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The Federal Reserve's Balance Sheet: An Update

Remarks by

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at the

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on

Key Developments in Monetary Economics

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To fight a recession, the standard prescription for a central bank is to lower its target short-term interest rate, thereby easing financial conditions and supporting economic growth. In the current downturn, however, the Federal Reserve has faced two historically unusual constraints on policy. First, the financial crisis, by increasing credit risk spreads and inhibiting normal flows of financing and credit extension, has likely reduced the degree of monetary accommodation associated with any given level of the federal funds rate target, perhaps significantly. Second, since December, the targeted funds rate has been effectively at its zero lower bound (more precisely, in a range between 0 and 25 basis points), eliminating the possibility of further stimulating the economy through cuts in the target rate. To provide additional support to the economy despite these limits on traditional monetary policy, the Federal Open Market Committee (FOMC) and the Board of Governors have taken a number of actions and initiated a series of new programs that have increased the size and changed the composition of the Federal Reserve's balance sheet.

I thought it would be useful this evening to review for you the most important elements of the Federal Reserve's balance sheet, as well as some aspects of their evolution over time. As you'll see, doing so provides a convenient means of explaining the steps the Federal Reserve has taken, beyond conventional interest rate reductions, to mitigate the financial crisis and the recession, as well as how those actions will be reversed as the economy recovers. I laid out some of these points in April at a conference

sponsored by the Federal Reserve Bank of Richmond, but a lot has happened in the intervening period and so an update seems timely.[1]

For those of you who might be interested in learning more about the Federal Reserve's policy strategy, by the way, an excellent source of information is a feature of the Board's website titled "Credit and Liquidity Programs and the Balance Sheet."[2] This source provides extensive and regularly updated information on our programs and goes well beyond the basic balance sheet data that we publish every week.[3]

To get started, slide 1 provides a bird's eye view of the Federal Reserve's balance sheet as of September 30, the quarter end, with the corresponding data from just before the crisis for comparison. As you can see, the assets held by the Federal Reserve currently total about $2.1 trillion, up significantly from about $870 billion before the crisis. The slide shows the principal categories of assets we hold, grouped (as I will explain) so as to correspond to the various types of initiatives we've taken to address the crisis. The liability side of the balance sheet, also summarized in slide 1, primarily consists of currency (Federal Reserve notes) and bank reserve balances (funds held in accounts at the Federal Reserve by commercial banks and other depository institutions). Later in my remarks, I will discuss the relationship between Federal Reserve liabilities and broader measures of the money supply. I will also discuss ways we can manage the link between the size of the Federal Reserve's balance sheet and the broader money

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[1] Ben S. Bernanke (2009), "The Federal Reserve's Balance Sheet," speech delivered at "Looking Forward: Rebuilding the Credit Markets." the 2009 Credit Markets Symposium sponsored by the Federal Reserve Bank of Richmond, held in Charlotte, N.C., April 2-3, www.federalreserve.gov/newsevents/speech/bernanke20090403a.htm.

[2] See "Credit and Liquidity Programs and the Balance Sheet" available at www.federalreserve.gov/monetarypolicy/bst_reportsresources.htm.

[3] The Federal Reserve publishes its balance sheet each week, typically around 4:30 p.m. Thursday. The balance sheet is included in the Federal Reserve's H.4.1 Statistical Release, "Factors Affecting Reserve Balances of Depository Institutions and Condition Statement of Federal Reserve Banks," available at www.federalreserve.gov/releases/h41.

supply during the transition back to a more familiar framework for monetary policy. Our capital, the difference between assets and liabilities, is about $50 billion.

The Asset Side of the Federal Reserve's Balance Sheet

Let's now look at the balance sheet in more detail, beginning with the asset side. For decades, the Federal Reserve's assets consisted almost exclusively of Treasury securities. Since late 2007, however, the share of our assets made up of Treasury securities has declined, while our holdings of other financial assets have expanded dramatically. As slide 1 shows, putting aside the miscellaneous "other assets" category, which includes such diverse items as foreign exchange reserves and the buildings owned by the Federal Reserve System, the assets on the Federal Reserve's balance sheet can be usefully grouped into four categories:

(1) short-term lending programs that provide backstop liquidity to financial institutions such as banks, broker-dealers, and money market mutual funds;

(2) targeted lending programs, which include loans to nonfinancial borrowers and are intended to address dysfunctions in key credit markets;

(3) holdings of marketable securities, including Treasury notes and bonds, the debt of government-sponsored enterprises (GSEs) (agency debt), and agency-guaranteed mortgage-backed securities (MBS); and

(4) emergency lending intended to avert the disorderly collapse of systemically critical financial institutions. I will say a bit more about each of these in turn.

Short-Term Lending Programs for Financial Institutions

The breakdown of the first category of assets--short-term lending programs for financial institutions--is shown on slide 2. As you can see, these assets currently total

about $264 billion, which is about 12 percent of the assets on the Federal Reserve's balance sheet. This category of assets consists mainly of loans made directly or indirectly to sound financial institutions. Such loans are fully secured by collateral and, in almost all cases, by recourse to the borrowing institution, and are for maturities no greater than 90 days. Thus, they involve very little credit risk; the Federal Reserve has suffered no losses on any of these loans.

From its beginning, the Federal Reserve, through its discount window, has provided credit to depository institutions to meet unexpected liquidity needs, usually in the form of overnight loans. The provision of short-term liquidity is, of course, a longstanding function of central banks, and--as we know from Bagehot and earlier authors--a principal tool for arresting financial panics.[4] Indeed, when short-term funding markets deteriorated abruptly in August 2007, the Federal Reserve's first response was to try to increase the liquidity available to the market by lowering the rate charged for discount window loans and by making it easier for banks to borrow at term. However, as in some past episodes of financial distress, banks were reluctant to rely on discount window credit, frustrating the Federal Reserve's efforts to enhance liquidity. The banks' concern was that their recourse to the discount window, if it somehow became known, would lead market participants to infer weakness--the so-called stigma problem. To address this issue, in late 2007, the Federal Reserve established the Term Auction Facility (TAF), which, as the name implies, provides fixed quantities of term credit to depository

[4] See Brian F. Madigan (2009), "Bagehot's Dictum in Practice: Formulating and Implementing Policies to Combat the Financial Crisis," speech delivered at "Financial Stability and Macroeconomic Policy," a symposium sponsored by the Federal Reserve Bank of Kansas City, held in Jackson Hole, Wyo., August 20-22, www.federalreserve.gov/newsevents/speech/madigan20090821a.htm; and Ben S. Bernanke (2008), "Liquidity Provision by the Federal Reserve," speech delivered (via satellite) at the Financial Markets Conference sponsored by the Federal Reserve Bank of Atlanta, held in Sea Island, Ga., May 13, www.federalreserve.gov/newsevents/speech/bernanke20080513.htm.

institutions through an auction mechanism. The introduction of this facility seems largely to have solved the stigma problem, partly because the sizable number of borrowers provides a greater assurance of anonymity, and possibly also because the three-day period between the auction and auction settlement suggests that the facility's users are not using it to meet acute funding needs on a particular day. As slide 2 shows, as of September 30, conventional discount window loans totaled $29 billion, and funds auctioned through the TAF totaled $178 billion. These programs, along with similar lending by other major central banks, appear to have helped stabilize the financial system here and abroad by ensuring depository institutions access to ample liquidity. In particular, increases in Federal Reserve loans to banks have been associated with substantial improvements in interbank lending markets, as reflected, for example, in the sharp declines in the spread between the London interbank offered rate, or Libor, and measures of expected policy rates.

Like depository institutions in the United States, foreign banks with large dollar-funding needs have also experienced powerful liquidity pressures over the course of the crisis. This unmet demand from foreign institutions for dollars was spilling over into U.S. funding markets, including the federal funds market, leading to increased volatility and liquidity concerns. As part of its program to stabilize short-term dollar-funding markets, the Federal Reserve worked with foreign central banks--14 in all--to establish what are known as reciprocal currency arrangements, or liquidity swap lines. In exchange for foreign currency, the Federal Reserve provides dollars to foreign central banks that they, in turn, lend to financial institutions in their jurisdictions. This lending by foreign central banks has been helpful in reducing spreads and volatility in a number

of dollar-funding markets and in other closely related markets, like the foreign exchange swap market. Once again, the Federal Reserve's credit risk is minimal, as the foreign central bank is the Federal Reserve's counterparty and is responsible for repayment, rather than the institutions that ultimately receive the funds; in addition, as I noted, the Federal Reserve receives foreign currency from its central bank partner of equal value to the dollars swapped. Because the loan to the foreign central bank, as well as the repayment of principal and interest, are set in advance in dollar terms, the Federal Reserve also bears no exchange rate risk in these transactions. Slide 2 shows the current value of outstanding swap lines at $57 billion, down from $554 billion at the end of last year, reflecting the marked improvement in dollar-funding markets across the globe.

In March 2008, following a sharp deterioration in funding conditions and the near failure of the investment bank Bear Stearns, the Federal Reserve opened up its short-term lending facilities to primary dealers.[5] Discount window lending and swap lines are part of the Federal Reserve's standard toolkit and are recognized in the Federal Reserve Act with provisions specifically identifying and authorizing each practice. However, the extension of credit to primary dealers is not authorized by the act in routine circumstances. To make these loans, which we judged to be necessary for the stability of the financial system and of the economy, the Board of Governors invoked general emergency lending authority provided by section 13(3) of the act, which allows the Federal Reserve to make secured loans under "unusual and exigent" circumstances to any individual, partnership, or corporation. Using this authority, the Federal Reserve made short-term collateralized loans available to primary dealers through an analogue to the

[5] Primary dealers are broker-dealers that trade in U.S. government securities with the Federal Reserve Bank of New York.

discount window called the Primary Dealer Credit Facility (PDCF). In serving as a lender of last resort to this important class of financial institutions, the Federal Reserve supported broader market and systemic stability. Reflecting a gradual improvement in financial markets, outstanding PDCF credit dropped to zero this past spring. For similar reasons, the Federal Reserve also invoked the 13(3) authority to provide liquidity to another type of financial institution, money market mutual funds. The money fund industry suffered a significant run in September 2008 after a prominent fund "broke the buck"--that is, was unable to maintain a net asset value of $1 per share. Together with an insurance program offered by the Treasury, the Federal Reserve's lender-of-last-resort activity helped to end the run and stabilize the money funds. The final row of slide 2 shows that credit outstanding under the Federal Reserve programs aimed at stopping the run on money funds has also dropped essentially to zero.[6]

The unstinting provision of liquidity by the central bank is crucial for arresting a financial panic. By the same token, the pricing and terms of central bank lending facilities should discourage usage and encourage firms to return to the private markets when the panic subsides. Slide 2 shows that this has been the case. Short-term lending to financial institutions was zero in June 2007, just before the crisis began, and exceeded $1.1 trillion at the end of last year. Currently, as I mentioned, this category has fallen to about $264 billion, a decline of more than 75 percent since the turn of the year. We expect this trend to continue as markets improve.

[6] The programs for money market funds are the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, or AMLF, and the Money Market Investor Funding Facility, or MMIFF.

Targeted Lending to Address Credit Market Dysfunction

The second category of assets on the Federal Reserve's balance sheet, shown on slide 3, consists of targeted lending programs aimed at improving the functioning of certain key credit markets, thereby providing critical support to the economy. Unlike the first category of assets, some of these loans are to nonfinancial borrowers. As the slide shows, this category comprises the Commercial Paper Funding Facility (CPFF) and the Term Asset-Backed Securities Loan Facility (TALF). The current amount of credit outstanding under these programs is about $84 billion, or 4 percent of the assets held by the Federal Reserve.

The commercial paper market is an important source of short-term funding for both financial and nonfinancial firms in the United States. In September 2008, the collapse of the investment bank Lehman Brothers set off a chain reaction: The money fund that broke the buck, to which I just alluded, did so because of its losses on Lehman Brothers commercial paper. Because money market funds are major investors in commercial paper, the run on the money funds that ensued also severely disrupted the commercial paper market. During this period, commercial paper rates spiked, even for the highest-quality firms. Moreover, most firms were unable to borrow for terms longer than a few days, exposing both the borrowing firms and the lenders to significant rollover risk. The Federal Reserve's CPFF addressed this risk by offering to lend at a term of three months, at a rate above normal market rates plus upfront fees, to high-quality commercial paper issuers. This program appears to have been quite successful. Since the CPFF was created, commercial paper spreads have returned to near-normal levels, and--

as anticipated--borrowings from the CPFF have declined sharply, from $334 billion at the turn of the year to less than $50 billion today.

Before the crisis, securitization markets were an important conduit of credit to the household and business sectors; some have referred to these markets as the "shadow banking system." Securitization markets (other than those for mortgages guaranteed by the government) were virtually shut down in the crisis, eliminating an important source of credit.[7] To address this concern, the Federal Reserve, in conjunction with the Treasury, launched the TALF. Under the TALF, eligible investors may borrow to finance purchases of the AAA-rated tranches of certain classes of asset-backed securities. The program originally focused on credit for households and small businesses, including auto loans, credit card loans, student loans, and loans guaranteed by the Small Business Administration. More recently, we have added commercial mortgage-backed securities to the program, with the goal of mitigating a severe refinancing problem in that sector.

The TALF has had some success in restarting securitization markets. Rate spreads for asset-backed securities have declined substantially, and we are seeing some market activity that does not use the facility. Like our other programs, the TALF carries little credit risk for the Federal Reserve, because we lend investors less than the value of the collateral and because capital from the Treasury provides additional loss-absorption capacity. Unlike the other programs, TALF credit outstanding has increased over time, as the loans made under this program are for terms ranging from three to five years.

[7] The shutdown of these markets was traced, in part, to broad concerns about the risks of structured products, particularly those backed by nonprime mortgages. In addition, these difficulties were linked to the evaporation of liquidity from short-term credit markets. In the years leading up to the financial crisis, market participants increasingly used short-term debt to fund the purchase of highly rated tranches of securitizations, in some cases with little or no liquidity support. As a result, when short-term credit markets froze, the demand for highly rated tranches of securitizations dropped.

Relative to the Federal Reserve's short-term lending to financial institutions, the CPFF and the TALF are rather unconventional programs for a central bank. I believe they are justified by the extraordinary circumstances of the past year and by the need for the central bank's crisis response to reflect the evolution of financial markets. Nonbank sources of credit, such as the commercial paper market and the securitization markets, are critical to the U.S. economy, especially compared with the more bank-centric economies of many foreign countries. By backstopping these markets, the Federal Reserve has helped normalize credit flows for the benefit of the economy.

Purchases of Longer-Term, Marketable Securities

The third major category of assets on the Federal Reserve's balance sheet is holdings of high-quality, marketable securities--specifically, Treasury securities, agency debt, and agency-backed MBS. As shown by slide 4, these holdings currently total about $1.6 trillion, or about 75 percent of Federal Reserve assets. By way of comparison, slide 4 also shows that, prior to the crisis, the Federal Reserve held $791 billion in securities, which was about 90 percent of its assets, and that all of these securities were Treasury obligations.

Even as other categories of assets shrink, Federal Reserve holdings of longer-term securities are set to continue to rise in the near term and will increasingly dominate the asset side of the balance sheet. As slide 4 shows, our holdings of securities declined from the period before the crisis to the beginning of this year. The Federal Reserve announced in November 2008 that it would begin to purchase agency debt and agency MBS; then in March, it announced plans to increase such purchases to as much as $1.25 trillion in agency-backed MBS and $200 billion in agency debt, and also announced plans to buy

up to $300 billion in Treasury securities.[8] We recently indicated that we expect to purchase the full $1.25 trillion of agency-backed MBS announced in March.[9] The Treasury purchase program is being completed this month, while the purchases of agency securities will be executed by the end of the first quarter of 2010. Note, incidentally, that the Federal Reserve's purchases of Treasury securities have served only to bring its holdings of U.S. Treasury debt back to roughly the level of before the crisis. The principal goals of our recent security purchases are to lower the cost and improve the availability of credit for households and businesses. As best we can tell, the programs appear to be having their intended effect. Most notably, 30-year fixed mortgage rates, which responded very little to our cuts in the target federal funds rate, have declined about 1-1/2 percentage points since we first announced MBS purchases in November, helping to support the housing market.

Support for Specific Institutions

In addition to the programs I have discussed, the Federal Reserve has provided financing directly to specific systemically important institutions. In particular, with the full support of the Treasury, we used our emergency lending powers to facilitate the acquisition of Bear Stearns by JPMorgan Chase & Co. and also to prevent the imminent default of the insurance company AIG. Slide 5 summarizes the amount of credit outstanding from these episodes.

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[8] See Board of Governors of the Federal Reserve System (2008), "Federal Reserve Announces It Will Initiate a Program to Purchase the Direct Obligations of Housing-Related Government-Sponsored Enterprises and Mortgage-Backed Securities Backed by Fannie Mae, Freddie Mac, and Ginnie Mae," press release, November 25, www.federalreserve.gov/newsevents/press/monetary/20081125b.htm; and Board of Governors of the Federal Reserve System (2009), "FOMC Statement," press release, March 18, www.federalreserve.gov/newsevents/press/monetary/20090318a.htm.

[9] Board of Governors of the Federal Reserve System (2009), "FOMC Statement," press release, September 23, www.federalreserve.gov/newsevents/press/monetary/20090923a.htm.

From a credit perspective, these emergency loans obviously carry more risk than traditional provisions of central bank liquidity. Two observations on this point are worth making: First, these loans amount to less than 5 percent of the Federal Reserve's balance sheet. Thus, Federal Reserve loans that are collateralized by riskier securities are quite small compared with our holdings of assets with little or no credit risk. Second, and more important, these financial risks were the result of actions taken to avert what likely would have been a substantial further intensification of the financial crisis, with potentially dire economic consequences.

All that said, we undertook these operations with great discomfort and only because the United States has no workable legal framework for winding down systemically critical financial institutions in a way that would allow firms to fail and their creditors to lose money without inflicting massive damage on the financial system. The Administration and other regulatory agencies have joined the Federal Reserve in calling on the Congress to develop a special resolution regime for systemically critical nonbank financial institutions, analogous to one already in place for banks, that could be invoked when the impending failure of such institutions threatens financial stability. The rules governing such a regime should spell out as precisely as possible the role that the Congress expects the Federal Reserve to play in such resolutions.

The Liability Side of the Federal Reserve's Balance Sheet

Having reviewed the main categories of assets on the Federal Reserve's balance sheet, let me touch briefly on the liability side (slide 6). The two main components of our liabilities are Federal Reserve notes (that is, paper currency) and reserves held at the

Federal Reserve by depository institutions. In addition, as the government's fiscal agent, the Federal Reserve holds Treasury deposits.

The amount of currency in circulation is determined by the public's demand. The "public" here includes non-U.S. residents, as, by some estimates, more than one-half of U.S. currency by value is held outside the country. Banks are required to deposit with the Federal Reserve a certain quantity of reserves, which depends on the amount of customer deposits that the banks hold.[10] Reserves exceeding the required amounts are called excess reserves. As you can see from slide 6, the large majority of bank reserves are currently excess reserves.

Effectively, the Federal Reserve funds its lending and securities purchases primarily through the creation of bank reserves. As you can see, the quantity of bank reserves held at the Federal Reserve has risen dramatically as the Federal Reserve's balance sheet has expanded, and reserves are likely to continue to grow as the Federal Reserve purchases additional agency-backed securities. Currency and bank reserves together are known as the monetary base; as reserves have grown, therefore, the monetary base has grown as well. However, because banks are reluctant to lend in current economic and financial circumstances, growth in broader measures of money has not picked up by anything remotely like the growth in the base. For example, M2, which comprises currency, checking accounts, savings deposits, small time deposits, and retail money fund shares, is estimated to have been roughly flat over the past six months.

Large increases in bank reserves brought about through central bank loans or purchases of securities are a characteristic feature of the unconventional policy approach known as quantitative easing. The idea behind quantitative easing is to provide banks

[10] Reserves can also be held in the form of vault cash.

with substantial excess liquidity in the hope that they will choose to use some part of that liquidity to make loans or buy other assets. Such purchases should in principle both raise asset prices and increase the growth of broad measures of money, which may in turn induce households and businesses to buy nonmoney assets or to spend more on goods and services. In a quantitative-easing regime, the quantity of central bank liabilities (or the quantity of bank reserves, which should vary closely with total liabilities) is sufficient to describe the degree of policy accommodation.

Although the Federal Reserve's approach also entails substantial increases in bank liquidity, it is motivated less by the desire to increase the liabilities of the Federal Reserve than by the need to address dysfunction in specific credit markets through the types of programs I have discussed. For lack of a better term, I have called this approach "credit easing."[11] In a credit-easing regime, policies are tied more closely to the asset side of the balance sheet than the liability side, and the effectiveness of policy support is measured by indicators of market functioning, such as interest rate spreads, volatility, and market liquidity. In particular, the Federal Reserve has not attempted to achieve a smooth growth path for the size of its balance sheet, a common feature of the quantitative-easing approach.

[11] See Ben S. Bernanke (2009), "The Crisis and the Policy Response," speech delivered at the Stamp Lecture, London School of Economics, London, England, January 13, www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm; and Ben S. Bernanke (2009), "Federal Reserve Policies to Ease Credit and Their Implications for the Fed's Balance Sheet," speech delivered at the National Press Club Luncheon, National Press Club, Washington, D.C., February 18, www.federalreserve.gov/newsevents/speech/bernanke20090218a.htm.

Exit Strategy

My colleagues at the Federal Reserve and I believe that accommodative policies will likely be warranted for an extended period. At some point, however, as economic recovery takes hold, we will need to tighten monetary policy to prevent the emergence of an inflation problem down the road. Looking at the Federal Reserve's balance sheet is useful, once again, in helping to understand key elements of the Federal Reserve's exit strategy from its current policies (slide 7).

As we just saw in slide 6, banks currently hold large amounts of excess reserves at the Federal Reserve. As the economy recovers, banks could find it profitable to be more aggressive in lending out their reserves, which in turn would produce faster growth in broader money and credit measures and, ultimately, lead to inflation pressures. As such, when the time comes to tighten monetary policy, we must either substantially reduce excess reserve balances or, if they remain, neutralize their potential effects on broader measures of money and credit and thus on aggregate demand and inflation.

To some extent, excess reserves will automatically contract as improving financial conditions lead to reduced use of our special lending facilities and, ultimately, to their closure. Indeed, as I have already noted, the amount of credit outstanding in the first two categories of assets (short-term lending to financial institutions and targeted lending programs) has already declined substantially, from about $1.5 trillion at the beginning of the year to about $350 billion. In addition, reserves could be reduced by about $100 billion to $200 billion each year over the next few years as securities held by the Federal Reserve mature or are prepaid.

However, even if our balance sheet stays large for a while, we have two broad means of tightening monetary policy at the appropriate time--paying interest on reserve balances and taking various actions that reduce the stock of reserves. In principle, we could use either of these approaches alone; however, to ensure effectiveness, we likely would use both in combination.

The Congress granted us authority last fall to pay interest on banks' balances at the Federal Reserve. Currently, we pay banks an interest rate of 1/4 percent. When the time comes to tighten policy, we can raise the rate paid on reserve balances as we increase our target for the federal funds rate. In general, banks will not lend funds in the money market at an interest rate lower than the rate they can earn risk-free at the Federal Reserve. Moreover, they should compete to borrow any funds that are offered in private markets at rates below the interest rate on reserve balances because, by so doing, they can earn a spread without risk. Thus, the interest rate that the Federal Reserve pays should tend to put a floor under short-term market rates. Raising the rate paid on reserve balances also discourages excessive growth in money or credit, because banks will not want to lend out their reserves at rates below what they can earn at the Fed. Considerable international experience suggests that paying interest on reserves is an effective means of managing short-term market rates. For example, the European Central Bank (ECB) allows banks to place excess reserves in an interest-paying deposit facility. Even as the ECB's liquidity operations have substantially increased its balance sheet, the overnight interbank rate has remained at or above the ECB's deposit rate. The Bank of Japan, the Bank of Canada, and several other foreign central banks have also used their ability to pay interest on reserves to maintain a floor under short-term market rates.

Although, in principle, the ability to pay interest on reserves should be sufficient to allow the Federal Reserve to raise interest rates and control money growth, this approach is likely to be more effective if combined with steps to reduce excess reserves. I will mention three options for achieving such an outcome.

First, the Federal Reserve could drain bank reserves and reduce the excess liquidity at other institutions by arranging large-scale reverse repurchase agreements (reverse repos) with financial market participants, including banks, the GSEs, and other institutions. Reverse repos, which are a traditional and well-understood tool of monetary policy implementation, involve the sale by the Federal Reserve of securities from its portfolio with an agreement to buy the securities back at a slightly higher price at a later date. Reverse repos drain reserves as purchasers transfer cash from banks to the Fed. Second, using the authority the Congress gave us to pay interest on banks' balances at the Federal Reserve, we can offer term deposits to banks, roughly analogous to the certificates of deposit that banks offer to their customers. Bank funds held in term deposits at the Federal Reserve would not be available to be supplied to the federal funds market. Third, the Federal Reserve could reduce reserves by selling a portion of its holdings of long-term securities in the open market. Each of these policy options would help to raise short-term interest rates and limit the growth of broad measures of money and credit, thereby tightening monetary policy.

Overall, the Federal Reserve has a wide range of tools for tightening monetary policy when the economic outlook requires us to do so. We will calibrate the timing and pace of any future tightening, together with the mix of tools, to best foster our dual objectives of maximum employment and price stability.

Conclusion

By using our balance sheet, the Federal Reserve has been able to overcome, at least partially, the constraints on policy posed by dysfunctional credit markets and by the zero lower bound on the federal funds rate target. By improving credit market functioning and adding liquidity to the system, our programs have provided critical support to the financial system and the economy. Moreover, we have carried out these programs responsibly, with minimal credit risk and with close attention to the exit strategy. Our activities have resulted in substantial changes to the size and composition of our balance sheet. When the economic outlook has improved sufficiently, we will be prepared to tighten the stance of monetary policy and eventually return our balance sheet to a more normal configuration.

The Federal Reserve's Balance Sheet:

An Update

Slide 1

Federal Reserve Balance Sheet

(Billions of dollars)	9/30/09	6/27/07
Total assets	**2,144**	**869**
Short-term lending programs for financial institutions	264	0
Targeted lending programs	84	0
Securities holdings	1,593	791
Treasury securities	*769*	*791*
GSE-related securities	*824*	*0*
Emergency lending	101	0
Other assets (such as foreign exchange, bank premises)	102	78
Total liabilities	**2,093**	**836**
Federal Reserve notes	874	775
Reserve balances	848	16
Treasury deposits	273	4
Other (such as foreign official deposits)	98	41
Capital	**51**	**33**
Total liabilities and capital	**2,144**	**869**

Assets: Short-Term Lending Programs for Financial Institutions

(Billions of dollars)

	9/30/09	12/31/08	6/27/07
Short-term lending programs for financial institutions	**264**	1,159	0
Discount window	**29**	94	0
Term auction facility	**178**	450	0
Currency swaps	**57**	554	0
Primary dealer credit facility	**0**	37	0
Money market fund facilities	**0**	24	0

Slide 3

Assets: Targeted Lending Programs

(Billions of dollars)

	9/30/09	12/31/08	6/27/07
Targeted lending programs	**84**	334	0
Commercial Paper Funding Facility	**41**	334	0
Term Asset-Backed Securities Loan Facility	**43**	0	0

Slide 4

Assets: Securities Holdings

(Billions of dollars)

	9/30/09	12/31/08	6/27/07
Securities holdings	**1,593**	496	791
Treasury securities	**769**	476	791
GSE-related securities	**824**	20	0

Note:

GSE Government-sponsored enterprise

Slide 5

Assets: Emergency Lending

(Billions of dollars)

	9/30/09	12/31/08	6/27/07
Emergency lending	**101**	113	0
Maiden Lane LLC (Bear Stearns)	**26**	27	0
Maiden Lane II LLC (AIG RMBS holdings)	**15**	20	0
Maiden Lane III LLC (AIG-backed CDOs)	**21**	27	0
Credit to AIG	**39**	39	0

Note:

RMBS Residential mortgage-backed security

CDO Collateralized debt obligation

Slide 6

Liabilities

(Billions of dollars)

	9/30/09	12/31/08	6/27/07
Total liabilities	**2,093**	2,199	836
Federal Reserve notes	**874**	853	775
Reserve balances	**848**	860	16
Required balances	**26**	22	13
Excess balances	**822**	838	3
Treasury deposits	**273**	365	4
Other (such as foreign official deposits)	**98**	121	41

Slide 7

Exit Strategy

- Wind-down of short-term lending
- Interest on reserves
- Reverse repurchase agreements
- Time deposits for depository institutions
- Runoffs and asset sales