republican office of the Committee to discuss arrangements for a briefing for you on this matter.

Sincerely,

(signed) Ben Bernanke

Enclosure

Identical letters also sent to: Representatives Ralph Hall, George Radonovich, Mike Rogers, John Sullivan, Tim Murphy, Michael Burgess, Marsha Blackburn

26 November 2008

Responses to Questions on
Federal Reserve Swap Lines from
Members of the House Committee on Energy and Commerce

The Federal Open Market Committee (FOMC) currently has authorized bilateral swap lines with fourteen foreign central banks under the authority of the Federal Reserve Act. These arrangements are designed to help improve liquidity conditions in both domestic and international financial markets and to mitigate the spread of difficulties in obtaining U.S. dollar funding in fundamentally sound and systemically important economies. In that respect, these facilities support the functioning of a safe, flexible, and stable monetary and financial system in the United States during this period of financial turbulence and assist in the pursuit of the Federal Reserve's statutory goals of maximum employment and price stability.

It is important to recognize that a drawing under these swap agreements is not a loan but, rather, an exchange of dollars for foreign currency. A foreign central bank may request one or more drawings under a swap line, but the Federal Reserve has the right to approve each drawing. Transactions are structured so that there is no foreign exchange risk to the Federal Reserve, as explained further below. The maturity of these swaps has varied from overnight to at most three months.

Please find responses to your specific questions below.

1. *To which foreign central banks has the Federal Reserve made loans and for what amounts?*

   Eight of the fourteen foreign central banks that have liquidity swap lines with the Federal Reserve drew on their lines at some point during the period from December 2007, when the first liquidity swap lines were established, to November 25, 2008. Individual drawings have been for varying amounts and for varying terms, with maturities ranging from overnight to three months. All drawings that matured during this period were repaid in full. These lines are set to expire on April 30, 2009, unless extended by mutual agreement of the Federal Reserve and our central bank counterparties. The Federal Reserve Bank of New York publishes details quarterly on the amounts drawn under these arrangements in its report on Treasury and Federal Reserve Foreign Exchange Operations. The latest report, which covers the period from July through September, is attached.

2. *What authority does the Federal Reserve have to make such loans to foreign central banks?*

   The Federal Reserve operates its swap lines under authority in the Federal Reserve Act and the authorizations, policies, and procedures established by the FOMC. Section 14 of the Act permits the Federal Reserve Banks to conduct open market operations in foreign exchange markets and to open and maintain accounts in foreign currency with foreign central banks. The legal basis for the Federal Reserve's swap arrangements has been reviewed by Congress several times since the early 1960s, and Congress has never found these arrangements to be an inappropriate use of the powers granted in the Federal Reserve Act.

3. *Why has the Federal Reserve assumed the role of world lender in lieu of the International Monetary Fund?*

The financial turmoil of the past year and a half has disrupted the normal channels of transmission of dollar liquidity among institutions in the United States and abroad. Moreover, financing troubles abroad have at times created significant tensions in U.S. money markets, as foreign institutions sought to obtain dollar liquidity here that they had previously been able to obtain in their local markets. As these pressures continued to intensify, the Federal Reserve implemented temporary swap lines with other central banks to facilitate the functioning of domestic and international money markets. While dollar funding pressures have nonetheless persisted, the swap lines appear to have played a constructive role in limiting stresses in money markets both in the United States and abroad.

The Federal Reserve's efforts to provide liquidity through temporary swap lines differ fundamentally from the role traditionally played by the International Monetary Fund (IMF). The Federal Reserve has concluded swap lines with a number of leading advanced economies and several emerging market economies that have pursued strong policies in recent years. By contrast, IMF lending has traditionally been provided during times of stress and when countries' economic and financial policies need to be strengthened and redirected.

More recently, in late October, the IMF announced the establishment of its Short-term Lending Facility, a new facility that can provide liquidity to qualified emerging market countries facing temporary liquidity problems in global capital markets. The Federal Reserve is on record as welcoming the introduction of this facility and sees the new facility as broadly complementary to our swap lines with central banks. More generally, the Federal Reserve is supportive of the IMF's role in helping emerging market countries address and resolve their ongoing economic and financial difficulties and will work closely with the IMF as appropriate.

4. *What criteria does the Federal Reserve follow for the issuance of such loans?*

The Federal Reserve has considered carefully each request for a liquidity swap facility made by a foreign central bank. A central concern has been the extent to which the envisioned swap line would help remedy dollar funding pressures around the globe and, hence, reduce resulting pressures in U.S. money markets. With this in mind, the establishment of swap facilities has generally been limited to central banks that operate in economies with the following features: the economies are economically important, in the sense that they are large in terms of GDP, or they are financially important, in the sense that they have systemically important financial centers; the economies are fundamentally sound and well-managed; and the economies are threatened by dollar funding pressures arising from the global financial turmoil. The Federal Reserve also consults as appropriate to the circumstances with the U.S. Treasury and the Department of State to make sure that any swap arrangement with a foreign central bank is consistent with U.S. policy toward the country.

5. *The agreements have been described as currency swap arrangements where the Federal Reserve provides U.S. dollars in exchange for foreign currency. What exactly is the collateral for such loans, and how much collateral is required in exchange for each U.S. dollar?*

   Each Federal Reserve swap transaction with a foreign central bank is a combination of two foreign exchange transactions. In the first transaction, the Federal Reserve sells dollars to the foreign central bank in exchange for the currency of the foreign central bank. Later, at the maturity of the swap, this transaction is unwound, and the Federal Reserve sells the foreign currency back to the foreign central bank in exchange for the same amount dollars that were initially drawn. The amount of foreign currency taken by the Federal Reserve is determined by its value in foreign exchange markets on the date of the drawing and is equal in value to the quantity of dollars sold to the foreign central bank. The Federal Reserve also earns a market-based return as a part of this transaction. Because the Federal Reserve and the foreign central bank agree at the outset on the terms at which the initial transaction will be unwound, fluctuations in exchange rates and other asset prices during the interim do not alter the eventual payments between the central banks in the second leg. Thus, these swap operations are essentially void of exchange rate or other market risk.

   Importantly, we judge our swap line exposures to be of the highest quality and safety. Above and beyond the protection afforded by the foreign currency that we hold in the swap transaction, our central bank counterparties are obligated to return the dollars that they have drawn. We have long and close relationships with these central banks, many of which hold substantial quantities of U.S. dollar reserves in accounts at the Federal Reserve Bank of New York, and these dealings provide a track record that justifies a high degree of trust and cooperation.

6. *What are the credit terms attached to these loans, including repayment schedules, loan duration, and remedies or other provisions for default?*

   As can be seen in the attached report from the Federal Reserve Bank of New York, swap drawings are of short-term maturities, and the duration of individual swap transactions has varied from overnight to three months. Each initial transaction is reversed in full on the maturity date for the swap; there is no other scheduling of payments. When considering a request for a drawing under a swap arrangement, the Federal Reserve takes into account whether the counterparty central bank has ample capacity to repay--for example, out of its own foreign-currency reserves. The main remedy for failure to execute in the second leg of the swap transaction would be for the Federal Reserve to retain the foreign currency it acquired from the foreign central bank in the first leg of the swap. As noted above, however, we judge the probability of default on the swap to be extremely low.

7. *How would the Federal Reserve treat a default or failure to repay a loan by the foreign central bank?*

   As mentioned above, the main remedy for failure to execute in the second leg of the swap transaction would be for the Federal Reserve to retain the foreign currency it acquired from the foreign central bank in the first leg of the swap. As also noted above, however, we judge the probability of default on these swaps to be extremely low.

Attachment

Attachment to
Enclosure

pta.

TREASURY AND FEDERAL
FOREIGN EXCHANGE OPE

July–September 2008

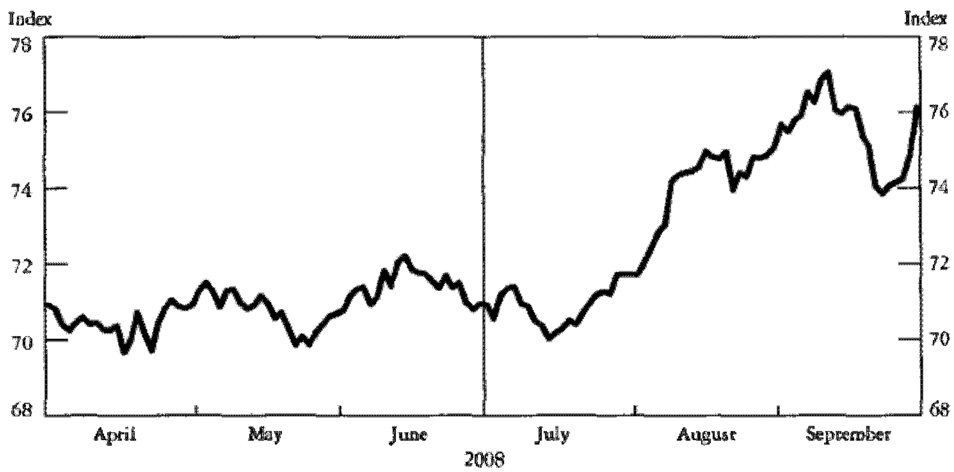
During the third quarter of 2008, the dollar's trade-weighted exchange value appreciated 7.3 percent, as measured by the Federal Reserve Board's major currencies index. The dollar appreciated 11.8 percent against the euro, but depreciated 0.1 percent against the yen. These exchange rate movements reflected rising concerns about the growth outlook for overseas economies relative to the U.S. economy, particularly as tensions in the global credit and funding markets intensified to historically extreme levels. The U.S. monetary authorities did not intervene in the foreign exchange markets during the quarter.

During the quarter, the euro–U.S. dollar currency pair traded in three distinct periods. For most of July, the dollar continued to trade near its all-time low against the euro, as concern over the health of the U.S. financial sector and its impact on the U.S. macroeconomic outlook weighed on sentiment toward the dollar. However, from the last week of July to the first week of September, the dollar appreciated broadly, as economic data indicated that growth prospects in many overseas economies were deteriorating sharply. Over the remainder of the quarter, the dollar traded in a wide range, as investors expressed great concern and uncertainty over both the global economic outlook and the health of global financial markets.

Reacting to historically elevated demand for dollar funding, during the quarter the Federal Reserve Bank of New York announced several increases in the size of the temporary currency swap facilities with the European Central Bank (ECB) and the Swiss National Bank (SNB). The New York Fed also authorized new facilities and renewed arrangements with the Bank of England (BoE), the Bank of Japan (BoJ), the Bank of Canada (BoC), the Reserve Bank of Australia (RBA), Sveriges Riksbank, Norges Bank, and the Danmarks Nationalbank.[1]

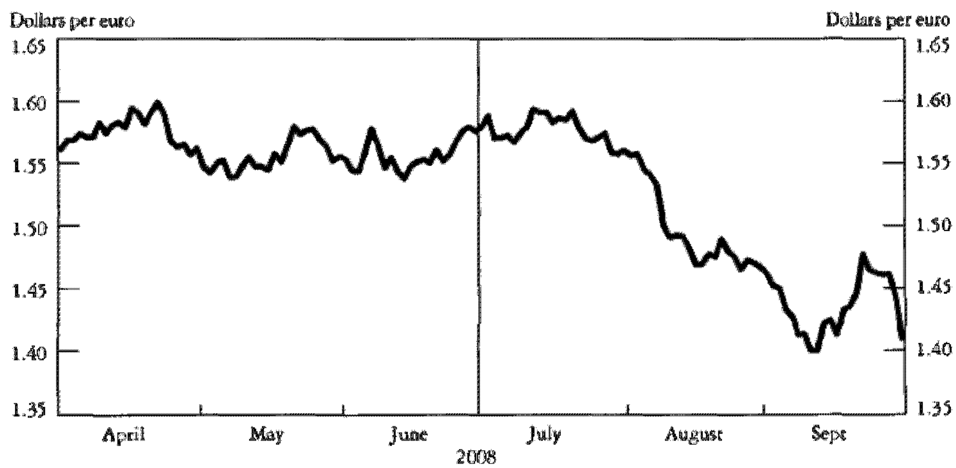
This report, presented by William Dudley, Executive Vice President, Federal Reserve Bank of New York, and Manager of the System Open Market Account, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from July through September 2008. Alex Cohen was primarily responsible for preparation of the report.

Chart 1
TRADE-WEIGHTED U.S. DOLLAR



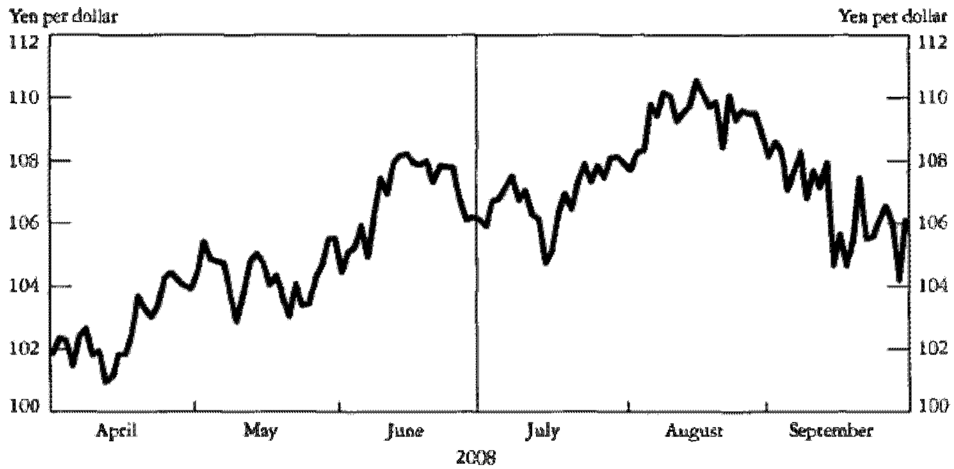
Sources: Board of Governors of the Federal Reserve System; Bloomberg L.P.

Chart 2
EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3
U.S. DOLLAR–YEN EXCHANGE RATE



Source: Bloomberg L.P.

DOLLAR TRADES IN RANGE AGAINST THE EURO DESPITE CONTINUED CONCERNS ABOUT THE U.S. ECONOMIC OUTLOOK

During the first three weeks of July, the euro–U.S. dollar exchange rate continued to trade within the range of approximately \$1.56 to \$1.60, while reaching an all-time high of about \$1.6040 per euro on July 15. During this period, sentiment toward the dollar remained relatively negative as concerns persisted about the impact of weakness in the U.S. financial and housing sectors on the real economy. These concerns were underscored by the failure in mid-July of California-based mortgage bank IndyMac Bank, F.S.B.—the second largest bank bankruptcy in U.S. history. In addition, during this period, concerns about the solvency of government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac intensified, as various news articles and analyst reports speculated that a government takeover of—or government support for—the firms may be necessary. On July 13, the U.S. Treasury and the Federal Reserve announced that they would provide Fannie Mae and Freddie Mac with back-stop liquidity. This announcement was generally viewed favorably, as it was perceived to reduce concerns about possible systemic risk in the U.S. financial sector and provide support to the housing sector.

[1] See <http://www.federalreserve.gov/newsevents/press/monetary/20080929a.htm>.

Throughout this period, market participants remained highly attuned to the relative growth prospects for the U.S. and overseas economies. Many investors continued to express optimism that overseas economic activity could remain resilient, despite widespread expectations for a U.S. economic slowdown. In the United States, growth data were mixed, as softer business confidence and retail sales data were countered by relatively better-than-expected industrial production and unemployment data. In addition, the front-month West Texas Intermediate (WTI) crude oil futures contract reached a record level of $147.27 per barrel, before moderating significantly over the remainder of the quarter.

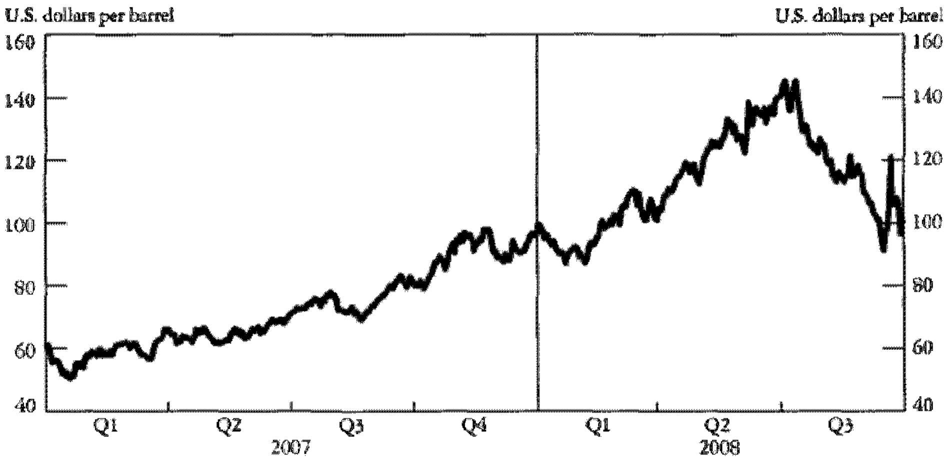
Investor sentiment toward the euro-area economic outlook remained more favorable than sentiment toward the U.S. outlook, despite some euro-area data showing signs of slowing economic activity. On July 3, the ECB, citing lingering inflationary pressures, increased its policy rate by 25 basis points, to 4.25 percent. However, official commentary noting growth concerns and subsequent weaker-than-expected data encouraged many investors to anticipate that a cyclical turning point in euro-area economic activity had arrived. This shift in expectations for relative growth prospects between the United States and the euro area also increasingly led many market observers to suggest that the multiyear trend of dollar depreciation against the euro might soon end.

DOLLAR RISES AGAINST MOST MAJOR CURRENCIES DURING THE MIDDLE OF THE QUARTER, AS GROWTH PROSPECTS IN OVERSEAS ECONOMIES DECLINE

From the last week of July to the first week of September, the dollar appreciated against most major currencies, as signs of deteriorating growth prospects in overseas economies led many investors to discredit the notion that economic activity in these countries could "decouple" from the United States. The dollar's trade-weighted exchange value, as measured by the Federal Reserve Board's major currencies index, appreciated approximately 9.5 percent over this period. The deterioration of global growth prospects was also evident in the sharp fall in commodity prices, particularly the front-month WTI crude oil futures contract, which by the end of August had declined roughly 21 percent from its record high in July.

Chart 4

FRONT-MONTH WEST TEXAS INTERMEDIATE CRUDE OIL FUTURES CONTRACT



Source: Bloomberg L.P.

From the last week of July to the first week of September, the dollar appreciated approximately 13.7 percent against the euro, as investors sharply downgraded their economic outlook for the euro-area economy. Foreign exchange moves were driven by a series of below-expectations euro-area data releases, including the German IFO Business Climate index on July 24 and the release of euro-area GDP in mid-August. Consistently, policy expectations in the euro area shifted noticeably. Following the ECB's August 7 policy meeting, some market participants expressed disappointment that President Jean-Claude Trichet did not show greater willingness to lower policy rates, given the sharp pace at which euro-area growth appeared to be slowing. Following the meeting, rates implied by the EONIA (Euro Overnight Index Average) swap curve declined, reflecting expectations that the ECB would leave policy rates unchanged over the next twelve months. This outlook for ECB policy rates contrasted sharply with market expectations at the beginning of the quarter, when the EONIA swap curve had implied about two full 25-basis-point policy rate increases over the same time horizon.

In contrast, U.S. economic data for the beginning of the quarter were interpreted more positively. In particular, employment, consumer confidence, housing, and manufacturing data generally exceeded market participants' expectations. At the end of July, comments from several Federal Open Market Committee (FOMC) members were interpreted as emphasizing the upside risks to inflation, a development that led some investors to speculate that the FOMC's series of policy rate cuts might soon near a conclusion. Expectations for future FOMC policy rate increases grew, as reflected by the 25-basis-point rise in rates implied by the June 2009 eurodollar futures contract during the third week of July. Consistent with these significant shifts in sentiment toward relative growth prospects for the United States and the euro area as well as interest rate expectations, in early September the dollar rose to about $1.39 per euro, its highest level in almost a year.

However, from the last week of July to the first week of September, the U.S. dollar was generally little changed against the Japanese yen, trading within a range of ¥105 to ¥111 per dollar. Many suggested that the perception that Japan's financial sector was more insulated from the ongoing tightening of global credit and funding market conditions provided some support to the yen, despite signs of slowing Japanese economic activity.

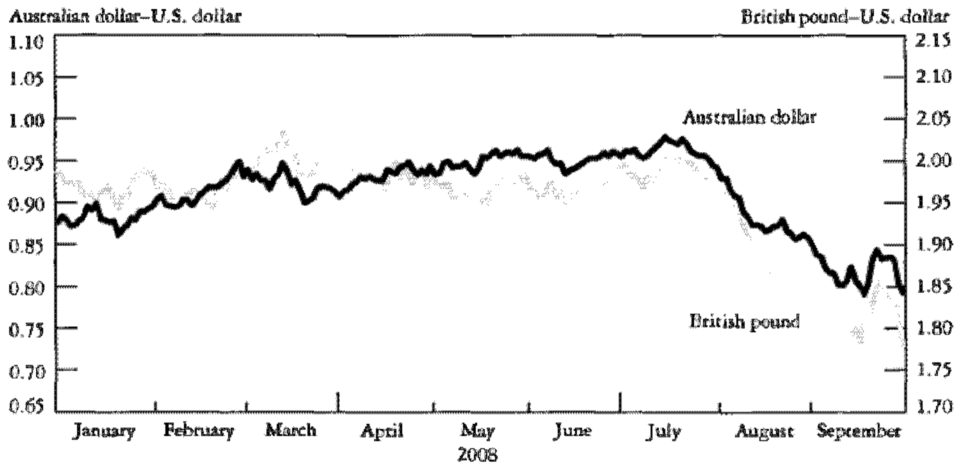
This perceived deterioration of growth prospects led several foreign central banks to begin easing policy rates or increasingly highlight downside risks to growth. The Reserve Bank of New Zealand unexpectedly reduced its official cash rate by 25 basis points, to 8.25 percent, at its July meeting. The RBA left policy rates unchanged at 7.25 percent during its August policy meeting, but its accompanying statement highlighted rising downside risks to growth. Further, while the BoE also left its policy rate unchanged at its August Monetary Policy Committee meeting, its quarterly inflation report was interpreted as placing a greater emphasis on the downside risks to growth. During the period, the U.S. dollar appreciated between approximately 13 and 20 percent against the Australian dollar, New Zealand dollar, and British pound.

Concerns about the global economic outlook were quite evident in many emerging market currencies. During the quarter, the South Korean won and Brazilian *real* each depreciated approximately 20 percent against the dollar, and the South Korean KOSPI and Brazilian Bovespa equity indexes declined 13.5 and 23.8 percent, respectively. Market participants attributed the price action in the Korean won to the deteriorating terms of trade and increasing current account deficit, given the adverse effect of slowing global growth on Korea's export sector. However, the Brazilian *real* depreciated as indications of slowing growth weighed on commodity prices, also resulting in a deterioration of terms of trade, given Brazil's reliance on commodity-related exports.

This shift in sentiment toward overseas growth prospects led international investors to make some significant portfolio adjustments—developments that benefited the dollar noticeably. In particular, as expectations for global growth fell, U.S. institutional investors, such as mutual funds and pension funds, began paring back their foreign investment holdings. Additionally, hedging activity among U.S.-based corporations, many of which reportedly chose to increase their currency-related hedges on their foreign businesses during this period, supported the dollar's broad appreciation.

Chart 5

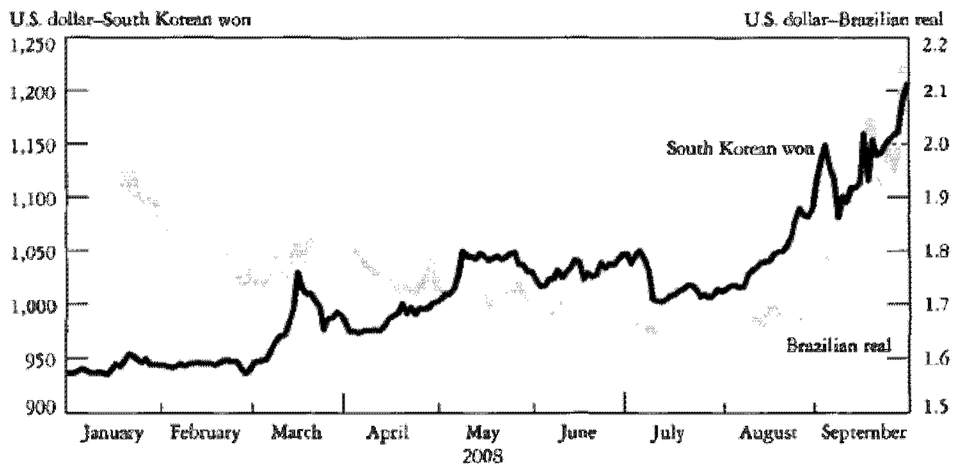
AUSTRALIAN DOLLAR–U.S. DOLLAR AND BRITISH POUND–U.S. DOLLAR EXCHANGE RATES



Source: Bloomberg L.P.

Chart 6

U.S. DOLLAR–SOUTH KOREAN WON AND U.S. DOLLAR–BRAZILIAN REAL EXCHANGE RATES



Source: Bloomberg L.P.

The deterioration in global growth prospects and capital outflows prompted many emerging market central banks to intervene to support their domestic currencies. Subsequently, some of these central bank reserve managers sought to reduce their holdings of other non-dollar major currencies to maintain a relatively steady portfolio allocation across major currencies. Market participants reported that this rebalancing activity by a number of prominent emerging market central banks provided support to the dollar against both the euro and British pound.

G-3 CURRENCIES TRADE IN WIDE RANGE AMID INTENSE CONCERN ABOUT THE HEALTH OF THE GLOBAL FINANCIAL SYSTEM

From the second week of September to the end of the third quarter, the dollar depreciated about 0.7 percent against the euro and about 1.5 percent against the Japanese yen. However, during this period, many major and emerging market currencies traded within historically wide ranges, and currency market volatility rose very sharply as concerns about the health of the global financial system intensified. The euro–U.S. dollar currency pair traded within a wide range of about $1.39 to $1.49 per euro, although it ended the quarter near $1.41 per euro, close to its lowest level since October 2007.

The announcement on September 7 that Fannie Mae and Freddie Mac would be placed in conservatorship was generally viewed positively by market participants, as it reduced uncertainty over the role of the GSEs in the financial system and their ability to provide support to the U.S. housing market and broader economy. However, concerns over the health of the U.S. financial sector increased sharply in mid-September after the investment bank Lehman Brothers Holdings Inc. announced that it had filed for bankruptcy and the Federal Reserve announced that it would provide liquidity support for the insurance company American International Group (AIG) to facilitate an orderly settlement of its business. Asset market volatility increased as confidence in the global financial system fell amid counterparty credit concerns and related funding market strains. Additionally, global equity markets declined, and spreads on financial firms' credit default swaps widened sharply. Dealers reported that liquidity conditions in the foreign exchange markets deteriorated significantly as speculative activity declined substantially, and counterparty credit concerns became very elevated. In this environment, exchange rate movements were largely driven by a historically high level of risk aversion among investors, who sought to reallocate their portfolios by holding safer assets and paring back on riskier exposures. Market participants expressed significant concern and uncertainty about the macroeconomic impact of these developments as well as the likely outlook for major exchange rates. Immediately following these developments, the dollar depreciated to about the $1.47 level against the euro and near the ¥104 level against the yen.

During the final two weeks of the quarter, market participants were focused on the U.S. Treasury's Troubled Asset Relief Program and the ensuing Emergency Economic Stabilization Act (EESA). The initial reports of these initiatives provided some support to the dollar, which recovered against the euro, appreciating by about 4.6 percent. By the end of the third quarter, the U.S. House of Representatives failed to pass the initial version of the EESA,[2] prompting a sharp sell-off in global equity markets and broad flight-to-quality flows into global sovereign debt markets. In this environment, both the yen and U.S. dollar outperformed most other major and emerging market currencies, with the euro–U.S. dollar currency pair trading near the $1.41 per euro level by the end of the quarter, close to the yearly high for the U.S. dollar. Sentiment toward the euro also deteriorated as comments from ECB officials continued to emphasize lingering inflationary risks. Consequently, many investors suggested that the euro area's real economic prospects could deteriorate significantly should the ECB not lower its policy rate at a faster pace.

The dollar's gains against the euro were supported by increasing concerns about the solvency of many European financial institutions. During the final weekend of the quarter, investors expressed great concern that several European financial institutions—including the Belgian-Dutch bank Fortis, the Belgian-French bank Dexia, and the U.K. mortgage bank Bradford and Bingley—had either been nationalized or required significant government capital injections. In addition, the German real estate company Hypo Real Estate announced plans to receive a sizable capital injection by a consortium of German banks. These developments added to negative sentiment toward the euro, as investors reacted to signs of intensifying strains on the European financial system. Notably, around this time, many market participants were focused on the Irish government's decision to place a two-year guarantee on all deposits, bonds, and debt of six Irish banks. Market participants suggested that the move highlighted the immediate need for a coordinated effort among euro-area policymakers to address potential solvency issues within the region's financial system. More generally, many market participants continued to express concern over the ECB's emphasis on lingering inflation risks, despite the significant strains on the global financial system and signs that euro-area growth was slowing dramatically.

[2] A modified version of the original EESA was passed by the Senate on October 1 and by the House of Representatives on October 3.

The yen outperformed most major and emerging market currency pairs during the final three weeks of the quarter. Elevated risk aversion toward the end of the quarter prompted a significant repatriation of capital by Japanese institutional and retail investors. Many of these investors pared back positions in higher yielding foreign investments as well as those in currencies considered sensitive to global growth and commodity prices. Additionally, the perception that the Japanese financial sector remained relatively healthy and that Japanese investors had limited exposure to overseas credit markets added to positive sentiment toward the yen. In September, the yen appreciated about 1.9 percent against the U.S. dollar to end the quarter at ¥106.11 per dollar, and appreciated between approximately 5 and 9 percent against the euro, Australian dollar, and New Zealand dollar.

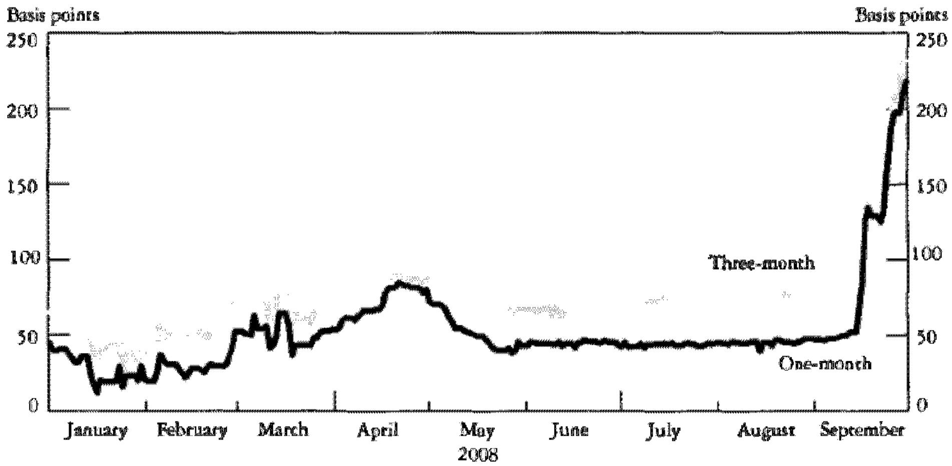
GLOBAL FUNDING AND FOREIGN EXCHANGE SWAP MARKET LIQUIDITY CONDITIONS DETERIORATE TO UNPRECEDENTED LEVELS

The sharp rise in counterparty credit concerns led to intense pressures in many global funding markets. Heightened demand for funding concurrent with elevated precautionary hoarding of cash by many institutions caused immense deterioration of term liquidity in both secured and unsecured lending markets. Many market participants reported that, as a result, some financial institutions were increasingly funding at very short-dated maturity tenors, leading to heightened concerns over potential rollover risks.

Global funding market pressures were evident in the virtual shut-down of the foreign exchange swap market. Dealers reported that bid-ask spreads on foreign exchange swaps widened to as much as ten times the levels that prevailed before August 2007. They also reported a widespread decline in interbank market making and exceptionally limited trading activity in term maturity tenors. The price action was reportedly driven by demand for dollar funding from global financial institutions, particularly European banks. As many of these institutions increasingly struggled to obtain funding in the unsecured cash markets, they turned to the collateralized foreign exchange swap market as a primary channel for raising dollar funding. This extreme demand for dollar funding led to a shift in foreign exchange forward prices, with the implied dollar funding rate observed in foreign exchange swaps on many major currencies rising sharply above that suggested by other relative interest rate measures such as the dollar OIS (Overnight Index Swap) rate and the dollar LIBOR (London Interbank Offered Rate). During the quarter, the spread of one- and three-month dollar rates implied by euro–U.S. dollar foreign exchange forward points over their respective dollar LIBOR fixing rate widened by around 415 and 245 basis points, respectively.

Chart 7

U.S. DOLLAR LIBOR–OVERNIGHT INDEX SWAP SPREAD

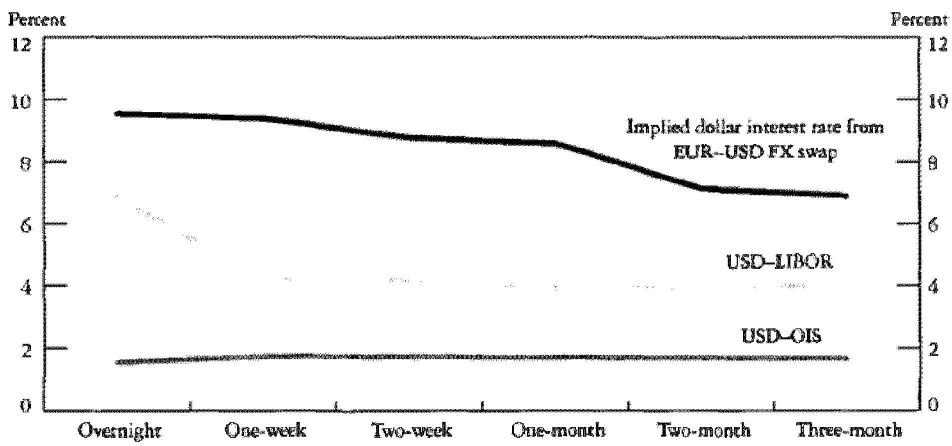


Source: Bloomberg L.P.

Note: LIBOR is the London Interbank Offered Rate.

Chart 8

U.S. DOLLAR INTEREST RATES, SEPTEMBER 30, 2008



Sources: Reuters; Bloomberg L.P.

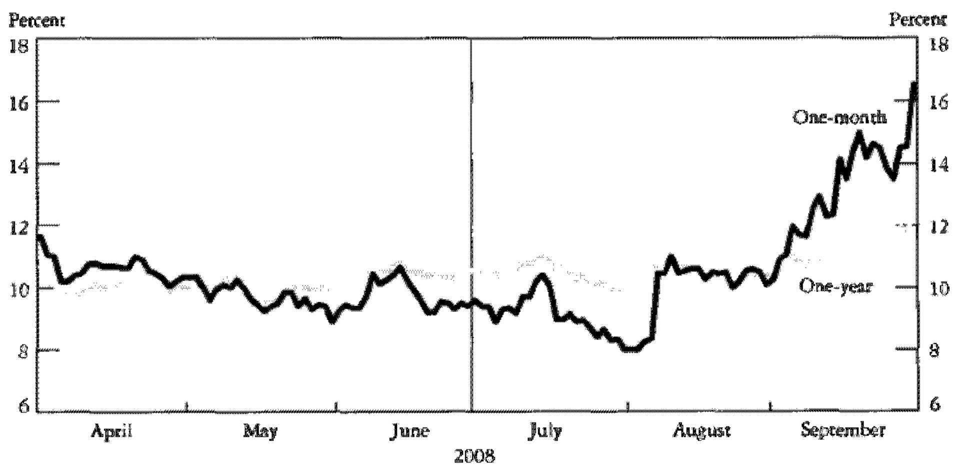
Note: LIBOR is the London Interbank Offered Rate; OIS is the Overnight Index Swap rate.

OPTION-IMPLIED VOLATILITY OF G-3 CURRENCIES RISES SHARPLY DURING THE THIRD QUARTER

Due to the elevated strains in global credit markets, option-implied volatility of most major and emerging market currencies rose to multiyear high levels. Option-implied volatility of the euro–U.S. dollar and U.S. dollar–yen currency pairs rose rapidly to levels last observed in 2000. Additionally, since mid-July, one-month option-implied volatility of the euro–U.S. dollar currency pair increased from about 9.6 percent to 17.1 percent, exceeding the levels observed in mid-March. The rise in option-implied currency market volatility was consistent with very sharp rises in volatility across global financial markets, as concerns about credit and funding market pressures intensified sharply.

Chart 9

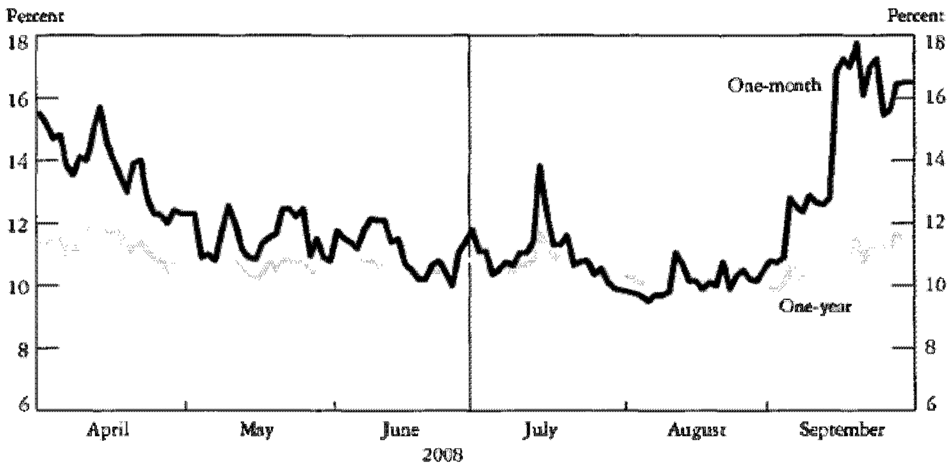
ONE-MONTH AND ONE-YEAR EURO–U.S. DOLLAR IMPLIED VOLATILITY



Source: Bloomberg L.P.

Chart 10

ONE-MONTH AND ONE-YEAR U.S. DOLLAR–YEN IMPLIED VOLATILITY



Source: Bloomberg L.P.

TEMPORARY RECIPROCAL CURRENCY ARRANGEMENTS EXPANDED WITH OTHER CENTRAL BANKS

To further address pressures in funding markets, throughout the quarter the FOMC authorized sizable increases in existing temporary reciprocal currency arrangements (swap lines) with the ECB and the SNB, while extending new swap lines to various central banks, as noted below.

Table 1

TEMPORARY RECIPROCAL CURRENCY ARRANGEMENTS

Billions of U.S. Dollars

Central Bank	Authorized Swap Line
European Central Bank	240[a]
Swiss National Bank	60[b]
Bank of England	80
Bank of Japan	120
Bank of Canada	30
Reserve Bank of Australia	30
Sveriges Riksbank	30
Norges Bank	15
Danmarks Nationalbank	15

[a]Reflects an increase of $190 billion over the previously authorized amount.

[b]Reflects an increase of $46 billion over the previously authorized amount.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE RESERVES

The U.S. monetary authorities did not undertake any intervention operations during the quarter. At the end of the quarter, the current value of the Federal Reserve System's Open Market Account holdings totaled $304.5 billion—consisting of $23.3 billion of foreign exchange reserve portfolio investments and $281.2 billion carrying value of outstanding swaps with the ECB, SNB, BoE, BoJ, RBA, and Danmarks Nationalbank. The current value of the U.S. Treasury's Exchange Stabilization Fund totaled $23.3 billion, comprised of euro and yen holdings. The U.S. monetary authorities invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. To the greatest extent practicable, the investments are split evenly between the System Open Market Account and the Exchange Stabilization Fund.

To facilitate the functioning of financial markets and provide liquidity in U.S. dollars abroad, on December 12, 2007, the FOMC authorized temporary reciprocal currency arrangements with the ECB and the SNB. Holdings related to these arrangements are included in the System Open Market Account for the first and second quarters.

As of September 24, the FOMC authorized increases in existing temporary reciprocal currency arrangements with the ECB and the SNB, and extended new swap lines to various central banks. As of September 29, the authorized swap line amounts were as follows: $240 billion for the ECB, reflecting an increase of $190 billion over the previously authorized amount; $60 billion for the SNB, reflecting an increase of $48 billion over the previously authorized amount; $80 billion for the BoE; $120 billion for the BoJ; $30 billion for the BoC; $30 billion for the RBA; $30 billion for Sveriges Riksbank; $15 billion for Norges Bank; and $15 billion for the Danmarks Nationalbank.

All reciprocal currency arrangements have been authorized through April 30, 2009. As of September 30, the ECB had drawn down $174.7 billion, the SNB had drawn down $28.9 billion, the BoE had drawn down $40.0 billion, the BoJ had drawn down $29.6 billion, the RBA had drawn down $10 billion, and the Danmarks Nationalbank had drawn down $5 billion, while the BoC, Sveriges Riksbank, and Norges Bank had yet to draw down on their swap lines.

A significant portion of the U.S. monetary authorities' foreign exchange reserves is invested in European and Japanese government securities. On an outright basis, the U.S. monetary authorities hold German, French, and Japanese government securities. Under euro-denominated repurchase agreements, the U.S. monetary authorities accept sovereign debt backed by the full faith and credit of the following governments: Belgium, France, Germany, Italy, the Netherlands, and Spain. Foreign currency reserves are also invested at the Bank for International Settlements and in facilities at other official institutions. As of September 30, direct holdings of foreign government securities totaled $21.1 billion, split evenly between the System Open Market Account and the Exchange Stabilization Fund. Foreign government securities held under repurchase agreements totaled $7.3 billion at the end of the quarter and were also split evenly between the two authorities.

Table 2

FOREIGN CURRENCY HOLDINGS OF U.S. MONETARY AUTHORITIES BASED ON CURRENT EXCHANGE RATES

Millions of U.S. Dollars

		Change in Balances by Source				
	Carrying Value, June 30, 2008[a]	Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sale[d]	Unrealized Gains/ Losses on Foreign Currency Revaluation[e]	Carrying Value, September 30, 2008[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	66,571.6	124,742.0	549.3	0	(7,474.1)[f]	184,388.7
Swiss franc	12,235.3	16,900.0	86.2	0	(883.5)[f]	28,338.1
Japanese yen	8,994.7	29,622.0	32.7	0	(86.5)[f]	38,563.0
Canadian dollar	0.0	0.0	0.0	0	0.0[f]	0.0
British pound	0.0	39,999.0	29.4	0	(1,109.3)[f]	38,919.1
Danish krone	0.0	5,000.0	0.5	0	(178.7)[f]	4,821.8
Australian dollar	0.0	10,000.0	1.8	0	(537.5)[f]	9,464.2
Swedish krone	0.0	0.0	0.0	0	0.0[f]	0.0
Norwegian krone	0.0	0.0	0.0	0	0.0[f]	0.0
Total	87,801.6	226,263.0	699.9	0	(10,269.6)	304,494.9
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	15,798.5	0	151.4	0	(1,679.5)	14,270.5
Japanese yen	8,994.7	0	16.0	0	19.8	9,030.5
Total	24,793.2	0	167.4	0	(1,659.7)	23,300.9

Note: Figures may not sum to totals because of rounding.

[a] Carrying value of the reserve asset position includes interest accrued on foreign currency, which is based on "day of" accrual method.

[b] Net purchases and sales include foreign currency purchases related to official activity, swap drawings and repayments, and warehousing.

[c] Investment earnings include accrued interest and amortization on outright and swap-related holdings.

[d] Gains and losses on sales are calculated using average cost.

[e] Reserve asset balances are revalued daily at the noon buying rates.

[f] Valuation adjustments on swap-related euro and Swiss franc holdings do not affect profit and loss because the impact is offset by the unwinding of the forward contract at the repayment date.

Table 3

BREAKDOWN OF FOREIGN RESERVE ASSETS HELD

Carrying Value in Millions of U.S. Dollars, as of September 30, 2008

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets:	14,270.5	184,388.7
Cash held on deposit at official institutions	5,997.2	6,021.0
Other assets[b]	—	170,094.5
Marketable securities held under repurchase agreements[c]	3,651.6	3,651.6
Marketable securities held outright	4,621.6	4,621.6
German government securities	1,981.6	1,981.6
French government securities	2,640.0	2,640.0
Swiss-franc-denominated assets:	—	28,338.1
Other assets[b]	—	28,338.1
Yen-denominated assets:	9,030.5	38,563.0
Cash held on deposit at official institutions	3,108.8	3,108.8
Marketable securities held outright	5,921.6	5,921.6
Other assets[b]		29,532.5
Canadian-dollar-denominated assets:		0
Other assets[b]		0
British-pound-denominated assets:		38,919.1
Other assets[b]		38,919.1
Danish-krone-denominated assets:		4,821.8
Other assets[b]		4,821.8
Australian-dollar-denominated assets:		9,464.2
Other assets[b]		9,464.2
Swedish-krone-denominated assets:		0
Other assets[b]		0
Norwegian-krone-denominated assets:		0
Other assets[b]		0

Note: Figures may not sum to totals because of rounding.

[a]As of September 30, the euro and yen portfolios had Macaulay durations of 9.1 months and 10.6 months, respectively, for both the ESF and SOMA portfolios.

[b]Carrying value of outstanding reciprocal currency swaps with the European Central Bank, the Swiss National Bank, the Bank of Japan, the Bank of Canada, the Bank of England, the Danmarks Nationalbank, the Reserve Bank of Australia, Sveriges Riksbank, and Norges Bank.

[c]Sovereign debt obligations of Belgium, France, Germany, Italy, the Netherlands, and Spain are presently eligible collateral for reverse repo transactions.

Table 4

RECIPROCAL CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of September 30, 2008
	Federal Reserve System Open Market Account (SOMA)	
Bank of Canada	2,000	0
Bank of Mexico	3,000	0
European Central Bank[a]	240,000	174,742
Swiss National Bank[a]	60,000	28,900
Bank of Japan[a]	120,000	29,622
Bank of Canada[a]	30,000	0
Bank of England[a]	80,000	39,999
Danmarks Nationalbank[a]	15,000	5,000
Reserve Bank of Australia[a]	30,000	10,000
Sveriges Riksbank[a]	30,000	0
Norges Bank[a]	15,000	0
Total	625,000	288,263
	U.S. Treasury Exchange Stabilization Fund (ESF)	
Bank of Mexico	3,000	0
Total	3,000	0

[a] Temporary swap arrangement.

Table 5

DAILY SWAP FACILITY ACTIVITY

U.S. Dollars

Date	Drawings	Repayments	Amount Outstanding
		European Central Bank	
7/3/08	25,000,000,000	25,000,000,000	50,000,000,000
7/17/08	25,000,000,000	25,000,000,000	50,000,000,000
7/31/08	25,000,000,000	25,000,000,000	50,000,000,000
8/14/08	30,000,000,000	25,000,000,000	55,000,000,000
8/28/08	20,000,000,000	25,000,000,000	50,000,000,000
9/11/08	20,000,000,000	20,000,000,000	50,000,000,000
9/18/08	40,000,000,000		90,000,000,000
9/19/08	40,000,000,000	40,000,000,000	90,000,000,000
9/22/08	40,000,000,000	40,000,000,000	90,000,000,000
9/23/08	40,000,000,000	40,000,000,000	90,000,000,000
9/24/08	40,000,000,000	40,000,000,000	90,000,000,000
9/25/08	65,000,000,000	60,000,000,000	95,000,000,000
9/26/08	65,000,000,000	40,000,000,000	120,000,000,000
9/29/08	30,000,000,000	30,000,000,000	120,000,000,000
9/30/08	84,742,000,000	30,000,000,000	174,742,000,000
		Swiss National Bank	
7/3/08	6,000,000,000	6,000,000,000	12,000,000,000
7/17/08	6,000,000,000	6,000,000,000	12,000,000,000
7/31/08	6,000,000,000	6,000,000,000	12,000,000,000
8/14/08	6,000,000,000	6,000,000,000	12,000,000,000
8/28/08	6,000,000,000	6,000,000,000	12,000,000,000
9/11/08	4,000,000,000	4,000,000,000	12,000,000,000
9/18/08	10,000,000,000		22,000,000,000
9/19/08	10,000,000,000	10,000,000,000	22,000,000,000
9/22/08	10,000,000,000	10,000,000,000	22,000,000,000
9/23/08	10,000,000,000	10,000,000,000	22,000,000,000
9/24/08	10,000,000,000	10,000,000,000	22,000,000,000
9/25/08	18,000,000,000	16,000,000,000	24,000,000,000
9/26/08	11,900,000,000	10,000,000,000	25,900,000,000
9/29/08	8,239,000,000	7,000,000,000	27,139,000,000
9/30/08	10,000,000,000	8,239,000,000	28,900,000,000
		Bank of Japan	
9/25/08	29,622,000,000		29,622,000,000

Table 5

DAILY SWAP FACILITY ACTIVITY (CONTINUED)

U.S. Dollars

Date	Drawings	Repayments	Amount Outstanding
		Bank of Canada	
		Bank of England	
9/18/08	14,050,000,000		14,050,000,000
9/19/08	20,800,000,000	14,050,000,000	20,800,000,000
9/22/08	26,150,000,000	20,800,000,000	26,150,000,000
9/23/08	30,101,000,000	26,150,000,000	30,101,000,000
9/24/08	29,900,000,000	30,101,000,000	29,900,000,000
9/25/08	35,045,000,000	29,900,000,000	35,045,000,000
9/26/08	40,000,000,000	35,045,000,000	40,000,000,000
9/29/08	9,999,000,000	10,000,000,000	39,999,000,000
9/30/08	9,999,000,000	9,999,000,000	39,999,000,000
		Danmarks Nationalbank	
9/30/08	5,000,000,000		5,000,000,000
		Reserve Bank of Australia	
9/29/08	10,000,000,000		10,000,000,000
		Sveriges Riksbank	
		Norges Bank	

BOARD OF GOVERNORS
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BEN S. BERNANKE
CHAIRMAN

December 3, 2008

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Senator:

Enclosed are my responses to the written questions you submitted following the July 15, 2008, hearing before the Committee titled, "Recent Development in U.S. Financial Markets and Regulatory Responses to Them." A copy has also been forwarded to the Chief Clerk of the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

(Signed) Ben Bernanke

For files
P. E...

Enclosure

Chairman Bernanke subsequently submitted the following in response to written questions received from Ranking Member Shelby in connection with the July 15, 2008, hearing regarding "Recent Development in U.S. Financial Markets and Regulatory Responses to Them" before Committee on Banking, Housing, and Urban Affairs:

<u>Preventing a Bailout</u>

Chairman Bernanke, government bailouts of financial institutions create long-term moral hazard problems. They make future financial crises more likely and more severe because investors and executives fail to monitor risks on the belief that the government will rescue them if they bet wrong. With the bailout of Bear Stearns earlier this year and now the Treasury's new proposal for the GSEs, I am concerned that we are creating a very severe moral hazard problem in this country. If we are not careful, it could very well be the source of our next crisis.

- **Chairman Bernanke, to avoid creating a moral hazard problem, should the equity positions of existing Freddie and Fannie shareholders be wipe-out as part of any investment by the Treasury Department in the GSEs?**

With the establishment of the GSE conservatorship, the equity positions of Fannie Mae and Freddie Mac were substantially reduced.

<u>Impact of New Government Debt</u>

Chairman Bernanke, Secretary Paulson's plan would likely involve the Treasury Department issuing new government debt to finance its investments in Freddie and Fannie.

- **How much debt will the Treasury likely need to issue to implement the Secretary's plan?**

- **What impact would this new debt issuance have on interest rates, the value of the dollar, the Federal government's fiscal position, and the overall economy?**

The existence of the backstop authorities to provide liquidity or capital support to the GSEs should bolster investor confidence in the GSEs and thereby reduce the extent of additional government support that will be required. It is very difficult to predict the scale of support that would be required in the event that liquidity or capital support does prove necessary. Depending partly on the scale of such activity, such financing activities could have some effect on interest rates, the dollar, the federal deficit, and the overall economy. However, the connection between the federal deficit and such variables is highly complex and any effects are likely to depend on the circumstances.

<u>Solvency of GSEs</u>

Chairman Bernanke, some have said that Freddie and Fannie are fundamentally sound and are only facing a crisis of confidence by investors.

- **In your judgment, is either Freddie or Fannie insolvent right now or do either of them face insolvency in the near future?**

- **Is there any way to prevent the collapse of Freddie and Fannie without significant financial support from the Federal government? In other words, is this a crisis of confidence or do Freddie and Fannie face real and serious financial problems?**

Fannie Mae and Freddie Mac both face significant challenges in the near future. Until the consequences of their past risk management decisions becomes clearer, and until the path of house prices becomes better known, the current capital adequacy of Fannie Mae and Freddie Mac will remain difficult to determine. Thus, the seriousness of the GSEs' financial problems, and the appropriate policy actions in response to these problems, particularly in light of the recent legislation passed by the Congress, remains to be seen.

<u>Raising Capital</u>

Chairman Bernanke, Secretary Paulson has offered one proposal for re-capitalizing Freddie and Fannie. Before Congress acts on this proposal, I would like to hear what other options and alternatives exist for addressing the current problems with the GSEs.

- **Would you please discuss what other steps could the Federal government take to support the GSEs? In particular, why would Treasury not ask for immediate receivership authority, which would serve to wipe out remaining shareholders and provide the government with greater ability to restructure the GSE with new management?**

Since Congress just recently passed GSE reform legislation, I will wait to discuss new proposals and other steps the Congress might take concerning the GSEs.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ELIZABETH A. DUKE
MEMBER OF THE BOARD

January 12, 2009

RECEIVED
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The Honorable Christopher J. Dodd
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I am pleased to enclose my responses to your additional questions received following the October 23, 2008, hearing before the Committee on the turmoil in U.S. credit markets. Also enclosed for the record are copies of my responses to the questions submitted by Senators Menendez and Enzi, which have been forwarded directly to their offices.

Please let me know if I can be of further assistance.

Sincerely,

(Signed) Elizabeth A. Duke

Enclosures

Governor Elizabeth Duke subsequently submitted the following in response to written questions received from Chairman Christopher Dodd in connection with the 10/23/08 hearing before the Committee on Banking, Housing, and Urban Affairs:

AIG

Q.1 Former AIG CEO Hank Greenberg recently wrote a letter that was reported in the Washington Post as saying, "Unless there is immediate change to the structure of the Federal loan [to AIG], the American taxpayer will likely suffer a significant financial loss." (Washington Post, November 3, 2008). However, in the Federal Reserve Board's report to the Senate Banking Committee about the Fed's actions with respect to AIG under Section 13(3) of the Federal Reserve Act, the Board told the Committee that it does not expect the loans to result in any losses to the Federal Reserve System or the taxpayer. Can you please explain why Mr. Greenberg is incorrect?

A.1. Outstanding advances to AIG under the credit facility initially provided to AIG on September 16, 2008 (the Revolving Credit Facility) are secured by the pledge of assets of AIG and its primary non-regulated subsidiaries, including AIG's ownership interest in its regulated U.S. and foreign subsidiaries. AIG has announced a comprehensive and global divestiture program to raise funds to repay the Revolving Credit Facility. These dispositions will include subsidiaries that rank among the largest and most prominent businesses in the industry.

As part of our oversight activities arising from our role as a lender to AIG, Federal Reserve staff, assisted by expert advisers that we have retained, reviews this divestiture program and closely monitors the company's progress in implementing the divestiture program's objectives on an ongoing basis, as well as cash flows and financial condition. The Federal Government's restructuring of its financial relationship with AIG announced on November 10, 2008, which includes the acquisition of $40 billion in newly issued Senior Preferred Stock of AIG by the U.S. Treasury, and the modification of some of the initial terms of the Revolving Credit Facility, should enhance AIG's ability to repay the Facility by, among other things, providing additional time to execute its asset disposition plan. Given the substantial assets of AIG and the senior and secured position of the Revolving Credit Facility, the Board expects that the Revolving Credit Facility will not result in any net loss to the Federal Reserve or taxpayers.

Advances to Maiden Lane II LLC (ML II) and to Maiden Lane III LLC (ML III) under the credit facilities established to partially fund the acquisition of certain AIG-related assets by these special purpose vehicles are secured by a lien on all of the assets held by ML II and ML III respectively. Given the expected amounts to be realized from the cash flows produced by these assets as well as the proceeds from disposition of these assets over time, and the subordinated positions of AIG in ML II and ML III, the Board does not expect any net cost to the taxpayers as a result of the failure to repay the credit extended by the Federal Reserve to ML II and ML III.

Q.2 What is the total sum of money the Federal Reserve System has lent to AIG through any and all actions undertaken by the Federal Reserve, including the Commercial Paper Funding Facility (CPFF)? What process was used to determine AIG's eligibility to

participate in the CPFF? Did the Federal Reserve consider the fact that AIG was already subject to special Fed lending when deciding AIG's eligibility to participate in the CPFF?

A.2. As initially structured in September 2008, the Revolving Credit Facility allowed AIG to borrow up to $85 billion. From inception of this Facility to November 5, 2008, the total aggregate amount of borrowings were approximately $77.0 billion, of which approximately $16.0 billion was repaid on or before that date. In connection with the U.S. Treasury's announcement that it would acquire $40 billion in AIG Senior Preferred Stock in November, the proceeds of which were used to repay amounts outstanding under the Facility, the total amount of credit permitted to be outstanding under the Facility was reduced to $60 billion. As of December 31, 2008, AIG had approximately $38.9 billion in advances outstanding under the Facility.

Four AIG affiliates, AIG Funding, Inc., International Lease Finance Corporation, Curzon Funding LLC, and Nightingale Finance LLC, have borrowed from the CPFF. Under the terms of the CPFF, these four affiliates may borrow an aggregate amount of up to approximately $20.9 billion from that Facility. As of November 5, 2008, these four affiliates had borrowed an aggregate amount of approximately $15.2 billion under the CPFF. By its terms, the CPFF is available to any U.S. issuer of commercial paper that meets the eligibility requirements of the Facility. Among other requirements, the commercial paper financed through the CPFF special purpose vehicle must be rated A-1/P-1/F-1 by a major nationally recognized statistical rating organization. The fact that a particular issuer may be eligible to borrow under, or be affiliated with an eligible borrower under, other credit facilities established under section 13(3) of the Federal Reserve Act does not disqualify the issuer under the terms of the CPFF. For example, affiliates of primary dealers that have access to the Primary Dealer Credit Facility are not ineligible to borrow under the CPFF. The four AIG affiliates that are borrowers from the CPFF meet the eligibility criteria of that Facility.

The Federal Reserve Bank of New York (FRBNY) is authorized to provide up to $22.5 billion in senior secured credit to ML II to partially fund its acquisition of approximately $40 billion (par value) in residential mortgage-backed securities from AIG. As of December 31, 2008, the FRBNY had lent $19.5 billion to ML II. As a result of the ML II credit facility, on December 12, 2008, the Securities Borrowing Facility for AIG, through which the FRBNY could lend up to $37.8 billion in cash to AIG in exchange for collateral in the form of investment grade securities that were being returned by AIG's securities lending counterparties, was terminated. On November 5, 2008, before the Securities Borrowing Facility was terminated, AIG had borrowed approximately $19.9 billion under that Facility. All borrowings under the Securities Borrowing Facility were repaid in full when the facility was terminated on December 12, 2008.

The FRBNY is authorized to provide up to $30 billion in senior secured credit to ML III to partially fund its acquisition of approximately $69 billion (par value) of multi-sector collateralized debt obligations (CDOs) protected by credit default swaps (CDS) and similar contracts written by AIG. As of December 31, 2008, FRBNY had lent $24.3 billion to ML III.

Q.3. What is AIG's market capitalization? Is the present value of AIG's equity and assets (using mark-to-market accounting) greater than AIG's liability to the Federal Reserve?

A.3. As explained in response to Question 1, advances under the Revolving Credit Facility are to be repaid with the proceeds of asset sales by AIG, including the disposition of many of its major U.S. and foreign insurance subsidiaries. The shares of the insurance subsidiaries of AIG are not themselves publicly traded or valued on a mark-to-market basis. Based on its recent common stock price, as of year-end 2008, AIG's market capitalization was approximately $4.2 billion. However, current market capitalization is not necessarily a reliable indicator of the value that the purchasers of AIG's businesses, which rank among some of the most prominent in the industry, will pay for these assets and thus the amount of proceeds that will be received from the disposition of these businesses. As stated above, in light of the substantial assets of AIG and the senior and secured position of the Revolving Credit Facility, the Board expects that the Revolving Credit Facility will not result in any net loss to the Federal Reserve or taxpayers.

Q.4. How has AIG used the funding the System has provided, and what analysis have you done to conclude that the loans will be repaid?

A.4. Consistent with the terms of the Revolving Credit Facility, AIG has used the proceeds of advances under the Revolving Credit Facility for general corporate purposes, including as a source of liquidity to pay obligations as and when they become due. Since the establishment of the Facility, a significant portion of the Facility proceeds has been used to meet continued cash requirements associated with AIG's securities lending program and for collateral calls related to its portfolio of CDS and similar contracts AIG had written on multi-sector CDOs. In the future, draws on the Revolving Credit Facility are not expected to be used for these purposes to a significant extent because the credit facilities provided to ML II and ML III are designed to address the liquidity pressures on AIG related to these factors. Draws on the Facility going forward may continue to be used for other general corporate purposes, such as to repay maturing debt obligations and provide operating funds, loans or capital to the company's subsidiaries.

See the answer to Question 1 for a description of the steps Federal Reserve staff is taking with regard to assessing whether outstanding advances under the Revolving Credit Facility will be repaid.

Q.5. Has the Federal Reserve put any restrictions on the lobbying activities of AIG?

- **Have any other restrictions been placed on AIG's business or other activities?**

A.5. As is usual in commercial lending transactions involving distressed borrowers, the Federal Reserve has certain rights as a creditor under the loan documentation relating to the Revolving Credit Facility, such as the right to require that overall corporate governance be acceptable to the Federal Reserve. Other provisions in the loan documentation include a prohibition, while the Federal Reserve Facility is outstanding, on making certain types of shareholder distributions, such as payment of dividends on common stock, and a requirement to submit to the Federal Reserve as lender a significant number of financial statements and reports that address a broad range of topics relating to the financial condition and future prospects of AIG. Regarding restrictions on its business, AIG may not make material changes to its business activities without the consent of the Federal Reserve, and may not enter into new swap transactions except under policies approved by the Federal Reserve or to hedge or mitigate risks.

Although the Federal Reserve loan documentation does not specifically address AIG's lobbying activities, as a condition of the Treasury's acquisition of $40 billion in Senior Preferred Stock under the Troubled Assets Relief Program (TARP), AIG must maintain and implement a written policy on lobbying, governmental ethics, and political activities that, among other things, applies to AIG and all of its subsidiaries and affiliated foundations. This policy may not be materially amended without the prior written consent of the Treasury.

Q.6. While financial problems in AIG Financial Products have been detailed by the Federal Reserve and the press, specifically regarding credit default swaps, Board staff has indicated that the life insurance company held by AIG may also have financial problems. Please detail these financial problems. Please indicate whether any of the loans, and if so, what amount, has been spent in the life insurance, and other insurance companies.

A.6. During the first three quarters of 2008, AIG reported significant losses arising primarily from other-than-temporary-impairment charges on its investment portfolio, which was the result to a significant extent of declines in the market values of mortgage-backed securities AIG held in connection with the securities lending program operated by AIG's regulated insurance subsidiaries. To address the losses from this activity during the period from inception of the Federal Reserve's Revolving Credit Facility to November 5, 2008, AIG had used about $19 billion of advances from the Facility to make capital contributions to its insurance companies or to repay obligations to the securities lending program. The ML II credit facility was designed to help AIG address these positions. ML II acquired from AIG's insurance subsidiaries, in return for cash, the residential mortgage-backed securities that these subsidiaries held as part of the securities lending program. These actions allow ML II to manage and realize the underlying value of these securities over the longer term, and relieve AIG and its insurance subsidiaries from the short-term volatility in the mark-to-market value of these assets in the current economic environment. These actions also were designed to enhance the safety and soundness and overall financial condition of the insurance companies.

Q.7. In return for the Federal Reserve loan, the federal government now controls almost 80 percent of AIG.

- **What federal entity is/will control this large share of AIG?**
- **What decisions have been made about how this control will be exercised?**
- **How many Federal Reserve or other federal staff are currently on-site at AIG? Please detail the roles of these staff.**

A.7. Under the terms of the Revolving Credit Facility as amended, AIG will issue shares of perpetual, non-redeemable convertible preferred stock to a trust that will hold the stock for the benefit of the U.S. Treasury. The preferred stock is convertible into 77.9 percent of AIG's outstanding common stock. Decisions regarding the exercise of any voting rights associated with this preferred stock and regarding any disposition of the stock to third parties will be made by the independent trustees of the trust. In addition to this equity interest, the Treasury Department, in connection with its acquisition of $40 billion of senior preferred stock of AIG under the TARP, also received warrants to purchase 2 percent of the common stock of AIG. Control over these instruments is exercised by the Treasury Department in compliance with the rules and conditions applicable to the TARP.

A team of approximately 10 Federal Reserve staff, led by a Senior Vice President of the FRBNY, has primary responsibility for managing and implementing the oversight of AIG provided for in the loan documentation relating to the Revolving Credit Facility. Federal Reserve staff are on-site at AIG to monitor the company's funding, cash flows, use of proceeds, and progress in pursuing its divestiture plan. Federal Reserve representatives are also in regular contact with AIG senior management and attend all AIG board meetings and board committee meetings.

Q.8. Board staff has indicated that the Federal Reserve has not taken a close look at the solvency of the insurance companies held by AIG because those activities are regulated at the state level. Is this correct? Has the Federal Reserve done a thorough analysis of AIG's insurance companies, including their solvency?

A.8. Under the existing statutory framework, the relevant state insurance regulatory authorities have the primary responsibility for determining the financial condition of AIG's insurance company subsidiaries. This includes the authority to take action to resolve regulated insurance companies that fail to meet the state regulator's capital, solvency, and other regulatory requirements. As a lender to AIG, the Federal Reserve closely monitors the cash flow, earnings, and general financial condition of the company on a consolidated basis, which includes reviewing financial information on all of the company's major subsidiaries, including the insurance subsidiaries. In carrying out this oversight responsibility, the Federal Reserve coordinates on an ongoing basis with the appropriate state insurance authorities.

EESA

Q.9. What actions has the Board taken to implement a plan under Section 110 of the Emergency Economic and Stabilization Act of 2008 with respect to foreclosure mitigation for mortgages or mortgage -backed securities held, owned, or controlled by or on behalf of a Federal Reserve Bank?

A.9. Section 110 of the Emergency Economic Stabilization Act directs Federal property managers, to the extent that they hold, own, or control mortgages, mortgage-backed securities, and other assets secured by residential real estate (residential mortgage assets), to "implement a plan that seeks to maximize assistance for homeowners and use its authority to encourage the servicers of the underlying mortgages, and considering net present value to the taxpayer, to take advantage of the HOPE for Homeowners Program under section 257 of the National Housing Act or other available programs to minimize foreclosures." Section 110 generally provides that the Federal Reserve Board (Board) is a Federal property manager with respect to any mortgage, mortgage-backed securities, or pool of such securities (residential mortgage assets) held, owned, or controlled by or on behalf of a Federal Reserve Bank other than residential mortgage assets that are held, owned, or controlled by or on behalf of a Federal Reserve Bank "in connection with open market operations under section 14 of the Federal Reserve Act (12 U.S.C. 353), or as collateral for an advance or discount that is not in default."

The Board is currently not a Federal property manager for any residential mortgage assets within the scope of section 110. To the extent that residential mortgage assets are held, owned or controlled by the Federal Reserve Banks, these assets are held, owned or controlled in connection with open market operations or as collateral for advances or discounts that are not in default, such as the credit extended to Maiden Lane LLC.[1]

Nonetheless, the Board is in the final stages of developing a foreclosure mitigation policy for use by the Federal Reserve Banks. In addition to applying this policy in situations required by section 110, the Board will consider whether there are situations in which it is appropriate and feasible for the Board to apply the policy voluntarily.

In developing this policy, the Board has consulted with the Federal Deposit Insurance Corporation, the Federal Housing Finance Agency, and other governmental and industry representatives, and has carefully considered recent developments and changes to industry protocols relating to foreclosure mitigation. The Board expects to finalize and vote on this policy soon and will promptly submit a copy of its policy once approved to Congress. The goal of the policy will be fully consistent with the requirements and goals of section 110 to offer distressed homeowners a sustainable loan modification when such action would result in a higher expected net present value (NPV) than would be expected through foreclosure.

- **Specifically, what goals has the Board established for the number or percentage of mortgages that should be modified to comply with the Act?**

Any portfolio that becomes subject to the Board's foreclosure mitigation policy will contain unique characteristics, such as the number of whole residential mortgage loans versus residential mortgage-backed securities, the percentage of senior mortgage loans versus subordinate mortgage loans, and the number of performing loans versus non-performing loans. To account for these variables, the Board does not expect to establish a pre-set number or percentage of loans that must be modified under its policy.

However, as noted above, the Board's over-arching goal under the policy will be to try to keep consumers in their homes by offering sustainable loan modifications when the expected

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[1] Maiden Lane LLC is the limited liability company to which a portfolio of assets was transferred in connection with a loan by the Federal Reserve Bank of New York, which facilitated the acquisition of The Bear Stearns Companies Inc. by JPMorgan Chase & Co.

NPV of a loan modification would be greater than the expected NPV of the net proceeds to be received through foreclosure.

- **What process has the Board established to communicate the plan, including modification goals, to Maiden Lane or the regional Federal Reserve Bank that would serve as the agent for the Board in carrying out its duty under the law?**

As noted above, the Board is in the final stages of developing a foreclosure mitigation policy to guide the Federal Reserve Banks in the event that the Board becomes a Federal property manager. The Board will transmit that policy to the Reserve Banks and require that the Reserve Banks, and any agents they may hire to assist in the management or servicing of the mortgage portfolios subject to section 110, abide by the policy.

- **How many Bear Stearns loans have been modified to date and what were the terms?**

Wells Fargo & Company (Wells Fargo) and EMC Mortgage Corporation currently act as the servicers of the whole residential mortgages that serve as collateral for the loan to Maiden Lane LLC. Both Wells Fargo and EMC Mortgage are members of the HOPE NOW Alliance and utilize industry standard protocols for loan modifications that are consistent with the standards and guidelines established by the HOPE NOW Alliance. Loan modifications for mortgages that serve as collateral for the loan to Maiden Lane LLC have been offered to delinquent borrowers who are facing other-than-temporary economic hardships, but who may have the capacity to perform on the loan following a modification of terms that provides an expected NPV greater than what would be expected through foreclosure. Workout plans, which are not formal loan modifications, are offered to borrowers with temporary problems and need assistance bringing their account current through short-term modifications to their payments.

The ability to offer loan modifications and workout plans for loans that serve as collateral for the extension of credit to Maiden Lane LLC is contingent on whether the subject assets are whole mortgage loans rather than mortgage-backed securities. Because mortgage-backed securities are pools of mortgages in which the Federal Reserve Bank only holds a fractional interest along with other investors, the Reserve Bank does not have direct control over the servicing of those residential mortgage assets. The majority of residential mortgage assets that serve as collateral for the loan to Maiden Lane LLC are in the form of residential mortgage-backed securities. Moreover, all of the residential whole loans in the portfolio were performing as of March 14, 2008, when Maiden Lane LLC acquired the portfolio.

As of November 30, 2008, slightly more than 11 percent of the residential mortgage whole loans that serve as collateral for the loan to Maiden Lane LLC and that were both non-performing and more than 60 days past due had been permanently modified through a reduction in interest rate, an extension of term, a deferral or reduction in the principal balance, or a combination of such actions. Typically, permanent loan modifications initially are considered when borrowers become 60 days or more past due.

The number of permanent loan modifications is expected to increase in the coming months. A significant portion of the loans currently 60 days or more past due only reached this stage recently and, as you know, the loan modification process, even under the best of circumstances, can take time, as the borrower must be contacted and appropriate analysis conducted to confirm that a modification is both appropriate and sustainable. Moreover, the loan modifications currently offered to borrowers for the loans backing the credit extension to Maiden Lane LLC become permanent only after a borrower makes three timely payments under the modified terms. Therefore, the number of permanently modified loans is expected to increase as more delinquent borrowers are contacted and finish the negotiation process and as borrowers that are in their three-month verification period fulfill their obligations and receive permanent loan modifications.

In addition, many delinquent borrowers are receiving flexible terms and assistance that may lead to loan workouts in forms other than formal loan modifications--for example, short sales or in the case of borrowers facing temporary financial hardships, a repayment plan. These workouts are not included in the stated percentage of loan modifications.

Q.10. I commend the Administration for following through with Section 112 of EESA by convening an international summit on November 15th. In announcing the summit, the White House explained that leaders of the G20 and key international financial institutions will review progress on measures taken to address the financial crisis and to discuss principles for reform of regulatory and institutional regimes going forward. Please describe what the Federal Reserve and Treasury Department intend to accomplish through this summit and the subsequent working group meetings that will follow the summit--specifically, what types of principles for regulatory and institutional modernization will the United States pursue in the international community? Will these principles include protections for consumers and households which form the foundation of economic prosperity in our country as well as other countries?

A.10. In a statement released following their November 15 meeting, the G-20 Heads of State articulated five key principles that will govern efforts by the official sector to reform the global financial system. These principles include strengthening transparency and accountability of financial markets and financial institutions, enhancing sound regulation, promoting integrity in financial markets, reinforcing international cooperation, and reforming international financial institutions. These efforts are constructive and should help to make the global financial system more robust and resilient. The Federal Reserve is working with its counterparts in the G-20 to identify and implement specific measures that will contribute to achieving these five principles. Initiatives to protect consumers and households are central to these efforts. The statement from the G-20 Heads of States emphasized that bolstering consumer protection is an essential step toward protecting the integrity of global financial markets. Consumers and households benefit both directly and indirectly as the financial system becomes stronger, better regulated, and more transparent.

Commercial Paper Funding Facility
Q.11. What real assets are securing loans made under the CPFF to special purpose vehicles?

A.11. The loans made under the CPFF to the special purpose vehicle (SPV) are collateralized by the highly rated commercial paper purchased by, and the fees collected by, the SPV.

Q.12. What has the Federal Reserve done to clarify the effect of the CPFF on the daily rates reported in the Board's H-15 data release?

- **What has the Board done to make clear that the support provided by the CPFF has altered the overall commercial paper rate?**
- **Does the H-15 data still represent an actual market rate, without credit enhancement by the CPFF or any other recent government action?**

A.12. On November 5, 2008 we added the following footnote to the H-15 release:

> *Financial paper that is insured by the FDIC's Temporary Liquidity Guarantee Program is not excluded from relevant indexes, nor is any financial, nonfinancial, or asset-backed commercial paper that may be directly or indirectly affected by one or more of the Federal Reserve's liquidity facilities. Thus the rates published after September 19, 2008, likely reflect the direct or indirect effects of the new temporary programs and, accordingly, likely are not comparable for some purposes to rates published prior to that period.*

The commercial paper rates published on the H-15 release have and continue to be a reflection of actual transactions that take place in the U.S. commercial paper market. We have never screened out transactions with third-party credit enhancements.

Q.13. What analysis has the Federal Reserve undertaken to determine which markets usually use the 90-day commercial paper rate in conducting their business?

- **Which of the markets, if any, did the Fed determine use this rate regularly in their business operation?**
- **What steps, if any, has the Federal Reserve taken to assure that the actions to lower the costs of issuing commercial paper are not having an adverse impact on other markets which are pegged to the 90-day financial commercial paper?**
- **Was a similar analysis conducted with respect to possible implications for markets that use other short term (under 365-day) commercial paper as a result of the establishment of the CPFF?**
- **What steps, if any, has the Federal Reserve taken to assure that the actions to lower the costs of issuing commercial paper is not having an adverse impact on those other markets?**

A.13. By law, the reimbursement rates on student loans are tied to the 90-day financial CP rate. In addition, dealers report that some financial contracts (e.g., derivatives) settle on certain CP rates published by the Federal Reserve.

The link of the reimbursement rate on student loans to the 90-day financial CP rate has become problematic for student lenders, because their cost of funds tends to be tied to Libor, and the spread between Libor and the financial CP rate has moved against them. Importantly, the wider spread likely reflects pressures on the Libor rate as well as the CP rate. In addition, this spread first widened a few weeks before the CPFF began operation.

To ensure that market participants fully understand our methodology for calculating CP rates, we published the following announcement on the Federal Reserve's commercial paper website on November 5, the first paragraph of which was also added (as already mentioned in our response to Question 11) as a footnote to the Federal Reserve's H-15 release:

> ***Clarification of Criteria Considered for Commercial Paper Rates***
> *Financial paper that is insured by the FDIC's Temporary Liquidity Guarantee Program is not excluded from relevant indexes, nor is any financial, nonfinancial, or asset-backed commercial paper that may be directly or indirectly affected by one or more of the Federal Reserve's liquidity facilities. Thus the rates published after September 19, 2008, likely reflect the direct or indirect effects of the new temporary programs and, accordingly, likely are not comparable for some purposes to rates published prior to that period.*
>
> *Through November 4, the documentation on the "About" page of this release indicated that paper issued under "credit-enhanced programs" was excluded from the samples of issues used to calculate reported rates. This wording was intended to convey that asset-backed commercial paper was excluded from the calculation of financial rates. Indeed, consistent with that intent, the Federal Reserve has, since 2006, published a separate rate series for asset-backed commercial paper. To avoid confusion, the reference to "credit-enhanced programs" will be dropped.*

Too Big to Fail

Q.14. When Chairman Bernanke testified before this Committee in support of emergency legislation to stabilize the economy, he acknowledged that we have a "serious 'too big to fail' problem in this country," and that "it is much worse than we thought it was coming into this crisis." Ironically, as Gary Stern, President of the Federal Reserve Bank of Minneapolis points out, "The too-big-to-fail problem ... has been exacerbated by actions taken over the past year to bolster financial stability." In surveying the financial landscape, one is struck by the fact that we are seeing increased consolidation of financial institutions – not just of commercial banks, but including enormous combinations of commercial and investment banks. In fact, news reports indicate that a number of the institutions that received capital injections are using them to do additional acquisitions.

- **Are such consolidations increasing our "too big to fail" problem, thereby increasing the problem of moral hazard? If so, what do we do about it?**

A.14. Working with the Treasury, the FDIC, and other agencies, the Federal Reserve believes that we must take all steps necessary to minimize systemic risk. We are also concerned about actions that increase moral hazard. As the Federal Reserve has previously noted, the acquisition of a troubled financial institution by a healthy firm can significantly mitigate risks to the financial system as a whole, preserve banking services in affected communities, and reduce the costs to taxpayers. Although preserving market discipline and avoiding moral hazard are extremely important, in exceptional circumstances it may be necessary for the government to intervene to protect financial and economic stability by taking steps to avoid the threat that could result from the failure of a major financial institution when financial markets are already quite fragile. The problems that result from moral hazard and the existence of institutions that are "too big to fail" must be addressed through prudent decisionmaking by government agencies, regulatory changes, improvements in the financial infrastructure, and other measures designed to prevent reoccurrence of threats to overall financial stability. Reforming the system to address these problems should be a top priority for lawmakers and regulators.

Q.15. Each agency represented at the hearing has aggressively used the tools at their disposal in dealing with the crisis. However, sometimes the use of those tools has led to unintended consequences. For instance, when the Treasury Department guaranteed money market funds, it led to a concern on deposit insurance and bank accounts. When the FDIC guaranteed bank debt, it had an effect on GSE borrowing costs, which in turn directly affects mortgage rates.

Acknowledging that there is often a need to act quickly in these circumstances, please explain what steps and processes you have employed to inform other agencies about significant actions you undertake to ensure that there are not serious adverse unintended consequences and that your actions are working in concert with theirs.

A.15. For many years, the Federal Reserve has worked with other government agencies--including the Treasury Department, the Securities and Exchange Commission, the Commodity Futures Trading Commission, and the other banking agencies--through the President's Working Group on Financial Markets and in other forums, to foster the safety and soundness of financial institutions and the stability of financial markets. During the financial crisis, this collaboration has increased greatly, and includes regular conference calls at the principals' level as well as formal and informal staff contacts with a range of other agencies to exchange information on financial developments and to discuss possible policy responses.

Such interactions have contributed importantly to the policy response to the crisis. Indeed, in some cases joint decisions by multiple agencies are required to take particular policy steps. For example, in order for the FDIC to invoke the systemic risk exception to the general requirement for least-cost resolution of a troubled insured depository institution, both the FDIC and Federal Reserve Boards must recommend such a step by two-thirds majorities and the Secretary of the Treasury, in consultation with the President, must determine that a least-cost resolution would have serious adverse effects on economic conditions or financial stability, and that a non-least-cost resolution would avoid or mitigate such adverse effects. This process, which involves considerable interaction between the three agencies at both the staff level and the principals' level, has been undertaken three times this fall, in connection with the difficulties of Wachovia and Citibank and with the establishment of the FDIC's Temporary Liquidity Guarantee Program. Similarly, some other policy actions have involved more than one agency, and so by necessity have required extensive inter-agency consultation. An example is the Term Asset-Backed Securities Loan Facility, which calls for an equity investment by the Treasury Department and credit provided by the Federal Reserve. Even when joint action not been formally required to adopt a particular policy, the Federal Reserve has found it useful to exchange views regarding the possible policy in order to benefit from the assessments of other agencies. In many cases such consultations have been organized by Treasury Department and have included a wide range of government agencies.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

June 13, 2008

The Honorable Christopher J. Dodd
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed is my response to the written question you submitted following the April 3, 2008, hearing before the Committee titled, Turmoil in U.S. Credit Markets: Examining the Recent Actions of the Financial Regulators." A copy has also been forwarded to the Chief Clerk of the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

(Signed) Ben Bernanke

Enclosure

Chairman Bernanke subsequently submitted the following in response to the written question received from Senator Dodd in connection with the April 3, 2008, hearing before the Committee on Banking, Housing, and Urban Affairs:

1. Does the Fed intend to conduct a study of what happened at Bear Stearns, with lessons learned?

The SEC, which was Bear Stearns' prudential regulator, is conducting an in-depth study of the events that precipitated the firm's liquidity crisis. The SEC has promised to share the results of its study with us. We will assess the results of the SEC's review and then consider whether further study of what happened to Bear Stearns is necessary. In terms of lessons learned, one lesson that is already clear is that asset and funding liquidity can evaporate suddenly, even for very high quality assets. Both leveraged financial intermediaries and their prudential regulators must think through carefully the implications for prudent capital and liquidity buffers.

In my view, the Congress has achieved an appropriate balance between the needs for discipline and accountability, on the one hand, and flexibility and judgment, on the other, in the statutory frameworks that it has established for both monetary policy and emergency lending.

With regard to monetary policy, the Congress has established the goals of maximum employment, stable prices, and moderate long-term interest rates, and it has set a framework for monetary policy accountability, partly through semiannual reports and testimony on monetary policy. The Congress has left the specific interpretation of the statutory goals for monetary policy to the judgment of the Board of Governors and the Federal Open Market Committee; for example, the Congress has wisely chosen not to quantify three goals of policy. Similarly, the Congress has provided only general guidance regarding the Federal Reserve's semiannual reports on monetary policy, leaving the specific content of such reports and the accompanying testimony to the judgment of the Federal Reserve.

The Congress has chosen an analogous approach for the conditions and accountability for emergency lending. With regard to the conditions for emergency lending, the Congress has established a clear framework that sets a high hurdle for undertaking such activities: Emergency lending can be done only in unusual and exigent circumstances, only when the borrower cannot otherwise secure adequate credit accommodations, and only with the approval of at least five members of the Federal Reserve Board. However, the Congress left the specific interpretation of the first two conditions to the Board. In my view, this was a wise decision by the Congress: Financial crises tend to be unique events, making it very difficult to set in advance an appropriate set of specific conditions that would have to be met for emergency lending. Moreover, the Congress has established an ongoing framework for the accountability of the Federal Reserve's financial operations by requiring that the Board publish on a regular basis statements of conditions for the Reserve Banks and for the System as a whole. Within this reporting framework, the Board has provided detail on the amounts outstanding under its various credit programs both in routine circumstances and in the current period of financial stress. In addition, the Federal Reserve recognizes that when it undertakes emergency lending it has an obligation to explain why it believes the conditions for such lending have been met. Congress has the authority to review the Federal Reserve's explanations, as it did at the hearing on April 3.

Chairman Bernanke, the Federal Reserve Act grants the Board of Governors broad emergency lending authority. It enables the Fed to extend the Federal safety net to corporations, such as investment banks, that otherwise are not guaranteed by the Federal government.

- **Since taxpayers bear any losses on any emergency loans the Fed extends, should there be limits on the amount of lending the Fed can conduct under its emergency lending authority? And given budgetary implications of such lending, should the Treasury Secretary also have to formally approve these loans?**

When Congress established the Federal Reserve as the nation's central bank, Congress considered it important that an independent agency be created to help maintain the stability of the U.S. financial system. Financial crises can develop quickly and with considerable intensity, and it is crucial that the Federal Reserve have authority to respond rapidly and powerfully to a severe crisis by, if necessary and appropriate, providing liquidity to the financial system.

It is important to note that the Federal Reserve's emergency lending authorities are subject to a number of important qualitative limits. Most notably, the Federal Reserve generally has authority to lend to non-banks only in unusual and exigent circumstances, and when the borrower is unable to obtain adequate credit accommodations from other banking institutions. Moreover, these emergency credits must be secured to the satisfaction of the lending Federal Reserve Bank and approved by a super-majority of the Board of Governors of the Federal Reserve System. Consistent with the spirit of the Federal Reserve Act, we have only used our power to make emergency loans to non-depository institutions on a small number of occasions in the 75 years since Congress granted this authority to the Federal Reserve.

The Federal Reserve also has been very careful in its recent actions to minimize any potential losses to taxpayers. All credit extended to primary dealers under the PDCF and all transactions with primary dealers under the term securities lending facility (TSLF) are fully secured by investment-grade securities with appropriate haircuts. In addition, the March 14 loan to Bear Stearns was repaid on March 17 without loss to the taxpayer. There are also substantial protections for taxpayers associated with the prospective $29 billion extension of credit by the Federal Reserve to be made in connection with the acquisition of Bear Stearns by JPMC. The collateral for the loan will be in the form of investment-grade securities and performing credit facilities, JPMC will bear the first $1 billion of losses on the collateral pool, the Federal Reserve will be able to liquidate the collateral over a long-term horizon of at least ten years, and we have hired a professional independent investment adviser to manage the collateral pool.

The Federal Reserve has never incurred any losses in extending credit through the discount window, and we will take every precaution to ensure that that remains the case.

In light of the strict qualitative limits on Federal Reserve emergency lending, the Federal Reserve's practice of using this authority judiciously and safely, and the need for the Federal Reserve to be able to act in a financial crisis with maximum alacrity and independence of judgment, we do not think it would be necessary or appropriate to require the Secretary of the Treasury to approve Federal Reserve emergency loans.

- **Also, does the Fed's mere possession of such broad lending authority create expectations that the Fed will not permit major financial institutions to fail?**

Investors in and creditors of major financial institutions undoubtedly are now more aware of the Federal Reserve's broad emergency lending authority. There are substantial constraints on the Federal Reserve's authority, however, that should help promote continued market discipline. Specifically, in contrast to the FDIC's broad authority to resolve and/or liquidate insured depository institutions, the Federal Reserve does not have authority to acquire or otherwise resolve financial firms. The Federal Reserve may only address the liquidity needs of solvent non-depository companies in unusual and exigent circumstances. In this regard, the Federal Reserve did not prevent the demise of Bear Stearns. The resolution of Bear Stearns relied on a private sector acquisition.

The inability of the Federal Reserve to acquire or otherwise provide a solvency backstop to financial institutions is reflected in the market prices of obligations of financial institutions and derivative instruments based on obligations of financial institutions. Prices of these financial assets imply that market participants are far from certain that the Federal Reserve would prevent major financial institutions from failing. In particular, market participants continue to pay substantial premiums for protection against losses from failure of most major U.S. financial institutions.

Moreover, any incidental costs associated with the Federal Reserve's lending authority must be compared against the substantial benefits that accrue to the financial markets--and ultimately to taxpayers and homeowners--by allowing the central bank to respond quickly in emergency situations as a lender of last resort. Congress created the Federal Reserve in part to serve the traditional central bank function as lender of last resort and thereby to reduce in emergency situations the potential adverse effects of illiquidity on either an individual firm or on the financial system more broadly. The fact that the Federal Reserve has exercised this authority to extend credit to non-depository institutions on only a small number of occasions in the past 75 years underscores the high hurdle that Congress and the Federal Reserve have set for such lending.

Moral Hazard

Chairman Bernanke, would you please address the extent to which the Fed's actions in this case have increased the risk of moral hazard?

Access to the federal safety net, including access to central bank credit, necessarily entails a degree of moral hazard. Thus, granting primary dealers access to Federal Reserve credit has increased moral hazard to some degree.

Although the potential for moral hazard should be carefully analyzed and considered by policymakers, it seems more likely that the example of Bear Stearns--in which shareholders and management suffered considerable losses--and the broader distress in financial markets will serve as a potent reminder to primary dealers and other leveraged financial firms about the importance of prudent liquidity risk management. In particular, in developing their liquidity management plans, primary dealers and others must now attach considerable weight to scenarios in which their access to funding in the repo market is sharply curtailed. Of course, the Federal Reserve, the SEC, and other regulatory agencies will be working to reinforce that message.

The adverse effects of moral hazard must and can be mitigated through prudential supervision and regulation. The SEC and the Federal Reserve have been monitoring the leverage and liquidity of the primary dealers. Going forward, the SEC and the Federal Reserve will assess what changes in prudential supervision and regulation of primary dealers (such as increased capital or liquidity requirements) are needed to mitigate moral hazard and ensure that the dealers manage their risks appropriately.

The adverse effects of moral hazard from use of the Federal Reserve's emergency lending powers also must and can be mitigated through judicious, sparing, and disciplined use by the Federal Reserve of these powers. In this regard, as noted above, the Federal Reserve generally has authority to lend to non-depository institutions only in unusual and exigent circumstances and has very rarely exercised this authority.

The Federal Reserve's actions with respect to Bear Stearns are instructive in this regard. The Federal Reserve facilitated the acquisition of Bear Stearns by JPMC because the substantial involvement of Bear Stearns in many important financial markets--at a time when the credit markets were particularly vulnerable--was such that a sudden failure by Bear Stearns would likely have led to a chaotic unwinding of positions in already severely strained circumstances. Moreover, a failure by Bear Stearns to meet its obligations would have cast doubt on the financial strength of other financial firms whose operations bore superficial similarity to that of Bear Stearns, without due regard to the fundamental soundness of those firms. The Federal Reserve judged that a sudden failure of Bear Stearns under these unusually fragile circumstances would have been extremely disorderly and would have risked unpredictable but severe consequences for many sound financial firms and for the functioning of the broader financial system and the economy.

Moreover, as discussed in my answer to the previous question, any incidental costs associated with the Federal Reserve's lending authority--such as increased moral hazard--must be weighed against the substantial benefits that accrue to the financial markets by allowing the central bank to serve as lender of last resort. The Federal Reserve's recent actions under its emergency lending authorities--the establishment of the PDCF and TSLF and the proposed financing of the JPMC acquisition of Bear Stearns--were essential to avert a financial crisis that likely would have had serious repercussions for the U.S. economy.

Lessons Learned and Too Big to Fail

We have heard the argument that Bear was "too inter-connected to allow to liquidate quickly". This would appear to be the case for a number of financial entities, including both banks and non-banks.

- **What changes in financial surveillance and reporting could the regulators use to make such a situation of "interconnectedness" less likely to trigger the type of resolution the Fed entered into with Bear?**

As noted in our answer to the previous question, although the interconnectedness of Bear Stearns was a consideration in the Federal Reserve's decision to facilitate the acquisition of Bear Stearns by JPMC, it was not a sufficient condition for the Federal Reserve's actions. Other important causes of the Federal Reserve's actions with respect to Bear Stearns were the suddenness of the collapse of the liquidity position of Bear Stearns and the unusually fragile conditions in the financial markets.

Regulators have for some time been paying considerable attention to the extent and nature of commercial and investment banks' credit exposures to other large financial institutions, including exposures arising from OTC derivatives. But clearly this is an issue that deserves further attention. In particular, regulators need to understand and evaluate the effectiveness of the stress tests that these firms use to assess and limit the potential for exposures to increase significantly in stressed market conditions. Regulators also need to take a hard look at the firms' liquidity risk management practices, including their reliance on common sources of funding and their vulnerabilities to sudden reductions in the availability of those types of funding.

- **Given that the Fed has pursued this transaction, how can the Fed and perhaps the Congress now convince market participants that something similar will not happen again? And if we cannot convince market participants that is the case, what is the implication for risk-taking behavior in the future?**

As discussed above, it seems likely that the considerable losses suffered by shareholders and management of Bear Stearns should serve to check and possibly diminish incentives for undue risk-taking by the owners and managers of large financial institutions. Moreover, as discussed above, the adverse effects of moral hazard from use of the Federal Reserve's emergency lending powers are mitigated by the sparing and disciplined use by the Federal Reserve of these powers. As noted above, the Federal Reserve generally has authority to lend to non-depository institutions only in unusual and exigent circumstances, when the borrower is unable to obtain credit accommodations from other banking institutions, when the loans are secured to the satisfaction of the Federal Reserve, and when at least five members of the Board of Governors of the Federal Reserve System approve the transaction. The Federal Reserve's decision to extend credit in support of JPMC's acquisition of Bear Stearns was based on a highly unusual confluence of events, including the suddenness of the collapse of the liquidity position of Bear Stearns and the highly fragile state of the financial markets at the time.

As noted above, the Federal Reserve is currently analyzing whether changes in the supervision and regulation of securities firms and their parent holding companies (particularly as regards their capital adequacy and liquidity) would be appropriate to mitigate potential residual adverse effects of actions such as the Federal Reserve's recent emergency liquidity facilities.

Attachments (2)

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ADDRESS OFFICIAL CORRESPONDENCE
TO THE BOARD

April 1, 2008

Kathleen A. Juhase, Esq.
Senior Vice President and
Associate General Counsel
JPMorgan Chase & Co.
277 Park Avenue, 19th Floor
New York, New York 10172

Dear Ms. Juhase:

This is in response to the request by JPMorgan Chase & Co. ("JPMC"), New York, New York, for (i) an exemption from section 23A of the Federal Reserve Act and the Board's Regulation W[1] that would permit JPMorgan Chase Bank, National Association ("JPMC Bank"), Columbus, Ohio, to extend credit to affiliates and issue guarantees on behalf of affiliates, in connection with the acquisition by JPMC of The Bear Stearns Companies, Inc. ("Bear Stearns"), New York, New York; and (ii) relief from the Board's risk-based and leverage capital guidelines for bank holding companies[2] in connection with the acquisition by JPMC of Bear Stearns. On March 16, 2008, JPMC entered into an agreement to acquire Bear Stearns.

Exemption from Section 23A and Regulation W

Section 23A and Regulation W limit the aggregate amount of "covered transactions" between a bank and any single affiliate to 10 percent of the bank's capital stock and surplus, and limit the aggregate amount of covered transactions with all affiliates to 20 percent of the bank's capital stock and surplus.[3] "Covered transactions" include, among other things, the extension of credit by a bank to an affiliate and the issuance by a bank of a guarantee on behalf of an affiliate.[4] In

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1 12 U.S.C. § 371c; 12 CFR part 223.

2 12 CFR part 225, Appendices A and D.

3 12 U.S.C. § 371c(a)(1) and 12 CFR 223.11 and 223.12.

4 12 U.S.C. § 371c(b)(7) and 12 CFR 223.3(h).

For files
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addition, the statute and rule require a bank to secure its extensions of credit to, and guarantees on behalf of, affiliates with prescribed amounts of collateral.[5]

Section 23A and Regulation W authorize the Board to exempt, at its discretion, a transaction or relationship from the requirements of the statute and the regulation if the Board finds the exemption to be in the public interest and consistent with the purposes of section 23A.[6] JPMC has requested that the Board exempt from section 23A and Regulation W, for a period of 18 months, certain covered transactions between JPMC Bank and its affiliates, up to an aggregate of 50 percent of the bank's capital stock and surplus, to facilitate the acquisition by JPMC of Bear Stearns.

The Board previously has granted other companies exemptions from section 23A and Regulation W that are similar to the exemption requested by JPMC. The Board has provided temporary exemptions to facilitate the orderly integration of merged companies,[7] has provided exemptions to facilitate internal reorganization transactions,[8] and has provided exemptions for banks that engage in securities financing transactions with their affiliates.[9]

The Board has determined to impose several conditions that would help protect JPMC Bank in connection with the exemption request:

- The exemption would apply only to extensions of credit by JPMC Bank to an affiliate and guarantees issued by JPMC Bank on behalf of an affiliate that (i) are fully collateralized; and (ii) are subject to daily mark-to-market and re-margining requirements.

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[5] 12 U.S.C. § 371c(c) and 12 CFR 223.14.

[6] 12 U.S.C. § 371c(f)(2) and 12 CFR 223.43.

[7] See, e.g., Board letter to Troland S. Link, Esq. (Deutsche Bank AG) dated May 28, 1999; Board letter to Ronald C. Mayer, Esq. (The Chase Manhattan Bank) dated August 18, 2000.

[8] See, e.g., Board letter to Carl Howard, Esq. (Citigroup) dated June 30, 2006.

[9] See, e.g., Board letter to Carl Howard, Esq. (Citigroup) dated August 20, 2007; Board letter to Courtney D. Allison, Esq. (Wachovia Corporation) dated June 12, 2007; Board letter to John H. Huffstutler, Esq. (Bank of America Corporation) dated June 7, 2005.

- JPMC must guarantee the performance of the affiliate for the benefit of JPMC Bank in connection with any exempt extension of credit or guarantee by JPMC Bank.

- In the second quarter of 2008, the exemption would be limited in the aggregate to 50 percent of JPMC Bank's capital stock and surplus. The amount of the exemption would then be reduced by one-sixth (that is, 8.33 percent of the bank's capital stock and surplus) in each subsequent quarter until the exemption expires after six quarters. For example, in the third quarter of 2008, the exemption would be limited in the aggregate to 41.67 percent of the bank's capital stock and surplus.

- The exemption would expire on October 1, 2009.

In addition, JPMC Bank would continue to be subject to the market-terms requirement of section 23B of the Federal Reserve Act with respect to its transactions with Bear Stearns. Section 23B requires that financial transactions between a bank and an affiliate be on terms that are substantially the same, or at least as favorable to the bank, as those that the bank would in good faith offer to nonaffiliates.[10]

Granting the requested exemption would have substantial public benefits. The exemption would assist JPMC in ensuring the funding liquidity of Bear Stearns and would facilitate the orderly integration of Bear Stearns with and into JPMC after the acquisition. In light of these considerations, the proposed extensions of credit and guarantees by JPMC Bank appear to be consistent with the purposes of section 23A and in the public interest. Accordingly, the Board hereby grants the requested exemption, subject to the conditions and limits discussed above.

Regulatory Capital Relief

JPMC also has requested that the Board provide JPMC with relief from the Board's risk-based and leverage capital guidelines for bank holding companies. Specifically, JPMC has requested that the Board permit JPMC, for a period of 18 months, to exclude from its total risk-weighted assets (the denominator of the risk-based capital ratios) any risk-weighted assets associated with the assets and other exposures of Bear Stearns, for purposes of applying the risk-based capital guidelines to the bank holding company. In addition, JPMC has asked the Board to permit

[10] See 12 U.S.C. § 371c-1(a)(1); 12 CFR 223.51.

JPMC, for a period of 18 months, to exclude from the denominator of its tier 1 leverage capital ratio any balance-sheet assets of Bear Stearns acquired by JPMC, for purposes of applying the leverage capital guidelines to the bank holding company. The Board has authority to provide exemptions from its risk-based and leverage capital guidelines for bank holding companies.[11]

JPMC has agreed to several conditions that would limit the scope of the relief request. First, JPMC proposes to exclude from its risk-weighted assets, for purposes of applying the Board's risk-based capital guidelines for bank holding companies, the risk-weighted assets of Bear Stearns existing on the date of acquisition of Bear Stearns by JPMC, up to a total amount not to exceed $220 billion. The amount of the exemption will be reduced by one-sixth in each subsequent quarter. In addition to this scheduled straight-line amortization of the exemption amount, the amount of the exemption also will be reduced in the event that JPMC sells or otherwise transfers to third parties any of the specified Bear Stearns subsidiaries identified on the attached Schedule. The amount of the reduction in such event would be the amount of risk-weighted assets in such subsidiary at the time of transfer. This exemption would expire on October 1, 2009.

Second, JPMC proposes to exclude from the denominator of its tier 1 leverage capital ratio, for purposes of applying the Board's tier 1 leverage capital guidelines for bank holding companies, the assets of Bear Stearns existing on the date of acquisition of Bear Stearns by JPMC, up to an amount not to exceed $400 billion. As with the risk-based capital exemption, the amount of the leverage exemption will be reduced by one-sixth in each subsequent quarter. In addition to this scheduled straight-line amortization of the exemption amount, the amount of the exemption also will be reduced in the event that JPMC sells or otherwise transfers to third parties any of the specified Bear Stearns subsidiaries identified on the attached Schedule. The amount of the reduction in such event would be the amount of assets in such subsidiary at the time of transfer. This exemption also would expire on October 1, 2009.

These regulatory capital exemptions would assist JPMC in acquiring and stabilizing Bear Stearns and would facilitate the orderly integration of Bear Stearns with and into JPMC. The Board notes that (i) JPMC would be well capitalized (as defined in section 225.2 of the Board's Regulation Y[12]) upon consummation of the acquisition of Bear Stearns, even without the regulatory capital relief provided by the exemptions; and (ii) JPMC has committed to remain well capitalized (as defined in

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[11] See 12 CFR part 225, App. A, § III.A; 12 CFR part 225, App. D, § II.b.

[12] 12 CFR 225.2(r).

section 225.2 of the Regulation Y) during the term of the exemptions, even without the regulatory capital relief provided by the exemptions.

In light of these considerations, the Board hereby grants the requested regulatory capital relief, subject to the conditions and limits discussed above.

These determinations are specifically conditioned on compliance by JPMC and JPMC Bank with all the commitments and representations made in connection with the exemption requests. These commitments and representations are deemed to be conditions imposed in writing by the Board in connection with granting the requests and, as such, may be enforced in proceedings under applicable law. These determinations are based on the specific facts and circumstances of the existing and proposed relationships among JPMC, JPMC Bank, and Bear Stearns. Any material change in those facts and circumstances or any failure by JPMC or JPMC Bank to observe any of its commitments or representations may result in a different determination or in revocation of the exemptions.

Sincerely yours,

Robert deV. Frierson
Deputy Secretary of the Board

Attachment

cc: Federal Reserve Bank of New York
Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation

SCHEDULE

Principal Subsidiaries of Bear Stearns

- Bear Stearns Asset Management Inc.
- Bear Stearns Securities Corp.
- Bear Stearns & Co. Inc.
- Texas Investment Holding Inc.
- Any other subsidiary of Bear Stearns that represented more than 10 percent of the total assets of Bear Stearns on the date of acquisition of Bear Stearns by JPMC

FEDERAL RESERVE SYSTEM

JPMorgan Chase & Co.
New York, New York

Order Approving the Acquisition of Control of a Bank

JPMorgan Chase & Co. ("JPMC"), a financial holding company within the meaning of the Bank Holding Company Act ("BHC Act"), has requested the Board's approval under section 3 of the BHC Act[1] to acquire indirect control of Bear Stearns Bank & Trust ("BSB&T"), Princeton, New Jersey, a subsidiary of The Bear Stearns Companies Inc. ("Bear Stearns"), New York, New York.[2] JPMC proposes to acquire more than 25 percent of the voting shares of Bear Stearns and then merge Bear Stearns with a newly formed subsidiary of JPMC, with Bear Stearns as the surviving entity.[3]

Based on all the facts and circumstances, the Board has determined that an emergency exists requiring expeditious action on the proposal.[4] In making this determination, the Board has considered the market conditions and the financial condition of Bear Stearns, the parent company of BSB&T, as well as all the facts of

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[1] 12 U.S.C. § 1842.

[2] JPMC includes the intermediate holding companies through which it will own the shares of BSB&T. Although BSB&T is a "bank" for purposes of the BHC Act, Bear Stearns is not treated as a bank holding company under the act. Bear Stearns controls BSB&T pursuant to section 4(f) of the BHC Act, which exempts a company from treatment as a bank holding company if the company controlled certain "nonbank banks" prior to March 5, 1987. 12 U.S.C. § 1843(f). JPMC does not qualify for this exemption, however, and requires approval to acquire direct or indirect control of BSB&T.

[3] JPMC is permitted by section 4(k) of the BHC Act to acquire control of Bear Stearns and its nonbanking subsidiaries without obtaining prior approval from the Board. 12 U.S.C. § 1843(f). Because JPMC qualifies as a financial holding company, the BHC Act requires only that JPMC provide the Board notice within 30 days after acquiring control of Bear Stearns and its nonbanking subsidiaries. 12 U.S.C. § 1843(k)(6); 12 CFR 225.87.

[4] 12 U.S.C. § 1842(b).

record. The Board has provided notice to the primary federal and state supervisors of BSB&T and the Department of Justice ("DOJ"); all have indicated they have no objection to the consummation of the proposal.

JPMC, with total consolidated assets of approximately $1.6 trillion, is the third largest depository organization in the United States, controlling deposits of approximately $511 billion, which represent 7.4 percent of the total amount of deposits of insured depository institutions in the United States.[5] JPMC operates four subsidiary insured depository institutions in eighteen states[6] and engages in numerous nonbanking activities that are permissible under the BHC Act. JPMC is the sixth largest depository organization in New Jersey, controlling deposits of approximately $7.1 billion.

BSB&T operates in New Jersey and is the 45th largest depository organization in the state, controlling deposits of approximately $398 million. On consummation of the proposal, JPMC would remain the third largest depository institution in the United States, with total consolidated assets of approximately $1.6 trillion. JPMC would control deposits of approximately $511 billion, which represent 7.4 percent of the total amount of deposits of insured depository institutions in the United States. In New Jersey, JPMC would become the fifth largest depository organization, controlling deposits of approximately $7.4 billion, which represent

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[5] National asset, deposit, and ranking data are as of December 31, 2007. Statewide deposit and deposit ranking data are as of June 30, 2007. In this context, insured depository institutions include commercial banks, savings banks, and savings associations.

[6] JPMC's largest subsidiary bank, JPMorgan Chase Bank, National Association ("JPMC Bank"), Columbus, Ohio, operates branches in Arizona, Colorado, Connecticut, Florida, Illinois, Indiana, Kentucky, Louisiana, Michigan, New Jersey, New York, Ohio, Oklahoma, Texas, Utah, West Virginia, and Wisconsin. JPMorgan Chase Bank, Dearborn ("Dearborn Bank"), Dearborn, Michigan, operates only in Michigan. Chase Bank USA, National Association ("Chase Bank"), Newark, Delaware, operates as a credit card bank. JPMC also operates J. P. Morgan Trust Company, National Association, Los Angeles, California, which is an insured trust company.

approximately 3.8 percent of the deposits in insured depository institutions in the state ("state deposits").

Interstate Analysis

Section 3(d) of the BHC Act allows the Board to approve an application by a bank holding company to acquire control of a bank located in a state other than the home state of such bank holding company if certain conditions are met. For purposes of the BHC Act, the home state of JPMC is New York,[7] and BSB&T is located in New Jersey.[8]

Based on a review of all the facts of record, including relevant state statutes, the Board finds that the conditions for an interstate acquisition enumerated in section 3(d) of the BHC Act are met in this case.[9] In light of all the facts of record, the Board is permitted to approve the proposal under section 3(d) of the BHC Act.

Competitive Considerations

Section 3 of the BHC Act prohibits the Board from approving a proposal that would result in a monopoly or would be in furtherance of an attempt to monopolize the business of banking in any relevant banking market. The BHC Act also prohibits the

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[7] A bank holding company's home state is the state in which the total deposits of all subsidiary banks of the company were the largest on July 1, 1966, or the date on which the company became a bank holding company, whichever is later. 12 U.S.C. § 1841(o)(4)(C).

[8] For purposes of section 3(d) of the BHC Act, the Board considers a bank to be located in the states in which the bank is chartered or headquartered or operates a branch. 12 U.S.C. §§ 1841(o)(4)-(7) and 1842(d)(1)(A) and 1842(d)(2)(B).

[9] 12 U.S.C. §§ 1842(d)(1)(A)-(B) and 1842(d)(2)-(3). JPMC is adequately capitalized and adequately managed, as defined by applicable law. There is no applicable age-requirement law in New Jersey, and BSB&T has been in existence and operated for more than five years. See 12 U.S.C. § 1842(d)(1)(B)(i)-(ii). On consummation of the proposal, JPMC would control less than 10 percent of the total amount of deposits of insured depository institutions in the United States and less than 30 percent of the state deposits in New Jersey. JPMC, therefore, would be in compliance with the relevant deposit cap under New Jersey law, which is 30 percent. 12 U.S.C. § 1842(d)(2)(B)-(D). All other requirements of section 3(d) of the BHC Act would be met on consummation of the proposal.

Board from approving a bank acquisition that would substantially lessen competition in any relevant banking market, unless the anticompetitive effects of the proposal are clearly outweighed in the public interest by the probable effect of the proposal in meeting the convenience and needs of the community to be served.

JPMC and Bear Stearns have subsidiary depository institutions that compete directly in the Metropolitan New York-New Jersey banking market.[10] The Board has reviewed carefully the competitive effects of the proposal in this banking market in light of all the facts of record. In particular, the Board has considered the number of competitors that would remain in the market, the relative shares of total deposits in depository institutions controlled by JPMC and Bear Stearns in the market ("market deposits"),[11] the concentration level of market deposits and the increases in those levels as measured by the Herfindahl-Hirschman Index ("HHI") under the Department of Justice Merger Guidelines ("DOJ Guidelines"),[12] and other characteristics of the market.

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[10] The Metropolitan New York-New Jersey banking market is defined as Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, and Westchester Counties, all in New York; Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties and the northern portions of Mercer County, all in New Jersey; Monroe and Pike Counties in Pennsylvania; and Fairfield County and portions of Litchfield and New Haven Counties in Connecticut.

[11] Deposit and market share data are as of June 30, 2007, and are based on calculations in which the deposits of thrift institutions are included at 50 percent. The Board previously has indicated that thrift institutions have become, or have the potential to become, significant competitors of commercial banks. See, e.g., Midwest Financial Group, 75 Federal Reserve Bulletin 386, 387 (1989); National City Corporation, 70 Federal Reserve Bulletin 743, 744 (1984). Thus, the Board regularly has included thrift deposits in the market share calculation on a 50 percent weighted basis. See, e.g., First Hawaiian, Inc., 77 Federal Reserve Bulletin 52, 55 (1991).

[12] Under the DOJ Guidelines, a market is considered unconcentrated if the post-merger HHI is under 1000, moderately concentrated if the post-merger HHI is between 1000 and 1800, and highly concentrated if the post-merger HHI exceeds 1800. The DOJ has informed the Board that a bank merger or acquisition generally will not be challenged (in the absence of other factors indicating anticompetitive effects) unless the post-merger

Consummation of the proposal would be consistent with Board precedent and within the thresholds in the DOJ Guidelines in the Metropolitan New York-New Jersey banking market.[13] On consummation of the proposal, the market would remain moderately concentrated as measured by the HHI, and numerous competitors would remain in the market.

The DOJ has conducted a review of the potential competitive effects of the proposal and has advised the Board that consummation of the transaction would not likely have a significantly adverse effect on competition in any relevant banking market. In addition, the appropriate banking agencies have been afforded an opportunity to comment and have not objected to the proposal.

Based on all the facts of record, the Board concludes that consummation of the proposal would not have a significantly adverse effect on competition or on the concentration of resources in the banking market where JPMC and Bear Stearns compete directly or in any other relevant banking market. Accordingly, the Board has determined that competitive considerations are consistent with approval.

Financial, Managerial, and Supervisory Considerations

Section 3 of the BHC Act requires the Board to consider the financial and managerial resources and future prospects of the companies and depository institutions involved in the proposal and certain other supervisory factors. The Board has considered

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HHI is at least 1800 and the merger increases the HHI by more than 200 points. The DOJ has stated that the higher-than-normal HHI thresholds for screening bank mergers and acquisitions for anticompetitive effects implicitly recognize the competitive effects of limited-purpose and other nondepository financial entities.

[13] JPMC operates the largest depository institution in the Metropolitan New York-New Jersey banking market, controlling deposits of approximately $228 billion, which represent 29 percent of market deposits. BSB&T controls $398 million in deposits, which represents less than 1 percent of market deposits. On consummation, JPMC would remain the largest depository institution in the market, controlling deposits of approximately $228 billion, which represent approximately 29 percent of market deposits. Approximately 271 depository institutions would remain in the banking market. The HHI would remain unchanged at 1118.

these factors in light of all the facts of record, including confidential reports of examination and other supervisory information received from the relevant federal and state supervisors of the organizations involved in the proposal, and other available financial information, including information provided by JPMC.

In evaluating financial factors in expansion proposals by banking organizations, the Board reviews the financial condition of the relevant companies involved on both a parent-only and consolidated basis, as well as the financial condition of the subsidiary depository institutions and other subsidiaries. In this evaluation, the Board considers a variety of information, including capital adequacy, asset quality, and earnings performance. In assessing financial factors, the Board consistently has considered capital adequacy to be especially important. The Board also evaluates the financial condition of the applicant organization after consummation of the proposed transaction.

The Board has considered the proposal carefully under the relevant financial factors. JPMC, its subsidiary depository institutions, and BSB&T are well capitalized and would remain so on consummation of the proposal.

The Board also has considered the managerial resources of the organizations involved and the proposed combined organization. The Board has reviewed the examination records of JPMC and its subsidiary depository institutions, including assessments of their management, risk-management systems, and operations. In addition, the Board has considered its supervisory experiences and those of the other relevant bank supervisory agencies with the organizations and their records of compliance with applicable banking law, including anti-money laundering laws. JPMC and its subsidiary depository institutions, as well as BSB&T, are considered to be well managed.

Based on all the facts of record, the Board has concluded that considerations relating to the financial and managerial resources and future prospects of the organizations involved in the proposal are consistent with approval, as are the other supervisory factors under the BHC Act.

Convenience and Needs Considerations

In acting on a proposal under section 3 of the BHC Act, the Board is required to consider the effects of the proposal on the convenience and needs of the communities to be served and to take into account the records of the relevant insured depository institutions under the Community Reinvestment Act ("CRA").[14]

As provided in the CRA, the Board has reviewed the convenience and needs factor in light of the evaluations by the appropriate federal supervisors of the CRA performance records of the relevant insured depository institutions. An institution's most recent CRA performance evaluation is a particularly important consideration in the applications process because it represents a detailed, on-site evaluation of the institution's overall record of performance under the CRA by its appropriate federal supervisor.[15] Each of JPMC's subsidiary depository institutions that is subject to the CRA received an "outstanding" rating at its most recent CRA performance evaluation.[16] BSB&T currently does not receive a CRA evaluation due to the bank's designation as a special purpose bank by the Federal Deposit Insurance Corporation.[17]

The Board has considered carefully all of the facts of record, including reports of examination of the CRA records of the institutions involved and confidential supervisory information. JPMC's acquisition of BSB&T will enhance and maintain the

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[14] 12 U.S.C. § 2901 et seq.; 12 U.S.C. § 1842(c)(2).

[15] See Interagency Questions and Answers Regarding Community Reinvestment, 66 Federal Register 36,620 and 36,639 (2001).

[16] JPMC's lead bank, JPMC Bank, received an "outstanding" rating at its most recent CRA performance evaluation by the Federal Reserve Bank of New York, as of September 8, 2003. JPMC Bank converted to a national bank on November 13, 2004. The Board has consulted with the Office of the Comptroller of the Currency ("OCC"), which is now JPMC Bank's primary federal supervisor, about the bank's performance since its evaluation in 2003. J. P. Morgan Trust Company received an "outstanding" rating at its most recent CRA performance evaluation by the OCC, as of November 4, 2006. Chase Bank received an "outstanding" rating at its most CRA examination by the OCC, as of January 9, 2006. Dearborn Bank engages in cash management activities for its affiliated banks and is not subject to the CRA.

[17] 12 CFR 345.11.

level of service provided to the customers currently served by BSB&T. Based on a review of the entire record, and for the reasons discussed above, the Board concludes that considerations relating to the convenience and needs factor and the CRA performance records of the relevant insured depository institutions are consistent with approval of the proposal.

Conclusion

Based on the foregoing, and in light of all the facts of record, the Board has determined that the application should be, and hereby is, approved. In reaching its decision, the Board has considered all the facts of record in light of the factors that it is required to consider under the BHC Act. The Board's approval is specifically conditioned on compliance by JPMC with the conditions in this order and all the commitments made to the Board in connection with the proposal. For purposes of this transaction, these commitments and conditions are deemed to be conditions imposed in writing by the Board in connection with its findings and decision and, as such, may be enforced in proceedings under applicable law.

The transaction may not be consummated before the fifth calendar day after the effective date of this order, or later than three months after the effective date of this order, unless such period is extended for good cause by the Board or by the Federal Reserve Bank of New York, acting pursuant to delegated authority.

By order of the Board of Governors,[18] effective April 1, 2008.

(signed)

Robert deV. Frierson
Deputy Secretary of the Board

[18] Voting for this action: Chairman Bernanke, Vice Chairman Kohn, and Governors Warsh, Kroszner, and Mishkin.

March 30, 2012

The Honorable Richard Shelby
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate
Washington, DC 20510

Dear Senator Shelby:

Thank you for your recent letter requesting information regarding the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Act). Congress passed the Act in response to the worst financial crisis this country has experienced since the Great Depression. We are firmly committed to implementing those reforms in a careful, responsible, and effective manner.

Over the past two years, we and our respective agencies have been working diligently to implement the Act. Collectively and individually, we have sought input and feedback from the general public, private industry, public interest groups, and a broad range of stakeholders. We have also held numerous meetings with our international and state counterparts. In response to these efforts, members of the Financial Stability Oversight Council (Council) and other agencies have received many thousands of comments on our regulatory proposals. We and our respective agencies have carefully reviewed - and are continuing to review - these comments in the course of rulemakings and studies.

We agree with you that Council member and interagency coordination and cooperation is critical to this effort. We are committed to implementing the Act through close coordination and consultation between and among Council members and our respective agencies and staffs.[1] The members of the Council and other agencies such as the Department of Housing and Urban Development and the Federal Trade Commission are consulting extensively with each other both on a bilateral basis and through the Council itself. There has been an unprecedented level of interagency cooperation, which has helped us to implement reforms in a careful and effective manner. The interagency consultation process has included staff discussions during the initial policy development stage as well as during the rulemaking process itself. We have shared proposed and final rule text prior to issuance as well as draft studies. The level of consultation and coordination has gone well beyond the formal consultation requirements of the Act. Consultation is taking place at multiple staff and senior policy official levels with the intention of improving the consistency of regulation across the financial industry and of reducing the

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[1] The Federal Trade Commission has very little rulemaking responsibility under the Act. The Federal Trade Commission and the Consumer Financial Protection Bureau are coordinating and fully cooperating on responsibilities either preserved or created in the Act. The two agencies entered into a Memorandum of Understanding, as required by the Act, on January 20, 2012 setting forth, among other things, how the agencies will coordinate and consult on law enforcement, rulemaking, and other activities.

Jon Leibowitz
Chairman of the Federal Trade Commission

Debbie Matz
Chairman of the National Credit Union Administration

John Walsh
Acting Comptroller of the Currency

S. Roy Woodall
Independent Member with Insurance Expertise

08-12255

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

October 6, 2008

The Honorable Charles E. Grassley
Ranking Member
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Senator:

This is in response to your letters of July 10 and September 23, 2008, requesting that the Federal Reserve Board, the Federal Reserve Bank of New York, and the Secretary of the Treasury provide certain information and answers to questions regarding a financing transaction by the Federal Reserve Bank of New York in connection with the acquisition of The Bear Stearns Companies, Inc. by JPMorgan Chase & Co. The responses on behalf of the Board of Governors are enclosed. The New York Reserve Bank is also providing these responses separately.

I appreciate the opportunity to provide the Board's views on these important questions.

Sincerely,

(Signed) Ben Bernanke

Enclosure

For files
P. Elliff

08- 8878

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

October 6, 2008

The Honorable Max Baucus
Chairman
Committee on Finance
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in response to your letter of July 10, 2008, requesting that the Federal Reserve Board, the Federal Reserve Bank of New York, and the Secretary of the Treasury provide certain information and answers to questions regarding a financing transaction by the Federal Reserve Bank of New York in connection with the acquisition of The Bear Stearns Companies, Inc. by JPMorgan Chase & Co. The responses on behalf of the Board of Governors are enclosed. The New York Reserve Bank is also providing these responses separately.

I appreciate the opportunity to provide the Board's views on these important questions.

Sincerely,

(Signed) Ben Bernanke

Enclosure

For files
P. E[illegible]

Responses to written questions concerning
the Federal Reserve's recent lending action
relating to the purchase of Bear Stearns Companies Inc.

1) Your initial response provided a list of the general categories of the assets contained in the collateral portfolio. Please identify and provide more specific and complete details regarding each asset within these general categories, including a list of hedges associated with those assets.

In order to maximize value in the sale or liquidation of the collateral portfolio, the Federal Reserve must manage the pool of collateral over a long-term horizon and liquidate it in an orderly fashion that is not affected by the unusual market pressures on liquidity that currently affect the market. Public disclosure of individual assets in the collateral pool and of the hedging strategies that are employed to reduce the risk in the portfolio would undermine our ability to best protect the taxpayer against loss on the liquidation of the portfolio. Nonetheless, in order to allow Congress to conduct appropriate oversight, the Federal Reserve Bank of New York ("FRBNY") will provide staff of the Committee with direct access at the Reserve Bank on a confidential basis to greater detail regarding the assets in the portfolio.

2) Please describe in detail how BlackRock was selected to be the manager of the assets.

BlackRock was selected under FRBNY's Acquisition Guidelines ("Guidelines"). The Guidelines recognize that exigent circumstances may require an exception to the normal competitive bidding process, subject to senior management approval. In light of the unique time pressures associated with the decision to support JPMC's acquisition of Bear Stearns, senior management at FRBNY carefully considered the issue and determined that an exception to the competitive bidding provisions of the Guidelines was appropriate with respect to the selection of an investment manager. BlackRock was selected to manage the proposed collateral portfolio for its technical expertise, operational capacity, and track record.

3)(a) Please explain why Bear Stearns assets are being purchased through a limited liability corporation based in Delaware. (b) What is the status of your effort to establish the limited liability corporation?

On June 26, 2008, Bear Stearns' assets were transferred to Maiden Lane LLC, a limited liability company based in Delaware, which was incorporated on April 29, 2008. The decision to incorporate as an LLC was based on the tax pass-through feature of the

For [illegible]
P. E[illegible]

LLC, the liability protection the LLC structure affords to its members, and the ability of its members to tailor the LLC form to suit their needs. The decision to incorporate in Delaware was based on the quality of Delaware law which is updated regularly to reflect current corporate developments, the flexibility of the Delaware statute, the speed in which administrative matters can be handled in Delaware, and our belief that it was appropriate in this context to incorporate in the United States.

4)(a) Please describe the process used by the Federal Reserve and BlackRock to select the Bear Stearns assets to be managed by the Delaware LLC. (b) Please provide any and all reports, memoranda, letters, or other written communications from BlackRock related to the selection and/or valuation of the assets.

FRBNY determined that it was willing to accept as collateral for the proposed Bear Stearns credit facility only assets that met each of the following parameters: (i) U.S. dollar denominated; (ii) U.S. domiciled; and (iii) performing residential and commercial mortgages or investment-grade or Agency issued securities (and related hedges). A performing mortgage is a mortgage that was no more than 30 days past due (as of March 14, 2008), and an investment-grade security is a security rated BBB- or higher by all rating agencies that have rated the security (as of March 14, 2008), including at least one of the three principal credit rating agencies.

5)(a) Please describe in detail the precedent, if any, for the Federal Reserve managing the type of assets selected from Bear Stearns. (b) Please describe in detail the precedent, if any, for the Federal Reserve using an LLC to manage the assets.

(a) As explained in greater detail in the response to Question 7, FRBNY extended credit in connection with the acquisition of Bear Stearns by JPMC pursuant to section 13(3) of the Federal Reserve Act, which was enacted in 1932. Under section 13(3), in unusual and exigent circumstances, the Board may authorize any Reserve Bank to extend credit to any individual, partnership, or corporation if the Reserve Bank obtains evidence that the borrower is unable to secure adequate credit accommodations from other banking institutions. Credit extended under section 13(3) must be secured to the satisfaction of the Reserve Bank. From July 1932 to July 1936, several Reserve Banks made loans using section 13(3) authority to a number of individuals and businesses. Records indicate that these loans were secured by a diverse range of collateral, including common stock, commercial inventory, and receivables of the borrowing businesses.

(b) We have not identified any record indicating the prior use of a limited liability company to hold collateral securing an extension of credit made by a Reserve Bank pursuant to section 13(3).

6)(a) What is the Federal Reserve's plan for periodically reporting to the public on the value of the assets and the status of their disposition during the ten years the new Federal Reserve financing facility will be in place. (b) Will you provide the Committee with quarterly updates on the current valuations of the assets in comparison to the valuation on the date the assets were acquired?

(a) Beginning after June 26, 2008, the date the Bear Stearns financing transaction was closed, the Board's H.4.1 Statistical Release, "Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of Federal Reserve Banks," includes information related to Maiden Lane, the limited liability company formed to acquire and manage the collateral for the Bear Stearns/JPMC financing transaction. Among other things, the release discloses, as of the date of the release, the aggregate fair value of Maiden Lane's net portfolio holdings and the book value of the principal and interest on the loans made to facilitate the Bear Stearns acquisition. Consistent with generally accepted accounting principles, the assets and liabilities of Maiden Lane have been consolidated with the assets and liabilities of FRBNY in the preparation of the statements of condition shown on the release because the Reserve Bank is the primary beneficiary of Maiden Lane. The H.4.1 release is published weekly on Thursdays and is available on the Board's public website.

(b) The fair value of Maiden Lane LLC's net portfolio holdings as of the date of acquisition, June 26, 2008, is disclosed in the H.4.1 Statistical Release issued by the Board of Governors on July 3, 2008. Thereafter, Maiden Lane LLC's net portfolio holdings will be updated quarterly and published on the H.4.1 release. Table 2 of this release includes a footnote that states the date the last time prices of portfolio holdings were revalued.

7) Former Federal Reserve Chairman Paul Volcker recently expressed the concern that the Federal Reserves action in the Bear Stearns matter "extended to the very edge of its lawful and implied power, transcending certain long-embedded central banking principles and practices." (a) What is the legal basis for the assumption of control over the $30 billion in assets? (b) Please provide copies of any and all memoranda, reports, or other written assessments or analysis of the legal issues surrounding the Federal Reserve's role in the transaction.

The legal basis for the Federal Reserve extension of credit in connection with the acquisition of Bear Stearns by JPMC is explained in a memorandum, dated April 2, 2008, from the Board's Legal Division to the Board of Governors. A copy of that memorandum is attached to these responses.

8)(a) If by disposing of these assets the LLC suffered a loss of $20 billion, what impact would that have on (1) the size of the Federal Reserve's balance sheet, (2) the Federal Reserve's annual remittance to the Treasury Department, (3) federal revenues, (4) the deficit, and (5) the debt held by the public? (b) What would be the impact on (a)(1)–(5) if the LLC realized a $20 billion gain?

(a) Consistent with generally accepted accounting principles, the assets and liabilities of Maiden Lane, the limited liability company that holds the assets serving as the collateral for the Bear Stearns/JPMC financing transaction and that is liable for repayment of the credit extended in the transaction, are consolidated with the assets and liabilities of FRBNY in the preparation of the financial statements of the Federal Reserve Banks. Under the credit agreement, the subordinated lender to Maiden Lane, JPMC, would absorb the first $1.15 billion of losses resulting from the decline in the value of the assets serving as collateral and any residual value of the collateral assets in excess of the obligations of Maiden Lane would be owed to FRBNY. The fair value of the net portfolio holdings of Maiden Lane is updated quarterly to reflect values at the end of each calendar quarter. If the revaluation of portfolio holdings indicates a decrease in value, FRBNY will reduce its carrying value of the asset and recognize an unrealized loss on any residual value not absorbed by JPMC. This loss, like any other Reserve Bank losses and expenses, will reduce the Bank's net earnings. The reduction in earnings would negatively affect the amount of the System earnings that are paid to the U.S. Treasury and the aggregate amount of federal revenues. Although the effect of such a reduction in System earnings on the overall federal deficit and debt held by the public would depend on a number of economic and fiscal factors present at that time, and cannot be predicted reliably now, realized losses to the Reserve Bank, should they ultimately occur, would accrue to the government.

(b) Similarly, interest earned on the loan would accrue to and be payable to the government. Moreover, if the revaluation of Maiden Lane portfolio holdings results in unrealized gains, FRBNY will increase its carrying value of the asset and will recognize an unrealized gain up to any unrealized losses previously recognized. Residual gains would then be accrued to JPMC up to its previously recognized loss. All remaining residual gains would then be recognized by FRBNY. These gains, like any other Reserve Bank gains and income, will increase the Bank's net earnings. The increase in earnings would positively affect the amount of the System earnings that are paid to the U.S. Treasury and the aggregate amount of federal revenues. Although the effect of such an increase in System earnings on the overall federal deficit and debt held by the public would depend on a number of economic and fiscal factors present at that time, and cannot be predicted reliably now, realized gains to the Reserve Bank, should they ultimately occur, would accrue to the government.

9) Please explain why JPM was unwilling to include the assets now being managed by the LLC in their merger deal with Bear Stearns?

An agreement of the Federal Reserve on Sunday, March 16, 2008, to finance a portion of the assets of Bear Stearns was necessary to secure JPMC's agreement at that time (i) to acquire the remainder of the assets of Bear Stearns and (ii) to assume or guarantee the liabilities of Bear Stearns to allow it to open for business without disruption on Monday, March 17, 2008. As Jamie Dimon, the chief executive officer of JPMC, testified before the Senate Banking Committee on April 3, 2008, JPMC informed the New York Reserve Bank on March 16, 2008, that JPMC was unwilling to acquire all of Bear Stearns, and JPMC could not accept the risk of acquiring all the assets and liabilities of Bear Stearns in light of the substantial pre-existing exposure of JPMC to similar assets and liabilities.

10)(a) Please provide a copy of the contract between the New York Federal Reserve and the asset manager, BlackRock Financial Management, which will manage the collateral pool relating to the JPM loan. (b) How will BlackRock be compensated for its services? (c) What is its maximum potential fee? (c) What is its minimum potential fee? (d) Please describe what independent check, if any, there will be to assure that BlackRock's valuation of the assets is accurate and that its management of them is prudent.

We would like to invite your staff to visit FRBNY so that we can provide details on these arrangements on a strictly confidential basis. BlackRock's valuation of the assets is based partially on valuations provided by other agents working for Maiden Lane LLC. FRBNY retains ultimate control over the policies governing the management and disposition of the collateral assets. At all times since BlackRock has been engaged, the management and senior staff of FRBNY have been involved on a day-to-day basis with the details of the portfolio management process. Experienced analysts and supervisors from FRBNY's Markets Group, Bank Supervision Group, and other areas have been assigned to monitor the portfolio and to carefully review BlackRock's investment management decisions.

11) In Congressional testimony James Dimon, Chairman of JPM, disclosed that the Federal Reserve has lent Bear Stearns $25 billion under a new program of direct lending available to major investment banks--separate from the $30 billion exchange of assets. (a) What is the status of that additional loan, or loans? (b) Please provide a history of borrowing by BSC through the Primary Dealer Credit Facility for the period of March 1, 2008 through June 30, 2008. (c) Also, please provide a history of borrowing by JPM through the Primary Dealer Credit Facility for the period of March 1, 2008 through June 30, 2008.

Aggregate information regarding borrowings extended at the Primary Dealer Credit Facility is available in the weekly H.4.1 Statistical Release by the Board, which is available at http://www.federalreserve.gov/releases/h41. The Federal Reserve has agreed with participants in its Primary Dealer Credit Facility to maintain the confidentiality of the details of their participation. This is necessary in order to prevent any stigma that might be perceived from use of the facility from attaching to participants. Were this information to be made public, the usefulness of the facility would be greatly impaired.

12) We understand that Jamie Dimon, Chairman of JPM, is a Class A Board Member of the Federal Reserve Bank of New York. What steps did the Federal Reserve take to ensure that Mr. Dimon's Board membership did not influence the negotiations regarding the purchase of Bear Stearns by JPM and the arrangement on the $30 billion in Bear Stearns assets.

Jamie Dimon, chief executive officer of JPMC, is one of nine members of the board of directors of FRBNY. Mr. Dimon did not participate in his role as a director of the Reserve Bank in the negotiations between the Federal Reserve and JPMC on any of the credit facilities authorized regarding Bear Stearns. Neither Mr. Dimon nor any other FRBNY director participated in the approval of the credit facilities regarding Bear Stearns. Rather, Mr. Dimon participated solely on behalf of JPMC. The Reserve Bank was represented at all times by its president, Timothy Geithner, and staff in negotiations with JPMC. Mr. Dimon has recused himself from any role as a member of the board of directors of the Reserve Bank in any matter related to the Bear Stearns credit facility.

Attachment

18 pages withheld under exemption (b)(5).

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

DANIEL K. TARULLO
MEMBER OF THE BOARD

June 29, 2012

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are my responses to the written questions you submitted following the January 18, 2012, hearing before the Subcommittee on Capital Markets and Government Sponsored Enterprises and the Subcommittee on Financial Institutions and Consumer Credit. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Daniel K Tarullo

Enclosure

Response to Questions for The Honorable Daniel K. Tarullo, Member, Board of Governors of the Federal Reserve System, from Chairman Bachus:

Section 1

1. Section 619(b)(2) of the Dodd-Frank Act itself divides authority for developing and adopting regulations to implement its prohibitions and restrictions between the Federal Reserve, the OCC, FDIC, SEC, and CFTC based on the type of entities for which each agency is explicitly charged or is the primary financial regulatory agency. The statute also requires these agencies, in developing and issuing implementing rules, to consult and coordinate with each other for the purposes of assuring that such rules are comparable and to provide for consistent application and implementation. Under the statutory framework, the CFTC is the primary federal regulatory agency with respect to a swap dealer and the SEC is the primary financial regulatory agency with respect to a security-based swap dealer; the Federal Reserve is explicitly charged with issuing regulations with respect to companies that control an insured depository institution, including bank holding companies. The OCC, Federal Reserve, and FDIC must jointly issue rules to implement section 619 with respect to insured depository institutions.

To enhance uniformity in both rules that implement section 619 and administration of the requirements of section 619, the Federal Reserve, OCC, FDIC, SEC and CFTC have been regularly consulting with each other in the development of rules and policies that implement section 619. The rule proposed by the agencies to implement section 619 contemplates that firms will develop and adopt a single, enterprise-wide compliance program and that the agencies would strive for uniform enforcement of section 619. We are carefully considering the public comments received on these points and will take those comments into account in crafting a final rule to implement section 619.

Section 2

1. Section 619 of the Dodd-Frank Act generally prohibits banking entities from engaging in proprietary trading for the purpose of profiting from short-term price movements, and from acquiring or retaining interests in, or having certain relationships with, hedge funds and private equity funds. In each case the statute explicitly provides certain exemptions from these prohibitions, as well as limitations on permitted activities.

Appropriate and effective implementation of the Act is a high priority for the Federal Reserve. As you note, the Federal Reserve, the OCC, the FDIC, SEC, and CFTC have issued proposed rulemakings to implement section 619; as part of those rulemakings, the agencies met with many interested representatives of the public, including banking firms, trade associations and consumer advocates, and provided an extended period of time for the public to submit comment to the agencies regarding the proposal. The agencies have received over 17,000 comments addressing a wide variety of aspects of the proposal, including each of the issues raised in your questions. The agencies are carefully reviewing those comments and considering the suggestions and issues they raise in light of the statutory restrictions and provisions. We will carefully consider the issues raised by your questions as we continue to review all comments submitted in implementing these important provisions.

Questions for The Honorable Daniel K. Tarullo, Member, Board of Governors of the Federal Reserve System, from Chairman Bachus:

Section 1

1. Congress enacted the Volcker Rule as a provision of the Bank Holding Company (BHC) Act and the Federal Reserve is generally vested with the exclusive authority to implement the provisions of the BHC Act and is given broad rulemaking, examination, enforcement and supervisory powers by that legislation. The legislative history to the Dodd-Frank Act indicates that the Board should "coordinate with other Federal and state regulators of subsidiaries of [a] holding company, to the fullest extent possible, to avoid duplication of examination activities, reporting requirements, and requests for information".

The witnesses gave seemingly conflicting statements about the supervisory and enforcement framework for Volcker. Chairman Gensler noted his authority to supervise swap dealers; Governor Tarullo noted that the Fed has "primary" authority and other regulators have "backup" authority. What does this explanation mean? Which agency will have examiners ensuring compliance at the Swap Dealer or Security-based Swap Dealer; the Federal Reserve, the SEC or the CFTC? Why would the Federal Reserve not be responsible for comprehensive compliance and inform enforcement as the primary regulator? What policy objective is being achieved by having multiple agencies supervise and enforce, since having multiple regulators technically responsible for examination and enforcement, no regulator would be clearly responsible or accountable for compliance?

Section 2

1. Since the "intent" of a trader cannot be determined, regulators have proposed seventeen metrics to deploy to gauge whether an institution is hiding proprietary trading within a market making desk. Since the proposed rule consistently notes that the quantitative measurements are designed for identifying trading activity that warrants additional scrutiny, why do the metrics not at the same time make evident that the activity tested is complying with the rule? What purpose are the metrics intended to serve?

2. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets (SIFMA) Asset Management Group comment letter dated February 13, 2012, regarding why the proposal's market making-related activity assumes that markets themselves are highly liquid and open to a wide array of end users when market making is in fact a highly nuanced process of trying to assess the demand for an instrument.

3. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets (SIFMA) Asset Management Group comment letter dated February 13, 2012, regarding how the proposal's hedging restrictions, which require all hedges to conform to an ambiguous, undefined concept of "reasonable correlation," would restrict

the ability of market makers to be able to cost-effectively hedge the fixed income securities they hold in inventory, including on a portfolio basis.

4. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets (SIFMA) Asset Management Group comment letter dated February 13, 2012, regarding the lack of sufficient guidance on market makers in derivatives as it relates to a banking entity's entering into a transaction in response to customer demand and hedging the related exposure.

5. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets (SIFMA) Asset Management Group comment letter dated February 13, 2012, regarding how the proposal hinders market makers from entering into block trades since the block positions guidance in the proposal only applies to the definition of market maker which requires market makers positioning blocks to second-guess whether, in working out of the position slowly to avoid depressing the price, they are seeking to generate revenue from price movements.

6. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association, The Clearing House, Financial Services Roundtable, and American Bankers Association comment letter dated February 13, 2012, regarding how the proposal's prohibited proprietary trading presumption is inconsistent with explicit congressional intent to allow useful principal activity.

7. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association, The Clearing House, Financial Services Roundtable, and American Bankers Association comment letter dated February 13, 2012, regarding why the proposal takes a transaction-by-transaction approach to principal trading when such analysis does not accord with the way in which modern trading units operate, which generally view individual positions as a bundle of characteristics that contribute to their complete portfolio.

8. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association, The Clearing House, Financial Services Roundtable, and American Bankers Association comment letter dated February 13, 2012, regarding how the five Agencies will coordinate interpretation, examination and enforcement of the Volcker Rule regulations.

9. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association, The Clearing House, Financial Services Roundtable, and American Bankers Association comment letter dated February 13, 2012, regarding your failure to conduct a general cost/benefit analysis of the proposed rules.

10. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association comment letter dated February 13, 2012,

regarding why the proposal provides no consistency as to the types of municipal securities that are exempt from the proprietary trading prohibition under the Volcker Rule.

11. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association comment letter dated February 13, 2012, regarding why the proposal distinguishes between municipal securities based on the type of issuer, which would be inappropriate since different issuers may offer securities that offer the same credit exposure to investors.

12. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association comment letter dated February 13, 2012, regarding why tender option bonds would be captured in the definition of "covered fund" under the proposal when there is no evidence in the legislative history of the Volcker Rule suggesting that Congress intended tender option bond transactions to be included in the scope of the Volcker Rule.

13. Please address how your agency will solve the problem raised by the Securities Industry and Financial Markets Association comment letter dated February 13, 2012, regarding why the proposal does not exclude issuers of asset-backed securities from the definition of "covered funds" despite the Financial Stability Oversight Council's findings that Congress did not intend for the Volcker Rule restrictions to apply to the sale or securitization of loans.

14. Please address how your agency will solve the problem raised in the American Council of Life Insurers comment letter dated January 24, 2012, regarding why insurance company investment activities that are permitted activities under current law and the proposed regulations are subject to reporting and record keeping requirements and compliance monitoring in Subpart D.

15. Please address how your agency will solve the problems raised in the AllianceBernstein comment letter dated November 16, 2011, regarding how the market making activities described in the proposal fail to take into account unregulated over-the-counter market making activities that covered banking entitles provide to such markets.

16. Please address how your agency will solve the problem raised in the AllianceBernstein comment letter dated November 16, 2011, regarding how the market making exemption appears to be predicated on the incorrect assumption that there is a perfect hedge for all securities and that all risks can be hedged for any given holding period for any position.

17. Please address how your agency will solve the problems raised in the Bank of Japan and Financial Services Agency Government of Japan comment letter dated December 28, 2011, regarding how the proposed restrictions on proprietary trading and certain interests in, and relationships with, hedge funds and private equity funds will raise operational and transactional costs of trading in Japanese Government Bonds.

18. Please address how your agency will solve the problems raised by the Canadian Banks comment letter dated January 19, 2012, regarding how the Volcker Rule, as enacted, excludes funds registered for public sale in the U.S. under the Investment Company Act of 1940 yet the proposal fails to provide a similar exclusion for Canadian Public Funds from the proposed definition of "covered fund" which violates Canada's rights under the North American Free Trade Agreement.

19. Please address how your agency will solve the problems raised by Capital One Financial Corporation, Fifth Third Bancorp, and Regions Financial Corporation comment letter dated November 29, 2011, over how a narrowly construed insured depository institution exemption that does not extend to many of the swaps that banks and their customers consider to be core banking services could push even the smallest registered bank dealers over the Volcker Rule's $1 billion threshold which would result in additional burdensome record keeping and compliance requirements that may cause small dealers to exit the market.

20. Please address how your agency will solve the problems raised by the U.S. Chamber of Commerce Center for Capital Markets Competitiveness comment letter dated December 15, 2011, regarding how the proposed rule should be considered an economically significant rulemaking.

21. Please address how your agency will solve the problem raised the U.S. Chamber of Commerce Center for Capital Markets Competitiveness comment letter dated December 15, 2011, regarding why the definition of exempt state and municipal securities is narrower under the Volcker Rule provisions of the Dodd-Frank Act than under the Securities and Exchange Act of 1934 which will subject municipal securities issued by municipalities and authorities to Volcker Rule provisions.

22. Please address how your agency will solve the problem raised by the Citigroup Global Markets comment letter dated January 27, 2012, regarding how the government obligations exemption will be consistently implemented when obligations of "agencies" of States and their political subdivisions are exempted, but each municipal jurisdiction applies its own definition of political subdivision to its issuer entities.

23. Please address how your agency will solve the problem raised by the Citigroup Global Markets comment letter dated January 27, 2012, regarding the proposed rule's failure to expressly exempt tender option bond programs from its restrictions on covered fund activities and how covered transactions with covered funds will have a significant adverse effect on the municipal securities market.

24. Please address how your agency will solve the problem raised in the comment letters from Rep. Anna Eshoo dated December 13, 2011,; Rep. Michael Honda dated December 20, 2011,; Rep. Zoe Lofgren dated December 23, 2011,; Rep. David Schweikert dated December 16, 2011,; and Sen. Kay Hagan dated January 13, 2012, regarding how

venture capital funds should not be covered by the Volcker Rule and how the Volcker Rule, as enacted, consistently used the specific term "private equity fund" - not the more general term "investment advisor" as it relates to venture capital funds.

25. Please address how your agency will solve the problem raised in the comment letter from Sen. Kay Hagan dated January 13, 2012, regarding how the proposed regulations could inadequately clarify the treatment of certain investments made by insurers and why the rule does not conform to Section 619's directive to accommodate the "business of insurance" and includes investments in covered funds within the exemption for insurers.

26. Please address how your agency will solve the problem raised by the Income Research and Management comment letter dated January 20, 2012, regarding how the proposed regulations outlining how market making banking entities can generate revenue compel market makers to trade on an agency basis rather than a principal basis and how the domestic corporate and securitized (i.e. commercial, residential, and asset-backed mortgage securities) credit markets are too large and heterogeneous to be served appropriately primarily by an agency trading based model.

27. Please address how your agency will solve the problem raised by the Investment Industry Association of Canada comment letter dated December 21, 2011, regarding the reasoning behind the extraterritorial application of the proposed Volcker Rule when there is nothing in the statutory text of the Volcker Rule or legislative history to suggest that Congress intended the Agencies to depart from their long-standing approach to apply U.S. banking and securities law to cross-border transactions.

28. Please address how your agency will solve the problem raised by the Municipal Securities Rulemaking Board comment letter dated January 31, 2012, regarding the need to broaden the "governmental obligations" exemption from the proposed rule's restriction on proprietary trading to include all "municipal securities" as defined in the Exchange Act in order to avoid a bifurcation of the municipal securities market that brings no additional benefit to the safety and soundness of the banking system.

29. Please address how your agency will solve the problem raised by the Municipal Securities Rulemaking Board comment letter dated January 31, 2012, regarding how most municipal market participants consider a primary function of market making to be the generation of liquidity in the market by taking securities into inventory, and that a dealer may not always be able to demonstrate compliance with the requirement of the market maker exception, with respect to the covered financial position, as designed not to exceed the reasonably expected near term demands of clients, customers, or counterparties.

30. Please address how your agency will solve the problem raised by the Norinchukin Bank comment letter dated January 25, 2012, that by applying the Volcker Rule to any transactions that take place outside of the U.S. based only on the fact that foreign banks

have U.S.-based offices seems like an extraterritorial application which deviates from one of the main objectives of the Dodd-Frank Act of containing systemic risks.

31. Please address how your agency will solve the problems raised by U.K. Chancellor of the Exchequer George Osborne's comment letter dated January 23, 2012, regarding how the proposed regulations would appear to make it more difficult and costlier to provide market-making services in non-U.S. sovereign markets.

32. Please address how your agency will solve the problems raised by the Standish Mellon Asset Management comment letter dated January 19, 2012, regarding how the proposed prohibited principal trading could result in dealers being hesitant to transact in secondary cash bonds because of extraordinary compliance requirements and the lack of clarity surrounding the rules.

10-3680

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

December 2, 2009

BEN S. BERNANKE
CHAIRMAN

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Senator:

I am writing to acknowledge receipt of the questions regarding American International Group, Inc. (AIG) that your staff forwarded on November 25, 2009. The Federal Reserve has also provided you and your staff substantial information through testimony before the Committee, letters in response to written questions that you have submitted, the reports filed by the Board under section 129 of the Emergency Economic Stabilization Act of 2008, the Board's monthly transparency reports (*Federal Reserve Credit and Liquidity Programs and the Balance Sheet)*, and staff briefings.

We are reviewing the questions received so that we can assemble additional information relevant to your inquiry. Toward that end, I understand our staffs talked last night regarding this information. In the meantime, I wanted to assure you that we are actively working on your requests.

Sincerely,

08-15922

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

January 15, 2009

BEN S. BERNANKE
CHAIRMAN

2009 JAN 21 P 5:02

RECEIVED
OFFICE OF THE SECRETARY
RECORDS SECTION

The Honorable John Conyers, Jr.
Chairman
Committee on the Judiciary
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter of October 29, 2008, in which you ask a number of questions with respect to the Troubled Asset Relief Program ("TARP") and related programs of the Department of the Treasury ("Treasury") under the Emergency Economic Stabilization Act ("EESA"). Specifically, you have asked about the criteria used by Treasury to award funds under these programs, the responses of the federal banking agencies to the proposed acquisition of National City Corporation ("National City") by The PNC Financial Services Group, Inc. ("PNC"), and the type of review that the federal banking agencies conduct in evaluating the competitive effects of transactions that involve the acquisition of a bank.

Enclosed are staff responses to your questions as well as relevant supporting documents. As you know, the Board has taken numerous actions both independently and together with Treasury and the other federal banking agencies to stabilize the financial system and promote the return of credit markets to more normal functioning. The Board has worked with Treasury and the other federal banking agencies to implement the provisions of EESA, including the TARP's Capital Purchase Program ("CPP"). The Board will continue to make every effort to share with Congress relevant information about its role in these efforts to restore financial stability and normalize credit markets when requested.

I hope that you will find this information and the enclosed documents to be useful. An index of the responsive documents that are enclosed is attached for your reference. A portion of the requested information was obtained by the Federal Reserve during the application process or in the course of examining the relevant institutions and includes confidential supervisory and business information. The requested information is being made available for review on the understanding that it will be given confidential treatment. Documents that contain confidential supervisory or business information are separately bound and labeled.

If you have any questions regarding the information provided in this response, do not hesitate to contact Laricke Blanchard of my staff at (202) 452-3003.

Sincerely,

(Signed) Ben Bernanke

For files
P. Elliff

Enclosures

Identical letter also sent to: Congresswoman Betty Sutton

Federal Reserve responses to letter dated October 29, 2008, concerning questions with respect to the Troubled Asset Relief Program and the acquisition of National City Corporation by The PNC Financial Services Group, Inc.

1. Please detail what conditions have or will be imposed upon the use of the federal funds provided to PNC Financial Services Group or any other financial entity through the Emergency Economic Stabilization Act. Describe and explain any factors taken into account when federal tax dollars are being used to help fund an acquisition of another firm. Please provide a copy of all documents (including, but not limited to, records, memoranda, correspondence, recorded messages, charts, graphs, notes, studies, reports, other writings, and electronic media such as emails, instant messages, and texts) from September 2008 onward relating to any aspect of the foregoing.

A primary purpose of the EESA is to "immediately provide authority and facilities that the Secretary of the Treasury can use to restore liquidity and stability to the financial system of the United States . . .".[1] As part of this authorization from Congress, Treasury established the TARP to help stabilize financial markets, inject liquidity into the financial system, and enable financial institutions to provide credit again. One component of the TARP is the CPP, which was not announced until October 14, 2008. Under the CPP, the Treasury, after consulting with the appropriate federal banking regulator, may purchase up to $250 billion of senior preferred shares on standardized terms from qualifying financial institutions ("QFIs").

The TARP and CPP were established by Treasury, not by the Board or other federal banking agencies. Treasury's Office of Financial Stability ("OFS") administers and oversees the TARP, including the CPP. Treasury is responsible for setting the criteria and factors taken into account in determining eligibility for TARP and CPP participation.[2] The conditions for participation are described in a series of documents made available by Treasury on its website. In particular, we refer you to the "Application Guidelines for TARP Capital Purchase Program."

2. Please detail the methodology and criteria that were considered in connection with the possible transfer of federal funds through the Emergency Economic Stabilization Act to National City Corporation as compared to the other regional banks for which you recently

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[1] Pub. L. No. 110-343, § 2(1) (Oct. 3, 2008).

[2] Such criteria are contained in the Term Sheet for CPP participation, which can be accessed on Treasury's website. Each applicant must obtain and review a copy of such terms and agreements and agree to all conditions, including representations and warranties, as a condition to participation in the CPP.

approved funding. Also, please describe the extent to which any impact on National City Corp.'s customers and employees as well as the relevant local economy was taken into consideration with regard to approval or denial of funds to National City and the proposed acquisition of National City by PNC. Please provide a copy of all documents (including, but not limited to, records, memoranda, correspondence, recorded messages, charts, graphs, notes, studies, reports, other writings, and electronic media such as emails, instant messages, and texts) from September 2008 onward relating to any aspect of the foregoing.

Applications for federal funds administered through the EESA are considered under uniform methodologies and criteria established by Treasury. Potential applicants are required to submit their request for funds under the CPP to their primary federal supervisor. If the applicant is a bank holding company, the application should be submitted to both the applicant's holding company supervisor and the supervisor of the largest insured depository institution controlled by the applicant. Treasury coordinates with federal banking regulators to maintain streamlined evaluations and a standardized process to ensure consistency. The federal banking regulators use the uniform criteria established by Treasury in evaluating and making recommendations to Treasury for participation in the CPP. Under this process, once the primary federal banking regulator reviews an application, it may or may not recommend the QFI for participation in the CPP by forwarding the application to Treasury's OFS. Relevant documents on the evaluation process for CPP applications are enclosed.

The Board is the primary federal banking regulator for state member banks. The Federal Reserve System reviews applications submitted by state member banks wishing to participate in the CPP and, after reviewing all the facts and circumstances in accordance with the criteria established by Treasury, forwards applications to Treasury with recommendations for action. The OFS then reviews and issues the ultimate decision on whether or not to make a capital purchase. Such applications are reviewed and evaluated pursuant to their own individual merits, dependent on each applicant's financial condition.

As mentioned above, the Federal Reserve System also receives a copy of all applications involving a bank holding company. In these situations, a Reserve Bank reviews each application and refers applications with recommendations for action to the Board. In cases where the holding company is a shell organization or where there is a dominant subsidiary bank, the primary federal banking regulator forwards the application to Treasury. In situations involving complex holding company structures or multi-bank holding companies, the Board will forward the application to Treasury with a recommendation. Regardless of a bank holding company's structure, the Board works closely with the primary federal banking regulator of its subsidiary depository institutions to determine an appropriate recommendation on participation in the CPP. Treasury has ultimate authority to approve or deny CPP applications.

National City did not submit an application for participation in the CPP. In connection with the supervision of National City, the Board worked closely with the Office of the Comptroller of the Currency ("OCC"), the primary federal regulator for National City's subsidiary bank, National City Bank, Cleveland, Ohio. It is our understanding that documents that are responsive to this question, including an email from the Comptroller of the Currency to National City that reflects the views of the OCC, the Federal Reserve, and the Federal Reserve Bank of Cleveland, also will be provided by the OCC. Various documents relevant to PNC's acquisition of National City also are enclosed, including the Board's order dated December 15, 2008, approving the acquisition.

Supporting Documentation:

- Documents related to the implementation of the CPP transmitted to the Board by Treasury;
- Relevant portions of the application and related record for the proposal by PNC to acquire National City; and
- Order approving the proposal by PNC to acquire National City.

3. As noted above, the press has recently reported that the banking industry "has no intention of using the [bailout] money to make new loans"; the Treasury has acknowledged that one of their principal motives in allocating the funds is to "drive consolidation"; and a JP Morgan official acknowledged that the bailout funds would allow them to be "more active on the acquisition side." Please detail any knowledge by your departments or agencies of these matters, as well as any discussions or understandings you may have regarding the use of the funds the government is providing and their possible use with regard to mergers and consolidations. Please provide a copy of all documents (including, but not limited to, records, memoranda, correspondence, recorded messages, charts, graphs, notes, studies, reports, other writings, and electronic media such as emails, instant messages, and texts) from September 2008 onward relating to any aspect of the foregoing.

The Board and other federal banking agencies have encouraged eligible institutions to use the CPP to build capital to increase the availability of credit to consumers and businesses, as noted in the joint press release dated October 20, 2008. Treasury has established the standards that must be adopted by holding companies and institutions that participate in the CPP.

On November 18, 2008, Chairman Bernanke testified before the Financial Services Committee of the U.S. House of Representatives regarding TARP and several initiatives the Board has taken to normalize credit markets. He noted that "the ongoing capital injections under the TARP are continuing to bring stability to the banking system and have reduced some of the pressure on banks to deleverage, two critical first steps toward restarting flows of new credit." He also discussed the joint statement issued on November 12, 2008, by the federal banking agencies on meeting the needs of creditworthy borrowers. The statement emphasizes that it is imperative that all banking organizations and their regulators work together to ensure that the needs of creditworthy borrowers are met in a manner consistent with safety and soundness, including working with borrowers to avoid preventable foreclosure. As capital adequacy is critical in determining a banking organization's ability and willingness to lend, the joint statement discusses the need for careful capital planning, including setting appropriate dividend policies. The joint statement also notes that the agencies expect banking organizations to conduct regular reviews of their management compensation policies to ensure that they encourage prudent lending and discourage excessive risk-taking. The Board expects that the banking organizations use the TARP funds they receive under the CPP to assist their prudent lending activities and help normalize the credit markets.

Supporting Documentation:

- Statement by Chairman Bernanke (November 18, 2008);
- Joint Statement by the federal banking agencies, "Agencies encourage participation in Treasury's Capital Purchase Program, FDIC's Temporary Liquidity Guarantee Program" (October 20, 2008); and
- Joint statement by the federal banking agencies (November 12, 2008).

4. Please detail the manner in which antitrust considerations generally have been and are being taken into account in recent consolidations, and particularly in the proposed acquisition of National City Corp. by PNC Financial Services Group. Please detail how the antitrust review is impacted by the fact that the Treasury or Federal Reserve, their employees and/or representatives may have participated in discussions involving the possible acquisition of one financial entity by another financial entity. Please provide a

copy of all documents (including, but not limited to, records, memoranda, correspondence, recorded messages, charts, graphs, notes, studies, reports, other writings, and electronic media such as emails, instant messages, and texts) from September 2008 onward relating to any aspect of the foregoing.

The Board's role in reviewing bank mergers and acquisitions emanates principally from two sources: the Bank Holding Company Act of 1956 ("BHC Act")[3] and the Bank Merger Act ("Merger Act").[4] The BHC Act requires that a bank holding company obtain the Board's approval prior to acquiring an additional bank. The Merger Act requires that the surviving depository institution in a proposed merger obtain the prior approval of its appropriate federal bank supervisor. The antitrust standards in the banking laws mirror the standards in section 2 of the Sherman Act and section 7 of the Clayton Act with one exception.[5]

The Board devotes considerable care and substantial resources to analyzing individual merger applications, and coordinates its review with that of the Department of Justice ("DOJ") under the Clayton and Sherman Acts. The Board carefully reviews the competitive effects of the proposal in each local banking market where the applicant and target directly compete. In analyzing the competitive effects, the Board considers the number of competitors that would remain in the market, the relative market shares of total deposits in depository institutions in the market ("market deposits"), the concentration level of market deposits in the market and the

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[3] 12 U.S.C. §§ 1841 et seq.

[4] 12 U.S.C. § 1828(c).

[5] In recognition of the critical and unique role that banks play in communities and the importance of ensuring that banks operate in a safe and sound manner, Congress specifically authorized the banking agencies to approve a bank combination that would otherwise violate the standards of the Clayton Act if the banking agency finds that "the anticompetitive effects of the proposed transaction are clearly outweighed in the public interest by the probable effect of the transaction in meeting the convenience and needs of the community to be served." See 12 U.S.C. §§ 1828(c)(5)(B), 1842(c)(1)(B). In adopting this variation, Congress found that "the public interest [may] sometimes be served by a bank merger even though the merger lessened competition." See U.S. v. Third Nat'l Bank of Nashville, 390 U.S. 171, 185 (1968). The Federal Reserve has used this exception on only rare occasions, primarily involving acquisitions of troubled institutions. See, e.g., Fleet/Northstar Financial Group, Inc., 77 Federal Reserve Bulletin 750 (1991).

projected increase in this level as measured by the Herfindahl-Hirschman Index ("HHI") under the DOJ Merger Guidelines,[6] and other characteristics of the market.

The Board and the DOJ closely coordinate in the sharing of information about, and competitive analyses of, banking consolidations through a combination of formal and informal procedures. These procedures ensure that the two agencies share information that is relevant to the competitive analysis of proposals for bank mergers or acquisitions that raise a serious competitive issue. They also ensure that the analysis of each agency is known to the other. In addition, the DOJ typically uses the local banking market definition developed by the Federal Reserve.

Coordination is facilitated through the exchange of documents and direct communications, including through meetings when appropriate. The Board provides a copy of all applications under the BHC Act and the Merger Act to the DOJ (and to the relevant banking agencies) immediately upon receipt. The DOJ regularly sends the Board (and other banking agencies) a document listing those mergers and acquisitions that it believes are not likely to have significantly adverse competitive effects. In applications with proposed divestitures, the Board sends the DOJ a copy of the applicant's commitments to divest branches and related documents. Similarly, in cases involving DOJ-required divestitures, the DOJ sends the Board a copy of the Department's "letter of agreement" with the applicant that identifies the terms of the divestitures.

On December 15, 2008, the Board approved PNC's proposed acquisition of National City. In considering this proposal, the Board conducted a detailed analysis of the competitive effects of the transaction. As discussed above, the Board coordinated with the DOJ on this review and the resulting divestiture of 61 branches. The Board's order approving the acquisition, which contains an extensive discussion of its competitive analysis, as well as other documents relevant to the Board's consideration of the competitive effects of this proposal are attached.

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[6] 49 Federal Register 26,823 (1984). The HHI is defined as the sum of the squared market shares of depository institutions in a local banking market. Market shares are calculated using total deposits, which are used as a proxy for banks' ability to produce the cluster of banking products and services.

Supporting Documentation

- Statement of Scott G. Alvarez, General Counsel, before the Antitrust Modernization Commission (December 5, 2005);
- Relevant portions of the application and related record for the proposal by PNC to acquire National City;
- Order approving the proposal by PNC to acquire National City;
- Order approving the proposal by Mitsubishi UFJ Financial Group to acquire voting shares of Morgan Stanley;
- Order approving the proposal by Wells Fargo & Company, San Francisco, California, to acquire Wachovia Corporation, Charlotte, North Carolina; and
- Order approving the proposal by Bank of America Corporation, Charlotte, North Carolina, to acquire Merrill Lynch & Company, Inc., New York, New York.

Attachments

January 15, 2009

Index of Responsive Documents

***Items Designated as Confidential Supervisory Information Are Included in a Separate Confidential Volume**

1. Excerpt from The PNC Financial Services Group, Inc. ("PNC") Proxy Statement detailing National City Corporation's ("National City") efforts to obtain stand-alone Capital Purchase Program ("CPP) funding prior to enactment of the Emergency Economic Stabilization Act ("EESA"), merger negotiations with various parties, PNC's bid for National City, and PNC's associated original and revised applications for CPP funding.
2. E-mail string among FRS staff and transmitting to relevant Reserve Bank staff, Treasury's CPP-related documents (October 19-20, 2008). The documents include:
    a. TARP CPP Council Charter **[Confidential Supervisory Information]**;
    b. Application Guidelines for TARP CPP;
    c. Application for TARP CPP;
    d. TARP CPP Case Decision Memo (for use by the Federal Banking agencies in making recommendations to Treasury) **[Confidential Supervisory Information]**;
    e. Process-Related FAQs for the CPP (directed toward Qualifying Financial Institutions ("QFIs");
    f. Process for Evaluation of QFI Participation in the TARP CPP **[Confidential Supervisory Information]**;
    g. Workflow for TARP CPP **[Confidential Supervisory Information]**.
3. Relevant Portions of the Application and Related Record on the Proposal by PNC to acquire National City. Documents include:
    a. Volumes I and II, consisting of the Application (providing an overview to the transaction) and Public Exhibits (including the purchase agreement and a discussion of convenience and needs to be served by the proposal);
    b. Volumes IV, V, and VI to the application (consisting of the Memorandum on Competitive Considerations and supporting materials) **[Confidential Supervisory Information]**;
    c. Public comments on the application;

d. Letter from the Board to PNC requesting additional information (including, in the confidential questions, information on competitive issues) (November 19, 2008);
e. Letter from PNC (consisting of the "Proposed Divestiture Package") (November 24, 2008) **[Confidential Supervisory Information]**;
f. Letter from PNC to the Board providing supplemental divestiture information (November 26, 2008) **[Confidential Supervisory Information]**;
g. E-mail from Board staff to PNC requesting additional divestiture information (December 4, 2008), and E-mail from PNC to Board staff providing additional information on divestitures (December 8, 2008) **[Confidential Supervisory Information]**;
h. Letter from the Department of Justice ("DOJ") to the Board regarding the Letter of Agreement between the DOJ and PNC (December 11, 2008);
i. PNC's Divestiture Commitments to the Board (December 12, 2008).

4. Statement of Scott G. Alvarez, General Counsel, before the Antitrust Modernization Commission (December 5, 2005).
5. Order approving the proposal by The PNC Financial Services Group, Inc., Pittsburgh, Pennsylvania, to acquire National City Corporation, Cleveland, Ohio (December 15, 2008).
6. Order approving the proposal by Mitsubishi UFJ Financial Group, Tokyo, Japan, to acquire voting shares of Morgan Stanley, New York, New York (October 6, 2008).
7. Order approving the proposal by Wells Fargo & Company, San Francisco, California, to acquire Wachovia Corporation, Charlotte, North Carolina (October 12, 2008)
8. Order approving the proposal by Bank of America Corporation, Charlotte, North Carolina, to acquire Merrill Lynch & Company, Inc., New York, New York (November 26, 2008).
9. Testimony of Chairman Bernanke before the Committee on Financial Services, U.S. House of Representatives (November 18, 2008).
10. Joint statement by the federal banking agencies, "Interagency Statement on Meeting the Needs of Creditworthy Borrowers (November 12, 2008).
11. Joint Statement by the federal banking agencies, "Agencies encourage participation in Treasury's Capital Purchase Program, FDIC's Temporary Liquidity Guarantee Program" (October 20, 2008).

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

September 16, 2011

The Honorable Darrell Issa
Chairman
Committee on Oversight
and Government Reform
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

In reply to your letter of July 22, 2011, regarding the proposed rule Margin and Capital Requirements for Covered Swap Entities, the Board, jointly with the other prudential regulators (the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the Farm Credit Administration, and the Federal Housing Finance Agency) provided responses and certain documents by letter of September 7, 2011. The documents included with that letter largely described the prudential regulators' supervisory policies with respect to derivative products. As enclosed, the Board is providing an additional document that may be of interest to you, specifically, the memorandum from the Board staff to the Board with respect to the proposed rule.

As indicated in the joint response letter, the prudential regulators face a number of difficult issues in formulating the margin rules for uncleared swaps required by the Dodd-Frank Act. In developing a final rule, we will carefully consider the comments we received, including those raised in your letter. All of the comments received by the Board on the proposal are available at the web link listed below.

I hope you find this information helpful.

Sincerely,

Enclosures

Link to comments received by Board: http://www.federalreserve.gov/generalinfo/foia/index.cfm?doc_id=R%2D1415&doc_ver=1

136 pages withheld under exemption (b)(5)

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 23, 2012

The Honorable Collin Peterson
Ranking Member
Committee on Agriculture
House of Representatives
Washington, D.C. 20515

Dear Congressman:

Thank you for your letter dated January 12, 2012, inquiring as to the Board's authority, prior to the Dodd-Frank Act, to require entities under our jurisdiction to demand initial or variation margin from their counterparties in uncleared swap transactions.

In general, apart from the Dodd-Frank Act, the Board has broad and flexible authority to take supervisory and formal or informal enforcement actions to require entities under our jurisdiction to operate in a safe and sound manner. The Board has used this authority to require those entities to take a variety of actions to ensure that they monitor and manage the risks from their swap activities. In particular, the Board currently requires entities we supervise to manage the credit risk of the swaps aspect of their counterparty relationships, just as those entities are required to manage the risks of other credit relationships, and to manage the combined credit risks of each customer or counterparty on an aggregate basis. That credit risk management must include steps such as performing independent credit underwriting of new customers or counterparties to set a combined credit exposure limit for the particular customer or counterparty, measuring the credit exposure with appropriate metrics, monitoring the customer's or counterparty's financial condition and creditworthiness on an ongoing basis, and reporting all credit exposures with each customer or counterparty to management on an aggregate basis in a single report. A key aspect of this risk management also includes establishing appropriate margin and collateral haircut practices for all swap counterparties. The existing guidance does not specify requirements for initial and variation margin, but instead requires entities themselves to evaluate the risk of each counterparty and swap position and establish prudent collateral and other risk-mitigating protections as appropriate. A copy of recent Board (and other bank regulatory agency) guidance related to credit risk management is enclosed.

I hope this information is helpful to your deliberations.

Sincerely,

Enclosure

Office of the Comptroller of the Currency
Federal Deposit Insurance Corporation
Board of Governors of the Federal Reserve System
Office of Thrift Supervision

Interagency Supervisory Guidance on Counterparty Credit Risk Management

June 29, 2011

Table of Contents

COUNTERPARTY CREDIT RISK MANAGEMENT

I. Introduction

This guidance discusses critical aspects of effective management of counterparty credit risk (CCR), and sets forth sound practices and supervisory expectations for an effective CCR management framework. CCR is the risk that the counterparty to a transaction could default or deteriorate in creditworthiness before the final settlement of a transaction's cash flows. Unlike the credit risk for a loan, when only the lending banking organization[1] faces the risk of loss, CCR creates a bilateral risk of loss because the market value of a transaction can be positive or negative to either counterparty. The future market value of the exposure and the counterparty's credit quality are uncertain and may vary over time as underlying market factors change. The guidance is intended for use by banking organizations, especially those with large derivatives portfolios, in setting their risk management practices, as well as by supervisors as they assess and examine such institutions' management of CCR. For other banking organizations without large derivatives portfolios, risk managers and supervisors should apply this guidance as appropriate, given the size, nature, and complexity of the CCR risk profile of the banking organization.

CCR is a multidimensional form of risk, affected by both the exposure to a counterparty and the credit quality of the counterparty, both of which are sensitive to market-induced changes. It is also affected by the interaction of these risks, for example the correlation[2] between an exposure and the credit spread of the counterparty, or the correlation of exposures among the banking organization's counterparties. Constructing an effective CCR management framework requires a combination of risk management techniques from the credit, market, and operational risk disciplines.

CCR management techniques have evolved rapidly over the last decade, along with increased complexity of derivative instruments under management. Banking organizations substantially improved their risk management practices during this time; however, in some cases, implementation of sound practices has been uneven across business lines and counterparty types. Further, the financial crisis of 2007-2009 revealed weaknesses in CCR management at many banking organizations, such as shortcomings in the timeliness and accuracy of exposure aggregation capabilities and inadequate measurement of correlation risks. The crisis also highlighted deficiencies in the ability of banking organizations to monitor and manage counterparty exposure limits and concentration risks, ranging from poor selection of CCR metrics to inadequate system infrastructure.

To address these weaknesses, this guidance reinforces sound governance of CCR management practices, through prudent board and senior management oversight, management reporting, and risk management functions. The guidance discusses relevant topics in risk measurement, including metrics, exposure aggregation and concentration management, stress testing, and associated characteristics of adequate systems infrastructure. It also covers risk control functions, such as counterparty limits, margin practices, validating and backtesting models and systems, managing close-outs,[3] managing

[1] Unless otherwise indicated, "banking organizations" refers to national banks in the case of the Office of the Comptroller of the Currency (OCC); federal and state savings associations and savings and loan holding companies in the case of the Office of Thrift Supervision (OTS); state member banks and bank holding companies in the case of the Federal Reserve Board (Board); and state nonmember banks in the case of the Federal Deposit Insurance Corporation (FDIC). The U.S. branches and agencies of foreign banks supervised by the OCC, the Board and the FDIC also are considered to be banking organizations for purposes of this guidance.

[2] In this guidance, "correlation" refers to any form of linear or non-linear inter-relationship or dependence between factors.

[3] A close-out is the process undertaken by a banking organization following default of a counterparty to fully collect on all items due from that counterparty.

central counterparty exposures, and controlling legal and operational risks arising from derivatives activities.

CCR management guidelines and supervisory expectations are delineated in various individual and interagency policy statements and guidance,[4] which remain relevant and applicable. This guidance offers further explanation and clarification, particularly in light of developments in CCR management. However, this guidance is not all-inclusive and banking organizations should reference sound practices for CCR management, such as those advanced by industry, policymaking and supervisory forums.[5]

II. Governance

1. Board and Senior Management Responsibilities

The board of directors or a designated board-level committee (board) should clearly articulate the banking organization's risk tolerance for CCR, by approving relevant policies, including a framework for establishing limits on individual counterparty exposures and concentrations of exposures. Senior management should establish and implement a comprehensive risk measurement and management framework consistent with this risk tolerance that provides for the ongoing monitoring, reporting, and control of CCR exposures.

Senior management should adhere to the board's established risk tolerance and establish policies and risk management guidelines appropriately.[6] At a minimum, policies should outline CCR management standards that are in conformance with this guidance. More specifically, they should address the subjects discussed in this document, such as risk measurement and reporting, risk management tools, and processes to manage legal and operational risk. Policies should be detailed and contain a clear escalation process for review and approval of policy exceptions, especially those pertaining to transaction terms and limits.

2. Management Reporting

Banking organizations should report counterparty exposures to the board and senior management at a frequency commensurate with the materiality of exposures and the complexity of transactions. Reporting should include concentration analysis and CCR stress testing results, to allow for an understanding of exposures and potential losses under severe market conditions. Reports should also include an explanation of any measurement weaknesses or limitations that may influence the accuracy and reliability of the CCR risk measures.

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[4] See, for example, Supervisory Policy Statement on Investment Securities and End-User Derivatives Activities, 63 FR 20191, April 23, 1998. Examination guidance on CCR is contained in various agency publications including: FDIC, *Capital Markets Examination Handbook*; Federal Reserve, SR 99-03 and *Trading and Capital Market Activities Manual* (to be amended as appropriate to reflect this guidance); OTS, *Examiner Handbook*, Section 660, "Derivative Instruments and Hedging"; the OCC's Banking Circular 277, and "Risk Management of Financial Derivatives" (*Comptroller's Handbook, January*, 1997).

[5] Industry, policymaking, and supervisory groups include, but are not limited to, the Counterparty Risk Management Policy Group (CRMPG), Committee on Payment and Settlement Systems (CPSS), International Swaps and Derivatives Association (ISDA), Institute of International Finance (IIF), Group of Thirty (G30), Group of Twenty Finance Ministers and Central Bank Governors (G-20), International Organization of Securities Commissions (IOSCO), Senior Supervisors Group (SSG), and Basel Committee on Banking Supervision (BCBS). Documents produced by all of these groups were drawn upon in developing this guidance.

[6] Relevant supervisory guidance discusses establishment of CCR policies and procedures.

Senior management should have access to timely, accurate, and comprehensive CCR reporting metrics, including an assessment of significant issues related to the risk management aspects discussed in this guidance. They should review CCR reports at least monthly, with data that are no more than three weeks old. It is general practice for institutions to report:

- Total counterparty credit risk aggregated on a firm-wide basis and at significant legal entities.
- Counterparties with the largest exposures, along with detail on their exposure amounts.
- Exposures to central counterparties (CCPs).
- Significant concentrations, as outlined in this guidance.
- Exposures to weak or problem counterparties.
- Growth in exposures over time. As a sound practice, metrics should capture quarterly or monthly changes, supplemented (where relevant) by year-over-year trend data.
- Exposures from over-the-counter (OTC) derivatives. When they are material, additional product class break-outs (for example, traditional lending, securities lending) should be included.
- A sufficiently comprehensive range of CCR metrics, as discussed in the CCR metrics section.
- A qualitative discussion of key risk drivers of exposures or conditions or factors that would fundamentally change the risk profile of CCR. An example would be assessment of changes in credit underwriting terms and whether they remain prudent.

3. Risk Management Function and Internal Audit

A banking organization's board and senior management should clearly delineate the respective roles of business lines versus risk management, both in terms of initiating transactions that have CCR, and of ongoing CCR management. The board and senior management should ensure that the risk management functions have adequate resources, are fully independent from CCR related trading operations (in both activity and reporting), and have sufficient authority to enforce policies and to escalate issues to senior management and the board (independent of the business line).

The board should direct internal audit to regularly assess the adequacy of the CCR management framework as part of the regular audit plan. Such assessments should include credit line approval processes, credit ratings, and credit monitoring. Such an assessment should opine on the adequacy of the CCR infrastructure and processes, drawing where appropriate from individual business line reviews or other internal and external audit work. Please see the relevant section of this guidance regarding the role of CCR model validation or review. The board should review annual reports from internal audit and model validation or review, assessing the findings and confirming that management has taken appropriate corrective actions.

III. Risk Measurement

1. CCR Metrics

Given the complexity of CCR exposures (particularly regarding OTC derivatives), banking organizations should employ a range of risk measurement metrics to promote a comprehensive understanding of CCR and how it changes in varying environments. Metrics should be commensurate with the size, complexity, liquidity, and risk profile of the CCR portfolio. Banking organizations typically rely on certain metrics as a primary means of monitoring, with secondary metrics used to create a more robust view of CCR exposures. Banking organizations should apply these metrics to single counterparty exposures, groups of counterparties (for example, by internal rating, industry, geographical region), and the consolidated CCR portfolio. Banking organizations should assess their largest exposures, for instance their top 20 exposures, using each primary metric.

Major dealers and large, sophisticated banking organizations with substantial CCR exposure should measure and assess:

- Current exposure (both gross and net of collateral).
- Forward-looking exposure (that is, potential exposure).
- Stressed exposure (broken out by market risk factors, and/or by scenario).
- Aggregate and stressed credit valuation adjustment (CVA) as well as CVA factor sensitivities.
- Additional relevant risk measures, such as (for credit derivatives) jump-to-default risk on the reference obligor, and economic capital usage.
- The largest exposures by individual business line and product types.
- Correlation risks, such as wrong-way risk, as well as the credit quality of collateral.

Refer to Appendix A for definitions of basic metrics and descriptions of their purposes.

2. Aggregation of Exposures

Banking organizations should have the capacity to measure their exposure at various levels of aggregation (for example, by business line, legal entity, or consolidated by industry). Systems should be sufficiently flexible to allow for timely aggregation of all CCR exposures (that is, OTC derivatives, securities financing transactions (SFTs), and other pre-settlement exposures), as well as aggregation of other forms of credit risk to the same counterparty (for example, loans, bonds, and other credit risks). The following are sound CCR aggregation principles:

- Counterparty-level current exposure and potential exposure should be calculated daily, based on the previous day's position data and any exchange of collateral.
- For each organizational level of aggregation, all trades should be included.
- There should be sufficient flexibility to aggregate exposure at varying levels of granularity, including industries, regions, families of products (for example, OTC derivatives, SFTs), or other groupings to identify concentrations.
- While banking organizations are not required to express all forms of risk in a common metric or basis, management should be able to view the various forms of exposures to a given counterparty in a single report and/or system. Specifically, this could include current outstanding exposure across different categories (e.g., current exposure for OTC derivatives and drawn-down lines of commitment for loans). Exposure reports should also include the size of settlement and clearing lines.

- Banking organizations should be consistent in their choice of currency and exchange rate, and take into account the validity and legal enforceability of any netting agreements they may have with a counterparty.
- Management should understand the specific approach used to aggregate exposures for any given risk measure, in order to properly assess the results. For instance, some measures of risk (such as current exposure) may be readily added together, while others (such as potential exposure) are less meaningful when they are added to form an aggregate view of risk.
- Internal capital adequacy models should incorporate CCR.

3. Concentrations

Concentrated exposures are a significant concern, as CCR can contribute to sudden increases in credit exposure, which in turn can result in unexpectedly large losses in the event of counterparty default. Accordingly, banking organizations should have enterprise-wide processes to effectively identify, measure, monitor, and control concentrated exposures on both a legal entity and enterprise-wide basis.

Concentrations should be identified using both quantitative and qualitative means. An exposure or group of related exposures (for example, firms in the same industry), should be considered a concentration in the following circumstances: exposures (individually or collectively) exceed risk tolerance levels established to ensure appropriate diversification; deterioration of the exposure could result in material loss; or deterioration could result in circumstances that are detrimental to the banking organization's reputation. All credit exposures should be considered as part of concentration management, including loans, OTC derivatives, names in bespoke and index CDO credit tranches, securities settlements, and money market transactions such as fed funds sold. Total credit exposures should include the size of settlement and clearing lines, or other committed lines.

CCR concentration management should identify, quantify, and monitor:

- Individual counterparties with large potential exposures, when those exposures are driven by a single market factor or transaction type. In these circumstances, banking organizations should supplement statistical measures of potential exposure with other measures, such as stress tests, that identify such concentrations and provide an alternative view of risks associated with close-outs.
- Concentrations of exposures to individual legal entities, as well as concentrations across affiliated legal entities at the parent entity level, or in the aggregate for all related entities.
- Concentrations of exposures to industries or other obligor groupings.
- Concentrations of exposures to geographic regions or country-specific groupings sensitive to similar macroeconomic shocks.
- Concentrations across counterparties when potential exposure is driven by the same or similar risk factors. For both derivatives and SFTs, banking organizations should understand the risks associated with crowded trades,[7] where close-out risk may be heightened under stressed market conditions.

[7] For purposes of this guidance, a "crowded trade" is a large balance of open trading positions in a given asset or group of assets relative to its daily trading volume, when other market participants have similar positions that would need to be liquidated should any adverse price change occur. Coincident sale of these assets by a large number of market participants could lead to significant price declines and dramatic increases in uncollateralized exposures.

- Collateral concentrations, including both risk concentrations with a single counterparty, and risks associated with portfolios of counterparties. Banking organizations should consider concentrations of non-cash collateral for all product lines covered by collateral agreements;[8] including collateral that covers a single counterparty exposure and portfolios of counterparties.[9]
- Collateral concentrations involving special purpose entities (SPEs). Collateral concentration risk is particularly important for SPEs, because the collateral typically represents an SPE's paying capacity.
- Banking organizations should consider the full range of credit risks in combination with CCR to manage concentration risk, including; risks from on- and -off-balance-sheet activities, contractual and non-contractual risks, contingent and non-contingent risks, as well as underwriting and pipeline risks.

4. Stress Testing

Banking organizations with significant CCR exposures should maintain a comprehensive stress testing framework, which is integrated into the banking organization's CCR management. The framework should inform the banking organization's day-to-day exposure and concentration management, and it should identify extreme market conditions that could excessively strain the financial resources of the banking organization. Regularly, but no less than quarterly, senior management should evaluate stress test results for evidence of potentially excessive risk, and take risk reduction strategies as appropriate.

The severity of factor shocks should be consistent with the purpose of the stress test. When evaluating solvency under stress, factor shocks should be severe enough to capture historical extreme market environments and/or extreme but plausible stressed market conditions. The impact of such shocks on capital resources and earnings should be evaluated. For day-to-day portfolio monitoring, hedging, and management of concentrations, banking organizations should also consider scenarios of lesser severity and higher probability. When conducting stress testing, risk managers should challenge the strength of assumptions made about the legal enforceability of netting and the ability to collect and liquidate collateral.

A sound stress-testing framework should include:

- Measurement of the largest counterparty-level impacts across portfolios, material concentrations within segments of a portfolio (such as industries or regions), and relevant portfolio- and counterparty-specific trends.
- Complete trade capture and exposure aggregation across all forms of trading (not just OTC derivatives) at the counterparty-specific level, including transactions that fall outside of the main credit system. The time frame selected for trade capture should be commensurate with the frequency with which stress tests are conducted.
- Stress tests, at least quarterly, of principal market risk factors on an individual basis (for example, interest rates, foreign exchange, equities, credit spreads, and commodity prices) for all material counterparties. Banking organizations should be aware that some counterparties may be material on a consolidated basis, even though they may not be material on an individual legal entity basis.

[8] Banking organizations should also track concentrations in volatile currencies.

[9] This analysis is particularly important with repo-style transactions and other forms of SFTs for which the ability of market participants to liquidate large collateral positions may be difficult during periods of market turbulence.

- Assessment of non-directional risks (for example, yield curve exposures and basis risks) from multi-factor stress testing scenarios. Multi-factor stress tests should, at a minimum, aim to address separate scenarios: severe economic or market events; significant decrease in broad market liquidity; and the liquidation of a large financial intermediary of the banking organization, factoring in direct and indirect consequences.
- Consideration, at least quarterly, of stressed exposures resulting from the joint movement of exposures and related counterparty creditworthiness. This should be done at the counterparty-specific and counterparty-group (for example, industry and region) level, and in aggregate for the banking organization. When CVA methodologies are used, banking organizations should ensure that stress testing sufficiently captures additional losses from potential defaults. [10]
- Basic stress testing of CVA to assess performance under adverse scenarios, incorporating any hedging mismatches.
- Concurrent stress testing of exposure and non-cash collateral for assessing wrong-way risk.
- Identification and assessment of exposure levels for certain counterparties (for example, sovereigns and municipalities), above which the banking organization may be concerned about willingness to pay.
- Integration of CCR stress tests into firm-wide stress tests.[11]

5. Credit Valuation Adjustments (CVA)

CVA refers to adjustments to transaction valuation to reflect the counterparty's credit quality. CVA is the fair value adjustment to reflect CCR in valuation of derivatives. As such, CVA is the market value of CCR and provides a market-based framework for understanding and valuing the counterparty credit risk embedded in derivative contracts. CVA may include only the adjustment to reflect the counterparty's credit quality (a one-sided CVA or just CVA), or it may include an adjustment to reflect the banking organization's own credit quality. The latter is a two-sided CVA, or CVA plus a debt valuation adjustment (DVA). For the evaluation of the credit risk due to probability of default of counterparties, a one sided CVA is typically used. For the evaluation of the value of derivatives transactions with a counterparty or the market risk of derivatives transactions, a two-sided CVA should be used.

Although CVA is not a new concept, its importance has grown over the last few years, partly because of a change in accounting rules that requires banking organizations to recognize the earnings impact of changes in CVA.[12] During the 2007-2009 financial crisis, a large portion of CCR losses were because of CVA losses rather than actual counterparty defaults.[13] As such, CVA has become more important in risk management, as a mechanism to value, manage, and make appropriate hedging

[10] Exposure testing should include single-factor, multi-factor and material non-directional risks.

[11] CCR stress testing should be consistent with overall banking organization-wide stress testing and follow the principles set forth in the "Principles for Sound Stress Testing Practices and Supervision" issued by the Risk Management and Modeling Group of the Basel Committee in May 2009.

[12] Accounting literature pertinent to CVA includes FAS Statement 157, and Accounting Standards Codification (ASC) Topic 820. In addition, other transaction fair value adjustments should be conducted. For example, those involving a banking organization's own credit risk, or differences in funding costs based on whether transactions are collateralized or not.

[13] Basel Committee on Banking Supervision, "Strengthening the resilience of the banking sector – consultative document," December 2009. http://bis.org/publ/bcbs164.htm

decisions, to mitigate banking organizations' exposure to the mark-to-market (MTM) impact of CCR.[14] The following are general standards for CVA measurement and use of CVA for risk management purposes:

- CVA calculations should include all products and counterparties, including margined counterparties.
- The method for incorporating counterparty credit quality into CVA should be reasonable and subject to ongoing evaluation. CVA should reflect the fair value of the counterparty credit risk for OTC derivatives, and inputs should be based on current market prices when possible.
    - Credit spreads should be reflected in the calculation where available, and banking organizations should not overly rely on non-market-based probability of default estimates when calculating CVA.
    - Banking organizations should attempt to map credit quality to name-specific spreads rather than spreads associated with broad credit categories.
    - Any proxy spreads should reasonably capture the idiosyncratic nature of the counterparty and the liquidity profile.
    - The term structure of credit spreads should be reflected in the CVA calculation
- The CVA calculation should incorporate counterparty-specific master netting agreements and margin terms; for example, the CVA calculation should reflect margin thresholds or minimum transfer amounts stated in legal documents.
- Banking organizations should identify the correlation between a counterparty's credit-worthiness and its exposure to the counterparty, and seek to incorporate the correlation into their respective CVA calculation.

Management of CVA

CVA management should be consistent with sound risk management practices for other material mark-to-market risks. These practices should include the following:

- Business units engaged in trades related to CVA management should have independent risk management functions overseeing their activities.
- Systems that produce CVA risk metrics should be subject to the same controls as used for other MTM risks, including independent validation or review of all risk models, including alternative methodologies.[15]
- Upon transaction execution, CVA costs should be allocated to the business unit that originates the transaction.
    - As a sound practice, the risk of CVA should be incorporated into the risk-adjusted return calculation of a given business.

[14] An accurate measure of CVA is critical to prudent risk-taking, as part of effectively understanding the risk-reward tradeoff in a given derivatives transaction. The more comprehensively CVA is measured, the more transparent the economics of a given transaction.

[15] Liquidity in credit markets has varied significantly over time. As liquidity conditions change, banking organizations should calculate CVA using methodologies appropriate to the market pricing information available for each counterparty and transaction type.

    - CVA cost allocation provides incentive for certain parties to make prudent risk-taking decisions, and motivates risk-takers to support risk mitigation, such as requiring strong collateral terms.

- Banking organizations should measure sensitivities to changes in credit and market risk factors to determine the material drivers of MTM changes. On a regular basis, but no less frequently than quarterly, banking organizations should ensure that CVA MTM changes are sufficiently explained by these risk factors (for example, through profit and loss attribution for sensitivities, and backtesting for value at risk (VaR)).

- Banking organizations hedging CVA MTM should gauge the effectiveness of hedges through measurements of basis risk or other types of mismatches. In this regard, it is particularly important to capture non-linearities, such as the correlation between market and credit risk, and other residual risks that may not be fully offset by hedging.

CVA VaR

Banking organizations with material CVA should measure the risk of associated loss on an ongoing basis. In addition to stress tests of the CVA, banking organizations may develop VaR models that include CVA to measure potential losses. While these models are currently in the early stages of development, they may prove to be effective tools for risk management purposes. An advantage of CVA VaR over more traditional CCR risk measures is that it captures the variability of the CCR exposure, the variability of the counterparty's credit spread, and the dependency between them.

Developing VaR models for CVA is significantly more complicated than developing VaR models for a banking organization's market risk positions. In developing a CVA VaR model, a banking organization should match the percentile and time horizon for the VaR model to those appropriate for the management of this risk, and include all significant risks associated with changes in the CVA. For example, banking organizations may use the same percentile for CVA VaR as they use for market risk VaR (for example, the 95^{th} or 99^{th} percentile). However, the time horizon for CVA VaR may need to be longer than for market risk (for example, one quarter or one year) because of the potentially illiquid nature of CVA. The following are important considerations in developing a CVA VaR model:

- All material counterparties covered by CVA valuation should be included in the VaR model.

- A CVA VaR calculation that keeps the exposure or the counterparty probability of default static is not adequate. It will not only omit the dependence between the two variables, but also the risk arising from the uncertainty of the fixed variable.

- CVA VaR should incorporate all forms of CVA hedging. Banking organizations and examiners should assess the ability of the VaR measure to accurately capture the types of hedging used by the banking organization.

6. Wrong-Way Risk

Wrong-way risk occurs when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself. Specific wrong-way risk arises when the exposure to a particular counterparty is positively correlated with the probability of default of the counterparty itself because of the nature of the transactions with the counterparty. General wrong-way risk arises when the probability of default of counterparties is positively correlated with general market risk factors. Wrong-way risk is an important aspect of CCR that has caused major losses at banking organizations.

Accordingly, a banking organization should have a process to systematically identify, quantify, and control both specific and general wrong-way risk across its OTC derivative and SFT portfolios.[16] To prudently manage wrong-way risk, banking organizations should:

- Maintain policies that formally articulate tolerance limits for both specific and general wrong-way risk, an ongoing wrong-way risk identification process, and the requirements for escalation of wrong-way risk analysis to senior management.
- Maintain policies for identifying, approving, and otherwise managing situations when there is a legal connection between the counterparty and the underlying exposure or the associated collateral.[17] Banking organizations should generally avoid such transactions because of their increased risk.
- Perform wrong-way risk analysis for OTC derivatives, at least at the industry and regional levels.
- Conduct wrong-way risk analysis for SFTs on broad asset classes of securities (for example, government bonds, and corporate bonds).

IV. Systems Infrastructure Considerations

Banking organizations should ensure that systems infrastructure keeps up with changes in the size and complexity of their CCR exposures, and the OTC derivatives market in general. Systems should capture and measure the risk of transactions that may be subject to CCR as a fundamental part of the CCR management framework.

Banking organizations should have strong operational processes across all derivatives markets, consistent with supervisory and industry recommendations.[18] Management should strive for a single comprehensive CCR exposure measurement platform.[19] If not currently possible, banking organizations should minimize the number of system platforms and methodologies, as well as manual adjustments to exposure calculations. When using multiple exposure measurement systems, management should ensure that transactions whose future values are measured by different systems are aggregated conservatively.

To maintain a systems infrastructure that supports adequate CCR management, banking organizations should:

<u>Data Integrity and Reconciliation</u>

- Deploy adequate operational resources to support reconciliations and related analytical and remediation processes.

[16] A standard way of quantifying general wrong-way risk is to design and apply stress scenarios that detect wrong-way risk in the portfolio, record counterparty exposures most affected by the scenarios, and assess whether the creditworthiness of such counterparties is also negatively affected by the scenario.
[17] Examples of this situation are single-name credit derivatives when there is a legal relationship between the counterparty and the reference entity underlying the transaction, and financing transactions when the counterparty pledges an affiliate's security as collateral.
[18] Examples are recommendations made by the Senior Supervisors Group (SSG) and the Counterparty Risk Management Policy Group (CRMPG).
[19] A single platform may in practice contain a number of separate systems and models. These would be considered a cohesive framework if they are operationally stable and accurate in risk estimation, particularly with regard to proper reflection of collateral and netting. A common programming language for these systems facilitates an effective measurement framework.

- Reconcile positions and valuations with counterparties.
  - Large counterparties should perform frequent reconciliations of positions and valuations (daily if appropriate).[20]
  - For smaller portfolios with non-dealer counterparties where there are infrequent trades, large dealers should ensure the data integrity of trade and collateral information on a regular (but not necessarily daily) basis, reconciling their portfolios according to prevailing industry standards.
- Reconcile exposure data in CCR systems with the official books and records of the financial institution.
- Maintain controls around obligor names at the point of trade entry, as well as reviews of warehoused credit data, to ensure that all exposures to an obligor are captured under the proper name and can be aggregated accordingly.
- Maintain quality control over transfer of transaction information between trade capture systems and exposure measurement systems.
- Harmonize netting and collateral data across systems to ensure accurate collateral calls and reflection of collateral in all internal systems. Banking organizations should maintain a robust reconciliation process, to ensure that internal systems have terms that are consistent with those formally documented in agreements and credit files.
- Remediate promptly any systems weaknesses that raise questions about the appropriateness of the limits structure. If there are a significant number of limit excesses, this may be a symptom of system weaknesses, which should be identified and promptly remediated.
- Eliminate or minimize backlogs of unconfirmed trades.

Automation and Tracking

- Automate legal and operational information, such as netting and collateral terms. Banking organizations should be able to adjust exposure measurements, taking into account the enforceability of legal agreements.
- Automate processes to track and manage legal documentation, especially when there is a large volume of legal agreements.
- Increase automation of margin processes[21] and continue efforts to expand automation of OTC derivatives post-trade processing. This should include automation of trade confirmations, to reduce the lag between trade execution and legal execution.
- Maintain systems that track and monitor changes in credit terms and have triggers for relevant factors, such as net asset value, credit rating, and cross-default.
- Maintain default monitoring processes and systems.

[20] Large dealer counterparties should perform portfolio reconciliation on a daily basis, as set forth in relevant industry standards, such as the ISDA "Collateralised Portfolio Reconciliation Best Operational Practices" (January, 2010).
[21] Banking organizations should consider the recommendations in the "Standards of Electronic Exchange of OTC Derivative Margin Calls," issued by ISDA Collateral Committee on November 12, 2009.

Add-Ons

For large derivatives market participants, certain trades may be difficult to capture in exposure measurement systems, and are therefore modeled outside of the main measurement system(s). The resulting exposures, commonly referred to as add-ons, are then added to the portfolio potential exposure measure. In limited cases, the use of conservative add-on methodologies may be suitable, if the central system cannot reflect the risk of complex financial products. However, overreliance on add-on methodologies may distort exposure measures. To mitigate measurement distortions, banking organizations should:

- Review the use of add-on methodologies at least annually. Current or planned significant trading activity should trigger efforts to develop appropriate modeling and systems, prior to or concurrent with these growth plans.
- Establish growth limits for products with material activities that continue to rely on add-ons. Once systems are improved to meet a generally accepted industry standard of trade capture, these limits can be removed.

V. Risk Management

1. Counterparty Limits

Meaningful limits on exposures are an integral part of a CCR management framework, and these limits should be formalized in CCR policies and procedures. For limits to be effective, a banking organization should incorporate these limits into an exposure monitoring system independent of relevant business lines. It should perform ongoing monitoring of exposures against such limits, to ascertain conformance with these limits, and have adequate risk controls that require action to mitigate limit exceptions. Review of exceptions should include escalation to a managerial level that is commensurate with the size of the excess or nature of mitigation required. A sound limit system should include:

- Establishment and regular review of counterparty limits by a designated committee. Further, a banking organization should have a process to escalate limit approvals to higher levels of authority, depending on the size of counterparty exposures, credit quality, and tenor.
- Establishment of potential future exposure limits, as well as limits based on other metrics. It is a sound practice to limit the market risk arising through CVA, with a limit on CVA or CVA VaR. However, such limits do not eliminate the need to limit counterparty credit exposure with a measure of potential future exposure.
- Individual CCR limits should be based on peak exposures rather than expected exposures.
    - Peak exposures are appropriate for individual counterparty limit monitoring purposes because they represent the risk tolerance for exposure to a single counterparty.
    - Expected exposure is an appropriate measure for aggregating exposures across counterparties in a portfolio credit model, or for use within CVA.
- Consideration of risk factors such as the credit quality of the counterparty, tenor of the transactions, and the liquidity of the positions or hedges.
- Sufficiently automated monitoring processes to provide updated exposure measures at least daily.

- Monitoring of intra-day trading activity for conformance with exposure limits and exception policies. Such controls and procedures can include intra-day limit monitoring, trade procedures and systems that assess a trade's impact on limit utilization prior to execution, limit warning triggers at specific utilization levels, and restrictions by credit risk management on allocation of full limits to the business lines.

2. Margin Policies and Practices

Collateral is a fundamental CCR mitigant. Indeed, significant stress events have highlighted the importance of sound margining practices. With this in mind, banking organizations should ensure that they have adequate margin and collateral "haircut"[22] guidelines for all products with CCR.[23] Accordingly, banking organizations should:

- Maintain CCR policies that address margin practices and collateral terms, including, but not limited to:
  - Processes to establish and periodically review minimum haircuts.
  - Processes to evaluate the volatility and liquidity of the underlying collateral. Banks should strive to ensure that haircuts on collateral do not decline during periods of low volatility.
  - Controls to mitigate the potential for a weakening of credit standards from competitive pressure.
- Set guidelines for cross-product margining. Banking organizations offer cross-product margining arrangements to clients to reduce required margin amounts. Guidelines to control risks associated with cross-product margining would include limiting the set of eligible transactions to liquid exposures, and having procedures to resolve margin disputes.
- Maintain collateral management policies and procedures to control, monitor and report:
  - The extent to which collateral agreements expose a banking organization to collateral risks, such as the volatility and liquidity of the securities held as collateral.
  - Concentrations of less liquid or less marketable collateral asset classes.
  - The risks of re-hypothecation or other reinvestment of collateral (both cash and noncash) received from counterparties, including the potential liquidity shortfalls resulting from the re-use of such collateral.
  - The CCR associated with the decision whether to require posted margin to be segregated. Organizations should perform a legal analysis concerning the risks of agreeing to allow cash to be commingled with a counterparty's own cash and of allowing a counterparty to re-hypothecate securities pledged as margin.
- Maintain policies and processes for monitoring margin agreements involving third-party custodians. As with bilateral counterparties, banking organizations should:
  - Identify the location of the account to which collateral is posted, or from which it is received.

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[22] A haircut is the difference between the market value of an asset being used as collateral for a loan and the amount of money that a lender will advance against the asset.

[23] See guidelines issued by ISDA, SIFMA and MFA, including the "Market Review of OTC Derivative Bilateral Collateralization Practices (Release 2.0)," March 2010, and "Best Practices for Collateral Management," June 30, 2010.

- Obtain periodic account statements or other assurances that confirm the custodian is holding the collateral in conformance with the agreement.
- Understand the characteristics of the account where the collateral is held (for example, whether it is in a segregated account), and the legal rights of the counterparty or any third-party custodian regarding this collateral.

3. Validation of Models and Systems:

A banking organization should validate its CCR models initially and on an ongoing basis. Validation of models should include: an evaluation of the conceptual soundness and developmental evidence supporting a given model; an ongoing monitoring process that includes verification of processes and benchmarking; and an outcomes-analysis process that includes backtesting. Validation should identify key assumptions and potential limitations, and it should assess their possible impact on risk metrics. All components of models should be subject to validation along with their combination in the CCR system.

Evaluating the conceptual soundness involves assessing the quality of the design and construction of the CCR models and systems, including documentation and empirical evidence that supports the theory, data, and methods used.

Ongoing monitoring confirms that CCR systems continue to perform as intended. This generally involves process verification, an assessment of model data integrity and systems operation, and benchmarking to assess the quality of a given model. Benchmarking is a valuable diagnostic tool in identifying potential weaknesses. Specifically, it is the comparison of a banking organization's CCR model estimates with those derived using alternative data, methods, or techniques. Benchmarking can also be applied to particular CCR model components, such as parameter estimation methods or pricing models. Management should investigate the source of any differences in output, and determine whether benchmarking gaps indicate weakness in the banking organization's models.

Outcomes analysis compares model outputs to actual results during a sample period not used in model development. This is generally accomplished using backtesting. It should be applied to components of CCR models (for example the risk factor distribution and pricing model), the risk measures, and projected exposures. While there are limitations to backtesting, especially for testing the longer time horizon predictions of a given CCR model, it is an essential component of model validation. Banking organizations should have a process for the resolution of observed model deficiencies detected by backtesting. This should include further investigation to determine the problem, and appropriate course of action, including changing a given CCR model.

If the validation of CCR models and infrastructure systems is not performed by staff that is independent from the developers of the models, then an independent review should be conducted by technically competent personnel to ensure the adequacy and effectiveness of the validation. The scope of the independent review should include: validation procedures for all components, the role of relevant parties, and documentation of the model and validation processes. This review should document its results, what action was taken to resolve findings, and its relative timeliness.

Senior management should be notified of validation and review results and should take appropriate and timely corrective actions to address deficiencies. The board should be apprised of summary results, especially unresolved deficiencies. In support of validation activities, internal audit should review and test models and systems validation, and overall systems infrastructure as part of their regular audit cycle.

For more details on validation, please see Appendix B.

4. Close-Out Policies and Practices

Banking organizations should have the ability to effectively manage counterparties in distress, including execution of a close-out. Policies and procedures outlining sound practices for managing a close-out should include:

- Requirements for hypothetical close-out simulations at least once every two years for one of the banking organization's most complex counterparties.
- Standards for the speed and accuracy with which the banking organization can compile comprehensive counterparty exposure data and net cash outflows. Operational capacity to aggregate exposures within four hours is a reasonable standard.
- The sequence of critical tasks, and decision-making responsibilities, needed to execute a close-out.
- Requirements for periodic review of documentation related to counterparty terminations, and confirmation that appropriate and current agreements that specify the definition of events of default and the termination methodology that will be used are in place.
    - Banking organizations should take corrective action if documents are not current, active and enforceable.
    - Management should document their decision to trade with counterparties that are either unwilling or unable to maintain appropriate and current documentation.
- Established closeout methodologies that are practical to implement, particularly with large and potentially illiquid portfolios. Dealers should consider using the "close-out amount" approach for early termination upon default in inter-dealer relationships.[24]
- A requirement that the banking organization transmit immediate instructions to its appropriate transfer agent(s) to deactivate collateral transfers, contractual payments, or other automated transfers contained in "standard settlement instructions" for counterparties or prime brokers that have defaulted on the contract or for counterparties or prime brokers that have declared bankruptcy.

VI. Managing Central Counterparty Exposures

A central credit counterparty (CCP) facilitates trades between counterparties in one or more financial markets by either guaranteeing trades or novating contracts, and typically requires all participants to be fully collateralized on a daily basis. The CCP thus effectively bears most of the counterparty credit risk in transactions, becoming the buyer for every seller and the seller to every buyer. Well-regulated and soundly-managed CCPs can be an important means of reducing bilateral counterparty exposure in the OTC derivatives market. However, CCPs also concentrate risk within a single entity. Therefore, it is important that banking organizations centrally clear through regulated CCPs with sound risk management processes, and strong financial resources sufficient to meet their obligations under extreme stress conditions.

[24] The close-out amount approach is defined in CRMPG III, Containing Systemic Risk: Road to Reform (August 6, 2008), pp. 122-125. Also, ISDA has published a closeout amount protocol to aid in the adoption of the close-out amount approach.

To manage CCP exposures, banking organizations should regularly, but no less frequently than annually, review the individual CCPs to which they have exposures. This review should include performing and documenting due diligence on each CCP, applying current supervisory or industry standards[25] (and any subsequent standards) as a baseline to assess the CCP's risk management practices.

- For each CCP, an evaluation of its risk management framework should at a minimum include membership requirements, guarantee fund contributions, margining practices, default-sharing protocols, and limits of liability.
- Banking organizations should also consider the soundness of the CCP's policies and procedures, including procedures for handling the default of a clearing member, obligations at post-default auctions, and post-default assignment of positions.
- Banking organizations should also maintain compliance with applicable regulatory requirements, such as ensuring contingent loss exposure remains within a banking organization's legal lending limit.

VII. Legal and Operational Risk Management

Banking organizations should ensure proper control of, and access to, legal documentation and agreements. In addition, it is important that systems used to measure CCR incorporate accurate legal terms and provisions. The accessibility and accuracy of legal terms is particularly critical in close-outs, when there is limited time to review the collateral and netting agreements. Accordingly, banking organizations should:

- Have a formal process for negotiating legal agreements. As a best practice, the process would include approval steps and responsibilities of applicable departments.
- At least annually, conduct a review of the legal enforceability of collateral and netting agreements for all relevant jurisdictions.
- Maintain policies on when it is acceptable to trade without a master agreement,[26] using metrics such as trading volume or the counterparty's risk profile.
  - Trading without a master agreement may be acceptable in cases of minimal volume or when trading in jurisdictions where master agreements are unenforceable. As applicable, policies should outline required actions, to undertake and monitor transactions without an executed master agreement.
- Use commonly recognized dispute resolution procedures.[27]

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[25] For instance, "Recommendations for Central Counterparties," a consultative report issued by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions under the auspices of the Bank for International Settlements (March 2004).
[26] The capital rules in the United States refer to master agreements. These include: The Federal Reserve's "Risk-Based Capital Standards: Advanced Capital Adequacy Framework — Basel II", 12 CFR 208; Appendix F, and 12 CFR 225; Appendix G." For the FDIC, it is 12 CFR 325, Appendix D. For the OCC, it is 12 CFR Part 3, Appendix C. For the OTS, it is 12 CFR Parts 559, 560, 563, and 567.
[27] An example of such procedures would be the ISDA "2009 Dispute Resolution Protocol" (September 2009).

- Banking organizations should seek to resolve collateral disputes within recommended timeframes.
- Senior management should receive reports listing material and aged disputes, as these pose significant risk.

- Include netting of positions in risk management systems, only if there is a written legal review (either internally or externally) that expresses a high level of confidence that netting agreements are legally enforceable.
- Maintain ongoing participation in both bilateral and multilateral portfolio compression efforts. Where feasible, banking organizations are encouraged to elect compression tolerances (such as post-termination factor sensitivity changes and cash payments) that allow the widest possible portfolio of trades to be terminated.
- Adopt and implement appropriate novation protocols.[28]

1. Legal Risk Arising from Counterparty Appropriateness[29]

While a counterparty's ability to pay should be evaluated when assessing credit risk, credit losses can also occur when a counterparty is unwilling to pay, which most commonly occurs when a counterparty questions the appropriateness of a contract. These types of disputes pose not only risk of a direct credit loss, but also risk of litigation costs and/or reputational damage. Banking organizations should maintain policies and procedures to assess client and deal appropriateness. In addition, banking organizations should:

- Conduct initial and ongoing due diligence, evaluating whether a client is able to understand and utilize transactions with CCR as part of assessing the client's sophistication, investment objectives, and financial condition.
  - For example, although some clients may be sophisticated enough to enter into a standardized swap, they may lack the sophistication to fully analyze the risks of a complex OTC deal.
  - Banking organizations should be particularly careful to assess appropriateness of complex, long-dated, off-market, illiquid, or other transactions with higher reputational risk.
- Include appropriateness assessments in the new product approval process. Such assessments should determine the types of counterparties acceptable for a new product, and what level of counterparty sophistication is required for any given product.
- Maintain disclosure policies for OTC derivative and other complex transactions, to ensure that risks are accurately and completely communicated to counterparties.
- Maintain guidelines for determination of acceptable counterparties for complex derivatives transactions.

[28] An example would be the ISDA novation protocol.
[29] For guidance on counterparty appropriateness, see the Federal Reserve's "Trading and Capital Markets Activity Manual," section 2070, pp. 6-7, and the "Interagency Statement on Sound Practices Concerning Elevated Risk Complex Structured Finance Activities" (January 11, 2007).

VIII. Conclusion

For relevant banking organizations, CCR management should be an integral component of the risk management framework. When considering the applicability of specific guidelines and best practices set forth in this guidance, a banking organization's senior management and supervisors should consider the size and complexity of its securities and trading activities. Banking organizations should comprehensively evaluate existing practices against the standards in this guidance and implement remedial action as appropriate. A banking organization's CCR exposure levels and the effectiveness of its CCR management are important factors for a supervisor to consider when evaluating a banking organization's overall management, risk management and credit and market risk profile.

Appendix A

GLOSSARY

This glossary describes commonly used CCR metrics. As discussed above, banking organizations should employ a suite of metrics commensurate with the size, complexity, liquidity, and risk profile of the organization's CCR portfolio. Major broker - dealer banking organizations should employ the full range of risk measurement metrics to enable a comprehensive understanding of CCR and how it changes in varying environments. Banking organizations of lesser size and complexity should carefully consider which of these metrics they need to track as part of their exposure risk management processes. At a minimum, all banking organizations should calculate current exposure and stress test their CCR exposures. Definitions marked with an asterisk are from the Bank for International Settlements.

Exposure Metrics:

Current Exposure

Definition: Current exposure is the larger of zero, or the market value of a transaction or a portfolio of transactions within a netting set with a counterparty that would be lost upon the default of the counterparty, assuming no recovery on the value of those transactions in bankruptcy. Current exposure is often also called replacement cost. Current exposure may be reported gross or net of collateral.

Purpose: Allows banking organizations to assess their CCR exposure at any given time, that is, the amount currently at risk.

Jump-to-Default (JTD) Exposure

Definition: JTD exposure is the change in the value of counterparty transactions upon the default of a reference name in CDS positions.

Purpose: Allows banking organizations to assess the risk of a sudden, unanticipated default before the market can adjust.

Expected Exposure

Definition: Expected exposure is calculated as average exposure to a counterparty at a date in the future.

Purpose: This is often an intermediate calculation for expected positive exposure or CVA. It can also be used as a measure of exposure at a common time in the future.

Expected Positive Exposure (EPE)

Definition: EPE is the weighted average over time of expected exposures when the weights are the proportion that an individual expected exposure represents of the entire time interval.*

Purpose: Expected positive exposure is an appropriate measure of CCR exposure when measured in a portfolio credit risk model.

Peak Exposure

Definition: Peak exposure is a high percentile (typically 95 percent or 99 percent) of the distribution of exposures at any particular future date before the maturity date of the longest transaction in the netting set. A peak exposure value is typically generated for many future dates up until the longest maturity date of transactions in the netting set.*

Purpose: Allows banking organizations to estimate their maximum potential exposure at a specified future date, or over a given time horizon, with a high level of confidence. For collateralized counterparties, this metric should be based on a realistic close-out period, considering both the size and liquidity of the portfolio. Banking organizations should consider peak potential exposure when setting counterparty credit limits.

Expected Shortfall Exposure

Definition: Expected shortfall exposure is similar to peak exposure, but is the expected exposure conditional on the exposure being greater than some specified peak percentile.

Purpose: For transactions with very low probability of high exposure, the expected shortfall accounts for large losses that may be associated with transactions with high tail risk.

Sensitivity to Market Risk Factors

Definition: Sensitivity to market risk factors, is the change in exposure because of a given market risk factor change (for example, DV01).

Purpose: Provides information on the key drivers of exposure to specific counterparties and on hedging.

Stressed Exposure

Definition: Stressed exposure is a forward-looking measure of exposure based on pre-defined market factor movements (non-statistically generated). These can include single-factor market shocks, historical scenarios, and hypothetical scenarios.

Purpose: Allows banking organizations to consider their counterparty exposure under a severe or stressed scenario. This serves as a supplemental view of potential exposure, and provides banking organizations with additional information on risk drivers. It is best practice to compare stressed exposure to counterparty credit limits.

CVA Related Metrics:

Credit Valuation Adjustment (CVA)

Definition: The credit valuation adjustment is an adjustment to the mid-market valuation (average of the bid and asked price) of the portfolio of trades with a counterparty. This adjustment reflects the market value of the credit risk resulting from any failure to perform on contractual agreements with a counterparty. This adjustment may reflect the market value of the credit risk of the counterparty or the market value of the credit risk of both the banking organization and the counterparty.*

Purpose: CVA is a measure of the market value of CCR, incorporating both counterparty creditworthiness and the variability of exposure.

CVA VaR

Definition: CVA VaR is a measure of the variability of the CVA mark-to-market value and is based on the projected distributions of both exposures and counterparty creditworthiness.

Purpose: Provides banking organizations with an estimate of the potential CVA mark-to-market loss, at a certain confidence interval and over a given time horizon.

CVA Factor Sensitivities

Definition: CVA factor sensitivities is the mark-to-market change in CVA resulting from a given market risk factor change (for example, CR01).

Purpose: Allows banking organizations to assess and hedge the market value of the credit or market risks to single names and portfolios and permits banking organizations to monitor excessive buildups in counterparty concentrations.

Stressed CVA

Definition: Stressed CVA is a forward-looking measure of CVA mark-to-market value based on pre-defined credit or market factor movements (non-statistically generated). These can include single market factor shocks, historical scenarios, and hypothetical scenarios.

Purpose: Serves as an informational tool, and allows banking organizations to assess the sensitivity of their CVA to a potential mark-to-market loss under defined scenarios.

Appendix B:
DETAIL ON MODEL VALIDATION AND SYSTEMS EVALUATION

A banking organization should validate its CCR models, initially and on an ongoing basis. Validation should include three components: an evaluation of the conceptual soundness of relevant models (including developmental evidence); an ongoing monitoring process that includes verification of processes and benchmarking; and an outcomes-analysis process that includes backtesting. The validation should either be independent, or subject to independent review.

Validation is the set of activities designed to give the greatest possible assurances of CCR models' accuracy and systems' integrity. Validation should also identify key assumptions and potential limitations, and assess their possible impact on risk metrics. CCR models have several components:

- Statistical models to estimate parameters, including the volatility of risk factors and their correlations;
- Simulation models to convert those parameters into future distributions of risk factors;
- Pricing models that estimate value in simulated scenarios; and
- Calculations that summarize the simulation results into various risk metrics.

All components of each model should be subject to validation, along with analysis of their interaction in the CCR system. Validation should be performed initially as a model first goes into production. Ongoing validation is a means of addressing situations where models have known weaknesses and ensuring that changes in markets, products, or counterparties do not create new weaknesses. Senior management should be notified of the validation results and should take corrective actions in a timely manner when appropriate.

A banking organization's validation process should be independent of the CCR model and systems development, implementation, and operation. Alternately, the validation should be subject to independent review, whereby the individuals who perform the review are not biased in their assessment because of involvement in the development, implementation, or operation of the processes or products. Individuals performing the reviews should possess the requisite technical skills and expertise to provide critical analysis, effective challenge, and appropriate recommendations. The extent of such reviews should be fully documented, sufficiently thorough to cover all significant model elements, and include additional testing of models or systems as appropriate. In addition, reviewers should have the authority to effectively challenge developers and model users, elevate concerns or findings as necessary, and either have issues addressed in a prompt and substantial manner or reject a model for use by the banking organization.

Conceptual Soundness and Developmental Evidence

The first component of validation is evaluating conceptual soundness, which involves assessing the quality of the design and construction of CCR models. The evaluation of conceptual soundness includes documentation and empirical evidence supporting the theory, data, and methods used. The documentation should also identify key assumptions and potential limitations and assess their possible impact. A comparison to industry practice should be done to identify areas where substantial and warranted improvements can be made. All model components are subject to evaluation, including simplifying assumptions, parameter calibrations, risk-factor diffusion processes, pricing models, and risk metrics. Developmental evidence should be reviewed whenever the banking organization makes material changes in CCR models. Evaluating conceptual soundness includes independent evaluation of whether a model is appropriate for its purpose, and whether all underlying assumptions, limitations, and shortcomings have been identified and their potential impact assessed.

Ongoing Monitoring, Process Verification and Benchmarking

The second component of model validation is ongoing monitoring to confirm that the models were implemented appropriately and continue to perform as intended. This involves process verification, an assessment of models, and benchmarking to assess the quality of the model. Deficiencies uncovered through these activities should be remediated promptly.

Process verification includes evaluating data integrity and operational performance of the systems supporting CCR measurement and reporting. This should be performed on an ongoing basis and includes:

- The completeness and accuracy of the transaction and counterparty data flowing through the counterparty exposure systems.
- Reliance on up-to-date reviews of the legal enforceability of contracts and master netting agreements that govern the use of netting and collateral in systems measuring net exposures, and the accuracy of their representations in the banking organization's systems.
- The integrity of the market data used within the banking organization's models, both as current values for risk factors and as sources for parameter calibrations.
- The operational performance of the banking organization's counterparty exposure calculation systems, including the timeliness of the batch-run calculations, the consistent integration of data coming from different internal or external sources, and the synchronization of exposure, collateral management and finance systems.

"Benchmarking" means comparing a banking organization's CCR measures with those derived using alternative data, methods, or techniques. It can also be applied to particular model components, such as parameter estimation methods or pricing models. It is an important complement to backtesting and is a valuable diagnostic tool in identifying potential weaknesses. Differences between the model and the benchmark do not necessarily indicate that the model is in error because the benchmark itself is an alternative prediction. It is important that a banking organization use appropriate benchmarks, or the exercise will be compromised. As part of the benchmarking exercise, the banking organization should investigate the source of the differences and whether the extent of the differences is appropriate.

Outcomes Analysis Including Backtesting

The third component of validation is outcomes analysis, which is the comparison of model outputs to actual results during a sample period not used in model development. Backtesting is one form of out-of-sample testing. Backtesting should be applied to components of a CCR model, for example the risk factor distribution and pricing model, as well as the risk measures and projected exposures. Outcomes analysis includes an independent evaluation of the design and results of backtesting to determine whether all material risk factors are captured and to assess the accuracy of the diffusion of risk factors and the projection of exposures. While there are limitations to backtesting, especially for testing the longer horizon predictions of a CCR model, banking organizations should incorporate it as an essential component of model validation.

Typical examples of CCR models that require backtesting are expected exposure, peak exposure, and CVA VaR models. Backtesting of models used for measurement of CCR is substantially different than backtesting VaR models for market risk. Notably, CCR models are applied to each counterparty facing the banking organization, rather than an aggregate portfolio. Furthermore, CCR models should project the distribution over multiple dates and over long time horizons for each counterparty. These complications make the interpretation of CCR backtesting results more difficult than that for market risk. Because backtesting is critical to providing feedback on the accuracy of CCR models, it is particularly important that banking organizations exert considerable effort to ensure that backtesting provides effective feedback on the accuracy of these models.

Key elements of backtesting include the following activities:

- Back-testing programs should be designed to evaluate the effectiveness of the models for typical counterparties, key risk factors, key correlations and pricing models. Backtesting results should be evaluated for reasonableness as well as for statistical significance. This may serve as a useful check for programming errors, or cases in which models have been incorrectly calibrated.
- Backtesting should be performed over different time horizons. For instance, the inclusion of mean reversion parameters or similar time varying features of a model can cause a model to perform adequately over one time horizon, but perform very differently over a different time horizon. A typical large dealer should, at a minimum, perform backtesting over one day, one week, two weeks, one month and every quarter out to a year. Shorter time periods may be appropriate for transactions under a collateral agreement when variation margin is exchanged frequently, even daily, or for portfolios that contain transactions that expire or mature in a short timeframe.
- Backtesting should be conducted on both real counterparty portfolios and hypothetical portfolios. Backtesting on fixed hypothetical portfolios provides the opportunity to tailor backtesting portfolios to identify whether particular risk factors or correlations are modeled correctly. In addition, the use of hypothetical portfolios is an effective way to meaningfully test the predictive abilities of the counterparty exposure models over long time horizons. Banking organizations should have criteria for their hypothetical portfolios. The use of real counterparty portfolios evaluates whether the models perform on actual counterparty exposures, taking into account portfolio changes over time.

It may be appropriate to use back-testing methods that compare forecast distributions of exposures with actual distributions. Some CCR measures depend on the whole distribution of future exposures rather than a single exposure percentile (for example, EE and EPE). For this reason, sole reliance on backtesting methods that count the number of times an exposure exceeds a unique percentile threshold may not be appropriate.

Exception counting remains useful, especially for evaluating peak or percentile measures of CCR, but these measures will not provide sufficient insight for expected exposure measures. Hence, banking organizations should test the entire distribution of future exposure estimates and not just a single percentile prediction.

Banking organizations should have policies and procedures in place that describe when back-testing results will generate an investigation into the source of observed backtesting deficiencies, and when model changes should be initiated as a result of backtesting.

Documentation

Adequate validation and review are contingent on complete documentation of all material aspects of CCR models and systems. This should include all model components and parameter estimation or calibration processes. Documentation should also include the rationale for all material assumptions underpinning its chosen analytical frameworks, including the choice of inputs; distributional assumptions; and weighting of quantitative and qualitative elements. Any subsequent changes to these assumptions should also be documented and justified.

The validation or independent review should be fully documented. Specifically, this would include results, the scope of work, conclusions and recommendations, and responses to those recommendations. This includes documentation of each of the three components of model validation, discussed above. Complete documentation should be done initially and updated over time to reflect ongoing changes and model performance. Ability of the validation (or review) to provide effective challenge should also be documented.

Internal Audit

A banking organization should have an internal audit function, independent of business-line management, which assesses the effectiveness of the model validation process. This assessment should ensure the following: proper validation procedures were followed for all components of the CCR model and infrastructure systems; required independence was maintained by validators or reviewers; documentation was adequate for the model and validation processes; and results of validation procedures are elevated, with timely responses to findings. Internal audit should also evaluate systems and operations that support CCR. While internal audit may not have the same level of expertise as quantitative experts involved in the development and validation of the model, they are particularly well suited to evaluate process verification procedures. If any validation or review work is out-sourced, internal audit should evaluate whether that work meets the standards discussed in this section.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 25, 2012

The Honorable Kevin Brady
Vice Chairman
Joint Economic Committee
United States Senate
Washington, D.C. 20510

Dear Mr. Vice Chair:

Enclosed are my responses to the written questions you submitted following the October 4, 2011, hearing before the Joint Economic Committee. A copy has also been forwarded to the Committee for inclusion in the hearing record.

Please let me know if I can be of further assistance.

Sincerely,

Enclosure

Questions for The Honorable Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, from Vice Chairman Brady:

1. From 1981 to 2003, the Federal Reserve phased-out federal agency debt and mortgage-backed securities from the System Open Market Account to separate monetary policy from credit allocation by conducting open market operations entirely through Treasuries. During the first round of quantitative easing in 2009, the Federal Reserve bought $169 billion of federal agency debt securities and $1.1 trillion of federal agency mortgage-backed securities. At the time, the Federal Reserve said that it would allow these securities to run off as principal was repaid. On Wednesday, September 21, 2011, the Federal Reserve reversed course, stating that it will now reinvest any repaid principal into new federal agency mortgage-backed securities.

- **Does this policy change mean that the Federal Reserve is allocating credit to the housing sector?**

In August 2010, the Federal Open Market Committee (FOMC) began reinvesting principal received from agency debt and agency mortgage-backed securities in longer-term Treasury securities in order to support economic recovery in the context of price stability. At the time, the Committee sought to avoid the upward pressure on longer-term interest rates that might result if the maturing agency holdings were permitted to reduce the size of the System Open Market Account (SOMA) portfolio. (For more details, see the minutes of the August 2010 meeting, p. 8: http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20100810.pdf.)

At its meeting on September 20-21, 2011, the FOMC decided to change its reinvestment policy with respect to agency debt and agency mortgage-backed securities, directing reinvestment to agency mortgage-backed securities rather than longer-term Treasury securities. This change in reinvestment policy was expected to help reduce the spread between yields on mortgage-backed securities and those on comparable-maturity Treasury securities and so contribute to lower mortgage rates. In addition, the change in reinvestment policy could help prevent the shares of outstanding longer-term Treasury securities held by the Federal Reserve from reaching levels high enough to result in a deterioration in Treasury market functioning. The FOMC believed that this action would help to support conditions in mortgage markets and thereby contribute to a stronger economic recovery.

- **Does the Federal Reserve intend to make federal agency mortgage-backed securities a permanent feature of the System Open Market Account going forward?**

As noted in the minutes of the June 2011 FOMC meeting (http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20110622.pdf), as the economy recovers, the Federal Reserve will need to reduce the current substantial degree of monetary accommodation in order to avoid an undesirable increase in inflation. As it does so, the Committee intends to normalize the size and composition of the System Open Market Account (SOMA) portfolio, including by selling of our holdings of agency securities. Such sales will likely commence sometime after the first increase in the target for the federal funds rate. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted up or down in response to material changes in the economic outlook or financial conditions. Once sales begin, the pace of sales is expected to be aimed at eliminating Federal Reserve holdings of agency securities over a period of three to five years, thereby minimizing the extent to which our holdings might affect the allocation of credit across sectors of the economy.

➢ **Does allocating credit to the housing sector compromise the independence of the Federal Reserve to conduct monetary policy consistent with long-term price stability?**

The continuing difficulties in the housing market have broad implications for the U.S. economy and financial system. To address these issues, the FOMC has taken actions to support conditions in mortgage markets in order to better foster its dual mandate from the Congress of maximum employment and price stability. The Federal Reserve's actions have involved the purchase of agency-guaranteed mortgage-backed securities through a competitive process. While the guarantee provided for these mortgage-backed securities by the housing-related government-sponsored agencies has encouraged the flow of credit to the housing sector over many decades, the Federal Reserve's recent purchases of such securities have been aimed at reducing mortgage rates and other long-term interest rates relative to what they would otherwise be in order to foster a stronger economic recovery in the context of price stability.

2. The following questions relate to the foreign exchange value of the U.S. dollar:

➢ **Does the Federal Reserve's monetary policy affect the foreign exchange value of the U.S. dollar?**

All else equal, changes in the stance of U.S. monetary policy would normally be expected to lead to some change in the foreign exchange value of the dollar, and a tightening of policy would lead to some appreciation. However, the Federal Reserve's policies are only one of many macroeconomic and financial factors that influence the foreign exchange value of the dollar. Other factors include U.S. fiscal policy, foreign monetary and fiscal policies, risk sentiment, and market expectations for relative growth outlooks and relative inflation rates. Because monetary policy actions can also influence some of these other factors, such as risk sentiment or expectations for growth, the overall effect of Federal Reserve policy on the value of the dollar can be complex.

➢ **Is it fair to say that while a depreciating U.S. dollar may help exports, it also results in higher U.S. dollar prices for internationally traded commodities like oil? And does this put upward pressure on prices for consumer goods like gasoline?**

The economic effects of exchange rate movements will depend in part on the factors behind them. For example, if dollar depreciation were caused by a weaker outlook for U.S. growth, then one might expect to see commodity prices fall, whereas if dollar depreciation were caused by a diminished perception of risk in financial markets, then commodity prices might be expected to rise. Nonetheless, holding these other factors constant, a depreciation of the dollar should make

U.S. goods cheaper abroad and foreign goods more expensive in the United States. Over time this should have several effects. First, it should increase the exports of the United States and reduce imports, increasing U.S. aggregate demand and economic activity. Second, it should put some upward pressure on import prices, including the prices of imported commodities, and eventually may put some upward pressure on prices of some consumer goods. In practice, many of these effects are smaller for the United States than for other economies, because the United States is relatively large and international trade comprises a small share of U.S. GDP.

- **Which is better for the U.S. economy over the long term: (1) a weaker dollar, (2) a stronger dollar, or (3) a dollar with stable purchasing power?**

The Treasury Department has the lead role in U.S. exchange rate policy and has for some time emphasized that a strong dollar is in the interest of the United States, as well as of the global economy. This position is not meant to suggest that any particular level of the dollar is desired or targeted, and U.S. policy seeks to foster global conditions that allow currencies be traded in free and competitive markets.

In the long run, allowing exchange rates to be freely determined by market forces permits them to respond to changing economic conditions and to act as a stabilizing force in the economy. Ultimately, the real exchange value of the dollar will depend upon the fundamental strength of the U.S. economy and confidence in its markets. Economic policies that promote price stability, sustainable economic growth, and financial stability will support both the fundamental vitality of our economy and a strong dollar.

3. As dollars are being created and sent throughout the world, the search for a place to deploy them is affecting other countries, such as Brazil and Switzerland, in significant ways. For example, Switzerland is being forced to print more of its currency to offset its rising value against the U.S. dollar. This practice will eventually affect the United States as dollars recycle back into our economy.

- **Are you considering how this phenomenon might play out?**

- **If so, how do you see things evolving?**

First, I should begin by noting that the Swiss National Bank has set a ceiling on the exchange value of the Swiss franc against the euro, not the U.S. dollar, in order to combat the sharp rise in the value of the franc against the euro that had occurred over the first half of this year. The appreciation of the Swiss franc against the euro largely reflected investor concerns about continuing fiscal and financial pressures in the euro area, leading them to seek Swiss financial assets as a safe haven, and these factors have little to do with the Federal Reserve's policies.

Second, while the Federal Reserve's monetary policies can influence capital flows by affecting domestic rates of return, other factors are also important. For example, the strong rates of growth in many emerging market economies over the last decade have provided a natural incentive to investors to seek investment opportunities in those countries. In addition, when countries fix or manage their exchange rates, this can affect their current account balance and their pattern of capital flows; this has been the key factor behind the large amounts of reserve accumulation by certain emerging market countries in recent years.

Over the longer term, the G-20 countries have pledged to take actions that should promote a more balanced international system, with countries with large current account surpluses implementing policies to shift to growth based more on domestic demand and allow greater exchange rate flexibility and those with large current account deficits implementing policies to increase national savings. Such steps should materially lessen the net flow of capital from many emerging market economies to the United States and other advanced economies.

4. The Federal Reserve performs an essential function for financial stability by serving as lender-of-last-resort to (1) prevent the unnecessary failures of otherwise solvent U.S. banks and other financial institutions; (2) reduce the likelihood of financial contagion and disruptions in U.S. financial markets; and minimize any adverse effects on real output and employment in the U.S. economy.

➢ **Is there any affirmative reason why the Federal Reserve--in its 98-year history--has never clearly articulated its lender-of-last-resort policy?**

Because the appropriate policy actions tend to be very specific to the situation at hand, policymakers rarely provide detailed statements indicating exactly how they will utilize their policy tools to address crisis situations. National governments, for example, do not provide ex-ante policy statements about their potential use of tax and expenditure policies to address financial crises. Similarly, central banks do not generally commit to a particular course of action in advance of a crisis. Instead, many central banks have adopted broad principles that will guide their actions in a crisis. In the case of the Federal Reserve, Congress has already provided many of the broad principles underlying the Federal Reserve's long-standing approach to its lender-of-last-resort responsibility in Title XI of the Dodd-Frank Wall Street Reform Act. The Dodd-Frank Act provides that emergency lending should be for the purpose of providing liquidity to the financial system, and not to aid a failing financial institution. The Federal Reserve may only provide emergency credit as part of a broad-based lending program. Emergency credit may not be extended to insolvent firms. The security for emergency loans must be sufficient to protect taxpayers from losses; in particular, the Federal Reserve must follow sound risk management practices in valuing and margining collateral so that taxpayers are protected and the Federal Reserve is adequately secured. Any emergency lending program must be terminated in a timely and orderly fashion.

➢ **Is Allan Meltzer correct when he states that the absence of an official lender-of-last-resort policy has led to (1) increased economic uncertainty because no one knows with certainty how the Federal Reserve may act; (2) financially distressed firms seeking political solutions in the form pressure from Congress or the Administration being placed on the Federal Reserve to act to save them; and (3) a moral hazard problem from financial**

institutions taking greater risks based upon assumptions of how the Federal Reserve will act, though there is no guarantee of Federal Reserve action?

It is difficult to directly verify these assertions, but it seems very unlikely that the Federal Reserve's lender-of-last-resort policy is a significant factor in the three areas noted. On the first point, many would argue that economic uncertainty is unusually elevated at present. Among the major sources of economic uncertainty, most point to the continuing weakness in the housing market, the sluggish recovery in the labor market, the highly unsettled situation in Europe, and the potential for repercussions in the financial sector. On the second point, as discussed in the answer above, the Federal Reserve can only provide emergency credit as part of a broad-based lending program to support the financial system and cannot provide emergency credit to insolvent firms. On the third point, the Federal Reserve has utilized its emergency lending authorities in two periods: the Great Depression and the financial crisis of 2007-2009. Based on this history, it seems very unlikely that firms would actively take on greater risks now given the very small likelihood that the Federal Reserve would utilize its emergency lending authorities to provide liquidity assistance. Moreover, with the passage of the Dodd-Frank Act, the Federal Reserve is more constrained in its ability to provide emergency credit than it was in 2008. In addition, the Dodd-Frank Act put in place new tools that the government can use to resolve failing systemically important institutions in an orderly manner. Finally, regulators are more attuned than ever to potential liquidity risks and are actively taking steps to ensure that financial institutions maintain adequate liquidity buffers. All of these factors suggest that moral hazard associated with the Federal Reserve's lender-of-last-resort power is likely to be minimal.

- **Is mitigating the risks of moral hazards a positive in terms of economic stability?**

Economic stability is promoted through sound monetary and fiscal policies, and a well-regulated financial system. Taken together, these policies increase efficiency, reduce incentives for excessive risk-taking, and mitigate moral hazard. However, there could be exceptional circumstances--such as those that existed in 2008--when the federal government would be justified in pursuing extraordinary actions. In these unusual situations, the Federal Reserve's lender-of-last-resort policies may be necessary to restore economic stability.

The Dodd-Frank Wall Street Reform and Consumer Protection Act strengthened financial regulation and oversight, and created the Financial Stability Oversight Council to monitor developments in the financial system, identify emerging risks, and take action as appropriate to address such risks. These reforms have strengthened the financial system and reduced both the probability and severity of future crises.

- **After fulfilling its lender-of-last-resort role, should the Federal Reserve, in an orderly way, sell any acquired debt securities not normally held in its System Open Market Account?**

In fulfilling its responsibilities as lender-of-last-resort, the Federal Reserve provided a substantial volume of loans through a number of emergency lending programs. Almost all of this emergency credit has already been repaid with interest. We have suffered no losses on the loans we provided during the crisis, and we do not anticipate any losses on the loans that are still outstanding.

In addition to providing liquidity, the Federal Reserve used its monetary policy tools to support the economy during and after the crisis. Our monetary policy actions included reducing the federal funds rate, our usual policy interest rate, to very low levels by the end of 2008. Since that time, we have provided additional monetary policy accommodation through the purchase of longer-term securities, including Treasury securities and agency debt and mortgage-backed securities. These purchases have put downward pressure on longer-term interest rates and supported functioning in the mortgage and other private credit markets, thereby helping to foster the Federal Reserve's dual mandate from the Congress of maximum employment and price stability.

As the economy recovers, the Federal Reserve will need to remove this policy accommodation at an appropriate time in order to avoid an undesirable increase in inflation. As noted in the minutes of the June 2011 FOMC meeting (http://www.federalreserve.gov/monetarypolicy/files/fomcminutes20110622.pdf), the move to less accommodative monetary policy will include the normalization of the size and composition of the Federal Reserve's balance sheet, including sales of our holdings of agency securities. Such sales will likely commence sometime after the first increase in the target for the federal funds rate. The timing and pace of sales will be communicated to the public in advance; that pace is anticipated to be relatively gradual and steady, but it could be adjusted up or down in response to material changes in the economic outlook or financial conditions. Once sales begin, the pace of sales is expected to be aimed at eliminating Federal Reserve holdings of agency securities over a period of three to five years, thereby minimizing the extent to which our holdings might affect the allocation of credit across sectors of the economy.

5. As you know, there is some debate in Congress over whether the inflation measure used to price index federal programs and the tax code should be changed to another measure such as Chained CPI.

➢ **Which of the following indices do you believe is the best measure of overall consumer price inflation in the economy:**

- **CPI-U,**
- **Chained CPI-U,**
- **Personal Consumption Expenditures (PCE) Price Index,**
- **The market based version of the PCE Price Index,**
- **Or some measure?**

The choice of price measure for indexation purposes depends on what the Congress hopes to achieve, and there is no unambiguously best choice. That said, considering consumer price measures for the nation as a whole, economists generally believe that the CPI-U tends to overstate changes in the cost of living, in part because it does not fully account for consumers' substitution in response to changes in relative prices. The C-CPI-U (or chained CPI) uses a formula that does account for such substitution and so probably comes closer to measuring changes in the cost of living than the CPI-U does.

Like the chained CPI, the PCE price index also uses a formula that accounts for consumer substitution across in response to relative price changes. The PCE price index differs from the CPIs in a variety of ways, importantly including the fact that it is somewhat broader in scope than either CPI measure: The CPIs are limited to expenditures made by individuals out of pocket, whereas the PCE index also includes (a) the full weight of medical expenditures in the economy, whether paid by individuals, their employers, or governments, (b) expenditures by nonprofit institutions, and (c) a variety of items for which market-based prices are not available (such as the provision of ATM use and other banking services provided without explicit charge). Often, the CPI's out-of-pocket scope is viewed as most appropriate for indexation of programs affecting households, but there is no unambiguous answer to that question and it is a decision that the Congress will need to make.

I should note that all of the measures on your list other than the CPI-U, including the chained CPI, are revised over time. Such revisions complicate the use of these measures for indexation purposes (though by no means are those complications insurmountable), and Congress may wish to take those complications into account in making its decisions.

6. President George W. Bush and your predecessor Alan Greenspan repeatedly warned Congress about the systemic dangers that Fannie Mae and Freddie Mac posed to the global financial system. These warnings went unheeded. On September 6, 2008, Fannie Mae and Freddie Mac were found insolvent and placed into receiverships. So far, U.S. taxpayers have pumped $104 billion into Fannie Mae and $65 billion into Freddie Mac just to keep these GSEs alive. Standard & Poor's estimated that another $405 billion will be needed to capitalize new entities to replace Fannie Mae and Freddie Mac.

- **Has the failure to resolve Fannie Mae and Freddie Mac once and for all increased the total cost of resolution that taxpayers will eventually bear?**

The conservatorships for Fannie Mae and Freddie Mac facilitated the provision of mortgage credit during a very severe U.S. housing downturn, the worst housing downturn since the Great Depression. The continued flow of mortgage credit, even under stressed financial conditions, has likely been a force for stability in U.S. housing markets. In turn, housing market stabilization has likely not only reduced the total cost of resolution that taxpayers will eventually bear for these organizations, but also reduced the costs associated with resolving other financial institutions that have failed because of mortgage defaults, thereby helping to protect the deposit insurance fund. That said, it is difficult to estimate on net cost, the influence of the decision not to resolve Fannie Mae and Freddie Mac since these entities can influence virtually all aspects of mortgage finance, including underwriting standards, servicing costs and revenues, real estate prices through their dispositions of foreclosed properties, secondary prices for mortgage-backed securities, and hedging costs.

- **Has this failure deterred private financial services firms from investing in housing finance and offering financially sound mortgage loan products?**

Steep declines in house prices, relatively high unemployment rates, and a lack of certainty with respect to government's future involvement in mortgage finance have heightened risks and uncertainties associated with investing in housing finance. Investors have been extremely cautious about investing in private-label mortgage loan products, even including securities that are backed by loans that have been underwritten to high standards. Furthermore, investors are hesitant to act until the ongoing uncertainty about the future of Fannie Mae and Freddie Mac is resolved. The Administration's white paper on the future of mortgage finance laid out three possibilities for the future of Fannie Mae and Freddie Mac, and I hope that these possibilities will focus the discussion on how best to go forward.

- **Has this failure delayed the bottoming of the housing market and any recovery in housing prices?**

House prices have recovered in some locations, but not in others. Home prices depend on both demand and supply, and housing demand is only partly driven by the availability and terms of mortgage credit. Potential homeowners also factor in rental costs, local housing market liquidity and the potential for house price appreciation in the future, as well as their current debt and their income prospects. Housing supply is also only partly driven by the actions of government-sponsored enterprises. Recently, however, Fannie Mae and Freddie Mac have become significant sellers of real estate in some locations because of mortgage defaults and foreclosures. These entities have an obligation to conserve their assets on behalf of the taxpayers and the Congress may want to consider whether this is the best method of handling these properties. Regardless, it is unlikely that the conservatorships of Fannie Mae and Freddie Mac have significantly delayed the bottoming of housing markets. In some locations, there simply remains too much housing stock for current housing demand.

7. The Basel Committee on Banking Regulation promulgated capital standards for banks in 1988, 2004, and 2010, giving risk weights to various assets and off-balance-sheet items.

- **Did the low risk-weight given to residential mortgages and residential securities have the unintended consequence of encouraging U.S. banks to have excessive exposures to housing loans and housing-related securities prior to 2008?**

Under the general risk-based capital rules, first lien residential mortgages that meet certain criteria, such as being prudently underwritten, performing in accordance with their original terms, and not being 90 days or more past due, are assigned to the 50 percent risk weight category. Prudent underwriting standards include a conservative ratio of the loan balance to the value of the property. Residential mortgages that do not meet these criteria or that are made for the purpose of speculative property development are assigned to the 100 percent risk weight category, together with most wholesale and retail credits. With respect to residential mortgage-backed securities (RMBS) that are externally rated, those of relatively high credit quality, as evidenced by a triple-A rating, are assigned to the 20 percent risk weight category, while lower quality RMBS (e.g., rated BB) are assigned to the 200 percent risk weight category. Thus, the risk weights are designed to reflect the relative risks of the exposures.

Many factors influence banks' portfolio allocation decisions. While regulatory capital requirements may have some influence, more predominant factors include investment yield, perceived risk and return tradeoffs, liquidity, and fees and profits associated with lending volume.

- **Did the extremely low risk-weight given to bills, notes, and bonds of developed country governments have the unintended consequence of encouraging European banks to have excessive exposures to Greek, Irish, Italian, Portuguese, and Spanish government debt, which are now threatening the financial stability of the euro-zone?**

It is difficult to generalize about the impact of Basel Accord risk weights because of differences in details of implementation across nations and because of the changes that have occurred over time. It is roughly correct that, under both Basel I and Basel 2, European Union banks could use a zero risk-weight on the debt of any European Union government. However, a zero risk weight does not encourage holding concentrated exposures to any particular sovereign. And national banking systems usually have substantial exposures to the debt of their own sovereign for various practical reasons, including to serve as collateral at the central bank and because such debt is usually liquid within the nation.

- **Should capital standards be more neutral toward the credit allocation decisions that banks make?**

It is important that regulatory capital requirements ensure that banks hold capital commensurate with the risk of their exposures, including off-balance sheet items. Prior to 1989, regulatory capital requirements were credit neutral and every asset had the same capital requirement regardless of its risk. Banks thus had an incentive to hold higher risk assets, which generated more yield per unit of required regulatory capital. In response, U.S. and international bank regulators developed risk-sensitive risk-based capital ratios so as not to disincentivize banks from holding more liquid, lower risk assets. The banking agencies' use of both leverage and risk-based regulatory capital ratios help to limit gaming opportunities associated with each type of ratio.

8. Earlier this year, I introduced legislation that would reduce non-interest spending over the next decade relative to the size of the economy to 16.5% of potential GDP, slightly below the average of the Clinton Administration's 16.7%. In addition, the legislation provided a number of other tools to enforce fiscal discipline. Without asking you to endorse any specific provisions of the legislation, I would like your views on the various approaches the legislation takes from an economic perspective.

As I mentioned, the legislation utilizes potential GDP as estimated by the Congressional Budget Office as the denominator in calculating a cap on federal spending. Using potential GDP is intended to focus policy decisions on non-cyclical, structural issues. Therefore, this metric would eliminate the need to implement significant spending reductions in an economic downturn, but would also act as a restraint on spending in periods of economic expansion.

- **If Congress chose to enact spending limitations based on the size of the economy, what do you see as the policy advantages and disadvantages of using potential GDP as the metric instead of nominal GDP?**

Formal fiscal rules do not replace the need for policymakers to make the difficult choices necessary to put the federal budget on a sustainable path, but they can help the process by setting clear and transparent goals that may establish the credibility of changes in policy and reduce uncertainty. Although fiscal rules have not always proven successful, a number of countries seem to have found budget rules – sometimes, but not always, including a spending limit – helpful in achieving greater budget discipline. In practice, spending limits often have been based on cyclically-adjusted measures of spending or spending relative to potential GDP. As a result, spending decisions are based on factors that can be more directly controlled by policymakers rather than the near-term performance of the economy. This strategy does present some challenges since potential GDP is not measured directly and estimates of it are subject to revision.

9. The legislation also utilizes non-interest spending as the numerator in calculating the cap. The policy reason for utilizing non-interest spending was based on three principles: (1) Congress cannot directly control interest rates and should focus on what it can control; (2) excluding interest payments eliminates the effect of interest rate volatility over both the long term and short term on the cap; and (3) excluding interest payments insulates the Federal Reserve from undue pressure to keep interest rates artificially low to help implement fiscal policy.

- **Do you agree that this approach would create a more stable environment for policymakers?**

The experience in the United States and other countries suggests that fiscal rules focusing on budget measures that policymakers can control more directly tend to work better than budget measures that are affected significantly by the near-term performance of the economy and other factors outside of fiscal policymakers' direct control. That experience suggests that spending targets that exclude interest payments on the public debt would be more likely to work in practice than spending targets that include interest payments.

- **Do you believe insulating the Federal Reserve from pressure to keep interest rates artificially low is appropriate?**

There is substantial evidence from many different countries that the independence of decision-making by the central bank from short-term political considerations is important for achieving good economic performance. The Federal Reserve will continue to make monetary policy decisions in order to best meet our legislatively-determined dual mandate of promoting maximum employment and price stability.

10. The legislation also contains a sequestration metric that would reduce all discretionary spending by a maximum of 10% in any year and limit mandatory spending reductions to the elimination of cost-of-living escalators. I recognize that this approach would in some years not reduce spending sufficiently to reach the spending cap.

- **Is it more important that a spending control mechanism achieve a particular cap in a specific year or that it keeps you on a path toward the stated objective even if it were to take a few more years to reach the stated cap?**

Putting the federal budget on a sustainable path is a long-run problem, and it will require many years of difficult choices. Accordingly, it is probably more important for fiscal policy to achieve sustainable long-term goals than to necessarily meet particular annual targets.

- **Would removing uncertainty regarding government shutdowns through some type of permanent continuing resolution law be viewed as a positive or a negative by financial markets?**

Uncertainty about the budget process and government operations has almost certainly contributed to financial market volatility at various times. Taking steps to eliminate both actual and potential disruptions in government operations should help reduce the uncertainty of financial market participants about budget policies.

11. The legislation that I introduced also contains a couple of budget process reforms designed to force prioritization of spending. It would require the President's budget submission not only to meet caps required by law, but also to prioritize all non-interest federal spending into five categories with at least 12% in each category.

- **Without asking you to comment on the choice of five categories with a minimum of 12% in each category, do you believe that requiring some prioritization of spending in the budget process would be a positive development in the eyes of financial markets?**

Putting the federal budget on a sustainable path will require that the Congress, the Administration, and the American people make difficult policy choices that ultimately lead to the prioritization of some policies over others. That prioritization process could probably be achieved in a number of different ways. Nevertheless, the choices that are made with regard to federal spending and tax policy will affect a wide range of economic incentives that will be part of determining the future economic performance of our nation.

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

January 30, 2012

The Honorable Spencer Bachus
Chairman
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for your August 2, 2011, letter concerning the risk retention proposal issued for public comment by the Board of Governors of the Federal Reserve System ("Board"), the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, the U.S. Securities and Exchange Commission, the Federal Housing Finance Agency, and the Department of Housing and Urban Development, under section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). The agencies have received substantial public comments and are presently considering enhancements to the proposal. Your letter will be considered as we develop the final rule.

We appreciate your views with respect to the premium capture cash reserve account ("PCCRA") discussed in the proposed rule. Section 15G(a)(1)(A) provides that the risk retention regulations prescribed shall prohibit a securitizer from directly or indirectly hedging or otherwise transferring the credit risk that the securitizer is required to retain with respect to an asset. Consistent with this statutory directive, the PCCRA was proposed to help achieve the goals of risk retention by addressing the potential that a sponsor might effectively negate or reduce the economic exposure it is required to retain under the proposed rules.

The agencies have requested comments on all aspects of the risk retention proposal, including the design and need for the PCCRA and its potential effects on securitizations. The Federal Reserve will carefully consider all comments as we move forward with finalizing the risk retention rule.

Sincerely,

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

February 9, 2012

The Honorable Tim Johnson
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

This is in reply to your letter of November 9, 2011, regarding the importance of conducting an evaluation of the costs and benefits of rulemakings conducted by the Federal banking regulators under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"). The attached responses provide detail about our efforts to assess the benefits and costs of rules.

As your letter points out, Congress enacted the Dodd-Frank Act to address a number of deficiencies that contributed to the worst financial crisis in many years for the U.S. and to enhance protections for consumers, investors and taxpayers. It is critical that the agencies, including the Federal Reserve, implement this Act in a thoughtful manner that gives full effect to the Congressional intent behind the statute and does so in a manner that responsibly balances the costs and benefits of our implementation efforts.

In this spirit, let me assure you that the Federal Reserve takes quite seriously the importance of evaluating the burdens imposed by our efforts to issue rules implementing the Dodd-Frank Act and adopting an approach that balances costs and burdens within the requirements of each statutory mandate. We do this in a variety of ways, and at several different stages in the regulatory process.

For example, before the Federal Reserve develops a regulatory proposal, we often collect information through surveys and meetings directly from the parties that we expect will be affected by the rulemaking. This helps us to become informed about the benefits and costs of the proposed rule and craft a proposal that is both effective and minimizes regulatory burden. During the rulemaking process, we also specifically seek comment from the public on the benefits and costs of our proposed approach as well as on a variety of alternative approaches to the proposal. In adopting the final rule, we aim for a regulatory alternative that faithfully reflects the statutory provisions and the intent of Congress while minimizing regulatory burden. We also provide an analysis of the costs to small organizations of our rulemaking consistent with the Regulatory Flexibility Act and compute the anticipated costs of paperwork consistent with the Paperwork Reduction Act.

Measuring the impact of agency regulations on affected persons and the overall economy is very challenging, especially in the context of the numerous related rules required by the Dodd-Frank Act to be issued during the same time period by a number of agencies. The Federal Reserve believes strongly that public comment can enlighten our regulatory actions and inform our implementation of our statutory responsibilities. Consequently, the Federal Reserve has long followed the practice of providing the public a minimum of 60 days to comment on all significant rulemaking proposals, with longer periods permitted for especially complex or significant proposals, such as our recent proposal on enhanced prudential standards. We also have extended the comment period in cases where we believe additional time helps to promote the public's interest, such as in the case of the Volcker Rule and risk retention proposals. Similarly, we also favor seeking public comment on significant statements of regulatory guidance, and typically invite the public to comment on major statements of supervisory guidance, such as our guidance regarding incentive compensation. In addition, we make available to the public our examination manuals, supervisory letters, transaction approvals (and denials), and other matters of interest to the public related to implementation of our statutory responsibilities.

We also consult regularly with our fellow bank regulatory agencies on matters that might affect their institutions as well as on matters of common interest where a single regulatory approach across banking organizations of different charters would reduce compliance burden and risk. We accomplish this in many ways. The Federal Reserve participates in the Federal Financial Institutions Examination Council and in the Financial Stability Oversight Council, both of which facilitate interagency consultation and cooperation. Moreover, members of the Board as well as staff at senior levels have long established working associations with their peers at other agencies and have regular meetings to discuss policies of common interest and applicability. These many avenues of consultation at multiple levels increase the coordination and consistency of regulation across a banking industry that has many regulators and charters. We have expanded these channels to include regular consultation with the SEC, CFTC, CFPB and other agencies as changes in the law have caused our spheres of regulatory responsibilities increasingly to overlap.

The Federal Reserve also has for many years had a policy of conducting a zero-based review of each of its regulations on a periodic basis--typically every five years. The purpose of this review is to update each rule, reduce unnecessary burden, and streamline regulatory requirements based on our experience in implementing the rule and where permitted by the authorizing statutory provisions that motivated the rule.

Through these steps, more fully explained in the attached responses, the Federal Reserve seeks to carry out our statutory duties in a manner that is both consistent with the legislation enacted by Congress and maximizes benefits and minimizes costs associated with our implementation efforts.

Sincerely,

Enclosure

Attachment

1. Provide a detailed description of your agency's rulemaking process, including the variety of economic impact factors considered in your rulemaking. Please note to what degree you consider the benefits from your rulemaking, including providing certainty to the marketplace and preventing catastrophic costs from a financial crisis. Also describe any difficulties you may have in quantifying benefits and costs, as well as any challenges you may face in collecting the data necessary to conduct economic analysis of your rulemaking.

For every new regulation put forth by the Federal Reserve alone or jointly with other agencies, including those promulgated under the Dodd-Frank Act, it is the policy of the Federal Reserve to consider the various options available consistent with the statutory mandate being implemented; analyze the possible economic impact of implementing proposals to the extent permitted by available data; evaluate the compliance, record-keeping, and reporting burdens; and recommend the best course of action consistent with the statutory mandate based on an evaluation of the alternatives. If the regulation concerns an area where considerable information is available, a correspondingly more exhaustive regulatory analysis will be undertaken. For significant Dodd-Frank regulations, we assemble interdisciplinary teams, bringing together economists, supervisors, legal staff, and other specialists to help develop sensible policy alternatives and to help avoid unintended consequences. During the proposal stage, we specifically seek comment from the public on the costs and benefits of our proposed approach through surveys and meetings, as well as on alternative approaches to our proposal. This helps us to become informed about the benefits and costs of the proposed rule and craft a proposal that both is consistent with the Congressionally established mandate and minimizes regulatory burden. In adopting the final rule, we aim for a regulatory alternative that faithfully reflects the statutory provisions and the intent of Congress while minimizing regulatory burden. In addition, the Board is subject to two laws that require specific types of analysis--the Paperwork Reduction Act ("PRA") and the Regulatory Flexibility Act ("RFA"). The PRA and RFA require evaluations of the rulemaking's paperwork burden and effect on small entities, respectively. The Federal Reserve includes a separate analysis under each of these laws in its rulemaking publications.

Federal financial regulators face considerable challenges in quantifying all potential benefits and costs of a particular rule, such as the benefits from marketplace certainty or the prevention of a future financial crisis, especially in the context of the numerous related rules required by the Dodd-Frank Act to be issued during the same time period by a number of agencies. The GAO recently noted that the difficulty of reliably estimating the costs of regulations to the financial services industry and the nation has long been recognized, and the benefits of regulation generally are regarded as even more difficult to measure.[1] This task is further complicated by the need for the Federal Reserve to write rules that are often focused primarily on ensuring the safety and soundness of financial institutions. The benefits of a safe and secure financial system are clear, but they are difficult to quantify. Like other agencies, the Federal Reserve must often rely on information from regulated firms and from other affected parties for information regarding potential costs and benefits of a rulemaking. These parties often cannot quantify costs

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[1]GAO Report GAO-12-151, p.19; *See also* p. 36.

or benefits and, even where that is possible, may not have the incentive to provide that information or may be concerned about providing that information, which may reveal confidential business practices, in a public rulemaking.

2. Provide your agency's current and future plans to regularly review and, when appropriate, modify regulations to improve their effectiveness while reducing compliance burdens. Please include a description of actions your agency has taken, or plans to take, to streamline regulations; for example, the Consumer Financial Protection Bureau's "Know Before You Owe" effort drastically simplifies mortgage and student loan disclosure requirements. Also note statutory impediments, if any, that prevent your agency from streamlining any duplicative or inefficient rules under your purview.

The Federal Reserve has for many years had a policy of conducting a zero-based review of each of its regulations on a periodic basis--typically every five years. The purpose of this review is to update each rule, reduce unnecessary burden, and streamline regulatory requirements based on our experience in implementing the rule and where permitted by the authorizing statutory provisions that motivated the rule. In selecting regulations to be reviewed, we consider such factors as the length of time since the last evaluation of the regulation, our experience in administering the rule, the continued need for the rule, the type and number of complaints and suggestions received, the direct and indirect burdens imposed by the regulation, and the need to simplify or clarify the regulation and eliminate duplication.

With respect to rules adopted as a result of the Dodd-Frank Act, the Federal Reserve will review the impact of Dodd-Frank Act regulations once they are completed and firms have had a reasonable opportunity to implement these provisions. As part of this review, we will consider ways to reduce burdens that appear over time in the Dodd-Frank rules.

3. Provide details of how your agency encourages public participation in the rulemaking process, including through administrative procedures, public accessibility, and informal supervisory policies and procedures.

We are committed to soliciting and considering the comments of the public in the rulemaking process. We believe strongly that public participation in the rulemaking process improves our ability to identify and resolve issues raised by our regulatory proposals. During the proposal stage, we specifically seek comment from the public on the benefits and costs of our proposed approach, as well as on alternative approaches to our proposal. The Federal Reserve has long followed the practice of providing the public a minimum of 60 days to comment on all significant rulemaking proposals, with longer periods permitted for especially complex or significant proposals, such as our capital rules and our recent proposal on enhanced prudential standards. We also have extended our comment periods when it appears that the public interest would be served by allowing additional time for comment. Recently, for example, we extended the comment periods for our risk retention and Volcker rule proposals. We also favor seeking public comment on significant statements of regulatory guidance, and typically invite the public to comment on major statements of supervisory guidance, such as our guidance regarding incentive compensation and stress tests.

We also encourage public participation in the rulemaking process by making it easy for the public to find, review, and submit comments on any proposal that we have opened for comment and published in the *Federal Register*. All of these proposals can be found on our public website and at Regulations.gov. Public comments are accepted electronically and by mail. The rules and proposed rules that the Board expects to issue during the next six months are summarized in the Unified Agenda (also known as the Semiannual Regulatory Agenda), which is published twice each year in the Federal Register and posted on the Board's website. To ensure the public has sufficient notice of our rulemaking efforts under the Dodd-Frank Act, we also have published an anticipated schedule of these proposals on our website.

Moreover, Federal Reserve staff have participated in more than 300 meetings with outside parties and their representatives, including community and consumer groups, in connection with rulemakings required by the Dodd-Frank Act. To promote transparency, we post on our website a memorandum describing the attendees and subjects covered in any meetings involving non-governmental participants at which Dodd-Frank Act rulemakings are discussed. These summaries are posted on the Federal Reserve Board's website on a weekly basis.

To further transparency in the rulemaking process, the Federal Reserve also posts on its website all comments received on each proposed rule. Comments can also be viewed in person at the Board between 9:00 a.m. and 5:00 p.m. weekdays and can be obtained by formal request under the Freedom of Information Act. In addition, we make available to the public our examination manuals, supervisory letters, transaction approvals (and denials) and other matters of interest to the public related to our regulatory responsibilities.

4. Provide details of how your agency addresses the unique challenges facing smaller institutions when dealing with regulatory compliance, including any related advisory committees your agency may have or other opportunities for small institutions to be heard by your agency. Please also detail how your agency responds to concerns raised by small institutions.

The Federal Reserve has paid particular attention to reducing regulatory burden on community banking organizations. We have taken a number of steps to remain aware of the challenges faced by and the burdens of our proposals on community banks. For example, the Federal Reserve has established a set of community depository institution advisory councils at each of the 12 Federal Reserve banks for the purpose of gathering input from community depository organizations on ways to reduce regulatory burden and improve the efficiency of our supervision as well as to collect information about the economy from the perspective of community organizations throughout the nation. A representative from each of these 12 advisory councils serves on a national Community Depository Institution Advisory Council that meets semiannually with the Board of Governors to bring together the ideas of all the advisory groups.

The Board of Governors has also established a committee of Board members for the purpose of reviewing all regulatory matters from the perspective of community depository organizations. These reviews are intended to find ways to reduce the burden on community depository organizations from our regulatory policies without reducing the effectiveness of those policies in improving the safety and soundness of depository organizations of all sizes.

In addition, we are taking steps to reduce the burden on community depository organizations from our regulatory initiatives. For example, in its recent rulemaking proposals, the Federal Reserve has proposed and adopted streamlined approaches that reduce burden on community depository organizations that engage in fewer risky activities and have less complex structures. The Federal Reserve has also begun to separately and prominently identify which rulemakings apply to community depository organizations and what portions of particular rulemaking proposals are germane to community depository organizations, thereby reducing the attention community depository organizations pay to the many rulemaking proposals that are currently pending.

Moreover, for every new rule, the Board conducts an assessment and takes account of the potential impact that the rule may have on small businesses, small governmental jurisdictions, and small organizations as required under the Regulatory Flexibility Act ("RFA") (5 U.S.C. 601 et seq.). The Board prepares and makes available for public comment in the *Federal Register* an initial regulatory flexibility analysis for any rule that will have a significant economic impact on a substantial number of small entities. A final regulatory flexibility analysis is prepared for every rule that may have a significant economic impact on a substantial number of small entities and published in the *Federal Register*.

5. Describe how regulatory interagency coordination has improved since the creation of the Financial Stability Oversight Council established by the Wall Street Reform Act. Provide specifics of how coordination has helped, either formally or informally, in your rulemaking process.

The Dodd-Frank Act requires that the financial regulatory agencies consult or coordinate action on rulemakings under that Act in many cases. The Federal Reserve has actively worked with the other agencies in these joint and consultative rulemakings, both through direct contact with other agencies and through the FSOC. The FSOC has provided a ready forum for interagency consultation on rulemakings. These consultations have helped highlight the interaction between rulemakings under development by the Board and the broader set of rulemakings by other agencies under the Dodd-Frank Act, as well as improving our understanding of the interplay between proposed policy alternatives and existing regulation. The interagency consultation process has included staff discussions during the initial policy development stage, sharing of draft studies and regulatory text in the interim phases, and dialogue among agency principals in the advanced stages of several rulemakings.

The Federal Reserve also consults regularly with its fellow bank regulatory agencies on matters that might affect institutions supervised by the other bank regulatory agencies as well as on matters of common interest where a single regulatory approach across banking organizations of different charters would reduce compliance burden and risk. Members of the Board as well as staff at senior levels have established working associations with their peers at other agencies that include regular meetings to discuss policies of common interest and applicability. These many avenues of consultation at multiple levels increase the coordination and consistency of regulation across a banking industry that has multiple regulators and charters. We have expanded these channels to include regular consultation with the SEC, CFTC, CFPB and other agencies as changes in law have caused our spheres of regulatory responsibility to increasingly overlap.

March 30, 2012

The Honorable Richard Shelby
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate
Washington, DC 20510

Dear Senator Shelby:

Thank you for your recent letter requesting information regarding the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Act). Congress passed the Act in response to the worst financial crisis this country has experienced since the Great Depression. We are firmly committed to implementing those reforms in a careful, responsible, and effective manner.

Over the past two years, we and our respective agencies have been working diligently to implement the Act. Collectively and individually, we have sought input and feedback from the general public, private industry, public interest groups, and a broad range of stakeholders. We have also held numerous meetings with our international and state counterparts. In response to these efforts, members of the Financial Stability Oversight Council (Council) and other agencies have received many thousands of comments on our regulatory proposals. We and our respective agencies have carefully reviewed - and are continuing to review - these comments in the course of rulemakings and studies.

We agree with you that Council member and interagency coordination and cooperation is critical to this effort. We are committed to implementing the Act through close coordination and consultation between and among Council members and our respective agencies and staffs.[1] The members of the Council and other agencies such as the Department of Housing and Urban Development and the Federal Trade Commission are consulting extensively with each other both on a bilateral basis and through the Council itself. There has been an unprecedented level of interagency cooperation, which has helped us to implement reforms in a careful and effective manner. The interagency consultation process has included staff discussions during the initial policy development stage as well as during the rulemaking process itself. We have shared proposed and final rule text prior to issuance as well as draft studies. The level of consultation and coordination has gone well beyond the formal consultation requirements of the Act. Consultation is taking place at multiple staff and senior policy official levels with the intention of improving the consistency of regulation across the financial industry and of reducing the

[1] The Federal Trade Commission has very little rulemaking responsibility under the Act. The Federal Trade Commission and the Consumer Financial Protection Bureau are coordinating and fully cooperating on responsibilities either preserved or created in the Act. The two agencies entered into a Memorandum of Understanding, as required by the Act, on January 20, 2012 setting forth, among other things, how the agencies will coordinate and consult on law enforcement, rulemaking, and other activities.

Jon Leibowitz
Chairman of the Federal Trade Commission

Debbie Matz
Chairman of the National Credit Union Administration

John Walsh
Acting Comptroller of the Currency

S. Roy Woodall
Independent Member with Insurance Expertise

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

BEN S. BERNANKE
CHAIRMAN

April 2, 2012

The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives
Washington, D.C. 20515

Dear Congressman:

During my testimony before your Committee on February 24, 2010, questions were raised about whether the Federal Reserve had been subject to inappropriate political influence related to the 1972 Watergate Burglary and Iraq weapons purchases in the 1980s. Following the hearing, you asked me by letter dated March 3, 2010, to investigate these allegations. In response, I contacted our Inspector General ("IG") to conduct an independent analysis of the matters raised in your letter. As you know, the Board's Inspector General's office was established by Congress for the purpose of creating an independent and objective unit to conduct and supervise audits and investigations relating to the programs and operations of the Federal Reserve Board. The IG has conducted its own review of these matters. The Federal Reserve System, including the Board and the Federal Reserve Banks of Philadelphia and Atlanta, provided the IG with complete access to records and staff in order to facilitate a complete investigation. After an extensive review, the IG has completed its report. The IG has concluded that there is no evidence that the Federal Reserve was subjected to undue political influence or took improper actions in relation to the Watergate or Iraq weapons purchase incidents.

I am particularly pleased at the depth of the IG's investigation. As the section on "Objective, Scope, and Methodology" shows, the IG's office invested a significant amount of time in this investigation and produced a report that is unequivocal in its conclusions and comprehensive in its diligence. Given the very detailed review the IG conducted, readers of this report can be confident that had evidence of undue influence or improper action existed, the IG would have uncovered it and reported it.

A copy of the report is enclosed for your review. Thank you for your interest in this matter.

Sincerely,

Enclosure

cc: The Honorable Spencer Bachus
The Honorable Tim Johnson
The Honorable Richard Shelby

Office of Inspector General

Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s

Board of Governors of the Federal Reserve System

March 2012

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

OFFICE OF INSPECTOR GENERAL

March 30, 2012

The Honorable Ben S. Bernanke
Chairman
Board of Governors of the Federal Reserve System
Washington, D.C. 20551

Dear Chairman Bernanke:

The Office of Inspector General (OIG) of the Board of Governors of the Federal Reserve System (Board) is pleased to present its report on the *Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s.* During your February 2010 "Humphrey-Hawkins" testimony before the House Committee on Financial Services (Committee), Representative Ron Paul alleged that "the cash used in the Watergate scandal came through the Federal Reserve," and that "investigators . . . were always stonewalled" by the Federal Reserve. In addition, Representative Paul alleged that the Federal Reserve "facilitated a $5.5 billion loan to Saddam Hussein, who then bought weapons from our military industrial complex. . . ." Following the hearing, the Chairman of the Committee, Representative Barney Frank, sent a letter to you that referred to Representative Paul's statements. In his letter, Representative Frank requested a full investigation into allegations that inappropriate political interference with the Federal Reserve System "result[ed] in hidden transfers of resources to [1] facilitate crimes during the Watergate scandal in the 1970s, and [2] Iraq for weapons purchases during the 1980s." You referred the matter to the OIG, and our office initiated this inquiry in response to your request.

We performed this inquiry to identify and assess any available evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary and Iraq weapons purchases during the 1980s. In assessing undue political interference, our review sought to identify any available evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Specifically, we focused our analysis on allegations that (1) the cash found on the Watergate burglars came through the Federal Reserve, (2) the Federal Reserve "stonewalled" congressional members and staff investigating the source of the cash found on the burglars, and (3) the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s.

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, regarding the first Watergate allegation, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. Our office also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the second Watergate allegation (i.e., that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars). The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office for the District of Columbia advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. With regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Saddam Hussein or Iraq for weapons purchases during the 1980s.

We provided a draft of our report to the Board's General Counsel for review and comment. In his response, included as appendix 1, the General Counsel stated that our report confirmed past statements by Federal Reserve officials in relation to these incidents and indicated his appreciation for the thoroughness of our review.

We appreciate the cooperation that we received from the Board; the Federal Reserve Banks of Atlanta, Philadelphia, and New York; as well as the Federal Bureau of Investigation (FBI), the Georgia Department of Banking and Finance, and the U.S. Department of Agriculture (USDA) during our review. We are providing copies of this report to Board management; officials at the Federal Reserve Banks of Atlanta, Philadelphia, and New York; the FBI; and the USDA. The report will be added to our public website and will be summarized in our next semiannual report to Congress. Please contact me if you would like to discuss this report or any related issues.

Sincerely,

Mark Bialek

Mark Bialek
Inspector General

Enclosure

cc: Mr. Scott Alvarez

Office of Inspector General

Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s

Board of Governors of the Federal Reserve System

March 2012

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Background

The Chairman of the Board of Governors of the Federal Reserve System (Board) testifies semiannually before the House Committee on Financial Services (Committee) on monetary policy and the state of the economy. This is commonly referred to as the "Humphrey-Hawkins" testimony. During Chairman Ben Bernanke's semi-annual testimony before the Committee on February 24, 2010, Representative Ron Paul alleged that "the cash used in the Watergate scandal came through the Federal Reserve," and that "investigators . . . were always stonewalled" by the Federal Reserve. In addition, Representative Paul alleged that the Federal Reserve "facilitated a $5.5 billion loan to Saddam Hussein, who then bought weapons from our military industrial complex. . . ."

Following the hearing, the Chairman of the Committee, Representative Barney Frank, sent a letter to Chairman Bernanke that referred to Representative Paul's statements. In his letter, Representative Frank requested a full investigation into allegations that inappropriate political interference with the Federal Reserve System "result[ed] in hidden transfers of resources to [1] facilitate crimes during the Watergate scandal in the 1970s, and [2] Iraq for weapons purchases during the 1980s."

By letter dated April 16, 2010, Chairman Bernanke responded that he had "no knowledge that the Federal Reserve on its own or as a result of political or other interference facilitated any crimes or transfers in either of these matters." Chairman Bernanke referred the allegations to the Office of Inspector General (OIG) and requested that the OIG perform an investigation. Congress established the OIG as an independent oversight authority within the Board. The OIG conducts audits, investigations, and other reviews related to the Board under the authorities and responsibilities of the Inspector General Act of 1978, as amended.

Objective, Scope, and Methodology

We performed this inquiry in response to Chairman Bernanke's request. Our objective was to identify and assess any available evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary and Iraq weapons purchases during the 1980s. In assessing undue political interference, our review sought to identify any available evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Based upon our review of the February 2010 hearing record, and discussions with the staffs of Representative Frank and Representative Paul, we focused our analysis on the following allegations: (1) the cash found on the Watergate burglars came through the Federal Reserve, (2) the Federal Reserve "stonewalled" congressional members and staff investigating the source of the cash found on the burglars, and (3) the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s.

We reviewed the February 2010 hearing record and contacted the staffs of Representative Frank and Representative Paul, as well as Board staff, to obtain further detail regarding these allegations. At the suggestion of Representative Paul's staff, we reviewed a discussion of these allegations in a book by a professor at the University of Texas at Austin and contacted the professor for any additional information regarding these allegations.

Methodology for Analyzing Watergate Burglary Allegations

To identify any evidence regarding the Watergate allegations, our office performed searches of voluminous Board and Federal Reserve Bank archives, as well as Federal Bureau of Investigation (FBI) and congressional records. We also obtained documents related to the cash found on the Watergate burglars from the Board's electronic and hard-copy records systems and the Board's collection of Board meeting minutes from that time period.

We contacted the FBI to request any Watergate investigative materials that mention or relate to the Federal Reserve. In response, the FBI made available, and we reviewed, over 10 boxes of Watergate-related documents consisting of status memorandums, photographs, investigative summaries, and transaction records. Our office examined the final report of the Senate Select Committee on Presidential Campaign Activities, which consisted of over 1,200 pages, and examined the related congressional Watergate hearings transcript, consisting of 3,000 pages of transcribed testimony from 37 witnesses testifying over a five-week time span. We also reviewed the Government Accountability Office's (GAO's) reports on Watergate and the *Washington Post*'s online archive of Watergate articles.

We conducted employee interviews and examined documentation at the Federal Reserve Banks of Philadelphia and Atlanta and the National Archives and Records Administration. During on-site visits to the Federal Reserve Banks of Philadelphia and Atlanta, we reviewed the Federal Reserve Banks' boards of directors' meeting minutes and archived records for any additional information related to the cash found on the Watergate burglars. We also interviewed employees about the cash process in the 1970s. Our interviews included employees at the Federal Reserve Bank of Philadelphia and the Federal Reserve Bank of Atlanta, including its Miami branch, who had worked at these locations since before the Watergate scandal, as well as current Board staff who were also employed by the Board at the time. Additionally, we visited the Gerald R. Ford Presidential Library and Museum in Ann Arbor, Michigan, to review the library collection of Arthur Burns, Board Chairman at the time of the Watergate burglary. The collection includes Chairman Burns' handwritten journals, which contain his personal account of private interactions, staff meetings, and other information.

Based on information available in Board and FBI documents, our office developed a chronology of the Board's actions following the Watergate burglary to evaluate the Board's responses for any evidence that, as a result of undue political interference, the Board "stonewalled" congressional members or staff about the source of the cash found on the burglars. To develop the chronology, we utilized Board correspondence with Congress, Board staff chronologies written shortly after the burglary, press releases, and FBI investigative information. We analyzed the chronology to determine the extent to which various information was available to different individuals within the Federal Reserve System and externally, including Congress and the FBI. The detailed chronology is contained in appendix 3.

We also identified that, prior to the Watergate burglary, there was a well-publicized theft at the Federal Reserve Bank of Philadelphia involving its Cash Verification and Destruction (CV&D) process. Because of the relative proximity of the date of this theft to the Watergate burglary, and since it occurred at one of the Federal Reserve Banks that had distributed some of the $100 bills found on the Watergate burglars, our office also searched for any available evidence of a connection between this theft and the Watergate burglary. At the Federal Reserve Bank of Philadelphia, we analyzed the FBI report of investigation on the theft and other related documents and spoke with current Federal Reserve Bank of Philadelphia employees with knowledge of the incident. We also reviewed Board documents and interviewed current and former Board employees familiar with the theft and the resulting changes to cash procedures and controls.

Methodology for Analyzing Iraq Weapons Purchases Allegation

To identify any evidence regarding the Iraq allegation, we performed multiple searches through Federal Reserve archives from the late 1980s and early 1990s. We also conducted numerous interviews of Federal Reserve officials. We identified that, during the 1980s, the Atlanta office of an Italian Foreign Banking Organization (FBO), Banca Nazionale del Lavoro (BNL-Atlanta), was involved in extending $5.5 billion in unauthorized loans and letters of credit that largely benefited Iraq. We searched for any evidence of undue political interference with Federal Reserve officials related to BNL-Atlanta. As discussed below, BNL-Atlanta, as a U.S. office of an FBO, was primarily examined by the Georgia Department of Banking and Finance (State of Georgia), and the Federal Reserve had umbrella supervisory authority.

To identify any evidence that the Federal Reserve facilitated BNL-Atlanta's loans to Iraq, our office examined voluminous documents, including government reports, correspondence files, and internal memorandums. We reviewed transcripts of 15 congressional hearings, congressional staff reports, and GAO reports related to BNL-Atlanta. We also reviewed multiple reports by the Department of Justice (DOJ) regarding its investigation and prosecution of BNL-Atlanta employees. Additionally, we reviewed the Board's records concerning BNL-Atlanta, which included congressional correspondence, status memorandums, and internal reports.

To obtain information on the Federal Reserve's supervision of BNL-Atlanta, our office performed multiple searches of Board and Federal Reserve Bank archives and interviewed examination staff. We obtained documents from the Board's records systems, including BNL-Atlanta examination reports, and from the Board's collection of Board meeting minutes. At the Federal Reserve Bank of Atlanta and the Federal Reserve Bank of New York, we reviewed records and interviewed examination staff for additional information on the supervision of BNL-Atlanta. We also interviewed bank examiners from the State of Georgia, which had primary examination authority for BNL-Atlanta. We reviewed examination reports for BNL-Atlanta for any evidence of unusual supervisory practices, such as inadequately addressed examination areas, or insufficient responses by BNL-Atlanta to identified deficiencies or recommendations. We also consulted with legal staff at the Board and the Federal Reserve Banks about changes to the supervision of foreign banks due to the enactment of the Foreign Bank Supervision and Enforcement Act of 1991.

We also reviewed whether the Federal Reserve directly provided funds to BNL-Atlanta through its discount window lending program. Our office interviewed staff in the Federal Reserve Bank of Atlanta's credit department and reviewed related congressional testimony by Federal Reserve officials. We also analyzed publicly available Federal Reserve information pertaining to the discount window lending program.

While conducting our inquiry, we determined that BNL-Atlanta participated in a government export guarantee program run by the U.S. Department of Agriculture's (USDA's) Commodity Credit Corporation (CCC), and the Board was a member of an advisory body to the CCC called the National Advisory Council on International Monetary and Financial Policies (NAC).[1] To gain an understanding of BNL-Atlanta's participation in the CCC and the Board's actions on the NAC, our office reviewed public reports and spoke with officials knowledgeable about the program. We obtained substantial information from DOJ reports documenting the results of its BNL-Atlanta investigation, including the use of CCC-guaranteed funds by Iraq. Our office interviewed USDA and various Board and Federal Reserve Bank officials, including a Board Governor, about the CCC program, BNL-Atlanta's participation, and the Board's role on the NAC. We also reviewed Board records and GAO reports about the CCC and the NAC's deliberations regarding Iraq's participation in the CCC during the 1980s.

We conducted our evaluation fieldwork from April 2010 through July 2011 in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

Findings and Conclusions

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, related to the Watergate allegations, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. We also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the allegation that the Federal Reserve officials "stonewalled" congressional members and staff regarding the source of the cash found on the burglars. With regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Saddam Hussein or Iraq for weapons purchases during the 1980s. We also did not find evidence of any loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s.

[1] The Board's Chairman was the Board's principal representative on the NAC. The NAC also had a Committee of Alternates, composed of representatives from the member agencies who were empowered to act for their principals. The day-to-day work of the NAC was handled by a Staff Committee composed of economists and other professionals from the member agencies.

I. Allegations Regarding the Watergate Burglary

The Washington, D.C., Metropolitan Police Department arrested five individuals who had illegally entered the Democratic National Committee headquarters located at the Watergate office building in Washington, D.C., on June 17, 1972. At the time of the arrest and the subsequent search of the burglars' hotel rooms at the Watergate Hotel, 44 new $100 bills were discovered, some of which were sequentially numbered. Thereafter, the five burglars were indicted and found guilty on charges arising from the burglary. The Watergate burglary led to a political scandal that eventually led to the resignation of President Richard Nixon.

The Watergate scandal was the subject of multiple investigations by the FBI, the U.S. Attorney's Office for the District of Columbia (U.S. Attorney's Office), DOJ's Criminal Division, and GAO. Congress also held public hearings during spring and summer 1973 to investigate the Watergate burglary and illegal and improper practices during the 1972 presidential campaign. Congress' final report, published in June 1974, included findings and recommendations based on its investigation.

To assess undue political interference related to the Watergate burglary allegations, we searched for any evidence of the improper use of the political process or authority that could have affected the conduct or decision-making of Federal Reserve officials. Based on these allegations, our review focused on the cash found on the burglars, the cash distribution process, and the Board's response to congressional members and staff about the source of the cash found on the burglars.

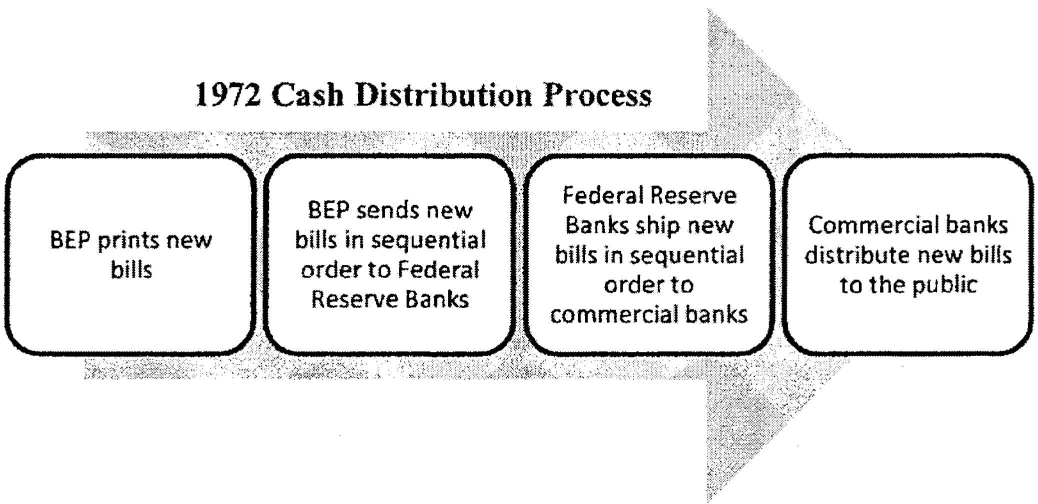
Our review did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. With regard to the allegation that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars, we found no evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials. The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office advising the Board at the time to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution.

Our office also analyzed a well-publicized theft that occurred prior to the Watergate burglary at the Federal Reserve Bank of Philadelphia involving its CV&D process. We did not identify any evidence of a connection between the cash stolen during this theft and the cash found on the Watergate burglars.

The Federal Reserve and the Cash Found on the Watergate Burglars

According to an FBI report on Watergate, the authorities found 44 new $100 bills, some of which were in sequential order, belonging to the Watergate burglars. The FBI investigation that traced the serial numbers of the bills revealed that the Bureau of Engraving and Printing (BEP) distributed some of these $100 bills to the Federal Reserve Bank of Philadelphia and the Federal Reserve Bank of Atlanta's Miami branch. Through tracing the serial numbers on the bills, the FBI report indicated that the Federal Reserve Bank of Philadelphia's records disclosed that the bills had been shipped to the Girard Bank and Trust Company in Philadelphia, and the Federal Reserve Bank of Atlanta's Miami branch confirmed to the FBI that its bills were part of a shipment to the Republic National Bank in Miami.

As depicted in the following figure, the cash distribution process for new bills in the 1970s involved a number of steps before the bills were dispersed to the general public. BEP printed new bills and then distributed them to Federal Reserve Banks and their district branches around the country. The Federal Reserve Banks and district branches then shipped the new bills to commercial banks. The Federal Reserve Banks only issued new bills to commercial banks and did not provide them directly to individuals. Lastly, the commercial banks distributed the new bills to the public through teller windows and other means.



New bills were kept in sequential order by "series" and distributed to commercial banks from the Federal Reserve Banks in "straps" of 100 bills of the same denomination. As such, commercial banks that distributed new bills could distribute such bills in sequential order. As new bills circulated, sequential bills became separated. Circulated bills that were deposited into commercial banks were eventually returned to the Federal Reserve Banks through normal commerce. The Federal Reserve Banks counted and authenticated the bills, and then determined whether the bills were "fit" or "unfit." Bills that were torn, soiled, or too worn for recirculation were deemed unfit and destroyed. Fit (reusable) bills were stored in the Federal Reserve Banks' vaults until they were recirculated through the commercial banks.

We reviewed this process to identify any evidence of undue political interference with Federal Reserve officials in relation to the distribution of the cash found on the Watergate burglars. Specifically, our office searched Federal Reserve records relating to the burglary and interviewed staff employed at the Board, the Federal Reserve Bank of Philadelphia, and the Federal Reserve Bank of Atlanta, as well as its Miami branch, at the time of the burglary. None of the records or interviewees revealed anything unusual or improper about the Federal Reserve's role in the distribution process that existed at the time of the Watergate burglary. The documentation indicated that the Federal Reserve Banks delivered the bills to the commercial banks. While the Federal Reserve Banks recorded the serial numbers of new $100 bills distributed to commercial banks, the commercial banks did not record the serial numbers of new bills distributed to the public. As such, the FBI traced the new $100 bills found on the Watergate burglars to commercial banks in Philadelphia and Miami, but it was unable to determine when or how the bills were distributed from these commercial banks. We did not find any evidence of undue political interference or that the Federal Reserve provided the new $100 bills directly to the burglars.

In addition to our review of the cash found on the burglars and the cash distribution process, we identified a well-publicized theft of unfit bills from the Federal Reserve Bank of Philadelphia that occurred prior to the Watergate burglary. We analyzed the details of the theft to identify any evidence of a connection to the Watergate burglary. In this incident, known as the "CV&D theft," several Federal Reserve Bank of Philadelphia employees conspired and stole a total of $1.4 million in unfit bills over a period of time, prior to their arrest in February 1972. Because of the relative proximity of the date of this theft to the Watergate burglary, and since it occurred at one of the Federal Reserve Banks that had distributed some of the new $100 bills found on the Watergate burglars, our office searched for any evidence of a potential connection between the cash involved in the CV&D theft and the cash found on the Watergate burglars. We found that the CV&D theft involved only unfit bills, while the Watergate burglars possessed new bills. Our review of documentation on the theft and interviews with Federal Reserve officials did not identify any evidence of a connection between the unfit cash stolen during the CV&D theft and the new cash found on the Watergate burglars.

The Federal Reserve's Responses to Congressional Members and Staff

To evaluate the Board's responses to congressional members and staff during the days subsequent to the Watergate burglary regarding the source of the cash found on the burglars, we developed a chronology based upon various documents written shortly after the burglary. The documents that we identified and analyzed included four written accounts by Board staff, several items of correspondence from the Board and from Congress, press releases, and FBI investigative files.

To better understand the chronology, it is helpful to explain the structure of the Federal Reserve System. As the central bank of the United States, the Federal Reserve System includes the Board of Governors of the Federal Reserve System, which is an independent federal agency located in Washington, D.C. The Federal Reserve Act provides that the Board shall consist of seven members, called governors, who are appointed by the President and confirmed by the Senate.

The Federal Reserve System also includes 12 regional Federal Reserve Banks. As previously mentioned, Federal Reserve Banks distribute cash to commercial banks, which then circulate the cash to the public. Federal Reserve Banks combine both public and private elements in their makeup and organization. Each Federal Reserve Bank has a nine-member board of directors that oversees its operations. Additional information on the structure and function of the Federal Reserve System is contained in appendix 2.

To address the allegation that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars, we assessed the Board's responses to congressional information requests for any evidence of undue political interference. Based on our analysis of the chronology and available documentation, we did not identify any evidence that the Board's initial or subsequent responses to congressional requests regarding its knowledge about the $100 bills were inaccurate or the result of undue political interference.

The documentation we reviewed did not contain any indications that the Board was aware of any information about the source of the cash found on the burglars at the time of its initial responses to congressional members and staff. The documentation showed that on June 19, 1972, two days after the Watergate burglary, Senator William Proxmire, Chairman of the Financial Affairs Subcommittee of the Joint Economic Committee, made a request to the Board in Washington, D.C., for the name(s) of the Federal Reserve Bank(s) involved in issuing the $100 bills found on the burglars, the name(s) of the person(s) receiving them, and the source of the check or financial instrument used to purchase the bills. That day, Board Chairman Burns responded by letter, "We at the Board have no knowledge of the Federal Reserve [B]ank which issued those particular notes or of the commercial bank to which they were transferred. Without this information, there is nothing we can do to comply with your request." Chairman Burns' letter also stated that once the investigative authorities provided that information to the Board, "we shall of course be glad to cooperate in every possible way." Board staff also told Senator Proxmire's office that day that the Board "had an obligation to ascertain whether anything the Federal Reserve might disclose would interfere with the investigations that were being carried on by the law enforcement authorities." The documentation we reviewed did not contain any Board communications about the Watergate burglary prior to the receipt of Senator Proxmire's June 19 request, including any communications with the investigative authorities or the Federal Reserve Banks. We also did not find any indications that Chairman Burns or any Board staff were aware of the issuing Federal Reserve Banks or the serial numbers of the $100 bills when they responded on June 19 to Senator Proxmire's request.[2]

We noted from documentation that a Board staff member initiated contact with the FBI on the evening of June 19 and learned which two Federal Reserve Banks had issued the bills. However, the documentation did not indicate that the FBI shared any other investigative information that evening, including whether the FBI had contacted the two Federal Reserve Banks. The next morning, the Board staff member provided the names of the two Federal Reserve Banks to the other Board staff who were in communication with Senator Proxmire's office.

In response to the Board's initial statements regarding its lack of information concerning the $100 bills found on the Watergate burglars, we noted several statements by congressional members and staff that the Board was not cooperating with their request. For example, Senator Proxmire's press release of June 20, 1972, stated:

> At the same time that the FBI told my staff on Monday [June 19] they had already been in touch with the Federal Reserve to identify where the bills came from, Chairman Arthur Burns wrote me that 'We at the Board have no knowledge of the Federal Reserve [B]ank which issue[d] those particular notes'.

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[2] Each bill contains a series number and a serial number, which together make the bill unique. Bills can be traced to the issuing Federal Reserve Bank using the serial numbers on each bill.

According to Board staff accounts, Chairman Burns' letter (referenced in Senator Proxmire's press release) was sent on June 19 at 4:20 p.m. At 5:00 p.m. that evening, the Board's Director of Reserve Bank Operations learned from the FBI the names of the two Federal Reserve Banks that issued the $100 bills. We noted that the Board staff accounts indicated that they learned throughout the day of June 20 from the Federal Reserve Bank of Philadelphia and, the Federal Reserve Bank of Atlanta, and its Miami branch, that the previous day (June 19) the Federal Reserve Banks had provided the FBI with detailed information about the $100 bills found on the Watergate burglars. We did not identify any evidence that the Board was aware of the contacts between the Federal Reserve Banks and the FBI when it responded to Senator Proxmire's request on June 19.

After the Board's initial responses to congressional members and staff that it would cooperate with their information request, the Board subsequently decided that it should not provide the requested information. Based on our review of available documentation, the Board's decision not to provide the information was consistent with the Board being advised by the U.S. Attorney's Office to not disclose it. Senator Proxmire's final letter about this matter to Chairman Burns, on August 1, 1972, stated, "I now find that the U.S. Attorney did not ask in any formal way that you withhold the information from me. . . ." In our evaluation of the Board's responses to congressional members and staff, we noted that the Board staff accounts written shortly after the Watergate burglary contained multiple references to discussions in which the U.S. Attorney's Office requested that Board officials not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. For example, the account by the Board's General Counsel stated that when he called the U.S. Attorney's Office to ask about disclosing the information to congressional members and staff, the U.S. Attorney responded that "with respect to any case in his office, his firm policy was that, subject to contrary directive from the Attorney General, there would be no disclosure of investigative evidence prior to presentation of facts to a Grand Jury. . . ."

Our office compared the Board staff's written accounts with FBI records relating to discussions between the Board and the investigative authorities. The FBI investigative files confirmed that the FBI referred the Board staff to the U.S. Attorney's Office regarding the disclosure of information to Congress. The files also indicated that the FBI responded to similar requests by stating that the information was part of its investigation and that the FBI could not share the information with Congress. In our review of the available documentation, we did not find any evidence of undue political interference in the Board's decision not to provide the requested information, and we noted that the documentation indicated that the Board's actions were consistent with the U.S. Attorney's Office advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution.

II. Allegation Regarding Iraq Weapons Purchases

To address the allegation that the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s, we searched for any evidence of undue political interference with Federal Reserve officials related to BNL-Atlanta. BNL-Atlanta, one of five U.S. offices operated by Banca Nazionale del Lavoro, a large Italian bank headquartered in Rome, was involved in $5.5 billion of unauthorized credit activity largely to benefit Iraq in the 1980s. BNL-Atlanta did not document the purposes of all of its loans to Iraq, leading to allegations that Iraq used the funds for weapons purchases. BNL-Atlanta employed 19 staff, and received its license to operate as an office of an FBO from the State of Georgia on April 14, 1982. It was primarily examined by the State of Georgia, and the Federal Reserve had umbrella supervisory authority. BNL-Atlanta offered banking services to Italian companies that had relationships with other Banca Nazionale del Lavoro offices and was involved in extending loans. BNL-Atlanta did not accept deposits, nor did it offer deposit insurance through the Federal Deposit Insurance Corporation.

On August 4, 1989, the FBI, assisted by Federal Reserve representatives, executed a search warrant on BNL-Atlanta and uncovered evidence that it had engaged in unauthorized credit transactions with Iraq. The federal authorities initiated the search of BNL-Atlanta based on information provided by two BNL-Atlanta employees. The U.S. Attorney's Office for the Northern District of Georgia created and led an investigative task force (BNL Task Force), which consisted of representatives from the FBI, the Federal Reserve, Customs and Border Protection, USDA's OIG, and the Internal Revenue Service. Bank examiners from the Federal Reserve Bank of Atlanta were detailed to the BNL Task Force to contribute their knowledge and experience in banking and regulatory compliance. The BNL Task Force conducted an extensive investigation into the size and scope of BNL-Atlanta's unauthorized transactions and identified $5.5 billion in unauthorized credit activity largely to benefit Iraq.

The investigation revealed that many of the unauthorized transactions were neither recorded on BNL-Atlanta's official books and records nor reported to banking regulators or the parent bank in Rome. The unauthorized activities were concealed by BNL-Atlanta employees through a variety of means, including maintaining a parallel set of secret books and records, utilizing the names of legitimate customers to record loans not authorized by the parent bank, and removing records of unauthorized transactions from the office and moving them between employees' homes and cars. BNL-Atlanta employees also created fake documentation to conceal the transactions from internal and external auditors, as well as bank examiners, and filed false reports with the parent bank in Rome, Banca Nazionale del Lavoro, and with federal and state regulators. These transactions violated BNL-Atlanta's lending limits, which were established by its parent bank.

The purpose of some of BNL-Atlanta's loans to Iraq was to finance the export of U.S. agricultural products through a USDA export guarantee program run by the CCC. The Board participated, along with the Department of the Treasury and other federal agencies, on the NAC, which was an advisory body to the CCC.

The BNL Task Force investigation spanned several years and ultimately resulted in criminal charges and prosecutions of multiple BNL-Atlanta employees, including the manager, Christopher Drogoul, as well as Vice Presidents Paul Von Wedel, Thomas Fiebelkorn, and Therese Barden. The Federal Reserve imposed a consent cease and desist order that required Banca Nazionale del Lavoro to maintain an additional reserve deposit equivalent to a reserve deficiency payment of $5.2 million at the Federal Reserve Bank of Atlanta for 18 months. Congress held multiple hearings related to BNL-Atlanta's activities. The BNL Task Force final report, published in October 1994, reviewed criminal allegations relating to BNL-Atlanta's credit extensions to Iraq and government actions taken in connection with exports to Iraq. The BNL Task Force final report stated, "We did not find evidence that U.S. agencies or officials illegally armed Iraq or that crimes were committed through bartering of CCC commodities for military equipment."

To assess undue political interference with Federal Reserve officials related to Iraq weapons purchases during the 1980s, we searched for evidence of the improper use of the political process or political authority that could have affected the conduct or decision-making of Federal Reserve officials. Specifically, we analyzed (1) the Federal Reserve's supervisory role and actions regarding BNL-Atlanta, (2) whether BNL-Atlanta borrowed any funds from the Federal Reserve Bank of Atlanta through the Federal Reserve's discount window lending program, and (3) the Board's participation on the NAC.

We did not find any evidence of undue political interference with Federal Reserve officials related to Iraq weapons purchases during the 1980s or any indications that the Federal Reserve facilitated any loans to Iraq through BNL-Atlanta for weapons purchases during the 1980s. Also, we did not find any evidence of loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s. Details of our review follow.

Foreign Bank Supervision in the 1980s

Based on the documents we reviewed, during the 1980s the International Banking Act of 1978 (IBA) governed the supervisory responsibilities for FBOs, such as Banca Nazionale del Lavoro. The IBA granted primary examination authority for FBOs' U.S. branches and agencies to the responsible licensing authorities (the state or the Office of the Comptroller of the Currency) and provided the Federal Reserve with umbrella supervisory authority. This umbrella supervisory authority included residual examination authority, but emphasized that the Federal Reserve was to use, to the extent possible, the examination reports of the primary examination authorities.

In accordance with the IBA, the Board developed a supervisory program in which each FBO with U.S. operations was assigned to a responsible Federal Reserve Bank. The Federal Reserve Bank of New York was identified as the responsible Federal Reserve Bank for the U.S. operations of Banca Nazionale del Lavoro. This responsibility involved evaluating the FBO's condition and strength by analyzing reports on its financial condition, periodically contacting the parent bank's managers and the home country banking authorities, and reviewing examination reports by the U.S. office's primary regulators. The Federal Reserve Bank of Atlanta assisted the Federal Reserve Bank of New York by ensuring that all offices of Banca Nazionale del Lavoro in the southeast region were examined on a timely basis and by providing copies of the examination reports to the Federal Reserve Bank of New York after each examination was completed.

BNL-Atlanta Supervision and Examinations

Based on our review of State of Georgia and Federal Reserve examination reports from 1986 to 1990 and BNL Task Force reports, interviews with State of Georgia bank examiners who participated in examinations of BNL-Atlanta, and discussions with Federal Reserve bank examiners, we did not identify any evidence of any undue political interference with Federal Reserve officials in the examination and supervision of BNL-Atlanta. Consistent with the regulatory structure described above, the State of Georgia was the primary examination authority for BNL-Atlanta. The State of Georgia conducted annual examinations of BNL-Atlanta with limited participation by the Federal Reserve Bank of Atlanta. The Federal Reserve Bank of Atlanta's participation was generally limited to a review of compliance with federal laws and regulations, such as ensuring consistency between the quarterly financial reports submitted by BNL-Atlanta to banking regulators and BNL-Atlanta's official books and records.

Prior to the FBI's execution of the search warrant on BNL-Atlanta in August 1989, the State of Georgia conducted the bank examinations of BNL-Atlanta and determined its overall safety and soundness rating, while Federal Reserve Bank of Atlanta examiners provided assistance as requested throughout the examination process.[3] From 1986 through January 1989, the State of Georgia assigned BNL-Atlanta overall ratings of 1, indicating that it was in satisfactory condition and that no violations of laws or regulations were identified during the examinations. After the search in August 1989, when the unauthorized lending activities were uncovered, the Federal Reserve performed independent examinations of BNL-Atlanta and assigned overall ratings of 5 (significant concern). Our review of examination reports from 1986 through 1990 did not identify any unusual examination procedures, and we noted that the BNL Task Force investigation of BNL-Atlanta's activities also did not identify any unusual examination practices.

We interviewed State of Georgia and Federal Reserve examination officials who participated in examinations of BNL-Atlanta and did not find any evidence of undue political interference regarding their supervision and examinations of BNL-Atlanta. The State of Georgia examination officials stated that they did not experience any undue political interference with their duties and did not recall any unusual practices in the examinations of BNL-Atlanta. Similarly, Federal Reserve examination officials did not report any unusual activity or undue political interference regarding the supervision of BNL-Atlanta. During the time that BNL-Atlanta conducted the unauthorized transactions, it was also subject to internal and external audits. According to a BNL Task Force report, none of the audits or examinations led anyone to suspect the unauthorized, off-book activities. The BNL Task Force investigation, as well as the officials from the Federal Reserve and the State of Georgia who we interviewed, indicated that it was unlikely that BNL-Atlanta's unauthorized activity would have been detected through audits or

[3] The examination procedures focused on safety and soundness by evaluating management and supervision, asset quality and credit administration, liquidity and funds management, earnings, and trading activities, to determine an overall rating. The overall rating was expressed on a scale from 1 to 5, with 1 being the highest rating (indicating minimal concern) and 5 being the lowest rating (indicating significant concern).

bank examinations due to the extent of fraudulent documentation and false statements by BNL-Atlanta employees, as well as collusion by a number of BNL-Atlanta employees.

Following the events at BNL-Atlanta, the Federal Reserve recommended legislation to respond to the perceived need for more federal oversight resulting from misconduct by a few foreign banks operating in the United States. Congress passed the Foreign Bank Supervision Enhancement Act of December 1991, which established minimum standards for foreign bank entry and expansion into the United States and gave the Federal Reserve enhanced supervisory and regulatory authority over foreign banks operating in the United States.

The Federal Reserve's Discount Window and BNL-Atlanta

In addition to analyzing the Federal Reserve's supervisory role and actions regarding BNL-Atlanta, we also examined the Federal Reserve's discount window lending program for any evidence that it was used to facilitate BNL-Atlanta's loans. We did not identify any evidence that funding was provided to BNL-Atlanta. The Board does not engage in lending or providing any direct funds to commercial banks. The Federal Reserve Banks, the operating arm of the Federal Reserve System, have the authority to extend loans through the discount window to member banks in their districts. The discount window lending program serves as a contingency source of liquidity for eligible banks by providing temporary funding, generally when banks are experiencing short-term liquidity pressures. The loans are generally provided on an overnight basis and must be secured by collateral that is approved by the lending Federal Reserve Bank.

The IBA amended the Federal Reserve Act to provide the U.S. operations of FBOs that maintained reserves in the United States access to their district Federal Reserve Bank's discount window lending program on the same terms as access was provided to domestic depository institutions. To be eligible, offices of FBOs, such as BNL-Atlanta, had to meet requirements similar to those required of domestic depository institutions, including reserve requirements. We discussed BNL-Atlanta's discount window activity with Federal Reserve Bank of Atlanta staff responsible for the operations and reviewed related congressional testimony by Federal Reserve officials. We found no evidence that BNL-Atlanta requested or received any loans through the Federal Reserve Bank of Atlanta's discount window.

BNL-Atlanta's Participation in the CCC and the Board's Participation on the NAC

To finance some of its loans to Iraq, BNL-Atlanta participated in an export guarantee program run by the CCC. During the 1980s, the CCC was a federal corporation within the USDA that promoted the export of U.S. agricultural commodities by providing repayment guarantees to U.S. banks, which financed the exported commodities on behalf of the foreign importer's bank. The CCC export guarantee program was used primarily by developing countries, such as Iraq, where credit was necessary to increase or maintain U.S. export levels and private banks were less willing to provide financing without such a repayment guarantee. As the USDA was responsible for the operations and oversight of the CCC, the Federal Reserve did not have any direct involvement or decision-making authority over the CCC export guarantee program. The Board participated, along with the Department of the Treasury and other federal agencies, on the NAC, which was an advisory body to the CCC.

Some of BNL-Atlanta's unauthorized credit arrangements with Iraq were financed through the CCC export guarantee program. BNL-Atlanta's parent bank in Rome determined BNL-Atlanta's credit policies and limited its individual authority over lines of credit, including CCC-guaranteed loans, to less than $2.5 million. The BNL Task Force reported, however, that BNL-Atlanta entered into approximately $1.89 billion in concealed credit arrangements with Iraq to purchase U.S. agricultural commodities through the CCC.

Following the discovery of BNL-Atlanta's unauthorized transactions with Iraq, members of Congress, as well as various newspaper articles, questioned Iraq's use of the funds, including allegations of falsified CCC transactions and possible weapons purchases. According to the BNL Task Force final report, several of these allegations grew out of reports that Iraq may have acquired military equipment by bartering agricultural commodities that it obtained through the CCC export guarantee program. The BNL Task Force final report concluded that there was no evidence that U.S. agencies, or their officials, illegally armed Iraq or that crimes had been committed through the bartering of CCC agricultural commodities in exchange for military equipment. In addition, the USDA conducted an administrative review of the CCC export guarantee program for Iraq that focused on four operational problem areas identified by the USDA, none of which involved the Federal Reserve.

Congress created the NAC as an advisory group and assigned it the responsibility of evaluating policies and practices of government agencies that made loans or issued guarantees as part of foreign lending programs. The NAC advised the USDA on its agricultural export guarantee programs, such as the CCC, with various countries, including Iraq. However, the NAC itself did not directly make any loans or issue guarantees. The NAC membership consisted of the Board; the Departments of the Treasury, State, and Commerce; the U.S. Trade Representative; the U.S. Export-Import Bank; and the U.S. International Development Cooperation Agency.[4] While the NAC's advisory decisions were not binding, the USDA generally obtained NAC approval before issuing credit guarantees. According to congressional testimony by a Board governor, the Board's principal contribution to the NAC was sharing its expertise with the other members and objectively assessing the financial and economic soundness of proposals brought before the NAC.

The documentation we reviewed showed that the Board repeatedly raised concerns about Iraq's creditworthiness and the amount of proposed CCC guarantees for Iraq during NAC deliberations. For instance, in August 1988, the Board, along with the Department of the Treasury, objected to the USDA's proposal for $1.1 billion in CCC guarantees to Iraq for fiscal year 1989 because it felt the level was too high given Iraq's creditworthiness. Similarly, in fall 1989, the Board again expressed concerns regarding the extension of $1.2 billion in CCC guarantees to Iraq for fiscal year 1990. While a majority of NAC members supported the fiscal year 1990 proposal, the Board was concerned about Iraq's creditworthiness and the increased amount of the proposal. The unfolding BNL-Atlanta matter also reinforced the Board's reservations and opposition to additional CCC guarantees to Iraq for fiscal year 1990. Previously, the Board had opposed increasing CCC guarantees to Iraq in January 1987 and supported limiting the amount of CCC

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[4] Refer to footnote 1 for additional NAC membership information.

guarantees to Iraq for fiscal years 1986 and 1987. Our review of internal documents and external reports, and interviews with Federal Reserve officials familiar with the NAC, did not identify any evidence of undue political interference with Federal Reserve officials related to the Board's participation on the NAC. In addition, we did not find any indications that the Board used its role on the NAC to facilitate BNL-Atlanta's unauthorized transactions with Iraq.

Overall Conclusion

We did not find any evidence of undue political interference with Federal Reserve officials related to the 1972 Watergate burglary or Iraq weapons purchases during the 1980s. Specifically, regarding the first Watergate allegation, we did not find any evidence of undue political interference with or improper actions by Federal Reserve officials related to the cash found on the Watergate burglars. Our office also did not find any evidence of undue political interference with Federal Reserve officials or inaccurate responses by Board officials regarding the second Watergate allegation (i.e., that the Federal Reserve "stonewalled" congressional members and staff about the source of the cash found on the burglars). The documentation we reviewed indicated that the Board's decision not to provide information requested by congressional members and staff was consistent with the U.S. Attorney's Office advising the Board to not disclose the information because such disclosure may impede the investigation and jeopardize the subsequent prosecution. Finally, with regard to the Iraq allegation, we did not find any evidence of undue political interference with Federal Reserve officials or any indications that the Federal Reserve facilitated a $5.5 billion loan to Iraq for weapons purchases during the 1980s. We also did not find evidence of any loans between the Federal Reserve and Saddam Hussein or Iraq during the 1980s.

Analysis of Comments

We provided a draft of our report to the Board's General Counsel for review and comment. In his response, the General Counsel stated that our report confirmed past statements by Federal Reserve officials in relation to these incidents and indicated his appreciation for the thoroughness of our review. His full response is included as appendix 1.

Appendixes

Appendix 1 – Management's Comments

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

SCOTT G. ALVAREZ
GENERAL COUNSEL

March 29, 2012

Mark Bialek, Inspector General
Board of Governors of the Federal Reserve System
20th & C Streets, N.W.
Washington, D.C. 20551

Dear Mr. Bialek:

This is in response to your request for our comment on the draft report titled "Inquiry into Allegations of Undue Political Interference with Federal Reserve Officials Related to the 1972 Watergate Burglary and Iraq Weapons Purchases during the 1980s". Your report confirms past statements by Federal Reserve officials that no Federal Reserve official was subjected to undue political influence or acted improperly in relation to these incidents. I am particularly grateful for the thoroughness of the investigation by the staff of the Office of the Inspector General and for the detailed and complete report. We appreciate the opportunity to review the draft and have no comments to offer.

Sincerely,

Scott G. Alvarez