Monetary Policy and Economic Developments

Monetary Policy Report of February 2009

Part 1
Overview: Monetary Policy and the Economic Outlook

The U.S. economy weakened markedly in the second half of 2008 as the turmoil in financial markets intensified, credit conditions tightened further, and asset values continued to slump. Conditions in the labor market worsened significantly after early autumn, and nearly all major sectors of the economy registered steep declines in activity late last year. Meanwhile, inflation pressures diminished appreciably as prices of energy and other commodities dropped sharply, the margin of resource slack in the economy widened, and the foreign exchange value of the dollar strengthened.

The second half of 2008 saw an intensification of the financial and economic strains that had initially been triggered by the end of the housing boom in the United States and other countries and the associated problems in mortgage markets. The ensuing turmoil in global credit markets affected asset values, credit conditions, and business and consumer confidence around the world. Over the summer, a weakening U.S. economy and continued financial turbulence led to a broad loss of confidence in the financial sector. In September, the government-sponsored enterprises Fannie Mae and Freddie Mac were placed into conservatorship by their regulator, and Lehman Brothers Holdings filed for bankruptcy. The insurance company American International Group, Inc., or AIG, also came under severe pressure, and the Federal Reserve, with the full support of the Treasury, agreed to provide substantial liquidity to the company. In addition, a number of other financial institutions failed or were acquired by competitors. As a result of the Lehman Brothers bankruptcy, a prominent money market mutual fund suffered capital losses, which prompted investors to withdraw large amounts from such funds. The resulting massive outflows undermined the stability of short-term funding markets, particularly the commercial paper market, upon which corporations rely heavily to meet their short-term borrowing needs. Against this backdrop, investors pulled back broadly from risk-taking in September and October, liquidity in short-term funding markets vanished for a time, and prices plunged across asset classes. Securitization markets, with the exception of those for government-supported mortgages, essentially shut down.

Reflecting in part the adverse developments in financial markets, economic activity dropped sharply in late 2008 and has continued to contract so far in 2009. In the labor market, the pace of job losses quickened considerably be-

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NOTE: Included in this chapter are the text, tables, and selected figures from the Monetary Policy Report submitted to Congress on February 24, 2009, pursuant to section 2B of the Federal Reserve Act. The figures included here have been renumbered, and therefore the figure numbers in this report differ from the figure numbers in the Monetary Policy Report. The complete set of figures is available on the Board's website, at www.federalreserve.gov/boarddocs/hh.

Other materials in this annual report related to the conduct of monetary policy include the minutes of the 2008 meetings of the Federal Open Market Committee (see the "Records" section) and statistical tables 1–4 (at the back of this report).

ginning last autumn, the unemployment rate has risen to its highest level since the early 1990s, and other measures of labor market conditions—for example, the number of persons working part time because full-time jobs are not available—have worsened noticeably. The deteriorating job market, along with the sizable losses of equity and housing wealth and the tightening of credit conditions, has depressed consumer sentiment and spending; these factors have also contributed to the continued steep decline in housing activity. In addition, businesses have instituted widespread cutbacks in capital spending in response to the weakening outlook for sales and production as well as the difficult credit environment. And in contrast to the first half of the year—when robust demand for U.S. exports provided some offset to the softness in domestic demand—exports slumped in the second half as economic activity abroad fell. In all, real gross domestic product (GDP) in the United States declined slightly in the third quarter of 2008 and is currently estimated by the Bureau of Economic Analysis to have dropped at an annual rate of 3¾ percent in the fourth quarter; real GDP seems headed for another considerable decrease in the first quarter of 2009.

The downturn in sales and production, along with steep declines in the prices of energy and other commodities and a strengthening in the exchange value of the dollar, has contributed to a substantial lessening of inflation pressures in the past several months. Indeed, overall inflation, as measured by the price index for personal consumption expenditures, turned negative in the fourth quarter of 2008; over the first three quarters of the year, overall inflation had averaged nearly 4½ percent at an annual rate, largely because of sharp increases in food and energy prices. Core inflation—which excludes the direct effects of movements in food and energy prices—also slowed significantly late last year and entered 2009 at a subdued pace. Mirroring the drop in headline inflation, survey measures of near-term inflation expectations have fallen to very low levels in recent months, while the latest readings on longer-term inflation expectations are similar to those in 2007 and early 2008.

The Federal Reserve has responded forcefully to the crisis since its emergence in the summer of 2007. By the middle of last year, the Federal Open Market Committee (FOMC) had lowered the federal funds rate 325 basis points.[1] And as indications of economic weakness proliferated and the financial turbulence intensified in the second half, the FOMC continued to ease monetary policy aggressively; at its December meeting, the Committee established a target range for the federal funds rate of 0 to ¼ percent and indicated that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for some time.

In addition, the Federal Reserve took a number of measures during the second half of 2008 to shore up financial markets and support the flow of credit to businesses and households. (See the appendix for descriptions of these programs.) In response to intensified stresses in dollar funding markets, the Federal Reserve announced extensions of its Term Auction Facility and significantly expanded its network of liquidity swap lines with foreign central banks. To support the functioning of the commercial paper market in the aftermath of the Lehman Brothers bankruptcy, the Federal Reserve established the Asset-Backed Commercial Paper Money Mar-

1. A list of abbreviations is available at the end of this chapter.

ket Mutual Fund Liquidity Facility in September as well as the Commercial Paper Funding Facility and Money Market Investor Funding Facility in October. In an effort to restart certain securitization markets and support extensions of credit to consumers, the Federal Reserve in November announced the Term Asset-Backed Securities Loan Facility, which is scheduled to begin operation in coming weeks. To support the mortgage and housing markets and the economy more broadly and to encourage better functioning in the market for agency securities, the Federal Reserve announced programs in November to purchase agency-guaranteed mortgage-backed securities and agency debt. These initiatives have resulted in a notable expansion of the Federal Reserve's balance sheet, and the FOMC has indicated that it expects the size of the balance sheet to remain at a high level for some time as a result of open market operations and other measures to support financial markets and to provide additional stimulus to the economy in an environment of very low short-term interest rates.

Other U.S. government entities and foreign governments also implemented a variety of policy measures in response to the intensification of financial strains over the course of the fall and winter. The Treasury announced a temporary guarantee of the share prices of money market mutual funds and, beginning in October, used authority granted under the Emergency Economic Stabilization Act to purchase preferred shares in a large number of depository institutions. That same month, the Federal Deposit Insurance Corporation (FDIC) introduced a Temporary Liquidity Guarantee Program under which it offers guarantees for selected senior unsecured obligations of participating insured depository institutions and many of their parent holding companies as well as for all balances in non-interest-bearing transaction deposit accounts at participating insured depository institutions. In November, Citigroup came under significant financial pressure. In response, the FDIC, the Treasury, and the Federal Reserve provided a package of loans and guarantees to bolster Citigroup's financial condition; a similar package was arranged for Bank of America in January. Since October, governments in many advanced economies have announced support plans for their banking systems. These programs have included large-scale capital injections, expansions of deposit insurance, and guarantees of some forms of bank debt.

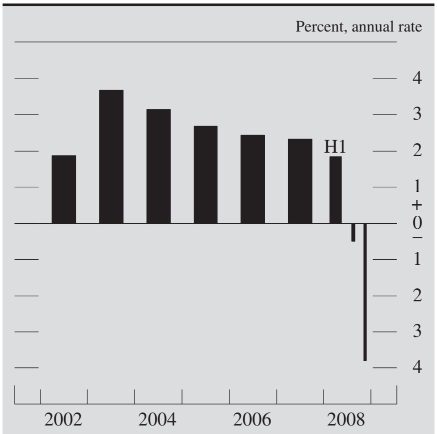
The measures taken by the Federal Reserve, other U.S. government entities, and foreign governments have helped restore a degree of stability to some financial markets. In particular, strains in short-term funding markets have eased noticeably since the fall, some corporate risk spreads have declined modestly, and measures of volatility have generally retreated. Nevertheless, significant stress persists in most markets, and financial institutions remain under considerable pressure; as a result, the flow of credit to households and businesses continues to be impaired.

In conjunction with the January 2009 FOMC meeting, the members of the Board of Governors of the Federal Reserve System and presidents of the Federal Reserve Banks, all of whom participate in FOMC meetings, provided projections for economic growth, unemployment, and inflation; these projections are presented in part 4 of this report. Given the strength of the forces weighing on the economy, FOMC participants viewed the outlook as having weakened significantly in recent months. Participants generally expected economic activity to contract sharply in the near term and then to move onto a path of gradual recovery, bolstered by monetary easing, government efforts to stabilize financial markets, and fiscal stimulus. Participants expected total and core inflation to be lower in 2009 than over the four quarters of 2008, in large measure because of the recent declines in commodity prices and rising slack in resource utilization; inflation was forecast to remain low in 2010 and 2011. Participants generally judged that the degree of uncertainty surrounding the outlook for both economic activity and inflation was greater than historical norms. Most participants viewed the risks to growth as skewed to the downside, and nearly all saw the risks to the inflation outlook as either balanced or tilted to the downside. Participants also reported their assessments of the rates to which macroeconomic variables would be expected to converge over the longer run under appropriate monetary policy and in the absence of further shocks to the economy. The central tendencies of these longer-run projections were 2.5 percent to 2.7 percent for real GDP growth, 4.8 percent to 5.0 percent for the unemployment rate, and 1.7 percent to 2.0 percent for the inflation rate.

Part 2 Recent Financial and Economic Developments

The downturn in economic activity that has been unfolding since late 2007 steepened appreciably in the second half of 2008 as the strains in financial markets intensified. After the financial difficulties experienced by Fannie Mae and Freddie Mac during the summer and the bankruptcy of Lehman Brothers Holdings in mid-September, short-term funding markets were severely disrupted, risk spreads shot up, equity prices plunged, and markets for private asset-backed securities remained largely shut down. As a result, pressures on the already strained balance sheets of financial institutions increased, thereby threatening the viability of some institutions and impinging on the flow of credit to households and businesses. In part reflecting the cascading effects of these developments throughout the wider economy, conditions in the labor market deteriorated markedly. Moreover, industrial production contracted sharply as manufacturers responded aggressively to declines in both domestic and foreign demand. According to the advance estimate from the Bureau of Economic Analysis, real gross domestic product (GDP) fell at an annual rate of 3¾ percent in the fourth quarter, and it seems headed for another sizable decrease in the first quarter of 2009 (figure 1). Meanwhile, inflation pressures have diminished as prices of energy and other commodities have plum-

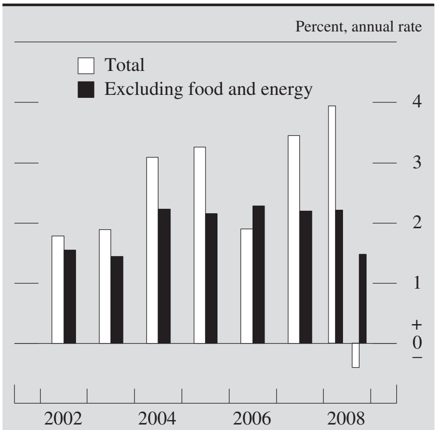
1. Change in Real Gross Domestic Product, 2002–08



Note: Here and in subsequent figures, except as noted, change for a given period is measured to its final quarter from the final quarter of the preceding period.

Source: Department of Commerce, Bureau of Economic Analysis.

2. Change in the Chain-Type Price Index for Personal Consumption Expenditures, 2002–08



SOURCE: Department of Commerce, Bureau of Economic Analysis.

meted, the margin of resource slack has widened, and the foreign exchange value of the dollar has strengthened (figure 2).

In response to the extraordinary financial strains, the Federal Reserve implemented a number of unprecedented policy initiatives to support financial stability and promote economic growth. These initiatives included lowering the target for the federal funds rate to a range of 0 to ¼ percent, beginning direct purchases of agency debt and agency mortgage-backed securities, broadening liquidity programs to financial intermediaries and other central banks, and initiating programs in support of systemically important market segments. Other U.S. government entities also undertook extraordinary initiatives to support the financial sector by injecting capital into the banking system and providing guarantees on selected liabilities of depository institutions. Many foreign central banks and governments took similar steps. Although these actions have helped restore a measure of stability to some markets, financial conditions remain quite stressed, and aggregate credit conditions continue to be impaired as a result.

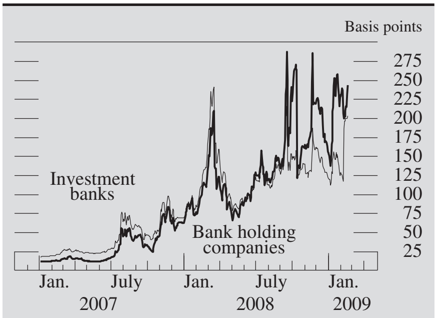
Financial Stability Developments

Evolution of the Financial Turmoil

The current period of pronounced turmoil in financial markets began in the summer of 2007 after a rapid deterioration in the performance of subprime mortgages caused largely by a downturn in house prices in some parts of the country. Investors pulled back from risk-taking, and liquidity diminished sharply in the markets for interbank funding and structured credit products more generally. House prices continued to fall rapidly in the first part of 2008, mortgage delinquencies and defaults continued to climb, and concerns about credit risk mounted. The increased financial strains led to a liquidity crisis in March at The Bear Stearns Companies, Inc., a major investment bank, and to its acquisition by JPMorgan Chase & Co. Subsequent aggressive monetary policy easing and measures taken by the Federal Reserve to bolster the liquidity of financial institutions contributed to some recovery in financial markets during the spring.

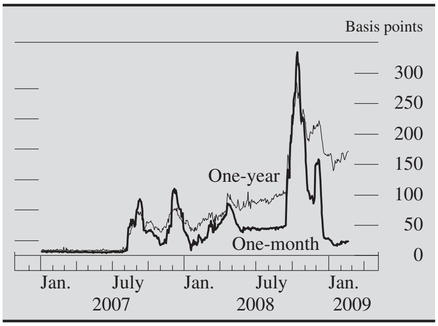
Nevertheless, strains in financial conditions intensified going into the second half of the year. In particular, amid worries that the capital of Fannie Mae and Freddie Mac would be insufficient to absorb mounting losses on their mortgage portfolios, the stock prices of the two government-sponsored enterprises (GSEs) began to decline significantly in June, and their credit default swap (CDS) spreads—which reflect inves-

3. Spreads on Credit Default Swaps for Selected U.S. Financial Companies, 2007–09



NOTE: The data are daily and extend through February 18, 2009. Median spreads for six bank holding companies and nine investment banks.
SOURCE: Markit.

4. Libor Minus Overnight Index Swap Rate, 2007–09



NOTE: The data are daily and extend through February 19, 2009. An overnight index swap (OIS) is an interest rate swap with the floating rate tied to an index of daily overnight rates, such as the effective federal funds rate. At maturity, two parties exchange, on the basis of the agreed notional amount, the difference between interest accrued at the fixed rate and interest accrued by averaging the floating, or index, rate. Libor is the London interbank offered rate.
SOURCE: For Libor, British Bankers' Association; for the OIS rate, Prebon.

tors' assessments of the likelihood of the GSEs defaulting on their debt obligations—rose sharply. Market anxiety eased somewhat in the second half of July after the Treasury proposed statutory changes, subsequently approved by the Congress, under which it could lend and provide capital to the GSEs. Nevertheless, pressures on these enterprises continued over the course of the summer; as a result, option-adjusted spreads on agency-guaranteed mortgage-backed securities (MBS) widened and interest rates on residential mortgages rose further.

Meanwhile, investor unease about the outlook for the broader banking sector reemerged. In July, the failure of IndyMac Federal Bank, a large thrift institution, raised further concerns about the profitability and asset quality of many financial institutions. Over the summer, CDS spreads for major investment and commercial banks rose, several large institutions announced sharp declines in earnings, and anecdotal reports suggested that the ability of most financial firms to raise new capital was limited (figure 3). With banks reluctant to lend to one another, conditions in short-term funding markets continued to be strained during the summer. The relative cost of borrowing in the interbank market—as exemplified by the London interbank offered rate (Libor), a reference rate for a wide variety of contracts, including floating-rate mortgages—increased sharply (figure 4).[2] In addition, required margins of collateral (known as haircuts) and bid-asked spreads widened in the markets for repurchase agreements (repos) backed by many types of securities, including agency securities that previously were considered very safe and liquid.

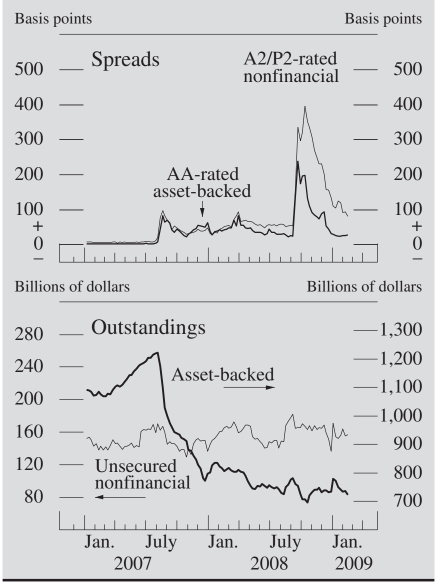
On September 7, the Treasury and the Federal Housing Finance Agency announced that Fannie Mae and Freddie Mac had been placed into conservatorship. To maintain the GSEs' ability to

2. Typically, the relative cost is measured by comparing the Libor rate with the rate on comparable-maturity overnight index swaps.

purchase home mortgages, the Treasury announced plans to establish a backstop lending facility for the GSEs, to purchase up to $100 billion of preferred stock in each of the two firms, and to initiate a program to purchase agency MBS. After the announcement, interest rate spreads on GSE debt narrowed as investors became confident that the Treasury would support the obligations of the GSEs. Option-adjusted interest rate spreads on MBS issued by the GSEs fell, and rates and spreads on new conforming fixed-rate mortgages declined. Nevertheless, other financial institutions continued to face difficulties in obtaining liquidity and capital as investors remained anxious about their solvency and, more broadly, about the implications of worsening financial conditions for the availability of credit to households and businesses and so for the economic outlook.

Amid this broad downturn in investor confidence, and after large mortgage-related losses in the third quarter, Lehman Brothers came under pressure as counterparties refused to provide short-term funding to the investment bank, even on a secured basis. Eventually, with no other firm willing to acquire it and with its borrowing capacity limited by a lack of collateral, Lehman Brothers filed for bankruptcy on September 15.[3] Over the previous weekend, Bank of America announced its intention to acquire Merrill Lynch, which had also come under severe funding pressures. In large part because of losses on Lehman Brothers' debt, the net asset value of a major money market mutual fund fell below $1 per share—also known as "breaking the buck," an event that had not occurred in many years—thereby prompting rapid and widespread investor withdrawals from prime funds (that is, money market mutual funds that hold primarily private assets). Prime funds responded to the surge in redemptions by reducing their purchases of short-term assets, including commercial paper—which many businesses use to obtain working capital—and by shortening the maturity of those instruments that they did purchase, leading to a deterioration of the commercial paper market (figure 5). Meanwhile, investors increasingly demanded safe assets, and funds that hold only Treasury securities

5. Commercial Paper, 2007–09



NOTE: The data are weekly and extend through February 18, 2009. Commercial paper yield spreads are for an overnight maturity and are expressed relative to the AA nonfinancial rate. Outstandings are seasonally adjusted.
SOURCE: Depository Trust and Clearing Corporation.

3. The bankruptcy of Lehman Brothers and the conservatorship of Fannie Mae and Freddie Mac constituted credit events of unprecedented scale for the CDS market. Nevertheless, settlement of the outstanding CDS contracts on these entities proceeded smoothly over the subsequent weeks, apparently due in part to the increased margins demanded by holders of CDS protection in the period leading up to early September.

experienced a sharp increase in inflows, which caused yields on Treasury bills to plummet. Intense demands among investors to hold Treasury securities, coupled with increased concerns about counterparty credit risk, reportedly led to a substantial scaling back of activity among traditional securities lenders in the Treasury market. The decreased activity contributed, in turn, to disruptions in the Treasury repo and cash markets that were evidenced by a very high volume of fails-to-deliver. Redemptions from prime funds slowed after the Treasury and the Federal Reserve took actions in September and October to support these funds (see the appendix).

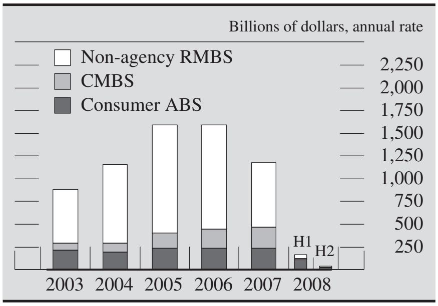
Around the same time that the difficulties at Lehman Brothers emerged, the financial condition of American International Group, Inc., or AIG—a large, complex insurance conglomerate—deteriorated rapidly, and the company found short-term funding, upon which it was heavily reliant, increasingly difficult to obtain. In view of the likely spillover effects to other financial institutions of a disorderly failure of AIG and the potential for significant pass-through effects to the broader economy, the Federal Reserve Board on September 16, with the full support of the Treasury, authorized the Federal Reserve Bank of New York to lend up to $85 billion to the firm to assist it in meeting its obligations and to facilitate the orderly sale of some of its businesses. (AIG, the Treasury, and the Federal Reserve later modified the terms of this arrangement, as described in the appendix.) Meanwhile, CDS spreads for other insurance companies rose, and their equity prices fell, amid concerns regarding their profitability and declines in the values of their investment portfolios.

Investor anxiety about investment banks, which had escalated rapidly in the wake of Lehman Brothers' collapse, abated somewhat after Morgan Stanley and Goldman Sachs were granted bank holding company charters by the Federal Reserve. However, on September 25 the resolution of another failing financial institution, Washington Mutual, imposed significant losses on senior and subordinated debt holders as well as on shareholders. As a consequence, investors marked down their expectations regarding likely government support for the unsecured nondeposit liabilities of financial institutions, which further inhibited the ability of some banking organizations to obtain funding. Among these institutions was Wachovia Corp., the parent company of the fourth-largest U.S. bank by asset size at the time, which was ultimately acquired by Wells Fargo in early October.

Against this backdrop, investors pulled back from risk-taking even further, funding markets for terms beyond overnight largely ceased to function, and a wide variety of financial firms experienced increasing difficulty in obtaining funds and raising capital. Libor rates rose at all maturities while comparable-maturity overnight index swap (OIS) rates fell, leaving spreads at record levels. Strains were also evident in the federal funds market, in which overnight funds traded over an unusually wide range and activity in term funds dropped sharply. Conditions in repo markets worsened further, as haircuts and bid-asked spreads on non-Treasury collateral increased, and the overnight rate on general Treasury collateral traded near zero. Despite substantial new issuance, yields on short-dated Treasury bills also traded near zero. Fails-to-deliver in the Treasury market and overnight lending of securities from the portfolio of the System Open Market Account soared to record highs. Spreads on asset-backed commercial paper (ABCP) and on lower-rated unsecured commercial paper issued by nonfinancial firms widened significantly.

Conditions in other financial markets also deteriorated sharply in September and October. CDS spreads on corporate debt surged, and the rates on investment-grade and high-yield bonds rose dramatically relative to comparable-maturity Treasury yields. Secondary-market bid prices for leveraged loans dropped to record-low levels as institutional investors pulled back from the market, and the implied spread on an index of loan credit default swaps (the LCDX) widened to record levels. Bid-asked spreads on high-yield corporate bonds and leveraged loans increased significantly, and liquidity and price discovery in the CDS market remained impaired, especially for contracts involving financial firms. Spreads on commercial mortgage-backed securities (CMBS) and consumer asset-backed securities (ABS) also widened dramatically, as securitizations other than government-supported MBS came to a standstill (figure 6). The turmoil affected even the Treasury market, in which interest rate spreads between yields on the most recently issued Treasury securities and yields on comparable-maturity off-the-run securities (that is, those securities that were previously issued)—an indicator of the liquidity in this market—surged from already elevated levels. Foreign financial markets experienced many of the same disturbances as domestic markets (see the section "International Developments"). Price movements in all of these markets were likely exacerbated by sales of securities by hedge funds and other leveraged market participants in an attempt to meet mounting redemption requests on the part of their investors and other funding needs.

6. Gross Issuance of Selected Mortgage- and Asset-Backed Securities, 2003–08

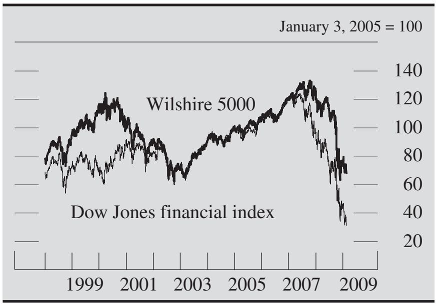


NOTE: Non-agency RMBS are residential mortgage-backed securities issued by institutions other than Fannie Mae, Freddie Mac, and Ginnie Mae; CMBS are commercial mortgage-backed securities; consumer ABS (asset-backed securities) are securities backed by credit card loans, nonrevolving consumer loans, and auto loans.

SOURCE: For RMBS and ABS, *Inside MBS & ABS* and Merrill Lynch; for CMBS, Commercial Mortgage Alert.

In the stock market, prices tumbled and volatility soared to record levels during the autumn as investors grew more concerned about the prospects of financial firms and about the likelihood of a deep and prolonged recession (figure 7). Equity-price declines were particularly pronounced among financial

7. Stock Price Indexes, 1998–2009



NOTE: The data are daily and extend through February 18, 2009.

SOURCE: Dow Jones Indexes.

and energy firms, but they were generally widespread across sectors and were accompanied by substantial net outflows from equity mutual funds. During this period, the premium that investors demanded for holding equity shares—gauged roughly by the gap between the earnings-price ratio and the yield on Treasury securities—shot up, reflecting the heightened risk aversion that prevailed in financial markets.

Policy Actions and the Market Response

To strengthen confidence in the U.S. financial system, during the autumn the Federal Reserve, at times acting in concert with foreign central banks, expanded its existing liquidity facilities and announced several additional initiatives, including programs to support short-term funding markets and to purchase agency debt obligations and MBS. (These initiatives are discussed in more detail in the appendix.) Because of the sharply diminished availability of market funding, several Federal Reserve facilities were used heavily throughout the remainder of the year.

In addition, the Treasury announced a temporary guarantee program for money market mutual funds and proposed the Troubled Asset Relief Program (TARP) to use government funds to help stabilize the financial system; on October 3, the Congress approved and provided funding for this program as part of the Emergency Economic Stabilization Act. Using funds from the TARP, the Treasury established a voluntary capital purchase plan under which the U.S. government would buy preferred shares from eligible institutions. Additionally, under the Temporary Liquidity Guarantee Program (TLGP), the Federal Deposit Insurance Corporation (FDIC) provided a temporary guarantee for selected senior unsecured obligations of participating insured depository institutions and many of their parent holding companies as well as for all balances in non-interest-bearing transaction deposit accounts at participating insured depository institutions.

After these actions and the announcements of similar programs in a number of other countries, stresses in financial markets eased somewhat, though conditions remained strained. In the interbank funding market, Libor fixings at most maturities declined noticeably and spreads over comparable-maturity OIS rates narrowed. Meanwhile, spreads on highly rated unsecured commercial paper and ABCP narrowed after the Federal Reserve announced measures in support of this market, and issuance rebounded somewhat from its lows in September and October. Conditions in global short-term dollar funding markets also improved significantly after the Federal Reserve substantially expanded its program of liquidity swaps with foreign central banks, which increased the amount of dollar funding auctioned in foreign markets, and a number of foreign governments took measures to strengthen and stabilize their banking systems.

Despite these improvements, investors remained concerned about the soundness of financial institutions. Spreads on CDS for U.S. banks widened further in November, which raised the prospect of significant increases in banks' costs of raising the funds they needed for lending. Citigroup, in particular, saw its CDS spread widen dramatically after it announced that it would take large losses on its securities portfolio. To support market stability, the U.S. government on November 23 entered into an agreement with Citigroup to provide a package of capital, guarantees, and liquidity access. Subsequently, CDS spreads for financial institutions reversed a portion of their earlier widening, and some nonfinancial risk spreads also narrowed.

Conditions in debt markets continued to ease after the passing of year-end, although most of these markets remain much less liquid than normal. Yields and spreads on corporate bonds and commercial paper have decreased noticeably in recent weeks, but activity in the leveraged loan market continues to be very weak. Equity prices for financial firms have continued to trend downward, and CDS spreads for such firms have fluctuated around extremely elevated levels. Investors expressed renewed concern over financial institutions in January after a number of firms, most notably Bank of America Corporation, reported large net losses for the fourth quarter. The Treasury, the FDIC, and the Federal Reserve announced on January 16 that they had entered into an agreement with Bank of America to provide a package of capital, guarantees, and liquidity access (see the appendix). Although markets responded favorably to this action, the uncertain prospects of the financial sector continue to weigh heavily on market sentiment.

Banking Institutions and the Availability of Credit

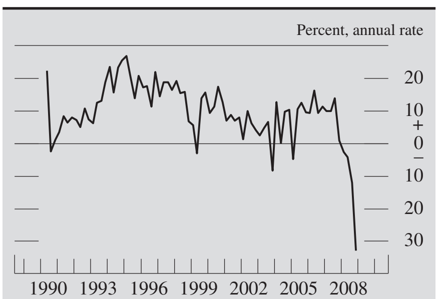
Commercial bank credit grew moderately over 2008 as a whole as both businesses and households at times drew heavily on existing lending commitments, but it contracted noticeably toward the end of the year and in early 2009. In the face of the severe financial market disruptions, some companies turned to already committed lines of credit with banks, which caused the growth of commercial and industrial (C&I) loans to spike in September and October. However, C&I lending declined over the past few months as some businesses reportedly paid down outstanding loans and stepped up their issuance in the corporate bond market. In addition, banks continued to report decreased demand for credit late last year in response to slowing business investment and reduced merger and acquisition activity. Most banks continued to tighten standards and terms on C&I loans to firms of all sizes. Issuance of leveraged loans by banks, which had already been very low through the first half of last year, was essentially nil in the second half, largely because of a drop in mergers and leveraged buyouts, which these loans are often used to finance. Commercial real estate (CRE) loans on banks' books expanded over 2008 as a whole. However, with the commercial mortgage securitization market essentially closed by mid-year, the rate of growth of this loan category stepped down significantly in the second half—a decrease consistent with the reported tightening of standards and a drop-off in demand for these loans.

Bank loans to households also declined over the second half of 2008 and early 2009, led by a sharp contraction in residential mortgage loans on banks' books, as demand weakened further and banks sold such loans to the GSEs. However, loans drawn under existing revolving home equity lines of credit continued to rise briskly during the second half of the year, an increase likely influenced by a drop in the prime rate, on which the rates on such loans are often based. Growth of consumer loans originated by banks expanded at a solid pace through October but weakened considerably in November and December. However, the amount of such loans held on banks' books generally continued to expand late in the year, as banks had difficulty selling these loans because of ongoing disruptions in securitization markets. Recently, consumer loan growth has also reportedly been buoyed by banks' decisions to build inventory in anticipation of issuance into the Term Asset-Backed Securities Loan Facility (TALF).

In the Senior Loan Officer Opinion Survey on Bank Lending Practices conducted in both October 2008 and January 2009, very large net fractions of banks reported having tightened lending standards for all major loan types. Significant net fractions of respondents also reported a widespread weakening of loan demand. In line with the nearly 33 percent drop (annual rate) in total unused loan commitments reported in fourth-quarter Call Reports, many banks indicated in the January survey that they had cut the size of existing credit lines to businesses and households (figure 8).

Earnings growth at depository institutions slowed markedly in 2008, and profitability as measured by return on assets and return on equity dropped dramatically; indeed, commercial banks posted an aggregate loss in the fourth quarter. These developments in part reflected write-downs on securities holdings and increases in loan-loss provisioning in response to deteriorating asset quality. In the fourth quarter, the overall loan delinquency rate at commercial banks increased to more than 4½ percent, its highest level since the early 1990s, and the total charge-off rate rose to more than 1¾ percent, surpassing its peaks in the previous two recessions. The ratio of loan-loss reserves to net charge-offs—an indicator of reserve adequacy—dropped below its previous nadir reached in the early 1990s.

8. Change in Unused Bank Loan Commitments to Businesses and Households, 1990:Q2–2008:Q4



NOTE: The data, which are not seasonally adjusted, are quarterly and extend through 2008:Q4.

SOURCE: Federal Financial Institutions Examination Council, Consolidated Reports of Condition and Income (Call Report).

Depository institutions' access to funding has improved as a result of the various Federal Reserve liquidity programs and the TLGP, under which eligible firms have issued $169 billion of FDIC-guaranteed bonds to date. In addition, the capital of banking organizations has been boosted by more than $200 billion of preferred stock purchases under the TARP. Still, the recent downward trend in the equity prices of most banks and the elevated level of their CDS spreads suggest that market participants remain concerned about the long-term profitability and potential insolvency of some depository institutions.

The financial turmoil has led to significant changes in the structure of the broad banking industry, with two large investment banks and one large finance company recently converting to bank holding companies to obtain better access to government funding programs; a handful of large insurance firms, motivated partly by their desire to apply for TARP funding, have likewise converted to thrift holding companies. In addition, several failures and mergers of large financial institutions resulted in increased concentrations of industry assets and deposits in 2008.

Domestic Developments

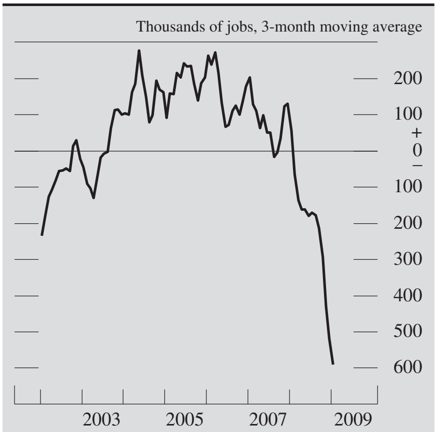
In part reflecting the intensifying deterioration in financial conditions, nearly all major sectors of the U.S. economy recorded sizable declines in activity in late 2008, and the weakness has extended into early 2009. Conditions in the labor market have worsened substantially since early autumn as employment has fallen rapidly, the unemployment rate has climbed, and firms continue to announce more layoffs. Housing remains on a steep downward trend, and both consumer spending and business investment have contracted significantly. In addition, demand for U.S. exports has slumped in response to the decline in foreign economic activity. Meanwhile, overall consumer price inflation turned negative in late 2008 as energy prices tumbled, and core inflation slowed noticeably.

The Labor Market

Conditions in the labor market deteriorated throughout 2008, but they worsened markedly in the autumn as job losses accelerated and the unemployment rate jumped. In total, private payrolls fell 3¾ million between the onset of the recession in December 2007 and January 2009, with roughly half of the reduction occurring during the past three months (figure 9). Indeed, since November, private payroll employment has fallen 600,000 per month, compared with average monthly job losses of 340,000 in September and October and 160,000 over the first eight months of 2008. The civilian unemployment rate, which stood at 4.9 percent in December 2007, has marched steadily upward over the past year, and it reached 7.6 percent in January 2009, its highest level since 1992 (figure 10). Moreover, private surveys and news reports indicate that firms plan on continuing to lay off workers in the near term.

Virtually all major industries have experienced considerable job losses recently. Manufacturing employment

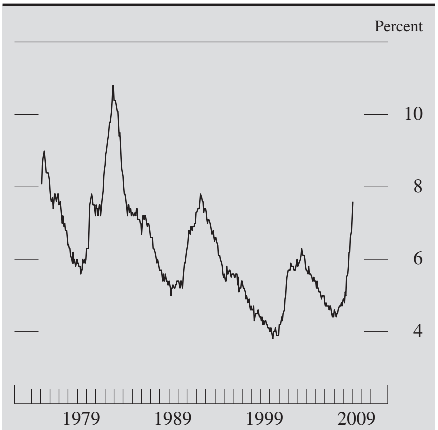
9. Net Change in Private Payroll Employment, 2002–09



Note: Nonfarm business sector. The data are monthly and extend through January 2009.

Source: Department of Labor, Bureau of Labor Statistics.

10. Civilian Unemployment Rate, 1975–2009



Note: The data are monthly and extend through January 2009.

Source: Department of Labor, Bureau of Labor Statistics.

has fallen nearly 500,000 over the past three months and has dropped more than 1 million since December 2007. Layoffs in truck transportation and wholesale trade, which are closely related to activity in the manufacturing sector, show a similar pattern. The decline in construction employment, which began in early 2007, has also sped up, in part because the ongoing contraction in homebuilding has been accompanied more recently by weakness in nonresidential building. In the service-producing sector, job losses have mounted at retail establishments, providers of financial services, and professional and business services firms, all of which have been adversely affected by the downturn in economic activity. A noticeable exception has been the continued brisk hiring by providers of health services.

The increase in joblessness has been widespread across demographic, educational, and occupational groups. In January 2009, the unemployment rate for men aged 25 years and older was 3 percentage points above its average level in the fourth quarter of 2007, while the rate for women aged 25 years and older was up 2 percentage points; as typically occurs during recessions, unemployment rates for teenagers and young adults showed even larger increases. Among the major racial and ethnic groups, unemployment rates for blacks and Hispanics have risen somewhat more than those for whites, a differential also typical of periods when labor market conditions weaken. Moreover, the number of workers who are working part time for economic reasons—a group that includes individuals whose hours have been cut back by their employers as well as those who want full-time jobs but are unable to find them—has soared to nearly 8 million, more than 3 million above its level at the start of the recession. The increase in involuntary part-time work has been widespread across industries.

The labor force participation rate, which typically falls during periods of labor market weakness, has decreased of late. The decline has probably been damped somewhat by the availability of extended unemployment insurance benefits, which may have encouraged some workers who would have otherwise discontinued their job search efforts to continue looking for work.[4] In addition, the reduction in household wealth over the past couple of years may have prompted some individuals who would have otherwise dropped out of the labor force to remain in, and it may have caused some who would not have entered the labor force to do so.

Broad measures of nominal hourly compensation, which includes both wages and benefits, posted moderate increases in 2008. For example, compensation per hour in the nonfarm business sector—a measure derived from the compensation data in the national income and product accounts (NIPA)—rose 3½ percent in nominal terms in 2008, similar to the increases over the preceding few years.

4. Under legislation enacted in June 2008, the Emergency Unemployment Compensation (EUC) program began to provide an additional 13 weeks of benefits to workers who exhaust their regular benefits (typically 26 weeks). In November, the program was expanded to provide additional benefits to workers who exhaust the previously available 13 weeks of EUC benefits (an additional 7 weeks for all eligible individuals and a further 13 weeks for individuals in states with high unemployment rates—defined as a state unemployment rate of 6 percent or above). This expansion, as well as the original EUC program, was scheduled to expire in March 2009, but the American Recovery and Reinvestment Act of 2009 extended it through December 2009; the act also increased payments to recipients of unemployment compensation by $25 per week.

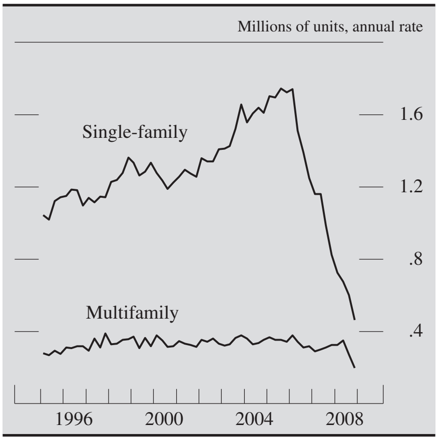
The wage component of hourly compensation also rose moderately in nominal terms in 2008, and because consumer price inflation over the year as a whole was low, much of the gain in nominal wages was reflected in higher real wages. For example, over the four quarters of last year, average hourly earnings, a measure of hourly wages for production and nonsupervisory workers, increased nearly 4 percent in nominal terms—and rose 2 percent after accounting for the rise in the price index for overall personal consumption expenditures (PCE). However, because of sharp cutbacks in hours worked, real average weekly earnings were up just 1 percent. Moreover, for many workers, real weekly earnings actually declined: In manufacturing, real average weekly earnings fell 1 percent last year, while in retail trade, this measure of real weekly earnings fell more than 2 percent.

The Household Sector

Residential Investment and Housing Finance

Housing activity remained on a steep downward trend in the second half of 2008. Home sales and prices slumped further, and homebuilders continued to curtail new construction in response to weak demand and elevated backlogs of unsold new homes. In the single-family sector, new units were started at an average annual rate of just 460,000 units in the fourth quarter of 2008—roughly 75 percent below the quarterly high reached in mid-2005 (figure 11). Starts in the multifamily sector averaged just 200,000 units in the fourth quarter; for 2008 as a whole, multifamily starts totaled 285,000, the lowest level in more than a decade. In all, the decline in residential investment, as

11. Private Housing Starts, 1995–2008



NOTE: The data are quarterly and extend through 2008:Q4.
SOURCE: Department of Commerce, Bureau of the Census.

measured in the NIPA, subtracted ¾ percentage point from the annual rate of change in GDP in the second half of 2008, about as much as in the first half. The further drop in housing starts and residential building permits in January suggests that housing will continue to exert a substantial drag on the change in real GDP in early 2009.

The further contraction in housing demand in the second half of 2008 partly reflected the bleaker picture for household income and wealth. Potential homebuyers may also have been deterred by concerns about the likelihood of additional declines in house prices and fears of buying into a falling market. And while individuals who qualified for fixed-rate conforming mortgages were able to take advantage of historically low interest rates, many potential homebuyers with blemished credit histories or who were in a position to make only small down payments found it difficult to obtain loans. In the market for new single-family homes, sales fell nearly 30 percent (not at an annual rate) between the second and fourth quarters, which brought the total decline in sales since their peak in mid-2005 to 70 percent. The slippage in sales has continued to hamper builders' efforts to gain control of their inventories. Although the stock of unsold new homes fell considerably in the second half of 2008, it did not fall as much as sales; thus, the months' supply of unsold new homes continued to move up, reaching a level nearly three times that recorded during the first half of the decade. In the market for existing single-family homes, the decline insales in recent quarters has been less pronounced than for new homes, but this situation could reflect the fact that these sales figures include some transactions involving foreclosed homes and other distressed properties, which tend to sell at heavily discounted prices. Existing home sales ended the year more than 30 percent below the highs of a few years earlier.

House prices fell sharply in the second half of 2008, with the latest 12-month readings in major nationwide indexes showing prices of existing homes down between 9 percent and 19 percent. One such measure, the LoanPerformance repeat-sales price index, fell 11 percent over the 12 months ending in December and stood 19 percent below its peak in early 2006. Declines in home prices have been especially steep in Arizona, California, Florida, and Nevada. These states, which had experienced some of the largest increases in home prices earlier in the decade, have generally seen the largest increases in delinquency rates and foreclosure actions initiated by lenders.

The drop in home prices is contributing to worsening payment problems among mortgage borrowers. Traditionally, some homeowners have coped with job loss and other life events by refinancing their homes and extracting equity or by selling the properties. However, the considerable declines in housing equity, along with tighter lending standards, mean that even prime loans are more difficult to refinance, and weak housing demand has made selling difficult. As a consequence, borrowers have increasingly fallen behind in their monthly obligations. Indeed, in November 2008, 25 percent of subprime mortgages were seriously delinquent (the latest available data).[5] As of December 2008, 3¾ percent of prime mortgages were seriously delinquent—much lower than the level of serious delinquency for nonprime loans, but still almost twice the level of a year earlier.

Foreclosures also have risen appreciably of late. Indeed, available data suggest that more than 2 million homes entered the foreclosure process in 2008, compared with foreclosure starts of 1½ million in 2007 and 1 million or less in each of the preceding four years. As with delinquencies, declining house prices have been a key contributor to the rise in foreclosures. At the same time, rising foreclosures have exacerbated the decline in house prices by increasing the number of heavily discounted properties on the market and thus exerting downward pressure on prices of otherwise comparable occupied homes. Lenders and public policy makers have taken steps to limit the number of avoidable foreclosures by modifying mortgages and putting in place programs such as Hope for Homeowners, established by the Federal Housing Administration (FHA).

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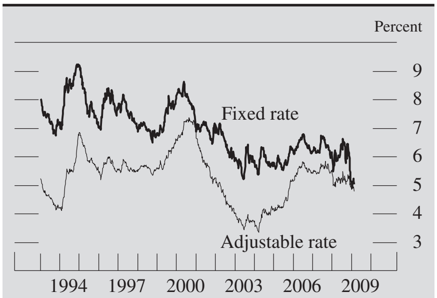
5. A mortgage is defined as seriously delinquent if the borrower is 90 days or more behind in payments or the property is in foreclosure.

In an environment of generally weak housing demand, falling home prices, tighter lending standards, and rising foreclosures, total household mortgage debt appears to have posted an outright decline in 2008—the first in the history of the series, which extends back to the 1950s. In secondary mortgage markets, securitization of mortgages by Fannie Mae and Freddie Mac has fallen in recent months, and gross issuance of GSE-backed MBS has lately just outpaced maturing issues so that levels outstanding have only inched up since the summer. Issuance of Ginnie Mae securities backed by FHA loans has continued to be strong, but the nonagency MBS market remains closed. The FHA has offered an alternative source of mortgage financing for some nonprime and near-prime borrowers, and such lending has picked up lately; still, it has replaced only part of the reduction in credit from other sources, largely because of the FHA's relatively strict lending standards and higher costs.

Interest rates on 30-year fixed-rate conforming mortgages have fallen about 100 basis points, on net, since the November 25 announcement of the Federal Reserve's program to purchase MBS issued by the housing GSEs and Ginnie Mae, and they currently stand at 5 percent (figure 12). However, interest rates for nonconforming jumbo fixed-rate loans have declined by less than those for conforming mortgages in recent months, which has caused the extraordinarily wide spread between the two rates to widen further.[6] The high level of this spread reflects, in part, the absence of functioning securitization markets for jumbo mortgages as well as an increased aversion by banks to making potentially risky loans.

12. Mortgage Rates, 1993–2009



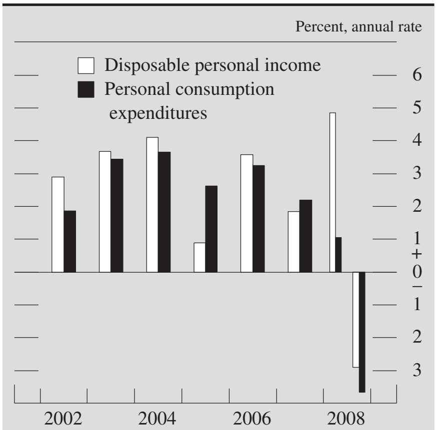
NOTE: The data, which are weekly and extend through February 18, 2009, are contract rates on 30-year mortgages.
SOURCE: Federal Home Loan Mortgage Corporation.

Consumer Spending and Household Finance

Consumer spending held up reasonably well in the first part of 2008. However, spending slackened noticeably toward the end of the second quarter despite the boost to household income from the tax rebates authorized by the Economic Stimulus Act of 2008, and consumer outlays entered the second half of the year on a downward trajectory. Against a backdrop of sizable job losses, decreases in household net worth, and difficulties in obtaining credit, real PCE declined at an annual rate of more than 3½ percent in the second half of 2008 (figure 13).

6. Conforming mortgages are those eligible for purchase by Fannie Mae and Freddie Mac; they must be equivalent in risk to a prime mortgage with an 80 percent loan-to-value ratio, and they cannot exceed the conforming loan limit. The conforming loan limit for a first mortgage on a single-family home in the contiguous United States is currently equal to the greater of $417,000 or 115 percent of an area's median house price; it cannot exceed $625,500. Jumbo mortgages are those that exceed the maximum size of a conforming loan; they are typically extended to borrowers with relatively strong credit histories.

13. Change in Real Income and Consumption, 2002–08



SOURCE: Department of Commerce, Bureau of Economic Analysis.

The downshift in consumer spending reflected both a sharp pullback in purchases of goods and a marked deceleration in expenditures on services. Outlays for new light motor vehicles (cars, sport utility vehicles, and pickup trucks) were especially hard hit. Indeed, at an annual rate of just 10¼ million units, sales of light vehicles in the fourth quarter were nearly 4 million units below the already reduced pace during the first nine months of the year; they fell further in January 2009 despite relatively low gasoline prices and a substantial increase in sales incentives in recent months.

Real disposable personal income (DPI)—that is, after-tax income adjusted for inflation—rose just 1¼ percent in 2008. Some of the weakness in real DPI reflected softness in aggregate wage and salary income, which fell slightly in real terms. As noted earlier, hourly wages posted a solid increase in real terms last year, but the effect of this increase on aggregate wages and salaries was outweighed by the negative effects of the contraction in employment and the decrease in hours worked by those who retained jobs. Apart from transfer payments, most types of nonwage income performed poorly as well. Measured on a per capita basis, average real after-tax income was essentially unchanged last year, compared with an average increase of nearly 2 percent during the preceding five years.

In addition to the weakness in income, consumer spending has been restrained in recent quarters by a sizable decrease in household net worth. This source of restraint on spending likely reflects not only the most recent drops in equity and house prices but also the lagged effects of the appreciable decline in wealth during 2007 and the first half of 2008. The loss of wealth, along with heightened concerns about the prospects for jobs and income, helped push consumer sentiment to very low levels. These factors also contributed to a noticeable upturn in the personal saving rate, which rose to nearly 3 percent in the fourth quarter of 2008 after fluctuating between 0 and 1 percent for most of the period since 2005.

Nonmortgage consumer debt outstanding appears to have fallen, on net, in the second half of 2008 after having increased at an annual rate of 4 percent in the first half. Part of the drop in borrowing was likely due to weaker demand for loans, but the available evidence also suggests that lenders tightened the supply significantly. Indeed, results from the Senior Loan Officer Opinion Survey released in October 2008 and January 2009 revealed that many banks tightened standards and terms for consumer loans, actions that included lowering credit limits on existing credit card accounts. Lenders also reportedly continued to tighten underwriting standards on non-government-guaranteed student loans, and some major providers of these loans exited the market.

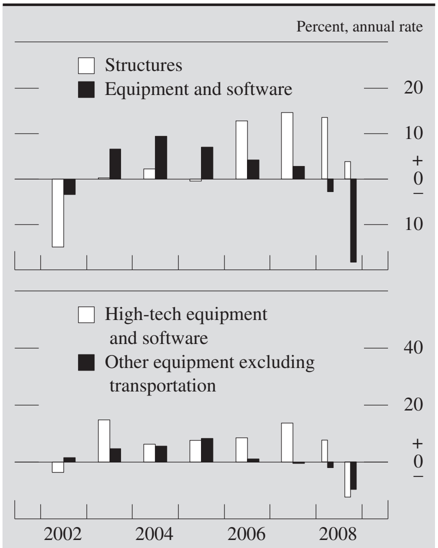
Part of the tightening of lending standards and terms no doubt reflects lenders' concerns about the credit quality of households. Indeed, the performance of consumer loans has continued to worsen in recent months, albeit less starkly than that of mortgages. Delinquency rates for most types of consumer lending—credit cards, auto loans, and nonrevolving loans—rose significantly, on net, over the course of 2008, and most such rates now stand at or above the levels seen during the 2001 recession. Household bankruptcy rates also increased sharply in 2008.

The pullback in consumer credit also likely reflects, in part, the difficulties in the market for asset-backed securities. Until the first half of 2008, a substantial fraction of consumer credit had been funded with ABS, but since the third quarter, issuance of credit card, automobile, and student loan ABS has slowed to a trickle. As noted earlier, to facilitate renewed issuance of consumer and small business ABS and thus support economic activity, the Federal Reserve announced in November plans for the Term Asset-Backed Securities Loan Facility, which will begin operations in the coming weeks.[7] Spreads on AAA-rated ABS rose through most of last year but have declined lately, reportedly in anticipation of the opening of the TALF.

Against this backdrop, interest rates on auto loans generally rose somewhat during the second half of 2008, and those on most other types of consumer loans were little changed, despite a substantial decrease in rates on comparable-maturity Treasury securities. Although some consumer interest rates appear to have fallen slightly in early 2009, their spreads to Treasury rates remain quite elevated.

7. A description of the TALF is in the appendix.

14. Change in Real Business Fixed Investment, 2002–08



NOTE: High-tech equipment consists of computers and peripheral equipment and communications equipment.

SOURCE: Department of Commerce, Bureau of Economic Analysis.

The Business Sector

Fixed Investment

After having posted small gains in the first half of 2008, real business fixed investment edged down in the third quarter and fell sharply in the fourth quarter (figure 14). The retrenchment in investment reflected both a steep drop in outlays on equipment and software (E&S) and a sharp deceleration in spending on nonresidential construction after 2½ years of robust gains. Investment demand appears to have been depressed by the downturn in sales, production, and profitability as well as by the reduced availability and higher cost of credit from securities markets, banks, and other lenders.

Real spending for E&S fell at annual rates of 7½ percent in the third quarter and 28 percent in the fourth quarter. Business outlays on motor vehicles, which had fallen sharply in the first half of the year, continued to plunge in the second half. Outlays for other major components of E&S also recorded sizable declines. Real investment in information technology equipment—which had risen moderately in the first half of the year—fell at a 12½ percent annual rate, on average, in the second half as business demand for computers, software, and communications equipment dropped appreciably. Real spending on equipment other than information technology and transportation, which had been moving essentially sideways since the end of 2005, held up through the third quarter. However, it fell at an annual rate of about 20 percent in the fourth quarter, and the slow pace of orders lately, along with the downbeat tone in recent surveys of business conditions, points to further declines in this broad category of spending in early 2009.

On net, real outlays for nonresidential construction posted a small increase in the second half of 2008. However, gains were concentrated in energy-related sectors—drilling and mining structures, petroleum refineries, and transmission and distribution facilities—and likely reflected the earlier run-up in the price of crude oil. Outside the energy-related sectors, spending turned down in the second half of last year as construction of office buildings softened and spending on nonoffice commercial buildings (a category that includes retail, wholesale, and some warehouse space) fell sharply. The decline was related to the rise in vacancy rates over the past few quarters, which was driven, in part, by the weakening in aggregate output and employment. In addition, recent reports from bank lending officers suggest that financing for new construction projects has become even more difficult to obtain.

Inventory Investment

One hallmark of the economic landscape over the past year has been the prompt response of producers to the slowing in final sales. For much of 2008, the production adjustments resulted in a rapid pace of inventory liquidation and were sufficient to prevent the emergence of widespread stock imbalances. In the fourth quarter, however, the precipitous drop in final demand left many firms holding inventories in excess of desired levels—a view expressed by respondents to a variety of business surveys at the turn of the year. Accordingly, available data suggest that producers continued to pare back output in January 2009.

The inventory overhang at year-end was especially acute in the motor vehicle sector. Although automakers slashed production during the fourth quarter, the collapse in sales last autumn pushed up dealers' stocks, and the days' supply of cars and light trucks soared to nearly 100 days—well above industry norms. In response, motor vehicle manufacturers instituted even larger cuts in production in early 2009. These cuts should help ease the pressure on dealers' stocks, though further progress will require continued restraint on production, a meaningful pickup in sales, or both.

Corporate Profits and Business Finance

Operating earnings per share for S&P 500 firms fell an estimated 17 percent in 2008. Losses were especially pronounced for financial firms. In the nonfinancial sector, earnings at firms other than oil and gas companies generally slowed over the course of 2008 and declined outright in the fourth quarter. In addition, in light of the deterioration in the economy, analysts significantly marked down their projections for earnings in 2009.

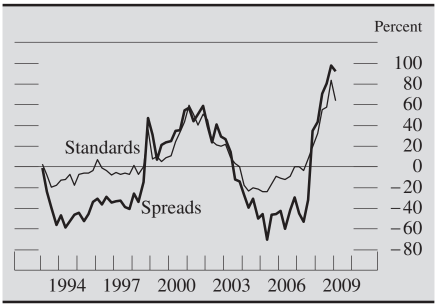
Borrowing by domestic nonfinancial businesses—primarily through the corporate bond market, the commercial paper market, and bank loans—slowed markedly in the second half of 2008. The deceleration reflected not only a reduced desire of businesses to borrow and invest in response to the worsening economic outlook but also a reduced willingness of potential lenders to provide funding for risky projects. In the corporate bond market, issuance of investment-grade securities by nonfinancial firms was solid throughout the year; in contrast, speculative-grade issuance has been scant in recent months. After moving up in the first half of the year, the cost of longer-term financing rose further as interest rates on both investment- and speculative-grade corporate bonds soared in the fall. While corporate bond rates were climbing, Treasury yields dropped, pushing interest rate spreads on corporate bonds well above previous record highs. The increases in spreads appeared to derive from both the anticipation of an increase in defaults and a further reduction in investors' willingness to take risk. In the commercial paper market, short-term borrowing by highly rated nonfinancial firms has increased since the summer; the rise reflects importantly the Federal Reserve programs supporting issuance by stronger firms. Indeed, rates on highly rated paper with maturities of less than 30 days have averaged around 20 basis points since late November, compared with nearly 200 basis points in September and October. Rates on lower-grade nonfinancial paper have also decreased in recent months, but their spreads to highly rated paper remain elevated by historical standards.

Bank lending to businesses expanded in September and October as firms reportedly drew on existing lines of credit. More recently, however, loans to commercial and industrial borrowers have registered significant declines. In addition, the growth of commercial real estate loans—which are often used to finance construction and land development—slowed substantially in the second half of the year. Given the deteriorating economic outlook, tighter credit standards, and businesses' decisions to scale back new investment, both C&I and CRE lending seem likely to fall further in the first part of 2009 (figure 15).

In the equity market, initial offerings by nonfinancial corporations were very sparse through the second half of 2008, and seasoned offerings (excluding firms in the energy sector) were also weak. Equity retirements—which often occur as a result of share repurchases that are associated with cash-financed mergers—continued to outpace the combined amount of private and public issuance, a development due, in part, to the completion of a few large mergers. However, share repurchases are estimated to have moderated a bit in recent months, and announcements of future cash-financed mergers have slowed significantly, likely because of the weaker economic outlook and tighter lending conditions.

The credit quality of nonfinancial firms deteriorated in the second half of the year. The aggregate ratio of debt to assets climbed further, and the aggregate ratio of liquid assets to total assets declined notably. Ratings downgrades

15. Net Percentage of Domestic Banks Tightening Standards and Increasing Spreads on Commercial and Industrial Loans to Large and Medium-Sized Borrowers, 1993–2009



NOTE: The data are drawn from a survey generally conducted four times per year; the last observation is from the January 2009 survey, which covers 2008:Q4. Net percentage is the percentage of banks reporting a tightening of standards or an increase in spreads less the percentage reporting an easing or a decrease. Spreads are measured as the loan rate less the bank's cost of funds. The definition for firm size suggested for, and generally used by, survey respondents is that large and medium-sized firms have annual sales of $50 million or more.

SOURCE: Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices.

on nonfinancial corporate bonds picked up and outpaced upgrades, and the share of corporate bonds rated B3 or below by Moody's increased to about 6½ percent. Delinquency rates on C&I loans increased noticeably in the fourth quarter, and delinquency rates on CRE loans rose further, mainly because of continued rapid weakening in the performance of residential and commercial construction loans.

The Government Sector

Federal Government

The deficit in the federal unified budget is in the midst of a massive widening. Mainly reflecting the deceleration in economic activity and the provisions of the Economic Stimulus Act of 2008, the deficit rose to $455 billion in fiscal year 2008, nearly $300 billion higher than in fiscal 2007 and equal to more than 3 percent of nominal GDP. So far in fiscal 2009, the deficit has increased substantially further, mostly because of outlays under the Troubled Asset Relief Program and the effects of the weak economy on revenues and spending.[8] In January, the Congressional Budget Office estimated that the deficit for fiscal 2009 as a whole would total more than $1 trillion under the spending and taxation policies in place at that time, a figure that excludes the budgetary impact of the American Recovery and Reinvestment Act of 2009.

Federal receipts fell nearly 2 percent in nominal terms in fiscal 2008 and stood at 17¾ percent of nominal GDP; they dropped further during the first four months of fiscal 2009. The decline has been most pronounced in corporate receipts, which have fallen at double-digit rates as corporate profits have dropped and as firms have presumably adjusted payments to take advantage of the bonus depreciation provisions contained in the Economic Stimulus Act. Excluding the rebates provided to most households under the act, individual income tax receipts rose moderately in fiscal 2008. However, so far in fiscal

8. In the Monthly Treasury Statements, equity purchases under the TARP and the GSE conservatorship are treated on a cash-flow basis, which means that the outlays are recorded as they occur; a flow of receipts will be recorded in future years to reflect any dividends on the shares of equity and the proceeds from the eventual sale of the shares. In contrast, the Congressional Budget Office (CBO) treats these transactions on an accrual basis and thus records outlays as the net present value cost of the equity purchases, rather than the entire amount that is disbursed; under the CBO approach, there is no offsetting flow of receipts in future years. According to the Treasury, the unified budget deficit for the first four months of fiscal 2009 totaled $569 billion; under the CBO approach, the year-to-date deficit would be $361 billion.

2009, individual receipts have been running below year-earlier levels, likely because of the weakness in nominal personal income and reduced capital gains realizations.

Excluding financial transactions, nominal federal outlays increased 8 percent in fiscal 2008 after having risen just 3 percent in fiscal 2007. Defense outlays rose 12 percent in fiscal 2008 as the rapid run-up in budget authority over the past three years continued to bolster spending; increases in defense funding in recent years have been substantial not only for operations in Iraq and Afghanistan but also for activities not directly related to those conflicts. Federal spending also rose sharply in fiscal 2008 for programs that provide support to lower-income households. So far in fiscal 2009, federal outlays for defense and low-income support programs have continued to rise rapidly. Also, spending for Medicare has picked up lately, and outlays for Social Security have been lifted by the large cost-of-living adjustment that took place in January. As for the part of federal spending that is a direct component of GDP, real federal expenditures for consumption and gross investment rose at an annual rate of 10 percent, on average, in the second half of calendar year 2008, mostly because of the sizable increase in defense spending.

State and Local Government

Aggregate real expenditures on consumption and gross investment by state and local governments were little changed, on net, in the second half of 2008 after posting a small increase in the first half. In part reflecting the mounting pressures on the sector's budgets, state and local employment has been about flat since mid-2008, while real construction spending has essentially moved sideways.

The financial positions of most states—with the exceptions of Arizona, California, Michigan, and a few others—were fairly solid at the end of fiscal year 2008.[9] However, so far in fiscal 2009, revenues have been running significantly below expected levels because of the softness in personal and corporate incomes and the weakness in retail sales. States' initial plans to address the widening budget gaps have included cuts in spending on education and other programs, hiring freezes and furloughs, and some tapping of rainy day funds; in coming quarters, however, the dominant influence on state budgets will be the infusion of grants-in-aid under the 2009 federal stimulus package, which will help cushion the effects of the economic downturn on states' budgets. At the local level, property tax receipts continued to be propped up in 2008 by the lagged effects of the dramatic increases in house prices over the first half of the decade.[10] Nevertheless, the sharp fall in house prices over the past two years is likely to put substantial downward pressure on local revenues before long. Moreover, many state and local governments will need to set aside money in coming years to rebuild their employee pension funds after the losses experienced in 2008 and to fund their ongoing obligations to provide health care to their retired employees.

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9. State government fiscal years end on June 30 in all but four states.

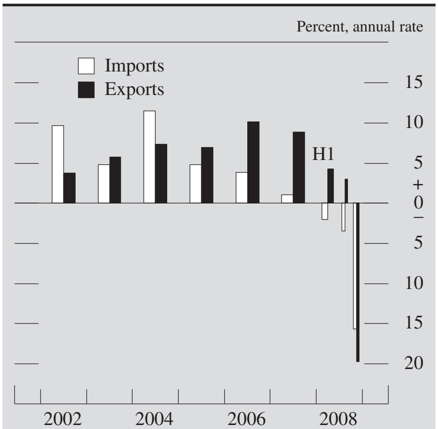
10. The lag between changes in house prices and changes in property tax revenue likely occurs because many localities are subject to state limits on the annual increases in total property tax payments and property value assessments. Thus, increases in market prices for houses may not be reflected in property tax bills until well after the fact.

The External Sector

In contrast to the first half of 2008—when robust exports provided some offset to the softness in domestic demand—the external sector provided little support to economic activity in the second half of the year. After decelerating in the third quarter, real exports declined sharply in the fourth quarter, as economic activity abroad contracted. Real imports, which had been declining earlier in 2008, also dropped considerably in the fourth quarter, dragged down by deteriorating U.S. demand (figure 16). The declines in trade flows in late 2008 were widespread across major types of products and U.S. trading partners. In addition, exports were depressed by production disruptions at Boeing.

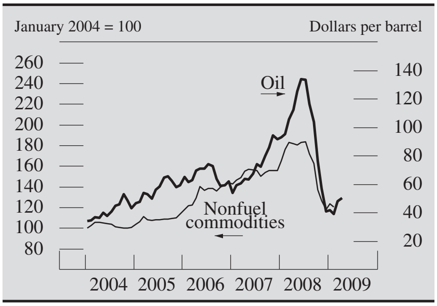
The U.S. trade deficit narrowed considerably at the end of 2008, which largely reflected a sharp decline in the price of imported oil. The trade deficit was $555 billion at an annual rate in the fourth quarter of 2008, or about 4 percent of nominal GDP, compared with a deficit of 5 percent of nominal GDP a year earlier.

16. Change in Real Imports and Exports of Goods and Services, 2002–08



Source: Department of Commerce, Bureau of Economic Analysis.

17. Prices of Oil and Nonfuel Commodities, 2004–09



Note: The data are monthly. The oil price is the spot price of West Texas intermediate crude oil, and the last observation is the average for February 1–18, 2009. The price of nonfuel commodities is an index of 45 primary-commodity prices and extends through January 2009.

Source: For oil, the Commodity Research Bureau; for nonfuel commodities, International Monetary Fund.

The price of crude oil in world markets was extremely volatile in 2008. After ending 2007 at about $95 per barrel, the spot price of West Texas intermediate (WTI) crude oil surged to more than $145 by mid-July amid both surprisingly robust oil demand, especially from emerging market economies, and continued restraint in near-term supply (figure 17). Since mid-July, the financial market turmoil and the resulting sharp downturn in global economic activity have dragged down oil demand. Despite attempts by OPEC to rein in production, the rapid drop in demand and concerns about future prospects for the global economy led to a collapse in oil prices. The spot price of WTI fell about 75 percent from its peak to near $40 per barrel in January of this year. Far-dated futures prices for crude oil have fallen somewhat less, which likely reflects the view that OPEC actions will eventually reduce supply and that global oil demand will rebound in the medium term.

Import prices rose rapidly in the first half of 2008, but the increase was reversed in the second half. That pattern primarily reflected the sharp swing in oil prices, but it was also influenced by a marked slowing in nonoil import price inflation from its rapid pace in the first half of the year. Even excluding oil, prices of imported goods declined in the fourth quarter of 2008, driven by both the sharp fall in non-oil commodity prices and the appreciation of the dollar that occurred in the latter half of the year.

National Saving

Total net national saving—that is, the saving of households, businesses, and governments excluding depreciation charges—fell further in 2008. After having ticked up to 3 percent of nominal GDP in 2006, net national saving dropped steadily over the subsequent two years as the federal budget deficit widened, the fiscal positions of state and local governments deteriorated, and private saving remained low; in the third quarter of 2008, net national saving stood at negative 1¾ percent of GDP. National saving will likely remain low this year in light of the weak economy and the recently enacted federal fiscal stimulus package. Nonetheless, if not boosted over the longer run, persistent low levels of national saving will likely be associated with both low rates of capital formation and heavy borrowing from abroad, which would limit the rise in the standard of living of U.S. residents over time and hamper the ability of the nation to meet the retirement needs of an aging population.

Prices and Labor Productivity

Prices

Although inflation pressures were elevated during the first half of 2008 and into the summer, they diminished appreciably toward year-end as prices of energy and other commodities dropped and the degree of slack in the economy increased. The chain-type price index for total personal consumption expenditures fell at an annual rate of 5½ percent in the fourth quarter after rising rapidly over the first three quarters of the year. The core PCE price index—which excludes food and energy items—rose at an annual rate of just ½ percent in the fourth quarter after increases of 2¼ percent, on average, over the first three quarters of the year. Over 2008 as a whole, core PCE prices increased 1¾ percent. Data for PCE prices in January 2009 are not yet available, but information from the consumer price index (CPI) and other sources suggests that both the total and core PCE price indexes posted modest increases in that month.

Since peaking in July, consumer energy prices have fallen dramatically, with most of the decline coming during the last three months of 2008. Largely reflecting the drop in crude oil prices, the price of gasoline fell from around $4 per gallon, on average, in July to less than $2 per gallon in December; in mid-February, it was in the neighborhood of $2 per gallon. Prices of natural gas, which typically move roughly in line with crude oil prices over periods of several months, also fell sharply in the second half of 2008 after a substantial run-up in the first half of the year. Consumer prices for electricity continued to move up through the end of the year—likely because of higher prices earlier in the year for fossil fuel inputs to electricity generation—though increases appear to have slowed in early 2009.

In contrast, consumer food prices continued to rise rapidly into the autumn. Increases were substantial both for food consumed at home and for purchased meals and beverages, which typically are influenced more by labor and other business costs than by farm prices. Since November, however, increases in consumer food prices have been quite modest. Farm prices, which had soared between 2006 and mid-2008 as a consequence of strong world demand and the increased use of corn for the production of ethanol, fell sharply in the second half of last year as prospects for domestic and foreign demand for food weakened and the demand for ethanol eased. Typically, changes in farm prices start to show through fairly quickly to consumer food prices, and the small increases in the CPI for food in the past couple of months suggest that a noticeable moderation in consumer food price inflation is under way.

The slowdown in core inflation in late 2008 was widespread, although it was particularly steep for motor vehicles, apparel, and other consumer goods that were heavily discounted by retailers in an environment of weak demand and excess inventories. In addition, the cost pressures that seemed to be boosting core inflation earlier in the year ebbed as pass-throughs of the previous large increases in the prices of energy and materials ran their course and the effects of recent declines in these prices started to show through to consumer prices. The strengthening in the exchange value of the dollar and the deceleration of import prices also helped ease the upward pressure on core inflation.

Survey-based measures of near-term inflation expectations have receded as actual inflation has come down, while indicators of longer-term inflation expectations have been steadier. According to the Reuters/University of Michigan Surveys of Consumers, median one-year inflation expectations, which had moved above 5 percent last spring and early summer, fell throughout the second half of last year; since December, they have fluctuated around 2 percent. As for longer-term inflation expectations, the Reuters/University of Michigan survey measure of median 5- to 10-year inflation expectations was about 3 percent in January and early February of this year, similar to the readings during 2007 and the early part of 2008.

Productivity and Unit Labor Costs

Labor productivity has held up surprisingly well in the past year. Although productivity growth has often stalled during previous recessions, output per hour in the nonfarm business sector rose 2¾ percent over the course of 2008, the same rate as in 2007. The continued rise in productivity during the second half of last year, at a time when output was contracting, likely reflects the aggressive downsizing undertaken by firms in response to their worsening sales prospects. Moreover, although estimates of the underlying pace of productivity growth are quite uncertain, the buoyancy of productivity in recent quarters suggests that the fundamental forces supporting a solid underlying trend—for example, the rapid pace of technological change and the ongoing efforts by firms to use information technology to improve the efficiency of their operations—remain in place.

Reflecting the solid gain in labor productivity, along with the subdued increase in nominal hourly compensation noted earlier, unit labor costs in the nonfarm business sector rose just ¾ percent in 2008. The increase in unit labor costs was about the same as that recorded in 2007.

Monetary Policy Expectations and Treasury Rates

The current target range for the federal funds rate, 0 to ¼ percent, is substantially below the level that investors expected at the end of June 2008; policy expectations were steadily revised downward over the second half of the year as the financial and economic outlook worsened. Toward the end of the year, readings on interest rate expectations from money market futures and options were complicated by persistent trading of federal funds below the target rate, which resulted from the large increase in reserve balances accompanying the expansion of the Federal Reserve's liquidity programs. Nevertheless, investors clearly anticipated that the federal funds rate would remain low for quite some time amid increasing concerns about the health of financial institutions, weakness in the real economy, and a moderation in inflation pressures. Futures quotes currently suggest that investors expect the federal funds rate to remain around its current level throughout the first half of this year and then to rise gradually through the end of 2010. However, uncertainty about the size of term premiums and potential distortions created by the zero lower bound for the federal funds rate make it difficult to obtain from futures prices a definitive reading on the policy expectations of market participants. Options prices suggested that investor uncertainty about the future path for policy was increasing considerably through October, as strains in financial markets intensified, but these measures of uncertainty have subsequently trended downward.

As the economic outlook worsened during the second half of the year and inflation pressures ebbed, yields on longer-maturity Treasury securities de-

18. Interest Rates on Selected Treasury Securities, 2004–09

NOTE: The data are daily and extend through February 18, 2009.
SOURCE: Department of the Treasury.

clined substantially (figure 18). In addition, the generally negative market sentiment and speculation that the Federal Reserve might begin purchasing large quantities of longer-maturity Treasury securities contributed at times to downward pressure on Treasury yields. Offsetting these factors to some degree were market expectations that the Treasury's issuance of long-term debt, which rose notably over the course of 2008, would pick up further in 2009. On net, yields on 2- and 10-year notes fell about 200 and 140 basis points, respectively, during the second half of 2008.

In contrast to yields on their nominal counterparts, yields on Treasury inflation-protected securities (TIPS) rose over the second half of 2008, which resulted in a noticeable reduction in measured inflation compensation—the difference between comparable-maturity nominal and TIPS yields. Some of this reduction was reversed in the early part of 2009. Inferences about inflation expectations based on TIPS yields have been difficult to make recently because these yields appear to have been affected to a degree by movements in liquidity premiums and because special factors have buffeted yields on nominal Treasury issues.

Federal Borrowing

Federal debt soared in the second half of 2008. The more than $1 trillion of Treasury borrowing since the summer reflects importantly the need to finance the Treasury's purchases of agency MBS and equity; the TARP, under which the Treasury has purchased preferred shares in a number of financial institutions; and the Supplementary Financing Program, under which the Treasury has increased deposits at the Federal Reserve to help fund the expansion of the Federal Reserve's balance sheet. The ratio of federal debt held by the public to nominal GDP surged to almost 45 percent at the end of calendar year 2008 and seems certain to increase again in the first part of 2009, as borrowing is expected to remain strong with the weak economy and budgetary initiatives.

Despite the heavy issuance of Treasury securities in the second half of the year, the rapid growth of federally guaranteed debt issued by banking institutions under the Temporary Liquidity Guarantee Program, and continued issuance of GSE securities, demand at most Treasury auctions was solid, as investors sought the safety of Treasury securities. Demand for Treasury bills was extremely strong, and yields in secondary markets sometimes fell close to zero (and even below zero at times), even as the supply of bills increased markedly. Foreign custody holdings of Treasury securities at the Federal Reserve Bank of New York grew nearly 40 percent over 2008, although the proportion of nominal coupon securities purchased at auctions by foreign investors generally remained in the 10 percent to 30 percent range observed over the past several years.

State and Local Government Borrowing

On net, borrowing by state and local governments in the market for municipal securities was subdued in the second half of 2008. The issuance of short-term municipal debt was robust, boosted in part by the need to fund operating expenditures at a time of weak revenues. However, issuance of long-term debt, which is generally used to fund capital spending projects or to refund existing long-term debt, slowed significantly. Interest rates on long-term debt climbed sharply across the maturity spectrum in the second half of 2008 in the face of considerable strain on the budgets of many state and local governments and sharp deteriorations in market functioning. More recently, however, municipal bond rates have dropped markedly, in part because market participants appeared to view the federal stimulus package as likely to improve the financial condition of state and local governments.

Monetary Aggregates

The M2 monetary aggregate increased at a 10 percent annual rate during the second half of 2008 and 8½ percent for the year as a whole.[11] The rapid growth

11. M2 consists of (1) currency outside the U.S. Treasury, Federal Reserve Banks, and the vaults of depository institutions; (2) traveler's checks of nonbank issuers; (3) demand deposits at commercial banks (excluding those amounts held by depository institutions, the U.S. government, and foreign banks and official institutions) less cash items in the process of collection and Federal Reserve float; (4) other checkable deposits (negotiable order of withdrawal, or NOW, accounts and automatic transfer service accounts at depository institutions, credit union share draft accounts, and demand deposits at thrift institutions); (5) savings deposits (including money market deposit accounts); (6) small-denomination time deposits (time deposits in amounts of less

reflected in part a marked decrease in some market interest rates relative to the rates offered on M2 assets, as well as increased demand for safe and liquid assets during the financial turmoil. During the second half of the year, the significant slowdown in the growth of retail money market mutual funds was offset by a rapid increase in small time deposits, as banks bid aggressively for these deposits to buttress their funding. The currency component of the money stock also increased briskly, an indication of solid demand for U.S. banknotes from both foreign and domestic sources. Flows into demand deposits were significant after the introduction of the Temporary Liquidity Guarantee Program, which apparently drew funds out of other money market instruments.

The monetary base—essentially the sum of currency in the hands of the public and bank reserves—has increased rapidly in recent months, primarily owing to heavy use of the Federal Reserve's liquidity programs. Credit extended through these programs caused the balance sheet of the Federal Reserve to expand considerably over the course of 2008, and this growth was financed largely by the creation of reserve balances. The increase in reserve balances almost entirely represented an increase in excess reserves rather than an increase in required reserves. In early 2009, the size of the balance sheet has decreased somewhat, which reflects a runoff in credit extended through the Commercial Paper Funding Facility and a decrease in draws on liquidity swap lines with foreign central banks.

than $100,000) less individual retirement account (IRA) and Keogh balances at depository institutions; and (7) balances in retail money market mutual funds less IRA and Keogh balances at money market mutual funds.

International Developments

International Financial Markets

Although foreign banks continued to report losses over the summer and funding conditions remained strained, global financial markets were relatively calm in July and August of 2008. This situation changed abruptly in September, as global interbank and other funding markets seized up and lending came to a near standstill. These developments were followed by the collapse of several prominent foreign financial institutions. In late September, the banks Bradford and Bingley, Fortis, and Dexia were partially or fully nationalized, and Hypo Real Estate Holding AG received a large capital injection from the German government.

The deepening of the crisis led many foreign governments to announce unprecedented measures to restore credit market functioning, including large-scale capital injections into the banking system, expansions of deposit insurance programs, and guarantees of some forms of bank debt. Most major central banks cut policy rates sharply as the financial crisis led to a dramatic deterioration in the outlook for economic activity and inflation; in October, coordinated policy rate cuts were made by the Federal Reserve and five other central banks. To address global dollar funding pressures, the Federal Reserve greatly expanded its program of liquidity swaps with foreign central banks by increasing the dollar amounts extended as well as the number of countries with which it has swap agreements. (The central banks with swap arrangements are discussed in the appendix.) These concerted global measures seem to have soothed conditions and had restored some measure of stability to markets by the end of the year, although credit markets abroad are still impaired.

Stock markets in the advanced foreign economies were nearly flat over July and August of 2008 but fell sharply beginning in late September; market volatility rose to record levels with the deepening of the financial crisis. On net, broad equity price indexes in Europe, Japan, and Canada fell 20 percent to 40 percent over the second half of last year and have continued to decline this year. Long-term sovereign bond yields fell sharply in Europe and Canada in the latter part of 2008, which reflected both the easing of monetary policy and diminished growth prospects, but have risen somewhat, on balance, in early 2009. In contrast, yields on inflation-protected long-term securities rose in many countries, and inflation compensation (the difference between yields on nominal securities and those on inflation-protected securities) fell sharply. As in the United States, measures of inflation compensation were quite volatile, however, as the liquidity of inflation-protected securities fell markedly.

Although in early 2008 the emerging market economies looked as if they might escape the most serious consequences of the financial crisis, the intensification of financial strains in September 2008 led to sharp and sudden capital outflows from many emerging markets as investors in the advanced economies sought to repatriate funds. Downdrafts in financial markets were reinforced by concerns over the effects of declining exports to the advanced economies and, for commodity exporters, plummeting commodity prices. Most stock markets in the emerging economies fell 20 percent to 40 percent, on net, over the second half of the year, and risk spreads on emerging market debt rose sharply.

The Federal Reserve's broadest measure of the nominal trade-weighted foreign exchange value of the dollar rose about 12 percent, on net, over the second half of 2008 (figure 19). Much of this rise reflected gains against major foreign currencies. The dollar appreciated 13 percent against the euro, 20 percent against the Canadian dollar, and 36 percent against sterling. The dollar's strength was attributable to several factors, including the realization by many investors that foreign growth would slow much more sharply than had been earlier anticipated as well as an increase in demand for the relative safety of U.S. assets such as Treasury securities. In contrast to its strength against other major currencies, the dollar depreciated 14 percent against the yen, as market volatility led many Japanese investors to sell foreign assets.

19. U.S. Dollar Nominal Exchange Rate, Broad Index, 2005–09

Note: The data, which are in foreign currency units per dollar, are daily. The last observation for the series is February 18, 2009. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of the most important U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

Source: Federal Reserve Board.

The dollar also rose against the currencies of most emerging market economies, including appreciation of more than 30 percent against both the Mexican peso and the Brazilian *real.* The dollar appreciated much less against most emerging Asian currencies, although it did rise more than 20 percent against the Korean won. In response to these pressures, many central banks in both Latin America and Asia intervened in support of their currencies.

The Financial Account

Although the current account deficit is estimated to have narrowed in 2008, it remains sizable. Turbulence in global financial markets has noticeably changed the composition of the associated financial flows. Before the turmoil, financial inflows were primarily in the form of net purchases of U.S. securities by foreign private investors and somewhat smaller net purchases by foreign official institutions. Since late 2007, however, foreign private net purchases of U.S. securities have dropped sharply, leaving foreign official inflows to play a much larger role. Furthermore, whereas before the turmoil private foreign investors purchased large sums of U.S. assets issued by private entities, since then foreign investments—both official and private—have been dominated by a "flight to safety" to U.S. Treasury securities. Finally, in the third quarter of 2008, reductions in holdings of foreign assets by private U.S. residents played an unusual role, which added significantly to net private inflows.

Overall, inflows from foreign private acquisitions of U.S. securities in 2008 were just one-fifth of the flows obtained in the previous two years, on average. Although purchases of U.S. Treasury securities rose considerably, there were unprecedented net sales in other U.S. securities in 2008. Foreign demand was particularly weak for U.S. agency and corporate bonds, with the weakness especially pronounced in the second half of the year.

Foreign official net purchases of U.S. assets remained relatively steady in 2008, at a pace slightly above that of 2007. However, the composition of official net purchases in the third and fourth quarters moved sharply away from U.S. agency securities and was concentrated almost exclusively in U.S. Treasury securities. Foreign official acquisitions continued to be dominated by Asian institutions in 2008.

Prior to the turmoil, U.S. investors' net purchases of foreign securities typically generated a financial outflow. These purchases slowed following the turmoil and more recently have turned to sizable net sales—generating a financial inflow—as U.S. investors have pulled out of foreign investments. In addition, U.S. residents considerably reduced their deposits in foreign banks in 2008.

The turmoil also led to unusual flows from the banking sector and from official transactions in the form of the Federal Reserve's liquidity swap arrangements with foreign central banks. Net flows reported by banking offices in the United States are typically small. Since the onset of the turmoil through mid-2008, however, banks have generated unusually large outflows, in part reflecting a response to heightened demand resulting from interbank funding pressures in European markets. As central banks acted to address these concerns with the expansion of the swap arrangements in September 2008, the private banking outflows slowed to a halt. Foreign central banks eased dollar pressures abroad by lending to their domestic banks the dollar liquidity acquired from the Federal Reserve. Further drawings on the swap lines in October and December contributed to a strong reversal of banking flows (back toward the United States, on net) in the fourth quarter.

Advanced Foreign Economies

Economic performance in the major advanced foreign economies weakened sharply in the second half of 2008, as global financial market turbulence, shrinking world trade, and collapsing business and consumer confidence weighed on activity. Across the advanced foreign economies, credit conditions and lending standards tightened considerably, industrial production declined, and retail sales slowed. Housing markets weakened everywhere and performed particularly poorly in countries that earlier had experienced housing booms, such as Ireland, Spain, and the United Kingdom. By the third quarter of last year, both Japan and the euro area had entered recessions, and output fell sharply in all the major advanced foreign economies in the fourth quarter, with most countries experiencing especially severe declines in exports and private investment.

After surging in response to accelerating commodity prices in the first half of last year, headline rates of inflation fell noticeably as a result of collapsing commodity prices and worsening economic conditions. The 12-month change in consumer prices peaked in the third quarter of 2008 for all the major economies, and the peak values ranged from a high of 5¼ percent in the United Kingdom to 2¼ percent in Japan. The most recent figures are substantially lower and range from 3 percent in the United Kingdom to below 1 percent in Japan. Excluding food and energy prices, the swings in consumer price inflation have been more subdued. After moving up somewhat during most of 2008, core inflation is now declining in most advanced foreign economies.

Official monetary policy rates have been lowered significantly since the beginning of 2008 in response to severe financial market turbulence, decelerating economic activity, and waning inflation. After some easing early last year by the Bank of England and the Bank of Canada, rapidly rising food and energy costs led these central banks to pause, and, in the case of the European Central Bank (ECB), raise rates in the summer. However, in the fall, as financial conditions deteriorated and commodity prices fell, policymakers in the major industrial economies cut rates sharply, including a coordinated move in October. In total, the Bank of England has lowered its policy rate from 5½ percent in January of 2008 to 1 percent. The Bank of Canada and the ECB have also dropped rates to 1 percent and 2 percent, respectively. In Japan, interest rates were lowered to near zero in December. In addition to substantial reductions in policy rates, central banks in the major advanced economies have taken a number of extraordinary measures to improve liquidity in financial markets, including the large-scale provision of term funding in local currency and dollar markets and the significant expansion of allowable collateral for central bank funding. Some foreign central banks are turning to or contemplating other measures to support activity, such as purchases of private-sector assets. Governments in the major industrial economies have also announced fiscal packages to bolster activity.

Emerging Market Economies

Economic performance weakened dramatically in emerging market countries in the second half of 2008. In the first half of the year, growth in many emerging market economies was relatively robust, and as food and energy prices soared, policymakers focused on containing inflationary pressure. However, in the second half, weaker demand from the advanced economies weighed on the export sectors of these countries, global financial turmoil led to tighter credit conditions, and in some cases, plunging commodity prices contributed to economic difficulties. By the end of the year, output in emerging market economies was dropping sharply, and inflationary pressures were moderating. These developments prompted policymakers in many countries to shift their focus to more stimulative monetary and fiscal policies to mitigate the effects of the economic downturn.

In China, the pace of activity slowed substantially in 2008, and concerns regarding high inflation and an overheating economy receded and gave way to efforts to bolster activity. Since September, Chinese authorities have lowered benchmark lending and deposit rates as well as bank reserve requirements several times. In November, a large fiscal stimulus plan that focused on infrastructure investment was announced, and Chinese authorities also enacted other policies designed to support the export sector, the real estate market, and small and medium-sized enterprises. After appreciating significantly in the first half of the year, the exchange value of the renminbi vis-à-vis the dollar was relatively stable in the second half of 2008.

Elsewhere in emerging Asia, the downturn in activity has been dramatic. Hong Kong, Singapore, South Korea, and Taiwan all posted substantial contractions in real GDP at the end of last year. Demand for these countries' goods from the advanced economies and China plunged in the second half of 2008, and authorities across emerging Asia have introduced more stimulative monetary and fiscal policies to bolster their economies.

In Mexico, growth was anemic in the first half of last year, but it improved in the third quarter, largely because of strong activity in the agricultural and service sectors. However, output is estimated to have declined sharply in the fourth quarter, as weakness in the U.S. manufacturing sector and financial stress have begun to weigh on the Mexican economy. In Brazil, economic activity remained firm through much of the year, but indicators suggest that output fell sharply in the fourth quarter.

Russia's economy and financial system experienced considerable stress over the second half of the year because of the steep drop in oil and other commodity prices, the turmoil in global financial markets, and geopolitical tensions resulting from the conflict with Georgia. Russian international reserves fell substantially, largely because of interventions to support the currency and the financial and corporate sectors more broadly. Several countries in emerging Europe also came under significant financial pressures in the fourth quarter of 2008, which reflected the aftermath of a period of very high rates of credit expansion as well as large current account deficits and external financing needs. Hungary, Latvia, Serbia, and Ukraine received official assistance from the International Monetary Fund.

Part 3
Monetary Policy in 2008 and Early 2009

After easing the stance of monetary policy 225 basis points over the first half of 2008, the Federal Open Market Committee (FOMC) lowered the target federal funds rate further in the second half, ultimately bringing it to a range of 0 to ¼ percent.[12] The Federal Reserve also took a number of additional actions to increase liquidity and improve market functioning. Some of these measures resulted in a substantial increase in the size of the Federal Reserve's balance sheet; further, the FOMC announced at its December meeting that the focus of policy going forward would be to support the functioning of financial markets and stimulate the economy through open market operations and other measures that would sustain the size of the Federal Reserve's balance sheet at a high level.

Information available last summer indicated that residential construction remained on a downward trend, the labor market had weakened further, and industrial production had declined. Although aggregate output was reported to have expanded in the second quarter, financial market developments suggested that the economy would likely come under considerable stress in the near future—in particular, tight credit conditions, the ongoing housing contraction, and the rise in energy prices were expected to weigh on economic growth over the subsequent few quarters. Core consumer price inflation remained relatively stable, but headline inflation was elevated as a result of large increases in food and energy prices.

12. Members of the FOMC in 2008 consisted of members of the Board of Governors of the Federal Reserve System plus the presidents of the Federal Reserve Banks of Cleveland, Dallas, Minneapolis, New York, and Philadelphia; in 2009, FOMC members consist of members of the Board of Governors plus the presidents of the Federal Reserve Banks of Atlanta, Chicago, New York, Richmond, and San Francisco. Participants at FOMC meetings consist of members of the Board of Governors and all Reserve Bank presidents.

With these considerations in mind, the FOMC kept the target federal funds rate unchanged at 2 percent at its August meeting. The accompanying policy statement indicated that, although downside risks to growth remained, the upside risks to inflation were also of significant concern to the Committee. This risk assessment, which many market participants reportedly interpreted as essentially balanced, was in line with expectations at the time. Accordingly, the expected path for policy was little changed in the wake of the announcement, and the response in broader financial markets was minimal.

By the time of the meeting on September 16, the outlook for inflation had moderated as a result of substantial declines in the prices of oil and other commodities as well as weakening aggregate demand. Various measures of inflation expectations declined between the two meetings, nominal wage increases continued to be moderate, and productivity growth remained solid. In addition, declining employment and softening final sales contributed to a weaker outlook for near-term economic activity. Still, some firms reportedly were continuing to pass through to their customers previous increases in the costs of energy and raw materials, and readings on core and headline inflation remained elevated. In this environment, the Committee was concerned that high inflation might become embedded in expectations and thereby impart considerable momentum to overall inflation. Financial strains had increased over the intermeeting period, although the consequences of the bankruptcy of Lehman Brothers Holdings on September 15 were not yet clear at the time of the meeting. Indeed, the substantial easing of monetary policy over the previous year, combined with ongoing measures to foster market liquidity, was seen as likely to support activity going forward. Thus, members agreed that keeping the federal funds target rate unchanged at 2 percent at the September meeting was appropriate.

Over the following weeks, stresses in financial markets continued to mount. Interest rate spreads in interbank funding markets widened markedly, corporate and municipal bond yields rose, and equity prices dropped sharply. The decline in the net asset value of a major money market mutual fund below $1 per share sparked a flight out of prime money market funds and caused a severe impairment of the functioning of the commercial paper market. In response to the extraordinary stresses in financial markets, the Federal Reserve, together with U.S. government entities and many foreign central banks and governments, implemented a number of unprecedented policy initiatives. Measures taken by the Federal Reserve around this time, discussed in detail in the appendix, included the establishment of the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, Commercial Paper Funding Facility, and Money Market Investor Funding Facility, which were intended to improve the liquidity in short-term debt markets and ease the strains in credit markets more broadly. In addition, to address the sizable demand for dollar funding in foreign jurisdictions, the FOMC authorized increases in its existing liquidity swap lines with foreign central banks and established lines with additional central banks. In domestic markets, the Federal Reserve raised the regular auction amounts of the 28- and 84-day maturity Term Auction Facility (TAF) auctions and announced two forward TAF auctions to provide funding over year-end.

The expansion of existing liquidity facilities and the creation of new facilities contributed to a substantial increase in the size of the Federal Reserve's balance sheet. Two initiatives were introduced to help manage the expansion of the balance sheet and promote control of the federal funds rate. First, on September 17, the Treasury announced a temporary Supplementary Financing Program at the request of the Federal Reserve. Under this program, the Treasury issues short-term bills over and above its regular borrowing program, with the proceeds deposited at the Federal Reserve. Second, using authority granted under the Emergency Economic Stabilization Act, the Federal Reserve announced on October 6 that it would begin paying interest on required and excess reserve balances. The payment of interest on excess reserves was intended to assist in maintaining the federal funds rate close to the target set by the Committee by creating a floor on interbank market rates. Initially, the interest rate paid on required reserve balances was set as a spread below the average targeted federal funds rate established by the FOMC over each reserve maintenance period, and the rate paid on excess balances was set as a spread below the lowest targeted federal funds rate for each reserve maintenance period. Subsequently, with the federal funds rate trading consistently below the target rate, the spreads were eliminated.

In late September and into October, macroeconomic conditions deteriorated in both the United States and Europe, prices of crude oil and other commodities dropped substantially, and some measures of expected inflation declined. In light of these developments and the extraordinary turmoil in financial markets, the Committee members agreed that downside risks to economic growth had increased and that upside risks to inflation had diminished; at an unscheduled meeting in early October, the FOMC cut its target to 1½ percent in an unprecedented coordinated policy action with five other major central banks. This action, along with the accompanying statement, led investors to mark down further the expected path for the federal funds rate.

At its October 28-29 meeting, the FOMC lowered its target for the federal funds rate an additional 50 basis points, to 1 percent. The Committee's statement noted that economic activity appeared to have slowed markedly, a development due importantly to weakening consumer and business spending and softening demand from many foreign economies. Moreover, the intensification of financial market turmoil was likely to exert additional restraint on spending by further tightening credit conditions for households and businesses. The Committee noted that, in light of the declines in the prices of energy and other commodities and the weaker prospects for economic activity, it expected inflation to moderate in coming quarters to levels consistent with price stability. With risks to economic activity to the downside, the Committee indicated that it would monitor economic and financial developments carefully and act as needed to promote sustainable economic growth and price stability.

The decision of the FOMC at its October meeting was broadly in line with market expectations and elicited only a modest reaction in financial markets. However, subsequent economic data releases suggested that economic activity was weaker and inflation lower than had been earlier anticipated. Those readings, along with continued strains in financial markets that weighed on investor sentiment, contributed to a sharp downward revision in the expected path of policy over the following weeks. Reflecting investor concerns about the condition of financial institutions, spreads on credit default swaps for U.S. banks widened sharply, and those for insurance companies remained very elevated.

Available evidence also suggested further tightening in consumer and small business credit conditions; in view of this tightening, the Federal Reserve announced on November 25 plans for the Term Asset-Backed Securities Loan Facility (TALF) to support lending to these borrowers. The Federal Reserve also announced on November 25 that, to help reduce the cost and increase the availability of residential mortgage credit, it would initiate a program to purchase up to $100 billion in direct obligations of housing-related government-sponsored enterprises and up to $500 billion in mortgage-backed securities (MBS) backed by Fannie Mae, Freddie Mac, and Ginnie Mae. The announcement and implementation of the agency purchase program appeared to reduce spreads on agency debt; conditions for high-quality borrowers in the primary residential mortgage market subsequently recovered somewhat.

Although some financial markets exhibited signs of improved functioning ahead of the December meeting, financial conditions generally remained very strained. Credit conditions had continued to tighten for both households and businesses, and ongoing declines in equity and house prices further reduced household wealth. Against this backdrop, indicators of aggregate economic activity continued to worsen. The Committee expected economic activity to contract sharply in the fourth quarter of 2008 and in early 2009; it noted that the uncertainty surrounding the outlook was considerable and that the downside risk to even this dour trajectory for economic activity was a serious concern. Inflation pressures had diminished appreciably as energy and other commodity prices dropped and economic activity slumped. Looking forward, members agreed that inflation pressures appeared set to moderate further in coming quarters, and some saw risks that inflation could drop below rates they viewed as most consistent over time with the Federal Reserve's dual mandate for maximum employment and price stability.

With the federal funds rate already trading at very low levels as a result of the large volume of excess reserves associated with the Federal Reserve's liquidity operations, participants agreed that the Committee would soon need to use other tools to impart additional monetary stimulus to the economy. The Federal Reserve had already adopted a series of programs that were providing liquidity support to a range of institutions and markets, and a continued focus on the quantity and the composition of Federal Reserve assets appeared to be necessary and desirable. Participants agreed that maintenance of a low level of short-term interest rates for some time and reliance on the use of balance sheet policies and communications about monetary policy could be effective and appropriate, in light of the sharp deterioration in the economic outlook and the appreciable easing of inflationary pressures.

Accordingly, the Committee announced a target range for the federal funds rate of 0 to ¼ percent and indicated that weak economic conditions were likely to warrant exceptionally low levels of the federal funds rate for some time. The statement also noted that the size of the Federal Reserve's balance sheet would be maintained at a high level through open market operations and other measures to support financial markets and stimulate the economy. In addition, the statement indicated that the Committee stood ready to expand purchases of agency debt and agency MBS and that it was evaluating the potential benefits of purchasing longer-term Treasury securities. The FOMC members emphasized that their expectation about the path of the federal funds rate was conditioned on their view of the likely path of economic activity. The interest rates on required reserve balances and excess reserve balances were both set at 25 basis points. These monetary policy decisions apparently were more aggressive than investors had been expecting. Market participants were somewhat surprised both by the size of the reduction in the target federal funds rate and by the statements that policy rates would likely remain low for some time and that the FOMC might engage in additional nontraditional policy actions such as the purchase of longer-term Treasury securities.

Incoming data over the following weeks indicated a continued sharp contraction in economic activity. The housing market remained on a steep downward trend, consumer spending continued its significant decline, the slowdown in business equipment investment intensified, and foreign demand weakened. Conditions in the labor market continued to deteriorate rapidly, and the drop in industrial production accelerated. Headline consumer prices fell in November and December, which reflected declines in consumer energy prices; core consumer prices were about flat in those months. Credit conditions generally remained tight, with financial markets fragile and some parts of the banking sector under substantial stress. However, modest signs of improvement were evident in some financial markets—particularly those that were receiving support from Federal Reserve liquidity facilities and other government actions.

At the meeting in January 2009, participants anticipated that a gradual recovery in U.S. economic activity would begin in the second half of the year in response to monetary easing, another dose of fiscal stimulus, relatively low energy prices, and continued efforts by the government to stabilize the financial sector and increase the availability of credit. As of late January, however, with financial conditions strained and the near-term economic outlook weak, most participants agreed that the Committee should continue to focus on supporting the functioning of financial markets and stimulating the economy through purchases of agency debt and MBS and other measures—including the implementation of the TALF—that will keep the size of the Federal Reserve's balance sheet at a high level for some time. Committee members agreed that keeping the target range for the federal funds rate at 0 to ¼ percent would be appropriate. They also agreed to continue using liquidity and asset-purchase programs to support the functioning of financial markets and to stimulate the economy.

In its January statement, the FOMC reemphasized that the Federal Reserve will use all available tools to promote the resumption of sustainable economic growth and to preserve price stability. The Committee also stated that, in addition to the purchases of agency debt and MBS already under way, it was prepared to purchase longer-term Treasury securities if evolving circumstances indicated that such transactions would be particularly effective in improving conditions in private credit markets. The Committee will continue to monitor carefully the size and composition of the Federal Reserve's balance sheet in light of evolving financial market developments. It will also continue to assess whether expansions of, or modifications to, lending facilities would serve to further support credit markets and economic activity and help preserve price stability.

Part 4 Summary of Economic Projections

The following material appeared as an addendum to the minutes of the January 27–28, 2009, meeting of the Federal Open Market Committee.

In conjunction with the January 27-28, 2009 FOMC meeting, the members of the Board of Governors and the presidents of the Federal Reserve Banks, all of whom participate in deliberations of the FOMC, provided projections for economic growth, unemployment, and inflation in 2009, 2010, 2011, and over the longer run. Projections were based on information available through the conclusion of the meeting, on each participant's assumptions regarding a range of factors likely to affect economic outcomes, and on his or her assessment of appropriate monetary policy. "Appropriate monetary policy" is defined as the future policy that, based on current information, is deemed most likely to foster outcomes for economic activity and inflation that best satisfy the participant's interpretation of the Federal Reserve's dual objectives of maximum employment and price stability. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge over time under appropriate monetary policy and in the absence of further shocks.

FOMC participants viewed the outlook for economic activity and inflation as having weakened significantly since last October, when their last projections were made. As indicated in Table 1 and depicted in Figure 1, participants projected that real GDP would contract this year, that the unemployment rate would increase substantially, and that consumer price inflation would be significantly lower than in recent years. Given the strength of the forces currently weighing on the economy, participants generally expected that the recovery would be unusually gradual and prolonged: All participants anticipated that unemployment would remain substantially above its longer-run sustainable rate at the end of 2011, even absent further economic shocks; a few indicated that more than five to six years would be needed for the economy to converge to a longer-run path characterized by sustainable rates of output growth and unemployment and by an appropriate rate of inflation. Participants generally judged that their projections for both economic activity and inflation were subject to a degree of uncertainty exceeding historical norms. Nearly all participants viewed the risks to the growth outlook as skewed to the downside, and all participants saw the risks to the inflation outlook as either balanced or tilted to the downside.

The Outlook

Participants' projections for the change in real GDP in 2009 had a central tendency of –1.3 to –0.5 percent, compared with the central tendency of –0.2 to 1.1 percent for their projections last October. In explaining these downward revisions, participants referred to the further intensification of the financial crisis and its effect on credit and wealth, the waning of consumer and business confidence, the marked deceleration in global economic activity, and the weak-

Table 1. Economic Projections of Federal Reserve Governors and Reserve Bank Presidents, January 2009

Percent

Variable	Central tendency[1]				Range[2]			
	2009	2010	2011	Longer Run	2009	2010	2011	Longer Run
Change in real GDP	–1.3 to –0.5	2.5 to 3.3	3.8 to 5.0	2.5 to 2.7	–2.5 to 0.2	1.5 to 4.5	2.3 to 5.5	2.4 to 3.0
October projection	–0.2 to 1.1	2.3 to 3.2	2.8 to 3.6	n.a.	–1.0 to 1.8	1.5 to 4.5	2.0 to 5.0	n.a.
Unemployment rate	8.5 to 8.8	8.0 to 8.3	6.7 to 7.5	4.8 to 5.0	8.0 to 9.2	7.0 to 9.2	5.5 to 8.0	4.5 to 5.5
October projection	7.1 to 7.6	6.5 to 7.3	5.5 to 6.6	n.a.	6.6 to 8.0	5.5 to 8.0	4.9 to 7.3	n.a.
PCE inflation	0.3 to 1.0	1.0 to 1.5	0.9 to 1.7	1.7 to 2.0	–0.5 to 1.5	0.7 to 1.8	0.2 to 2.1	1.5 to 2.0
October projection	1.3 to 2.0	1.4 to 1.8	1.4 to 1.7	n.a.	1.0 to 2.2	1.1 to 1.9	0.8 to 1.8	n.a.
Core PCE inflation[3]	0.9 to 1.1	0.8 to 1.5	0.7 to 1.5		0.6 to 1.5	0.4 to 1.7	0.0 to 1.8	
October projection	1.5 to 2.0	1.3 to 1.8	1.3 to 1.7		1.3 to 2.1	1.1 to 1.9	0.8 to 1.8	

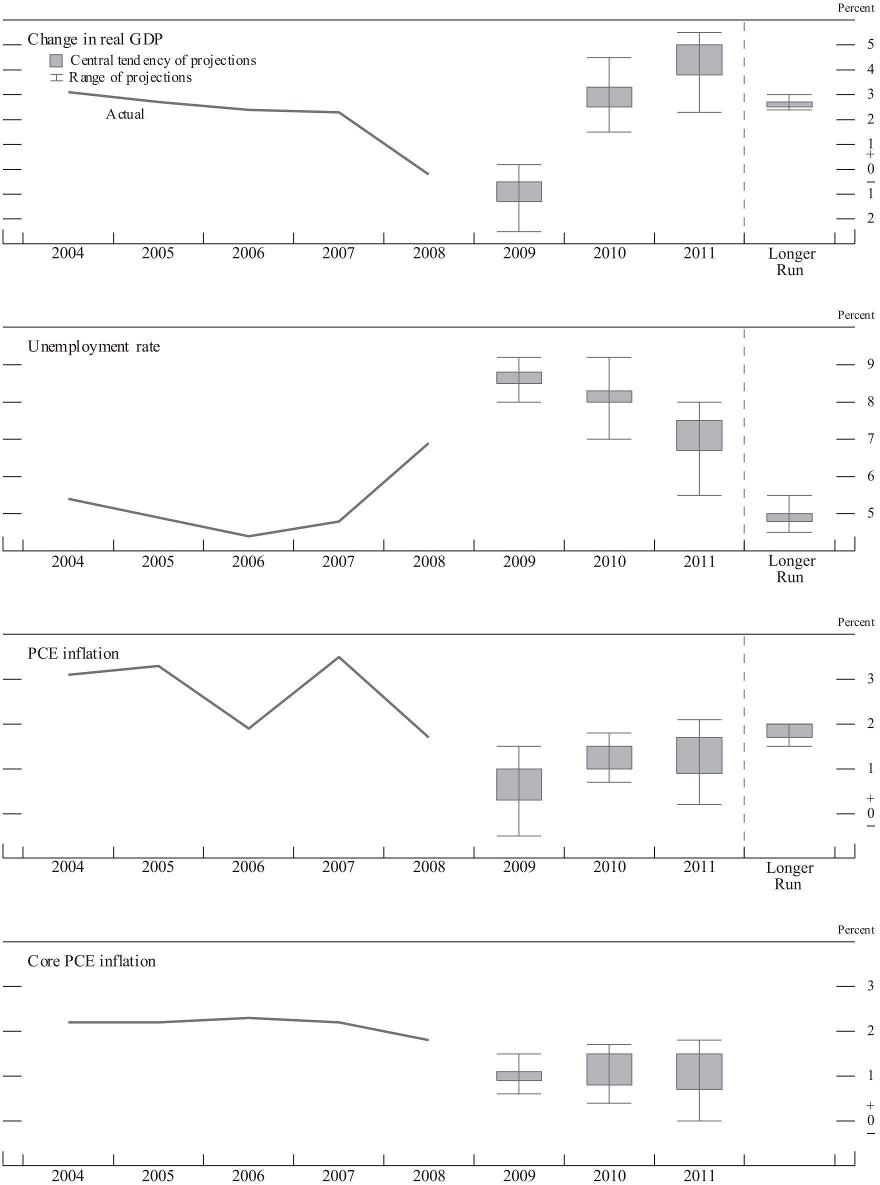
NOTE: Projections of change in real gross domestic product (GDP) and of inflation are from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The October projections were made in conjunction with the FOMC meeting on October 28–29, 2008.

1. The central tendency excludes the three highest and three lowest projections for each variable in each year.

2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.

3. Longer-run projections for core PCE inflation are not collected.

Figure 1. Central Tendencies and Ranges of Economic Projections, 2009-11 and over the Longer Run



NOTE: Definitions of variables are in the notes to table 1. The data for the actual values of the variables are annual.

ness of incoming data on spending and employment. Participants anticipated a broad-based decline in aggregate output during the first half of this year; they noted that consumer spending would likely be damped by the deterioration in labor markets, the tightness of credit conditions, the continuing decline in house prices, and the recent sharp reduction in stock market wealth, and they saw reductions in consumer demand contributing to further weakness in business investment. However, participants expected that the economy would begin to recover—albeit gradually—during the second half of the year, mainly reflecting the effects of fiscal stimulus and of Federal Reserve measures providing support to credit markets.

Looking further ahead, participants' growth projections had a central tendency of 2.5 to 3.3 percent for 2010 and 3.8 to 5.0 percent for 2011. Participants generally expected that strains in financial markets would ebb only slowly and hence that the pace of recovery in 2010 would be damped. Nonetheless, participants generally anticipated that real GDP growth would gain further momentum in 2011, reaching a pace that would temporarily exceed their estimates of the longer-run sustainable rate of economic growth and would thereby help reduce the slack in resource utilization. Most participants expected that, absent further shocks, economic growth would eventually converge to a rate of 2.5 to 2.7 percent, reflecting longer-term trends in the growth of productivity and the labor force.

Participants anticipated that labor market conditions would deteriorate substantially further over the course of this year, and nearly all expected that unemployment would still be well above its longer-run sustainable rate at the end of 2011. Participants' projections for the average unemployment rate during the fourth quarter of 2009 had a central tendency of 8.5 to 8.8 percent, markedly higher than last December's actual unemployment rate of 7.2 percent the latest available figure at the time of the January FOMC meeting. Nearly all participants' projections were more than a percentage point higher than their previous forecasts made last October, reflecting the sharp rise in actual unemployment that occurred during the final months of 2008 as well as participants' weaker outlook for economic activity this year. Most participants anticipated that output growth in 2010 would not be substantially above its longer-run trend rate and hence that unemployment would decline only modestly next year. With economic activity and job creation generally projected to accelerate in 2011, participants anticipated that joblessness would decline more appreciably that year, as is evident from the central tendency of 6.7 to 7.5 percent for their unemployment rate projections. Participants expected that the unemployment rate would decline further after 2011, and most saw it settling in at a rate of 4.8 to 5.0 percent over time.

The central tendency of participants' projections for total PCE inflation this year was 0.3 to 1.0 percent, about a percentage point lower than the central tendency of their projections last October. Many participants noted that recent readings on inflation had been surprisingly low, and some anticipated that the unexpected declines in the prices of energy and other commodities that had occurred in the latter part of 2008 would continue to hold down inflation at the consumer level in 2009. Participants also marked down their projections for core PCE inflation this year in light of their views about the indirect effects of lower energy prices and the influence of increased resource slack.

Looking beyond this year, participants' projections for total PCE inflation had a central tendency of 1.0 to 1.5 percent for 2010, 0.9 to 1.7 percent for 2011, and 1.7 to 2.0 percent over the longer run. Participants' longer-run projections for total PCE inflation reflected their individual assessments of the measured rates of inflation consistent with the Federal Reserve's dual mandate for promoting price stability and maximum employment. Most participants judged that a longer-run PCE inflation rate of 2 percent would be consistent with the dual mandate; others indicated that 1½ or 1¾ percent inflation would be appropriate. Modestly positive longer-run inflation would allow the Committee to stimulate economic activity and support employment by setting the federal funds rate temporarily below the inflation rate when the economy is buffeted by a large negative shock to demands for goods and services. Participants generally expected that core and overall inflation would converge over time, and that persistent economic slack would continue to weigh on inflation outcomes for the next few years and hence that total PCE inflation in 2011 would still be below their assessments of the appropriate inflation rate for the longer run.

Risks to the Outlook

Participants continued to view uncertainty about the outlook for economic activity as higher than normal.[13] The risks to their projections for real GDP growth were judged as being skewed to the downside and the associated risks to their projections for the unemployment rate were tilted to the upside. Participants highlighted the considerable degree of uncertainty about the future course of the financial crisis and its impact on the real economy; for example, rising unemployment and weaker growth could exacerbate delinquencies on household and business loans, leading to higher losses for financial firms and so to a further tightening of credit conditions that would in turn put further downward pressure on spending to a greater degree than currently foreseen. In addition, some participants noted that a substantial degree of uncertainty was associated with gauging the stimulative effects of nontraditional monetary policy tools that are now being employed given that conventional policy easing was limited by the zero lower bound on nominal interest rates. Others referred to uncertainties regarding the size, composition, and effectiveness of the fiscal

13. Table 2 provides estimates of forecast uncertainty for the change in real GDP, the unemployment rate, and total consumer price inflation over the period from 1987 to 2007. At the end of this summary, the box "Forecast Uncertainty" discusses the sources and interpretation of uncertainty in economic forecasts and explains the approach used to assess the uncertainty and risks attending participants' projections.

Table 2. Average Historical Projection Error Ranges

Percentage points

Variable	2009	2010	2011
Change in real GDP[1]	±1.2	±1.4	±1.4
Unemployment rate[1]	±0.5	±0.8	±1.0
Total consumer prices[2]	±0.9	±1.0	±0.9

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections that were released in the winter from 1987 through 2007 for the current and following two years by various private and government forecasters. As described in the box "Forecast Uncertainty," under certain assumptions, there is about a 70 percent probability that actual outcomes for real GDP, unemployment, and consumer prices will be in ranges implied by the average size of projection errors made in the past. Further information is in David Reifschneider and Peter Tulip (2007), "Gauging the Uncertainty of the Economic Outlook from Historical Forecasting Errors," Finance and Economics Discussion Series 2007-60 (Board of Governors of the Federal Reserve System, November).

1. For definitions, refer to general note in table 1.

2. Measure is the overall consumer price index, the price measure that has been most widely used in government and private economic forecasts. Projection is percent change, fourth quarter of the previous year to the fourth quarter of the year indicated. The slightly narrower estimated width of the confidence interval for inflation in the third year compared with that for the second year is likely the result of using a limited sample period for computing these statistics.

stimulus package—which was still under consideration at the time of the FOMC meeting—and of further measures to stabilize the banking system.

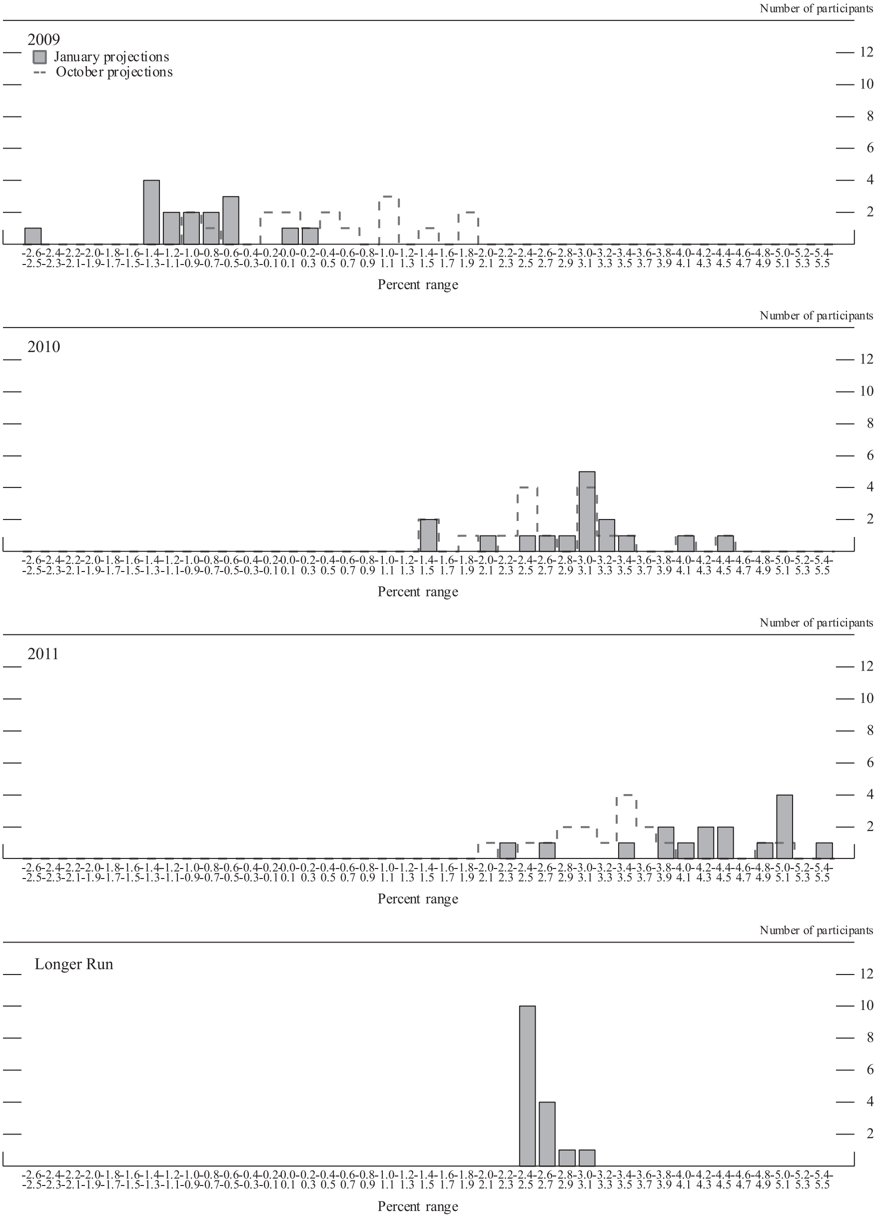
As in October, most participants continued to view the uncertainty surrounding their inflation projections as higher than historical norms. A slight majority of participants judged the risks to the inflation outlook as roughly balanced, while the rest viewed these risks as skewed to the downside. Participants indicated that elevated uncertainty about global growth was clouding the outlook for prices of energy and other commodities and hence contributing to greater uncertainty in their inflation projections. Many participants stated that their assessments regarding the level of uncertainty and balance of risks to the inflation outlook were closely linked to their judgments about the uncertainty and risks to the outlook for economic activity. Some participants noted the risk that inflation expectations might become unanchored and drift downward in response to persistently low inflation outcomes, while others pointed to the possibility of an upward shift if investors became concerned that stimulative policy measures might not be unwound in a timely fashion once the economy begins to recover.

Diversity of Views

Figures 2.A and 2.B provide further details on the diversity of participants' views regarding likely outcomes for real GDP growth and the unemployment rate, respectively. For 2009 to 2011, the dispersion in participants' projections for each variable was roughly the same as for their projections last October. This dispersion mainly indicated the diversity of participants' assessments regarding the stimulative effects of fiscal policy, the pace of recovery in financial markets, and the evolution of households' desired saving rates. The dispersion in participants' longer-run projections reflected differences in their estimates regarding the sustainable rates of output growth and unemployment to which the economy would converge under appropriate policy and in the absence of any further shocks.

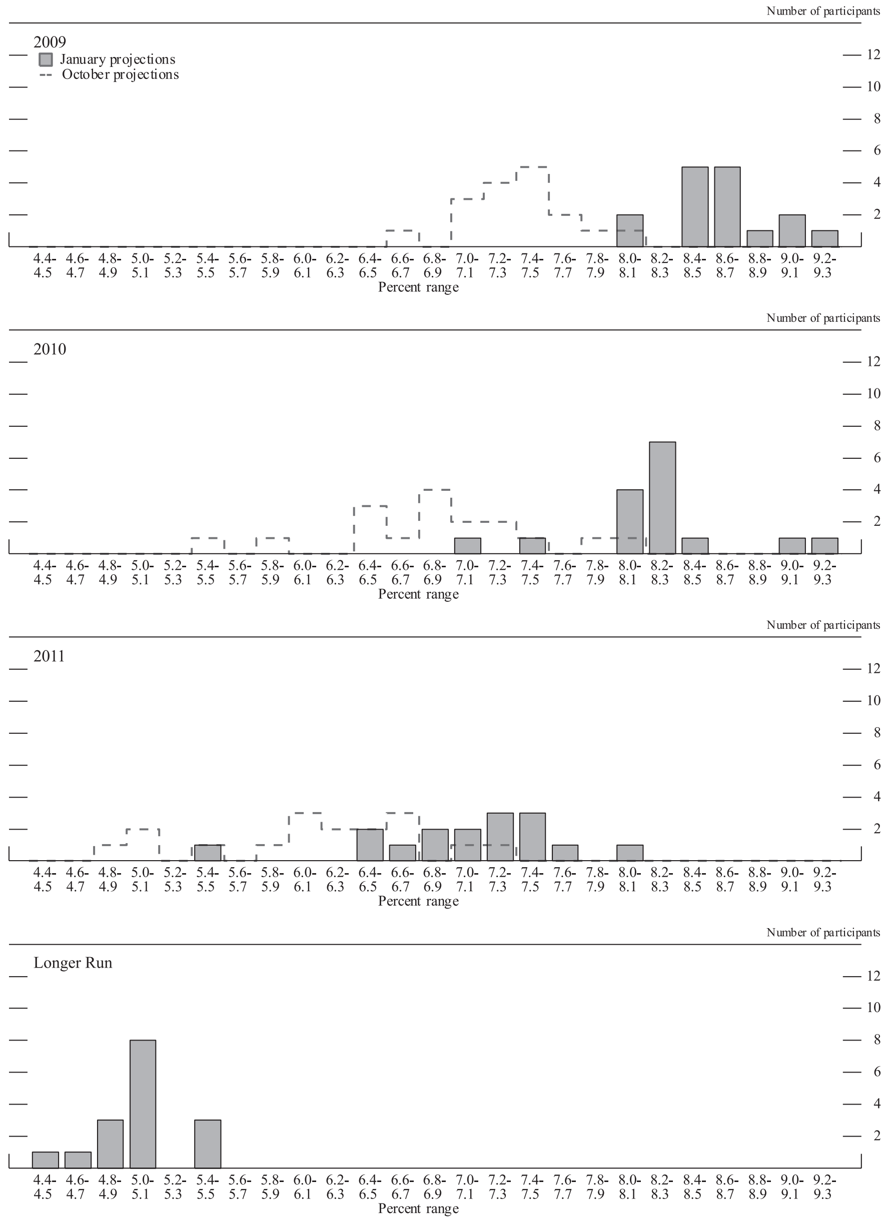
Figures 2.C and 2.D provide corresponding information regarding the diversity of participants' views regarding the inflation outlook. The dispersion in participants' projections for total PCE inflation in 2009 was substantially greater than for their projections made last October, due to increased diversity of participants' views regarding the near-term evolution of prices of energy and raw materials and the extent to which changes in those prices would be likely to pass through into overall inflation. The dispersion in participants' projections for core PCE inflation in 2009 was noticeably lower than last October, but the dispersion in their projections for core inflation in 2010 and 2011 was markedly wider, reflecting varying assessments about the timing and pace of economic recovery, the sensitivity of inflation to slack in resource utilization, the prevalence of downward nominal wage rigidity, and the likelihood that inflation expectations will remain firmly anchored. A few participants anticipated that inflation in 2011 would be close to their longer-run projections. However, most participants' projections for total PCE inflation in 2011 were below their longer-run projections, primarily reflecting the anticipated effects of substantial slack over the next three years; this inflation gap was about ¼ to ½ percentage point for some participants but exceeded a full percentage point for others.

Figure 2.A. Distribution of Participants' Projections for the Change in Real GDP, 2009–11 and over the Longer Run



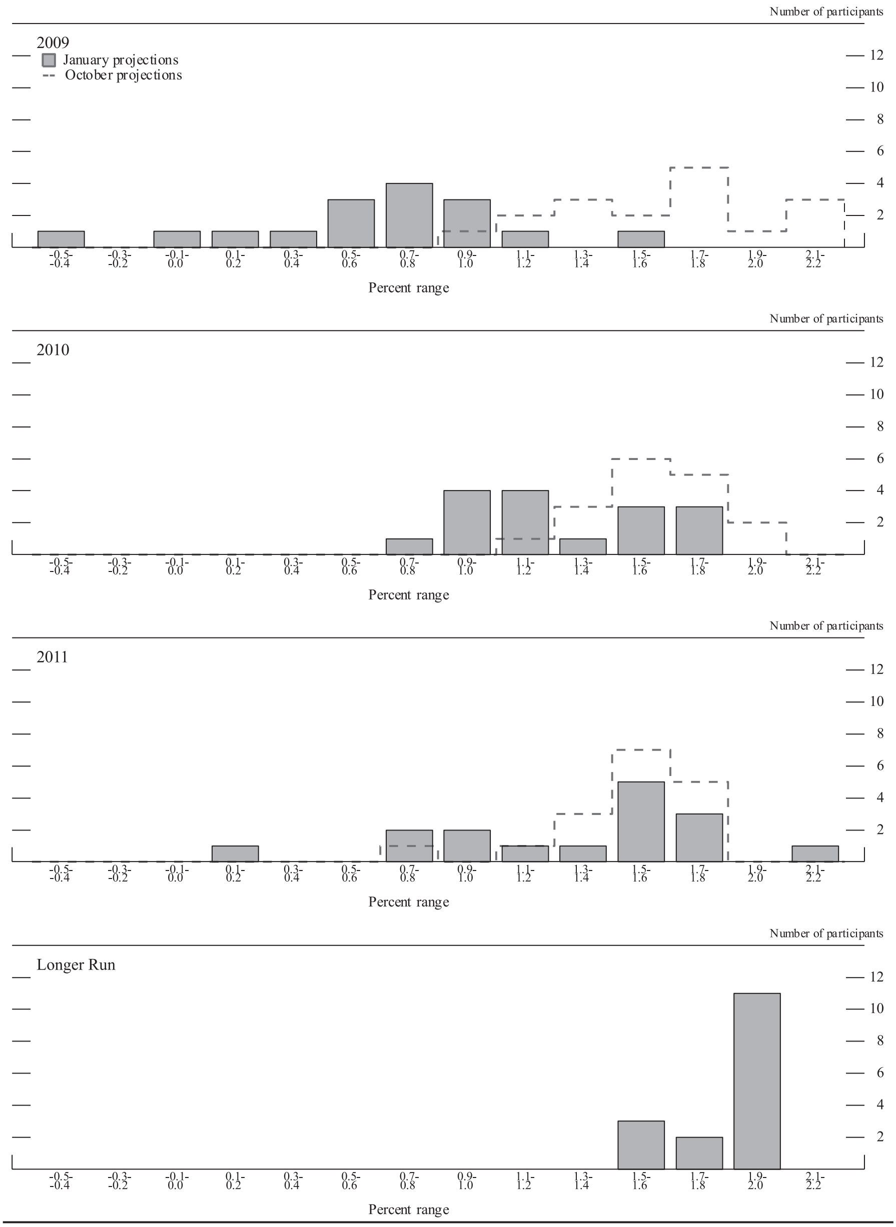
NOTE: Definitions of variables are in the general note to table 1.

Figure 2.B. Distribution of Participants' Projections for the Unemployment Rate, 2009–11 and over the Longer Run



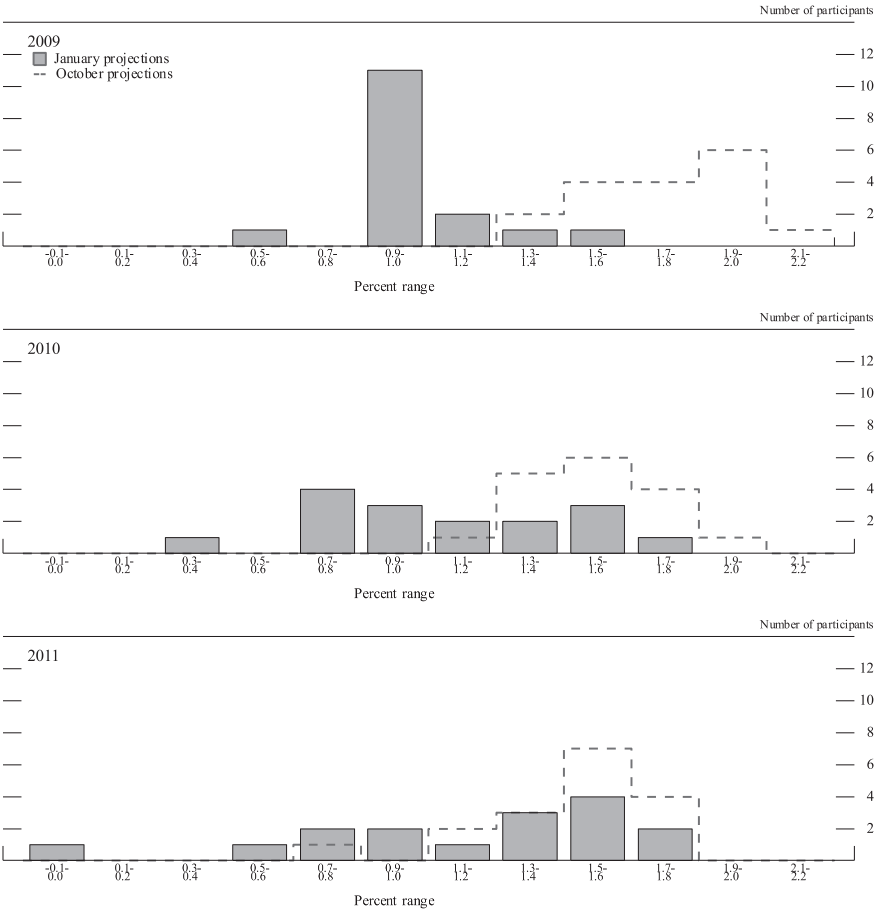
NOTE: Definitions of variables are in the general note to table 1.

Figure 2.C. Distribution of Participants' Projections for PCE Inflation, 2009–11 and over the Longer Run



NOTE: Definitions of variables are in the general note to table 1.

Figure 2.D. Distribution of Participants' Projections for Core PCE Inflation, 2009–11



NOTE: Definitions of variables are in the general note to table 1.

Forecast Uncertainty

The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however. The economic and statistical models and relationships used to help produce economic forecasts are necessarily imperfect descriptions of the real world. And the future path of the economy can be affected by myriad unforeseen developments and events. Thus, in setting the stance of monetary policy, participants consider not only what appears to be the most likely economic outcome as embodied in their projections, but also the range of alternative possibilities, the likelihood of their occurring, and the potential costs to the economy should they occur.

Table 2 summarizes the average historical accuracy of a range of forecasts, including those reported in past Monetary Policy Reports and those prepared by Federal Reserve Board staff in advance of meetings of the Federal Open Market Committee. The projection error ranges shown in the table illustrate the considerable uncertainty associated with economic forecasts. For example, suppose a participant projects that real GDP and total consumer prices will rise steadily at annual rates of, respectively, 3 percent and 2 percent. If the uncertainty attending those projections is similar to that experienced in the past and the risks around the projections are broadly balanced, the numbers reported in table 2 would imply a probability of about 70 percent that actual GDP would expand between 1.8 percent to 4.2 percent in the current year and 1.6 percent to 4.4 percent in the second and third years. The corresponding 70 percent confidence intervals for overall inflation would be 1.1 percent to 2.9 percent in the current year, 1.0 percent to 3.0 percent in the second year, and 1.1 percent to 2.9 percent in the third year.

Because current conditions may differ from those that prevailed on average over history, participants provide judgments as to whether the uncertainty attached to their projections of each variable is greater than, smaller than, or broadly similar to typical levels of forecast uncertainty in the past as shown in table 2. Participants also provide judgments as to whether the risks to their projections are weighted to the upside, downside, or are broadly balanced. That is, participants judge whether each variable is more likely to be above or below their projections of the most likely outcome. These judgments about the uncertainty and the risks attending each participant's projections are distinct from the diversity of participants' views about the most likely outcomes. Forecast uncertainty is concerned with the risks associated with a particular projection, rather than with divergences across a number of different projections.

Appendix
Federal Reserve Initiatives to Address Financial Strains

Since the onset of the financial turmoil in the summer of 2007, the Federal Reserve has announced several new measures to address the strains in financial markets, as well as enhancements to its existing liquidity facilities. (For outstanding balances related to these facilities, see table.)

Provision of Liquidity to Banks and Dealers

Modifications to the Primary Credit Program

Following the onset of the financial turmoil, the Federal Reserve Board announced temporary changes to its primary credit discount window facility on August 17, 2007. These changes were designed to provide depositories with greater assurance about the cost and availability of funding. First, the Federal Reserve Board approved a 50 basis point reduction in the primary credit rate to narrow the spread between the primary credit rate and the Federal Open Market Committee's target federal funds rate to 50 basis points. Second, the Federal Reserve Board announced a change to the Reserve Banks' usual practices to allow the provision of term financing for as long as 30 days, renewable by the borrower.

To bolster market liquidity further in the face of increasing financial strains, on March 16, 2008, the Federal Reserve Board unanimously approved a request by the Federal Reserve Banks to decrease the spread of the primary credit rate over the FOMC's target federal funds rate to ¼ percentage point. The Board also approved an increase in the maximum maturity of primary credit loans to 90 days from 30 days.

Federal Reserve Provision of Liquidity and Credit, 2007–09

Millions of dollars

Asset	Dec. 31, 2007	June 30, 2008	Feb. 18, 2009
Provision of liquidity to banks and dealers			
Primary credit program	8,620	24,095	65,144
Term Auction Facility	40,000	150,000	447,563
Liquidity swaps with foreign central banks	21,000	62,000	375,005
Securities lent under the Term Securities Lending Facility	n.a.	104,097	115,280
Primary Dealer Credit Facility and other broker-dealer credit	n.a.	1,455	25,268
Provision of liquidity to other market participants			
Asset-Backed Commercial Paper Money Market Mutual Funding Facility	n.a.	n.a.	12,722
Net portfolio holdings of Commerical Paper Funding Facility	n.a.	n.a.	248,671
Net portfolio holdings of LLCs funded through the Money Market Investor Funding Facility	n.a.	n.a.	0
Support of critical institutions			
Net portfolio holdings of Maiden Lane I, II, and III LLCs[1]	n.a.	29,970	72,231
Credit extended to American International Group, Inc.	n.a.	n.a.	37,357

NOTE: LLC is a limited liability company.

1. The Federal Reserve has extended credit to several LLCs in conjunction with efforts to support critical institutions. Maiden Lane LLC was formed to acquire certain assets of The Bear Stearns Companies, Inc. Maiden Lane II LLC was formed to purchase residential mortgage-backed securities from the U.S. securities lending investment portfolio of subsidiaries of American International Group, Inc. (AIG). Maiden Lane III LLC was formed to purchase multisector collateralized debt obligations on which the Financial Products group of AIG has written credit default swap contracts.

n.a. Not available.

SOURCE: Federal Reserve Board.

The Term Auction Facility

To address elevated pressures in short-term funding markets, in December 2007 the Board of Governors of the Federal Reserve System approved the establishment of a Term Auction Facility (TAF). Under this program, the Federal Reserve auctions term funds to depository institutions against the wide variety of collateral that can be used to secure loans at the discount window. By increasing the access of depository institutions to funding, the TAF has supported the ability of such institutions to meet the credit needs of their customers.

Each depository institution that is judged to be in generally sound financial condition by its Reserve Bank (and likely to remain so over the term of the loan) can participate in TAF auctions. All advances must be fully collateralized. Each TAF auction is for a fixed amount of funds, with the rate determined by the auction process (subject to a minimum bid rate). A depository institution submits bids through its Reserve Bank. The minimum bid rate for the auctions was initially established at the overnight index swap (OIS) rate corresponding to the maturity of the credit being auctioned. In January 2009, the minimum bid rate was changed to the interest rate paid by the Federal Reserve on excess reserve balances.

Initially, TAF auctions were in amounts of $20 billion and provided primarily 28-day term funds. Over the course of 2008, the Federal Reserve extended the term of some auctions to 84 days and raised the regular amounts of both the 28- and 84-day TAF auctions to $150 billion. The Federal Reserve also conducted two forward TAF auctions in November for $150 billion each, which provided funding over year-end.

Liquidity Swap Lines with Foreign Central Banks

To address the increasing demand for dollar funding in foreign jurisdictions, in December 2007, the Federal Open Market Committee (FOMC) authorized temporary reciprocal currency arrangements (swap lines) with the European Central Bank (ECB) and the Swiss National Bank (SNB). These arrangements initially provided dollars in amounts of up to $20 billion and $4 billion to the ECB and the SNB, respectively, for use in their jurisdictions. The FOMC approved these liquidity swap lines for a period of up to six months and later extended this term to October 30, 2009.

As demand for dollar funding rose further over the course of 2008, the FOMC authorized the expansion of its existing swap lines with the ECB and SNB. In the fall, the formal quantity limits on these lines, as well as on swap lines that were set up with the Bank of Japan and the Bank of England, were eliminated. The FOMC also authorized new liquidity swap lines with 10 other central banks: the Reserve Bank of Australia, the Banco Central do Brasil, the Bank of Canada, the Danmarks Nationalbank, the Bank of Korea, the Bank of Mexico, the Reserve Bank of New Zealand, the Norges Bank, the Monetary Authority of Singapore, and the Sveriges Riksbank.

The Term Securities Lending Facility

On March 11, 2008, to address increasing liquidity pressures in funding markets, the Federal Reserve announced the establishment of a Term Securities Lending Facility (TSLF). Under the TSLF, the Federal Reserve lends up to $200 billion of Treasury securities to primary dealers for a term of 28 days (rather than overnight, as in the regular securities lending program); the lending is secured by a pledge of other securities. Initially, the eligible collateral included other Treasury securities, federal agency debt, federal agency residential mortgage-backed securities (MBS), and non-agency AAA/Aaa-rated private-label residential MBS. In September, this list was broadened to include all investment-grade debt securities. The TSLF is intended to strengthen the financing position of primary dealers and foster improved conditions in financial markets more generally. Securities are made available through weekly auctions. This facility is currently scheduled to expire on October 30, 2009.

The Primary Dealer Credit Facility

To bolster market liquidity and promote orderly market functioning, on March 16, 2008, the Federal Reserve Board voted unanimously to authorize the Federal Reserve Bank of New York to create a lending facility—the Primary Dealer Credit Facility—to improve the ability of primary dealers to provide financing to participants in securitization markets. This facility became available for business on Monday, March 17, and was originally instituted for a term of six months; this term was subsequently extended, and the facility is currently set to expire on October 30, 2009. Collateral pledged to secure loans under this facility was initially limited to investment-grade debt securities; subsequently, eligible collateral was expanded to include all collateral eligible for pledge in triparty funding arrangements through the major clearing banks. The interest rate charged on such credit is the same as the primary credit rate at the Federal Reserve Bank of New York.

Provision of Liquidity to Other Market Participants

The Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility

On September 19, 2008, the Federal Reserve announced the creation of the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF). Under this program, the Federal Reserve extends nonrecourse loans at the primary credit rate to U.S. depository institutions and bank holding companies to finance their purchases of high-quality asset-backed commercial paper (ABCP) from money market mutual funds. This initiative is intended to assist money funds that hold such paper in meeting demands for redemptions by investors and to foster liquidity in the ABCP markets and broader money markets. Although the AMLF was initially authorized through January 2009, the Board subsequently extended its operation through October 30, 2009.

The Commercial Paper Funding Facility

On October 7, the Federal Reserve authorized the creation of the Commercial Paper Funding Facility (CPFF) to provide a liquidity backstop to U.S. issuers of commercial paper. The CPFF is intended to improve liquidity in short-term funding markets and thereby increase the availability of credit for businesses and households. The CPFF is currently authorized to purchase commercial paper through October 30, 2009.

Under the CPFF, Federal Reserve credit is provided to a special purpose vehicle (SPV) that, in turn, purchases commercial paper of eligible issuers.

The Federal Reserve Bank of New York has committed to lend to the SPV on a recourse basis, with such loans secured by all the assets of the SPV. The SPV purchases from eligible issuers three-month U.S. dollar-denominated commercial paper through the Federal Reserve Bank of New York's primary dealers. Eligible issuers are U.S. issuers of commercial paper, including U.S. issuers with a foreign parent company. The SPV purchases only U.S. dollar-denominated commercial paper (including ABCP) that is rated at least A-1/P-1/F1.

The maximum amount of a single issuer's commercial paper that the SPV may own at any time is the greatest amount of U.S. dollar-denominated commercial paper the issuer had outstanding on any day between January 1 and August 31, 2008. The SPV will not purchase additional commercial paper from an issuer whose total commercial paper outstanding to all investors (including the SPV) equals or exceeds the issuer's limit. Pricing is based on the three-month OIS rate plus fixed spreads. At the time of its registration to use the CPFF, each issuer must pay a facility fee equal to 0.1 percent of the maximum amount of its commercial paper the SPV may own.

The Money Market Investor Funding Facility

On October 21, 2008, the Federal Reserve announced the creation of the Money Market Investor Funding Facility (MMIFF). Under the MMIFF, the Federal Reserve Bank of New York will provide senior secured funding to a series of SPVs to facilitate an industry-supported private-sector initiative to finance the purchase of eligible assets from eligible investors. Eligible assets include U.S. dollar-denominated certificates of deposit and commercial paper issued by highly rated financial institutions and having remaining maturities of 90 days or less. Eligible investors currently include U.S. money market mutual funds and other similar entities. By backstopping the sales of money market instruments in the secondary market, the MMIFF should improve the liquidity of money market investors, thus increasing their ability to meet redemption requests and their willingness to invest in money market instruments. Improved money market conditions enhance the ability of banks and other financial intermediaries to accommodate the credit needs of businesses and households.

The SPVs will purchase eligible money market instruments from eligible investors using financing from the MMIFF and from the issuance of ABCP. The SPVs will issue to the seller of each eligible asset ABCP equal to 10 percent of the asset's purchase price, with the remaining 90 percent of the transaction funded in cash. The Federal Reserve Bank of New York will commit to lend to each SPV 90 percent of the purchase price of each eligible asset. These loans will be on an overnight basis and at the primary credit rate. The loans will be senior to the ABCP, with recourse to the SPV, and secured by all the assets of the SPV. At the time of an SPV's purchase of a debt instrument issued by a financial institution, the debt instruments of that financial institution may not constitute more than 15 percent of the assets of the SPV, except during an initial ramp-up period when the concentration limit may be 20 percent. The SPVs financed by the MMIFF are scheduled to enter a wind-down process on October 30, 2009.

The Term Asset-Backed Securities Loan Facility

On November 25, 2008, the Federal Reserve Board announced plans for the Term Asset-Backed Securities Loan Facility (TALF), a facility that will help market participants meet the credit needs of households and small businesses by supporting the issuance of asset-backed securities (ABS) collateralized by student loans, auto loans, credit card loans, and loans guaranteed by the Small Business Administration. The TALF is designed to increase credit availability and support economic activity by facilitating renewed issuance of consumer and small business ABS at more normal interest rate spreads.

Under the current design of the TALF, the Federal Reserve Bank of New York will lend up to $200 billion on a nonrecourse basis to holders of certain AAA-rated ABS backed by consumer and small business loans. Eligible securities must have been issued on or after January 1, 2009, and all or substantially all of the credit exposures underlying eligible ABS must be newly or recently originated exposures to U.S.-domiciled obligors. Originators of the credit exposures underlying eligible ABS must have agreed to comply with, or already be subject to, the executive compensation requirements of the Emergency Economic Stabilization Act of 2008.

On February 10, 2009, the Federal Reserve Board announced that it is prepared to undertake a substantial expansion of the TALF. The expansion could increase the size of the TALF to as much as $1 trillion and could broaden the eligible collateral to encompass other types of newly issued AAA-rated asset-backed securities, such as commercial MBS and private-label residential MBS. An expansion of the TALF would be supported by the provision by the Treasury of additional funds from the Troubled Asset Relief Program (TARP).

All U.S. persons who own eligible collateral may participate in the TALF, and each borrower must use a primary dealer to access the TALF. The Federal Reserve Bank of New York will offer a fixed amount of loans under the TALF on a monthly basis. Via a competitive, sealed-bid auction process, the Federal Reserve Bank of New York will award loans in amounts equal to the market value of the ABS less a haircut. The loans will be nonrecourse, will be secured at all times by the ABS, and will have a three-year term, with interest payable monthly. The Treasury, under the TARP, will provide credit protection to the Federal Reserve Bank of New York in connection with the TALF. The facility will cease making new loans on December 31, 2009, unless the Board agrees to extend the facility.

Direct Purchases of Assets

On September 19, 2008, the Federal Reserve announced that, to support market functioning, the Open Market Trading Desk would begin purchasing federal agency discount notes in the secondary market for the System Open Market Account. These instruments are short-term debt obligations issued by Fannie Mae, Freddie Mac, and the Federal Home Loan Banks. Similar to secondary-market purchases of Treasury securities, purchases of Fannie Mae, Freddie Mac, and Federal Home Loan Bank debt are conducted with the Federal Reserve's primary dealers through a series of competitive auctions.

To help reduce the cost and increase the availability of residential mortgage credit, the Federal Reserve announced on November 25 a program to purchase up to $100 billion in direct obligations of housing-related government-sponsored enterprises (GSEs) and up to $500 billion in MBS backed by Fannie Mae, Freddie Mac, the Federal Home Loan Banks, and Ginnie Mae. Purchases of agency debt obligations began in December, and purchases of MBS began in January.

The program to purchase GSE direct obligations has initially focused on fixed-rate, noncallable, senior benchmark securities issued by Fannie Mae, Freddie Mac, and the Federal Home Loan Banks. Over the course of the program, the Federal Reserve may change the scope of purchasable securities. Purchases will be made through a multiple-price competitive auction process. Primary dealers are eligible to transact directly with the Federal Reserve and are encouraged to submit offers for themselves and their customers.

Support of Critical Institutions

Bear Stearns

In mid-March of 2008, The Bear Stearns Companies, Inc., a major investment bank and primary dealer, was pushed to the brink of failure after losing the confidence of investors and finding itself without access to short-term financing markets. A bankruptcy filing would have forced the secured creditors and counterparties of Bear Stearns to liquidate underlying collateral, and given the illiquidity of markets, those creditors and counterparties might well have sustained substantial losses. If they had responded to losses or the unexpected illiquidity of their holdings by pulling back from providing secured financing to other firms and by dumping large volumes of illiquid assets on the market, a much broader financial crisis likely would have ensued. Thus, the Federal Reserve judged that a disorderly failure of Bear Stearns would have threatened overall financial stability and would most likely have had significant adverse implications for the U.S. economy.

After discussions with the Securities and Exchange Commission and in close consultation with the Treasury, the Federal Reserve determined that it should invoke emergency authorities to provide special financing to facilitate the acquisition of Bear Stearns by JPMorgan Chase & Co. JPMorgan Chase agreed to purchase Bear Stearns and assume the company's financial obligations. The Federal Reserve agreed to supply term funding, secured by $30 billion in Bear Stearns assets, to facilitate the purchase. A limited liability company, Maiden Lane LLC, was formed to facilitate the arrangements associated with the purchase by acquiring certain assets of Bear Stearns and managing those assets through time to maximize repayment of the credit extended and to minimize disruption to financial markets. JPMorgan Chase completed the acquisition of Bear Stearns on June 26, and the Federal Reserve extended approximately $29 billion of funding to Maiden Lane on that date.

American International Group

In early September, the condition of American International Group, Inc. (AIG), a large, complex financial institution, deteriorated rapidly. In view of the likely systemic implications and the potential for significant adverse effects on the economy of a disorderly failure of AIG, on September 16, the Federal Reserve Board, with the support of the Treasury, authorized the Federal Reserve Bank of New York to lend up to $85 billion to the firm to assist it in meeting its obligations and to facilitate the orderly sale of some of its businesses. This facility had a 24-month term, with interest accruing on the outstanding balance at a rate of 3-month Libor plus 850 basis points, and was collateralized by all of the assets of AIG and its primary nonregulated subsidiaries. On October 8, the Federal Reserve announced an additional program under which it would lend up to $37.8 billion to finance investment-grade, fixed-income securities held by AIG. These securities had previously been lent by AIG's insurance company subsidiaries to third parties.

In November, the Treasury announced that it would purchase $40 billion of newly issued AIG preferred shares under the TARP, which allowed the Federal Reserve to reduce from $85 billion to $60 billion the total amount available under the credit facility. Further, the interest rate on that facility was reduced to Libor plus 300 basis points, the fee on undrawn funds was reduced to 75 basis points, and the term of the facility was lengthened from two years to five years. The Federal Reserve also announced plans to restructure its lending related to AIG by extending credit to two newly formed limited liability companies. The first, Maiden Lane II LLC, received a $22.5 billion loan from the Federal Reserve and a $1 billion subordinated loan from AIG and purchased residential mortgage-backed securities from AIG. As a result of these actions, the securities lending facility established on October 8 was subsequently repaid and terminated. The second new company, Maiden Lane III LLC, received a $30 billion loan from the Federal Reserve and a $5 billion subordinated loan from AIG and purchased multisector collateralized debt obligations on which AIG has written credit default swap contracts.

Citigroup

Market anxiety about the condition of Citigroup intensified in November 2008, especially in the wake of the firm's announcement that it would lay off 52,000 workers and absorb $17 billion in distressed assets from structured investment vehicles that it sponsored, and concerns about the firm's access to funding mounted. To support financial market stability, the U.S. government on November 23 entered into an agreement with Citigroup to provide a package of capital, guarantees, and liquidity access. As part of the agreement, the Treasury and Federal Deposit Insurance Corporation (FDIC) are providing capital protection against outsized losses on a pool of about $306 billion in residential and commercial real estate and other assets, Citigroup has issued preferred shares to the Treasury and FDIC, and the Treasury has purchased an additional $20 billion in Citigroup preferred stock using TARP funds. In addition and if necessary, the Federal Reserve stands ready to backstop residual risk in the asset pool by providing nonrecourse credit.

Bank of America

Despite the improvement in bank funding markets after year-end, Bank of America also came under intense pressure. In mid-January 2009, the firm reported a $1.8 billion net loss for the fourth quarter, and it was further strained by its merger on January 2 with Merrill Lynch, which reported a fourth-quarter loss of $23 billion on a pretax basis and $16 billion on an after-tax basis. On January 16, Bank of America entered into an agreement with the

Treasury, the FDIC, and the Federal Reserve similar to that arranged with Citigroup in November. Under the arrangement, the Treasury and the FDIC provide protection against the possibility of unusually large losses on a pool of approximately $118 billion of financial instruments. In addition, and if necessary, the Federal Reserve will provide nonrecourse credit to Bank of America against this pool of financial instruments. As a fee for this arrangement, Bank of America issued preferred shares to the Treasury and the FDIC.

Abbreviations

ABS	asset-backed securities
AMLF	Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility
C&I	commercial and industrial
CMBS	commercial mortgage-backed securities
CPFF	Commercial Paper Funding Facility
CRE	commercial real estate
FOMC	Federal Open Market Committee; also, the Committee
GSE	government-sponsored enterprise
Libor	London interbank offered rate
MBS	mortgage-backed securities
MMIFF	Money Market Investor Funding Facility
OIS	overnight index swap
PDCF	Primary Dealer Credit Facility
SFP	Supplementary Financing Program
TAF	Term Auction Facility
TALF	Term Asset-Backed Securities Loan Facility
TARP	Troubled Asset Relief Program
TLGP	Temporary Liquidity Guarantee Program
TSLF	Term Securities Lending Facility

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Monetary Policy Report of July 2008

Part 1
Overview: Monetary Policy and the Economic Outlook

The U.S. economy remained sluggish in the first half of 2008, and steep increases in commodity prices boosted consumer price inflation. The housing market continued to contract, weighing on overall economic activity. Against a backdrop of mounting losses incurred by major financial institutions, financial market conditions deteriorated sharply further toward the end of the first quarter—a development that threatened to severely impair the functioning of the overall financial system and to hinder economic growth. In response, the Federal Reserve undertook a number of significant actions to address liquidity pressures faced by banks and other financial institutions, thereby augmenting the liquidity-enhancing measures implemented in the second half of 2007. Taken together, these measures fostered some improvement in the functioning of financial markets, but considerable strains persist. In view of the implications of the substantial reduction in credit availability and the continuing decline in housing activity for the economic outlook, the Federal Open Market Committee (FOMC) further eased the stance of monetary policy. After cutting the target federal funds rate 100 basis points in the second half of 2007, the FOMC reduced rates another 225 basis points over the first four months of 2008. The further easing of policy was seen as consistent with fostering price stability over time, given the Committee's expectation that a flattening-out of energy prices and increasing economic slack would damp inflationary pressures.

The most recent economic projections of participants in FOMC meetings (Board members and Reserve Bank presidents) are presented in part 4 of this report. According to these projections, the economy is expected to expand slowly over the rest of this year. FOMC participants anticipate a gradual strengthening of economic growth over coming quarters as the lagged effects of past monetary policy actions, amid gradually improving financial market conditions, begin to provide additional lift to spending and as housing activity begins to stabilize. FOMC participants marked up their forecasts of inflation for 2008 as a whole, reflecting the upward pressure on inflation from rising commodity prices. However, with longer-run inflation expectations anticipated to remain reasonably well anchored, with futures markets indicating that commodity prices are expected to flatten out, and with pressures on resources likely to ease, inflation is projected to moderate appreciably in 2009. FOMC participants indicate that considerable uncertainty surrounds the outlook for economic growth and that they see the risks around that outlook as skewed to the downside. They also see

Note: The discussion in this chapter consists of the text and tables from parts 1–3 of the Monetary Policy Report submitted to Congress on July 15, 2008 (the figures from that report are available on the Board's website, at www.federalreserve.gov/boarddocs/hh). Part 4 of that report is identical to the addendum to the minutes of the June 24–25, 2008, meeting of the Federal Open Market Committee and is presented with those minutes in the "Records" section of this annual report.

prospects for inflation as unusually uncertain, and they view the risks surrounding their forecasts for inflation as skewed to the upside.

In the second half of 2007, the deteriorating performance of subprime mortgages in the United States triggered a reassessment of credit and liquidity risks across a broad range of assets, leading to widespread strains and turbulence in domestic and international financial markets. During the first quarter of 2008, reports of further losses and write-downs at major financial institutions intensified concerns about credit and liquidity risks and resulted in a further sharp reduction of market liquidity. Risk spreads—particularly for structured credit products—widened dramatically, and securitization activity all but shut down in a number of markets. By March, many securities dealers and other institutions that had relied heavily on short-term financing in markets for repurchase agreements were facing much more stringent borrowing conditions.

In mid-March, a major investment bank, The Bear Stearns Companies, Inc., was pushed to the brink of failure after suddenly losing access to short-term financing markets. The Federal Reserve judged that a disorderly failure of Bear Stearns would have threatened overall financial stability and would most likely have had significant adverse implications for the U.S. economy. After discussions with the Securities and Exchange Commission and in consultation with the Treasury, the Federal Reserve determined that it should invoke emergency authorities to provide special financing to facilitate the acquisition of Bear Stearns by JPMorgan Chase & Co. The Federal Reserve also used emergency authorities to establish the Term Securities Lending Facility and the Primary Dealer Credit Facility to support the liquidity of primary dealers and financial markets more generally, which would bolster the availability of credit to the overall economy.[1] (See the box entitled "The Federal Reserve's Liquidity Operations.") Other steps taken by the Federal Reserve in recent months to address strains in financial markets include a further easing in the terms for bank borrowing at the discount window and an increase in the amount of credit made available to banks through the Term Auction Facility. The FOMC also authorized increases in its currency swap arrangements with the European Central Bank and the Swiss National Bank to facilitate an expansion of dollar lending operations to banks in their jurisdictions.

Over the second quarter, financial market conditions improved somewhat—credit spreads generally narrowed, liquidity pressures ebbed, and financial institutions made progress in raising new capital. Still, asset prices continue to be volatile, and many financial markets and institutions remain under considerable stress. Very recently, the share prices of Fannie Mae and Freddie Mac dropped sharply on investor concerns about their financial condition and capital position. The Treasury announced a legislative initiative to bolster the capital, access to liquidity, and regulatory oversight of the government-sponsored enterprises (GSEs). As a supplement to the Treasury's existing authority to lend to the GSEs, the Board of Governors established a temporary arrangement that allows the Federal Reserve to extend credit to Fannie Mae and Freddie Mac, if necessary.

1. Primary dealers are firms that trade in U.S. government securities with the Federal Reserve Bank of New York. On behalf of the Federal Reserve System, the New York Fed's Open Market Desk engages in such trades to implement monetary policy.

The sluggish pace of economic activity in the first half of 2008 was accompanied by a further deterioration in the labor market. Private-sector payroll employment declined at an average monthly pace of 94,000, and the unemployment rate rose to 5½ percent. Moreover, real labor income appears to have been flat in the first half of the year. Although wages rose in nominal terms, the purchasing power of those nominal gains was eroded by the rapid increases in consumer prices. Declining employment, stagnant real wages, and lower equity and home values weighed on consumer sentiment and spending. In addition, amid falling house prices and rising foreclosures, activity in the housing sector continued to decrease. The resulting softness in business sales and profits also made the environment for capital spending less hospitable. The weakness in overall domestic demand was partly offset by strong growth of exports, which were supported by a sustained expansion of foreign activity and a lower dollar.

The substantial further rise this year in the prices of many commodities, especially oil and agricultural products, largely reflected strong growth of physical demand that outstripped supply in these markets. Although weakening economic activity and rising prices have tempered demand for commodities in many industrialized nations, demand has continued to grow in booming emerging market economies. However, supplies of commodities have generally not kept pace for a variety of reasons, including political tensions in some oil-producing nations, higher input costs, lags in the development of new capacity, and more recently, floods in the Midwest. To varying degrees, the resulting increases in materials prices have passed through into retail prices of energy, food, and some other items.

Overall consumer price inflation, as measured by the price index for personal consumption expenditures, remained elevated in the first half of 2008, largely because of the sharp increases in the prices of many commodities. The decline in the foreign exchange value of the dollar has boosted import prices more generally and thus has also put upward pressure on inflation. Nonetheless, increases in labor costs and core consumer prices (which exclude the direct effects of movements in energy and food prices) have remained moderate. The rapid advance in overall prices has boosted some measures of inflation expectations: Near-term inflation expectations have risen considerably in recent months, and some indicators of longer-term inflation expectations have also moved up—a development that will require close monitoring in the period ahead.

Part 2
Recent Economic and Financial Developments

The growth of economic activity, which slowed sharply in the fourth quarter of 2007, remained subpar in the first half of 2008. Although the restraint on activity late in 2007 was concentrated in the housing sector, spillovers to other areas of the economy began to show through more clearly in the first half of 2008. Meanwhile, consumer price inflation has remained elevated this year, primarily because of steep increases in the prices of many commodities. Probably in response to the sizable rise in headline price indexes, some indicators of longer-term inflation expectations have risen in recent months. However, increases in labor costs and core prices have been fairly stable, reflecting in part the softening in aggregate activity.

Financial market stress that had developed over the second half of last year intensified in the first quarter of this year. Increased concerns about the possibility of a global economic slowdown and a generalized flight from riskier assets contributed to sharply wider risk spreads, heightened volatility, and impaired liquidity across a range of markets. The Federal Reserve responded to these developments and their potential adverse implications for the economy by aggressively easing the stance of monetary policy and by taking a number of steps to bolster liquidity and enhance market functioning. Conditions in financial markets improved somewhat in the wake of these actions, but significant strains remain. With credit conditions tight, equity and home values falling, and rapidly rising commodity prices boosting costs and consumer prices, growth of household and business spending appears to have been sluggish over the first half of the year.

The Household Sector

Residential Investment and Finance

Housing demand, residential construction, and home prices have all continued to fall so far this year. Following a decline at an annual rate of 43 percent in the second half of 2007, sales of new homes decreased at an annual rate of 32 percent in the first five months of 2008. However, sales of single-family existing homes, which dropped at an annual rate of 26 percent in the second half of last year, have been about unchanged this year. Moreover, pending home sales, which provide a glimpse of the pace of existing home sales in the months ahead, on net leveled out in the spring, hinting at some stabilization in transactions in the resale market. Still, for the overall housing sector, the challenging mortgage lending environment and the concerns of prospective homebuyers about further declines in house prices are likely continuing to depress housing demand.

As new home sales have continued to decline, homebuilders have struggled to work down their substantial overhang of unsold houses. As a consequence, residential construction activity has been pared further this year. In the single-family housing sector, new units were started at an annual rate of 674,000 in May—down more than 13 percent this year and roughly 60 percent since the peak reached in the first quarter of 2006. Despite these deep production cuts, the stock of unsold homes has moved down only 20 percent from its record high in early 2006. When evaluated relative to the three-month average pace of sales, the months' supply of unsold new homes has continued to rise and stood at 10½ months in May. In the multifamily sector, starts averaged an annual rate of about 320,000 units during the first five months of 2008, a level of activity at the lower end of its range in the past several years. All told, the decline in residential investment trimmed the growth rate of real gross domestic product (GDP) about 1 percentage point in the first quarter of 2008 and appears to have held down the second-quarter growth rate by about the same amount.

House prices also have continued to fall. The monthly price index published by the Office of Federal Housing Enterprise Oversight dropped at a 6 percent annual rate in the first four months of 2008 (the latest available data), a slightly faster rate of decline than in the second half of 2007.[2] In May, the av-

2. This index is the purchase-only version of the repeat-transactions price index for existing single-family homes published by the Office of Federal Housing Enterprise Oversight.

erage price of existing single-family homes sold—which does not control for changes in the mix of houses sold but is available on a more timely basis—was about 7¼ percent below that of a year earlier. Although lower prices should eventually help bolster housing demand, survey and anecdotal reports suggest that expectations of further house price declines are quite prevalent, a consideration that may make potential buyers reluctant to purchase homes until prices show signs of stabilizing.

The rising volume of foreclosures likely has contributed to falling house prices. Continuing the upward trend that began in late 2006, about 550,000 loans began the foreclosure process in the first quarter of 2008—more than double the average quarterly rate from 2003 to 2005. This rise in foreclosure starts will increase the supply of houses for sale unless borrowers can make up the missed payments or arrange with the lenders or mortgage servicers to have their loans modified.[3] Lenders and mortgage servicers have increasingly been working with borrowers to modify loans to allow borrowers to remain in their homes. However, some borrowers may not be able to afford even reduced monthly payments, and other borrowers may not wish to keep their properties in an environment of falling house prices. Thus, the share of foreclosure starts that ultimately result in the loss of a home seems likely to be higher in the current episode than customarily has been the case. (See the box entitled "Recent Federal Reserve Initiatives to Address Problems in the Mortgage Market".)

The rates of delinquency continued to rise in the first few months of 2008 across all categories of mortgage loans. Problems remained especially severe for subprime loans. However, the growth rate of subprime delinquencies has slowed this year, while that of prime and near-prime delinquencies—particularly on adjustable-rate loans—has picked up. Credit quality is strongly related to the origination date of mortgage loans, with loans originated in 2006 and 2007 much more likely to experience delinquency and default than loans originated in previous years. The poorer performance of the more recent loan vintages reflects a general deterioration in underwriting standards through early 2007 and the decline in house prices since 2007, which has increased the occurrence of negative homeowner equity for houses purchased near the peak of the real estate market.

New subprime mortgage loans remained largely unavailable in the first half of 2008, and borrowers with higher credit risk had to turn to government guarantee programs, such as that of the Federal Housing Administration, to obtain mortgage loans. The availability of prime mortgage credit has been held down by a further tightening of lending standards at many commercial banks, according to the Senior Loan Officer Opinion Survey on Bank Lending Practices conducted in January and April. Securitization of mortgages by the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, was robust through April, although the GSEs tightened standards and increased guarantee fees. For prime loans, interest rates on conforming fixed-rate mortgages were up slightly, on net, over the first half of 2008 after declining moderately late last year.[4] Rates on conform-

3. A loan may be modified by reducing the principal balance, reducing the interest rate, or extending the term so as to make monthly payments more affordable.

4. Conforming mortgages are those eligible for purchase by Fannie Mae and Freddie Mac; they must be equivalent in risk to a prime mortgage

Recent Federal Reserve Initiatives to Address Problems in the Mortgage Market

The high rate of mortgage foreclosures is creating personal, economic, and social distress for many homeowners and communities. The Federal Reserve is collaborating with other regulators, community groups, policy organizations, financial institutions, and public officials to identify solutions to prevent unnecessary foreclosures and their negative effects. The Federal Reserve also has taken a number of regulatory and supervisory actions to reduce the likelihood of such problems in the future.

In 2007, the Federal Reserve and other banking agencies called on mortgage lenders and mortgage servicers to work closely with borrowers who are having difficulty meeting their mortgage payment obligations. Foreclosure cannot always be avoided, but prudent loan workouts and other loss-mitigation techniques that help troubled borrowers can be less costly to lenders than foreclosure.

The Federal Reserve's Homeownership and Mortgage Initiatives reflect a comprehensive strategy across the Federal Reserve System to provide information and outreach to prevent unnecessary foreclosures and to stabilize communities. Under these initiatives, the Federal Reserve has been providing community coalitions, counseling agencies, and others with detailed analyses identifying neighborhoods at high risk of foreclosures. With this information, community leaders can target their scarce resources to borrowers in need of counseling and other interventions that may help prevent unnecessary foreclosures. One example of this effort is the online dynamic maps and data that illustrate nonprime loan conditions across the United States. In addition, community affairs offices across the Federal Reserve System have sponsored or cosponsored more than 75 events related to foreclosures since January 2007, reaching more than 5,800 attendees including lenders, counselors, community development specialists, and policymakers.

The Federal Reserve also is helping to address the challenges that foreclosed homes present, such as decreased home values and vacant properties that can deteriorate from neglect. Toward this end, the Federal Reserve entered into a partnership this spring with NeighborWorks America, a national nonprofit organization, to work together in identifying strategies to mitigate the effect of foreclosures and vacant homes on communities. In June 2007, the Federal Reserve began hosting a series of forums in several cities across the country to

ing adjustable-rate mortgages dropped in January but have since reversed a portion of that decline. Offered rates on jumbo fixed-rate loans—which ran up in the second half of last year as the securitization market for such loans dried up—remained elevated in the first half of 2008, and spreads between rates offered on these loans and on conforming loans stayed unusually wide.[5] To

with an 80 percent loan-to-value ratio, and they cannot exceed the conforming loan limit.

5. Jumbo mortgages are those that exceed the maximum size of a conforming loan; they are typically extended to borrowers with relatively strong credit histories.

examine the effects that foreclosures have on neighborhoods in both strong and weak housing markets and to assess the tools available to local communities to address the consequences of foreclosures.

The Federal Reserve is committed to fostering an environment that supports the homeownership goals of creditworthy borrowers with appropriate consumer protection and responsible lending practices. It is using its regulatory and supervisory authorities to help avoid future problems in mortgage markets. In coordination with other federal supervisory agencies and the Conference of State Bank Supervisors, the Federal Reserve issued principles-based guidance on specific types of adjustable-rate subprime mortgages in June 2007. The guidance is designed to help ensure that borrowers who choose an adjustable-rate mortgage get a loan that they can afford to repay and can refinance without prepayment penalty for a reasonable period before the first interest rate reset. The Federal Reserve issued similar guidance on nontraditional mortgages in 2006.

Strong uniform enforcement of the consumer protection regulations that govern mortgage lenders is critical to avoid future problems in mortgage markets. Together with other federal and state supervisory agencies, the Federal Reserve launched a pilot program to review consumer protection compliance and impose corrective or enforcement actions, as warranted, at selected nondepository lenders with significant subprime mortgage operations.

In December 2007, the Board proposed new rules under the Home Ownership and Equity Protection Act to ban unfair and deceptive mortgage lending practices. The Board received about 4,500 comments on the proposal and, taking into consideration these comments, issued new rules in July. For consumers receiving higher-priced mortgages, the final rules prohibit lenders from extending credit without regard to a borrower's ability to repay, require lenders to verify income and assets they rely upon in making loans, require lenders to establish escrow accounts for taxes and insurance, and prohibit prepayment penalties unless certain conditions are met. In addition, the rules also are designed to curtail deceptive mortgage advertising and to ensure that consumers receive mortgage disclosures at a time when the information is likely to be most useful to them.

Finally, the Board also is undertaking a broad and rigorous review of the Truth in Lending Act, which involves extensive consumer testing of mortgage disclosure documents. Clearer and easier-to-understand disclosures should help consumers better evaluate the loans that are offered to them and thus make more-appropriate choices when financing their homes.

support the market for larger loans, the Congress raised the conforming loan limit temporarily for 2008, which allowed the GSEs to back these mortgages. However, because the prepayment characteristics of jumbo mortgage borrowers are different from those of other borrowers, the GSEs and other market participants decided not to pool these "jumbo conforming" mortgages with other mortgages when creating mortgage-backed securities (MBS). As a result, the secondary market for such mortgages has thus far failed to thrive. Concerns expressed by public policymakers persuaded Fannie Mae and Freddie Mac to make greater efforts to jump-start trading in the market for jumbo conforming loans, and the GSEs have recently taken a variety of actions to encourage the development of that market.

The weakness in the housing market was associated with a sharp slowing in the growth of household mortgage debt to an annual rate of 3 percent in the first quarter of 2008, down from 6¾ percent in 2007 and 11¼ percent in 2006. The available indicators suggest that mortgage debt likely slowed further in the second quarter.

Consumer Spending and Household Finance

The growth rate of consumer spending slowed some in the first half of 2008 from its solid pace in the second half of 2007. The slowing reflected a number of restraining influences. The growth rate of real labor income has stepped down substantially since last summer as labor market conditions have weakened and as rising prices for food and energy have put a sizable dent in consumers' purchasing power. At the same time, household wealth has been reduced by declining values of both equities and houses. In addition, borrowing at banks to finance outlays has become more difficult as terms and standards on consumer credit have been tightened. Although the tax rebates that households began receiving in the spring are likely cushioning these effects to some extent, consumers appear to be quite downbeat. Measures of consumer confidence, which had dropped sharply in the second half of 2007, plunged further in the first half of this year and now stand at or below the low levels reached in the early 1990s.

Real personal consumption expenditures (PCE) rose at a modest annual rate of 1 percent in the first quarter. The available data suggest that spending picked up in the second quarter, reportedly boosted by tax rebates. Spending on light motor vehicles was lackluster in the first half of the year, as high gasoline prices curbed demand for sport-utility vehicles and pickup trucks. Outlays for other types of goods fell slightly in the first quarter but appear to have turned back up in recent months. Spending on services has held up well in recent quarters.

Following a sharp deceleration in the second half of last year, real labor income has been flat so far this year, as nominal wage gains have been eroded by rising consumer prices. Average hourly earnings, a measure of wages for production or nonsupervisory workers, rose at the same rate as the PCE price index in the five months through May; thus, wages were unchanged in real terms. In the past couple of months, part of the strain on household incomes caused by the stagnation in real wages was likely alleviated temporarily by the tax rebates that were paid out in May and June. As a result of these rebates, growth in real disposable personal income (DPI)—that is, after-tax income adjusted for inflation—which was subpar in the fourth quarter of 2007 and the first quarter of 2008, likely jumped in the second quarter. Despite an increase in transfers reflecting the recently passed extension of unemployment insurance benefits, real DPI is likely to fall back in the third quarter as the disbursement of rebates slows considerably.

After several years of providing an impetus to spending, household wealth has been a negative influence this year. Changes in household net worth tend to influence consumer spending most heavily over a period of a year or two. Accordingly, the drop last year in the ratio of household net worth relative to income probably weighed on consumption outlays in the first half of 2008. Moreover, this year's declines in residential real estate values and in equity prices have exacerbated the situation. Flagging wealth has likely left households less inclined to raise their spending at a rate that exceeds income growth, and the personal saving rate has flattened out over the past few quarters. In May, the saving rate jumped to 5 percent, as the immediate effect of tax rebates in many households was to boost savings.

Overall household debt increased at an annual rate of about 3½ percent in the first quarter of 2008, a notable deceleration from the 6¾ percent advance in 2007. Household debt appears to have slowed further in the second quarter. Because the growth of household debt was slightly less than the growth in nominal DPI in the first quarter and interest rates on mortgage and consumer debt declined a bit, the ratio of financial obligations to DPI ticked down.

Consumer (nonmortgage) debt expanded at an annual rate of 5¾ percent in the first quarter, about the same pace as in 2007. Consumer debt growth held up despite a reported tightening of lending terms and standards at banks. In part, this pattern may reflect some substitution away from mortgage credit. Also, interest rates on auto loans and on credit cards generally declined in the first half of this year but by less than short-term market interest rates.

Overall credit quality of consumer loans has deteriorated somewhat in recent months. Delinquency rates on consumer loans at commercial banks and captive auto finance companies rose in the first quarter but stayed within the range experienced over the past 10 years. Although household bankruptcy filings remained low relative to the levels seen before the changes in bankruptcy law implemented in late 2005, the bankruptcy rate rose modestly in the first few months of 2008.

Secondary-market data suggest that funding for credit card and auto loans has been well maintained in recent months. Notably, issuance of asset-backed securities (ABS) tied to credit card loans and auto loans has remained robust, despite spreads of yields on these securities over comparable-maturity swap rates that continue to be near historically high levels. In contrast, pressures in secondary markets for student loan ABS have reportedly affected the availability of such credit. The reimbursement formula for government-guaranteed student loans did not adequately compensate lenders for the higher funding cost in securitization markets, and issuance of guaranteed student loan ABS dropped sharply early in 2008. Legislation enacted in May gave the Department of Education and the Treasury the authority to provide short-term liquidity to institutions that lend to students, and availability of student loans appears to have improved. However, concerns persist about access to loans by students at community and career colleges, as these loans tend to be less profitable for lenders.

The Business Sector

Fixed Investment

After having posted robust gains in the middle of last year, real business fixed investment lost some steam in the fourth quarter and eked out only a small advance in the first quarter of 2008. Economic and financial conditions that influence capital spending deteriorated appreciably late last year and early this year: Business sales slowed, corporate profits fell, and credit conditions for some borrowers tightened. In addition, the heightened concern about the economic outlook may have caused some firms to postpone or abandon plans for capital expansion this year.

Real business outlays for equipment and software were flat in the first quarter. Growth in real spending on high-tech equipment and software slowed to an annual rate of about 10 percent, down from the 13 percent pace recorded in 2007. In addition, business spending on motor vehicles tumbled. Investment in equipment other than high tech and transportation dropped at an annual rate of 3¾ percent in the first quarter after a smaller decline in the previous quarter. The available indicators suggest that capital spending on equipment and software fell in the second quarter: Business purchases of new motor vehicles reportedly slipped again; shipments of nondefense capital goods (adjusted to exclude both transportation items and goods that were sent abroad) were lower, on average, in April and May than in the first quarter; and the tone of recent surveys of business conditions remained downbeat.

Nonresidential construction activity, which exhibited considerable vigor in 2006 and 2007, slowed appreciably in the first quarter of 2008. Real outlays for new commercial buildings declined sharply in the first quarter, and increases in outlays for most other types of building stepped down. More-recent data on construction expenditures suggest that spending on nonresidential structures may have bounced back in the second quarter. However, deteriorating economic and financial conditions indicate that this rebound may be short-lived. In addition to the weakening of business sales and profits, vacancy rates turned up in the first quarter (the latest available data). Moreover, the financing environment has remained difficult; bank lending officers have reported a significant tightening of terms and standards for commercial real estate loans, and funding through the commercial mortgage-backed securities (CMBS) market has continued to be extremely limited.

Inventory Investment

Despite sluggish final sales, inventories declined again in the first quarter of 2008 as firms acted promptly to prevent inventory imbalances from arising. Automakers, which had worked to bring days' supply down to a sustainable level last year, have moved aggressively to keep production aligned with demand in recent quarters. Excluding motor vehicles, real inventory investment fell in the fourth quarter of 2007 to its lowest level in several years and then turned negative in the first quarter of this year. According to the limited available data, nonauto businesses continued to liquidate real inventories early in the second quarter. Business surveys suggest that companies are generally comfortable with their current stock levels. Nonetheless, a few industries, most notably those producing construction supplies, are showing some evidence of inventory overhangs.

Corporate Profits and Business Finance

The sluggish pace of business investment in recent months is due in part to the weakening of domestic profitability and the tighter credit conditions faced by some businesses. In the first quarter of 2008, total economic profits for all U.S. corporations were down slightly from their level four quarters earlier; a nearly 20 percent rise in receipts from foreign subsidiaries was not sufficient to offset a 2½ percent fall in domestically generated profits. Although profits as a share of output in the nonfinancial corporate sector have declined in recent quarters, they remain well above previous cyclical lows. For companies in the S&P 500, operating earnings per share fell 17 percent over the year ending in the first quarter. This decline was more than accounted for by plummeting earnings at financial firms, which reported large write-downs on leveraged loans and mortgage-related assets.[6] For nonfinancial firms in the S&P 500, earnings rose nearly 11 percent over the four quarters ending in the first quarter of 2008; energy-sector firms had a strong 31 percent increase in earnings, whereas earnings at other nonfinancial firms rose 4½ percent.

Although credit has remained available to the business sector, yields on corporate bonds increased significantly over the first half of the year, and banks reported tighter terms and standards on commercial and industrial loans and on commercial real estate loans. All told, the growth rate of the debt of nonfinancial businesses fell from 11¾ percent in 2007 to 9¼ percent in the first quarter of 2008; the available data point to a further deceleration in the second quarter of this year.

On balance, the composition of borrowing by nonfinancial businesses has shifted this year toward longer-maturity debt. Net bond issuance by nonfinancial firms has been strong. Speculative-grade issuance, which dropped sharply late last year and was practically nil in the first quarter, rebounded markedly in the second quarter, while investment-grade issuance has continued to be robust. Spreads between yields on investment- and speculative-grade bonds and those on comparable-maturity Treasury securities climbed in January and then surged in March. After narrowing in April and May, bond spreads jumped again in late June. Outstanding commercial paper (CP) for nonfinancial firms has been little changed, on net, this year. Yields on nonfinancial CP have moved down since the beginning of the year, roughly in line with other short-term interest rates, although spreads between yields on lower-rated and higher-rated nonfinancial CP remain well above the levels prevailing before the onset of the financial difficulties last summer.

Commercial and industrial (C&I) loans at banks expanded briskly in the first quarter and then slowed markedly in the second quarter. In the Senior Loan Officer Opinion Survey taken in January and April, considerable net fractions of banks reported that they had tightened credit standards and boosted spreads on C&I loans. According to the respondent banks, the move to a more stringent lending posture mainly reflected a less favorable or more uncertain economic outlook and a reduced tolerance for risk; a significant fraction also noted concerns about the capital position of their own bank as a reason for tightening standards. The secondary market for syndicated leveraged loans remained relatively weak, but loans associated with some prominent buyouts were sold, albeit at a discount.

Gross equity issuance by nonfinancial firms dipped in the first quarter and rebounded in the second quarter. A sharp decline in share repurchases and cash mergers led to a notable reduction of net equity retirement in the first quarter.

The credit quality of nonfinancial corporations generally has remained solid. The six-month trailing bond default rate was very low despite a small

6. Asset write-downs and capital losses are generally excluded from the calculation of economic profits but are included as an expense in the operating earnings per share of financial firms.

tick up in June. The delinquency rate on C&I loans at commercial banks continued the mild increase that began last year, but it remained subdued by historical standards. Ratings downgrades in the first five months of this year were modest, only slightly exceeding upgrades. Balance sheet liquidity at nonfinancial corporations remained high through the first quarter of 2008, and leverage stayed very low.

In the April 2008 Senior Loan Officer Opinion Survey, a large fraction of banks reported having tightened credit standards on commercial real estate loans. Delinquency rates on commercial real estate loans for construction and land development projects extended by commercial banks moved sharply higher in the first quarter of 2008 after rising noticeably last year. In contrast, delinquency rates on bank loans that finance existing commercial properties moved up only slightly. Delinquency rates on commercial mortgages held by life insurance companies and those in CMBS pools, which mostly finance existing commercial properties, remained low.

Despite the generally solid performance of commercial mortgages in securitized pools, spreads of yields on CMBS over comparable-maturity swap rates soared to unprecedented levels early in 2008. In recent months, these spreads have narrowed somewhat, but they remain well above levels seen before this year. The widening of spreads reportedly reflected heightened concerns regarding standards for underwriting commercial mortgages over the past few years and likely also investors' wariness of structured finance products more generally. After hitting a record level in early 2007, issuance of CMBS dropped sharply late last year and slowed to a trickle so far this year.

The Government Sector

Federal Government

The deficit in the federal unified budget has widened during the current fiscal year after having narrowed in the preceding few years. A substantial portion of the rebates authorized by the Economic Stimulus Act of 2008 was distributed in May and June, which caused a significant widening of the deficit. In addition, the growth of receipts has slowed in response to the weaker pace of economic activity, and the growth of outlays has stepped up. Over the first nine months of fiscal year 2008—from October through June—the unified budget recorded a deficit that was $148 billion greater than during the comparable period ending in June 2007. When measured relative to nominal GDP, the deficit moved up from 1¼ percent in fiscal 2007 to 2¼ percent during the 12 months ending in June 2008; a continued slow pace of economic activity and additional revenue losses associated with the Stimulus Act are expected to widen the deficit further in the final three months of fiscal 2008.

The Economic Stimulus Act is estimated to result in about $115 billion of rebates being sent to households in 2008 and 2009. The rebates began to be distributed in the last few days of April, and by the end of June, approximately $80 billion worth of rebates had been disbursed, accounting for more than half of the widening of the budget deficit in the first nine months of fiscal 2008 relative to the same period in fiscal 2007.

The slower pace of economic activity has cut into receipts. Excluding the budgetary effects of stimulus rebates, federal revenues in the first nine months of fiscal 2008 were only 2 percent higher than in the same period in fiscal 2007, down from a rise of 6¾ percent in fiscal 2007 and considerably smaller than the double-digit gains recorded in fiscal 2005 and fiscal 2006. The slowdown in federal revenues has been most pronounced for corporate receipts, reflecting the decline in corporate profits since the middle of 2007. Individual income and payroll tax receipts—excluding the stimulus rebates—also have slowed, likely because of the smaller gains in personal income during the current fiscal year.

Nominal federal outlays in the first nine months of fiscal 2008 were 6½ percent above their level in the comparable period in fiscal 2007, a faster pace of increase than was recorded in fiscal 2007 but generally below the rapid increases seen in fiscal 2002 through 2006. So far this fiscal year, the growth of outlays for defense has stepped up relative to fiscal 2006 and 2007, and spending has continued to rise apace in most major nondefense categories. In the months ahead, outlays will be bumped up further by the extension of eligibility for unemployment insurance benefits to individuals who have exhausted their benefits.

As measured in the national income and product accounts (NIPA), real federal expenditures on consumption and gross investment—the part of federal spending that is a direct component of GDP—increased at an annual rate of 4¼ percent in the first quarter, a contribution of 0.3 percentage point to real GDP growth. Real defense spending accounted for almost the entire rise, as nondefense outlays only edged up. In the second quarter, defense spending appears to have posted another sizable increase, and given currently enacted appropriations, it is likely to rise further in coming quarters.

Federal Borrowing

Federal debt rose at an annual rate of 7½ percent in the first two quarters of fiscal year 2008—from October through March—a notable step-up from the 4¼ percent pace in fiscal 2007. As of the end of March, the ratio of federal debt held by the public to nominal GDP was about 37 percent, slightly higher than in recent years.

The deterioration in the budget position of the federal government led the Treasury to reintroduce the one-year Treasury bill, which was last issued in 2001. The initial auction on June 3 was very well received, with a bid-to-cover ratio above 3. Issuance also increased for both shorter- and longer-maturity Treasury securities. The proportion of nominal coupon securities purchased at Treasury auctions by foreign investors changed little over the first half of 2008 and remains in the range of 10 percent to 25 percent observed over the past several years. However, holdings of Treasury securities by foreign official institutions at the Federal Reserve Bank of New York increased more rapidly in the first half of 2008 than over any of the previous three years.

State and Local Government

The fiscal positions of state and local governments began to weaken last year and have continued to deteriorate in 2008. After having improved significantly from 2003 to 2006, net saving by the sector—which is broadly similar to the surplus in an operating budget—turned slightly negative in 2007, and this measure moved further into negative territory in the first quarter of 2008. The deterioration in budget conditions has occurred as increases in revenues have slowed while nominal expenditures have risen at a brisk pace. The slowdown in state income tax revenues has followed a pattern similar to the one that has emerged at the federal level. Corporate receipts have declined, and the rise in individual income taxes has become more subdued. At the same time, state receipts from sales taxes have softened markedly. At the local level, the decline in house prices has not yet begun to curb local property tax revenues appreciably, but increases in local receipts from this source seem likely to slow more noticeably in the next few years.

On the outlays side of the accounts, nominal spending has continued to rise, particularly for expenditures on health care and energy items. In real terms, expenditures on consumption and gross investment by state and local governments (as measured in the NIPA) rose only a bit in the first quarter, as increases in expenditures on current operations were largely offset by a decline in outlays on structures. However, construction expenditures are volatile from quarter to quarter, and the data through May suggest that real state and local expenditures for structures picked up in the second quarter. Meanwhile, state and local hiring remained elevated through June.

State and Local Government Borrowing

Bond issuance by state and local governments slowed moderately in the first quarter of 2008 as the cost of borrowing rose. Investors demanded higher returns, in part because of concerns about the strength of financial guarantors that insure many municipal bonds and in part because of concerns about the effect of a potential economic slowdown on state and local government revenues.[7] Beginning in February, these investor apprehensions also led to widespread failures of rate-resetting auctions for auction rate securities (ARS) issued by state and local governments.[8] Pressures in the municipal securities market eased somewhat in the second quarter, along with the broader relaxation of financial market strains. In addition, ratings upgrades of municipalities greatly exceeded downgrades in the second quarter. Since March, municipal bond issuance has rebounded, and a significant fraction of failing ARS issues have been paid down with the proceeds of standard bond issues.

National Saving

Total net national saving—that is, the saving of households, businesses, and governments excluding depreciation charges—dipped below zero in the first quarter of 2008. After having stood at an already low rate of 1¾ percent of nominal GDP in the second quarter of 2007, the national saving rate declined steadily over the subsequent three quarters, as the federal budget deficit widened, the fiscal positions of state and

7. Concerns about the financial guarantors arose in 2007, but significant downgrades did not occur until early this year. In June, Moody's and Standard & Poor's downgraded MBIA and Ambac, two of the largest guarantors, from AAA to AA or lower. New bond insurance business has shifted to guarantors that are viewed as financially stronger, and some municipalities have stated their intention to dispense with guarantors and issue on the strength of their own ratings.

8. ARS are long-term securities whose interest rates are reset through regularly scheduled auctions, typically every 7, 28, or 35 days. As of the end of 2007, the size of the ARS market in the United States was about $330 billion, about half of which was accounted for by municipal securities. A resetting auction fails when investors do not bid for the entire issue at an interest rate below the contract maximum. Upon auction failure, the asset holders from before the auction retain ownership of the securities and receive a specified ceiling interest rate, which is usually, but not necessarily, equal to the maximum bid rate.

local governments deteriorated, and business saving decreased. Accordingly, total national saving as a share of nominal GDP, which has been declining, on balance, since the late 1990s, has fallen to a historic low (apart from the third quarter of 2005, which was marked by sizable hurricane-related property losses). If not reversed over the longer run, persistent low levels of saving will be associated with either slower capital formation or continued heavy borrowing from abroad, either of which would retard the rise in the standard of living of U.S. residents over time and hamper the ability of the nation to meet the retirement needs of its aging population.

The External Sector

International Trade

Foreign demand has continued to be an important source of strength for the U.S. economy. Net exports contributed ¾ percentage point to the growth of real GDP in the first quarter of 2008 after adding a similar amount to growth in 2007. The growth of real exports of goods and services expanded at a 5½ percent pace in the first quarter, moderating from the 12½ percent surge recorded in the second half of 2007. Export growth in the first quarter was supported by higher exports of agricultural products, consumer goods, industrial supplies, and services. In contrast, exports of both aircraft and automobiles moved down after rising rapidly in the second half of 2007. Exports to Europe and Latin America rose robustly (in current dollars), while exports to Canada and to OPEC countries fell back. Data for April and May suggest that exports continued to expand in the second quarter, with exports of industrial supplies showing particular strength.

The positive contribution of net exports in the first quarter reflected, in part, a ¾ percent decline in real imports of goods and services. Imports of automotive products and consumer goods fell in line with slowing U.S. domestic demand, more than offsetting higher real imports of oil and a slight increase in imports of capital goods. Imports from China and Mexico declined (in current dollars), whereas imports from Canada, Japan, and OPEC countries expanded. After falling sharply in March, imports rebounded, on average, in April and May, as imports of capital equipment and consumer goods increased strongly.

In the first quarter of 2008, the U.S. current account deficit was $706 billion at an annual rate, or 5 percent of GDP, $25 billion narrower than its level in 2007; the narrowing largely reflects higher net investment income. A large improvement in the non-oil trade deficit was offset by a sharp increase in the bill for imported oil, which resulted from the jump in oil prices.

Compared with 2007, prices for imports of both material-intensive and finished goods are increasing at much faster rates so far this year. Although import price increases also reflect the depreciation of the dollar, rising commodity prices (discussed in more detail in the box entitled "Commodity Prices") have significantly boosted the rate of import price inflation. In the first quarter, prices of imported goods excluding oil and natural gas rose at an annual rate of about 7½ percent, a pace more than twice that of the previous year. Available data suggest that import price inflation was sharply higher in the second quarter.

The Financial Account

In late 2007 and the first quarter of 2008, the U.S. current account deficit

Commodity Prices

Prices for crude oil and many other commodities continued to soar through the first half of 2008. After shooting up about 60 percent last year, the spot price of West Texas intermediate crude oil has increased an additional 50 percent thus far in 2008, climbing from $92 per barrel in December 2007 to about $140 recently. While weaker economic growth and the high level of prices appear to be damping oil demand in industrialized nations, demand from emerging market countries remains robust. The continued strength in emerging market demand reflects, in part, government subsidies that limit the pass-through of higher crude prices to retail products and thus mute the response to higher prices. Furthermore, on the supply side, incoming information since the beginning of the year has been decidedly downbeat, with non-OPEC production continuing to fall short of expectations. Despite additional investment, oil production capacity has not risen at a pace commensurate with the growth of global demand. The lack of spare capacity has led, in turn, to heightened sensitivity of oil prices to political developments, such as ongoing tensions in the Middle East and instability in Nigeria. The price of the far-dated NYMEX oil futures contract (currently for delivery in 2016) has also risen to about $140 per barrel and suggests that the balance of supply and demand is expected to remain tight for some time to come.

Nearer-term market pressures have been reflected in domestic inventories of both crude oil and refined oil products, which have declined notably in recent months and stand well below year-earlier levels. Inventories also appear to be tight in other countries (although data are less complete for emerging market countries). Lean inventories increase the vulnerability of petroleum markets to any disruptions in production, transportation, and refining, which is of particular concern during hurricane season. The tightness of inventories suggests that the recent increases in oil prices reflect near-term demand and supply pressures, rather than speculative hoarding.

Prices of nonfuel commodities were quite volatile in the first half of 2008. Through early March, prices of many commodities rose sharply, including those for some foods (such as corn and wheat) and metals (in particular, copper and aluminum). This broad-based price

was financed primarily by foreign purchases of U.S. securities, as has been the norm in recent years. The global financial turmoil has continued to leave an imprint on both the sources and composition of cross-border financial flows, including a net private outflow in the first quarter. Meanwhile, foreign official inflows provided all of the financing from abroad during the first quarter, driven by net purchases of U.S. Treasury and agency securities by Asian institutions. Unusually large net purchases of corporate securities also contributed to foreign official inflows, likely reflecting sovereign wealth fund activity.

Foreign private demand appeared to remain robust for the safest U.S. investments—net private purchases of U.S. Treasury securities, which surged in the third quarter of 2007 when the turmoil began, remained at near-record levels through April 2008. In contrast, corporate bond purchases by foreign private investors have been weaker in each quarter of the turmoil than in any previous quarter since 2002. Corporate eqincrease appears to have been driven mainly by growth in global demand. More recently, however, price movements have been less uniform, and commodities such as wheat and nickel have seen sharp price declines. Nevertheless, some other food commodity prices have continued to soar, particularly the price of corn, which has been affected by weather-related concerns, including the recent floods in the Midwest. The price of rice has also increased sharply this year, which has led a number of rice-producing countries to enact export bans, adding to upward pressure on global prices. Through feed costs, increased grain prices also have been reflected in higher prices for meat and dairy products.

The supply response of farm crops to price increases typically has had a relatively short time lag, usually through increasing land under cultivation. Although increases in acreage devoted to one crop have recently come at the expense of other crops, yields have risen and should continue to do so as more-advanced seed varieties and cultivation techniques are employed.

In addition to supply and demand conditions in the physical markets, other factors have been cited as contributing to the rise in commodity prices in recent years, including depreciation of the dollar and lower interest rates. All else being equal, a lower value of the dollar implies a higher dollar price of commodities, but the causal relationships between the exchange value of the dollar and commodity prices are complex and run in both directions. The fact that commodity prices have risen significantly in terms of all major currencies suggests that factors other than the depreciation of the dollar have been important causes of the rise in prices. Similarly, the relationship between interest rates and commodity prices may depend on what is driving changes in interest rates. For example, to the extent that lower interest rates reflect a relatively weak economy and thus softer demand for commodities, interest rates and commodity prices may tend to move in the same direction. And irrespective of their cause, lower interest rates might also lead to a buildup in commodity inventories—as a result of reduced financing costs of holding inventories—potentially putting upward pressure on prices. However, inventory levels of key commodities have not risen this year, a fact that is at odds with such explanations of price increases that emphasize the role of interest rates.

uity purchases have also been very weak in 2008 through April after a strong rebound in the fourth quarter of 2007. Overall, total inflows from foreign private acquisitions of U.S. securities were well below average in the first quarter of 2008 but slightly above the nine-year low set in the third quarter of 2007 as the turmoil began.

Inflows from private purchases of U.S. securities in the first quarter of 2008 were offset by strong outflows associated with U.S. direct investment abroad and by interbank flows. Somewhat surprisingly given the global financial turmoil, the strength seen in U.S. direct investment abroad in 2007 persisted through the fourth quarter and into the first quarter of 2008. In addition, net lending abroad by U.S.-resident banks, which tends to be quite volatile, has increased with unusual consistency since the turmoil began; these outflows, primarily from foreign-owned banks to their European affiliates, were particularly large in March as conditions in U.S. and European interbank funding markets re-intensified.

The Labor Market

Employment and Unemployment

The demand for labor has been contracting this year. After having increased 54,000 per month, on average, in the second half of 2007, private payroll employment declined at an average monthly pace of 94,000 in the first half of 2008. Over the same period, the civilian unemployment rate moved up more than ½ percentage point, to 5½ percent.

Job losses in the first half of 2008 were concentrated in the construction and manufacturing sectors. Although businesses in these industries have been trimming payrolls for more than two years, the downsizing has intensified during the past several months. In addition, job losses have begun to mount this year in the wholesale and retail trade sectors and in the professional and business services category. Even among the many sectors in which payrolls have continued to expand, such as technical services providers and eating and drinking establishments, job gains have been less robust so far this year than in 2007. A notable exception has been hiring by providers of health and education services, which has remained strong.

The unemployment rate, which rose ½ percentage point in 2007, increased another ½ percentage point in the first half of this year. Initial claims for unemployment insurance and the number of individuals receiving unemployment insurance benefits moved up considerably over the six months ending in June; accordingly, the share of unemployed workers who lost their last jobs (as opposed to those who voluntarily left their jobs or were new entrants to the labor force) rose, on net, this spring. In addition, the percentage of persons who reported that they were working part time for economic reasons increased sharply. Thus far, the labor force participation rate, which typically falls during periods of labor market weakness, has remained steady and stood at 66.1 percent in June, near the middle of the range that has prevailed since early 2007.

Other indicators also point to further deterioration in labor market conditions this year: Private surveys of businesses suggest that firms plan to continue cutting back on hiring in the near term. At the same time, according to surveys of consumers, assessments of labor market prospects in the year ahead, which had worsened late last year, slipped further in the first half of 2008.

Productivity and Labor Compensation

Gains in labor productivity have moved up significantly of late. According to the latest available published data, output per hour in the nonfarm business sector rose 3¼ percent during the year ending in the first quarter of 2008, up from the ½ percent increase recorded over the preceding four quarters. On average, the rise in productivity over the past two years, although less than the outsized increases posted earlier in the decade, suggest that the fundamental forces that in recent years have supported a solid uptrend in underlying productivity remain in place. Those forces include the rapid pace of technological change and the ongoing efforts by firms to use information technology to improve the efficiency of their operations. Increases in the amount of capital, especially high-tech capital, available to each worker also appear to be providing considerable impetus to productivity growth.

Broad measures of hourly labor compensation have not kept pace with the rapid increases in both overall consumer prices and labor productivity, despite a labor market that, until recently, had been generally tight. The employment cost index (ECI) for private industry workers, which measures both wages and the cost to employers of providing benefits, rose 3¼ percent in nominal terms between March 2007 and March 2008 (the latest available data), the same gain as was recorded over the preceding 12 months. Although the increase in the wage and salary component of the ECI edged down, the rise in benefits costs picked up markedly. Benefits costs were pushed up by a sharp rise in employer contributions to retirement plans, which likely reflected, in part, the weak performance of the stock market and an atypically small increase in employer contributions in the preceding year.

According to preliminary data, compensation per hour in the nonfarm business (NFB) sector—an alternative measure of hourly compensation derived from the data in the NIPA—rose 4 percent over the year ending in the first quarter of 2008, down from a 5 percent gain in the previous year. Because of the slower growth in NFB hourly compensation and the faster growth in productivity over the period, unit labor costs rose just ¾ percent over the year ending in the first quarter of 2008 after having increased 4¼ percent over the preceding year. On average, the rise in unit labor costs over the past two years is about on par with the increases recorded in the preceding two years.

Prices

Headline inflation remained elevated in the first half of 2008, as prices for both food and energy continued to surge. The chain-type price index for personal consumption expenditures increased at an annual rate of 3.4 percent between December 2007 and May 2008, about the same as the brisk pace registered over the 12 months of 2007. Excluding food and energy items, the PCE price index rose at an annual rate of 1.9 percent over the first 5 months of the year, down from the 2.2 percent increase over the 12 months of 2007.

Energy prices, which jumped 20 percent over 2007, continued to soar in the first five months of this year. Spurred by rising crude oil costs, motor fuel prices continued to move up through May, and increases in prices of heating fuel and natural gas also jumped appreciably. Furthermore, the pass-through of the record-high levels of crude oil prices into retail gasoline prices was only partial, and wholesale and retail margins were unusually compressed in May. As these margins return to more typical levels, retail prices are likely to rise further. Indeed, survey evidence suggests that prices at the pump jumped again in June and early July. The recent pickup in natural gas prices apparently reflected substitution by utilities and other users away from relatively expensive crude oil as well as the unexpected shutdown of some production in the Gulf of Mexico during the spring.

Food prices have also picked up further this year. After climbing 4¾ percent in 2007, the PCE price index for food and beverages increased at an annual rate of more than 6 percent between December 2007 and May 2008. High grain prices and strong export demand have been primarily responsible for sizable increases in the retail prices of poultry, fish, eggs, cereal and bakery items, fats and oils, and a variety of other prepared foods. In addition, the index for fruits and vegetables rose at an annual rate of 7¼ percent over the first five months of the year, likely reflecting, in part, higher input costs. Although world grain production improved this spring, excessively wet weather and flooding in the Midwest boosted spot prices for corn and soybeans in June.

The small decline in core PCE price inflation this year masked some substantial—but largely offsetting—crosscurrents. Shelter costs have continued to decelerate as housing markets have softened further. In addition, a moderation in the pace of medical care price increases has also held down core price inflation this year. In contrast, prices of core services besides medical and shelter costs have increased more rapidly. Similarly, prices of core goods, which declined some in 2007, were about flat, on net, over the first five months of this year.

More fundamentally, increased slack in labor and product markets is likely damping price increases this year. However, a number of other factors are putting upward pressure on core inflation. Higher prices for energy and other industrial commodities continue to add to the cost of producing a wide variety of goods, and increases in the prices of non-oil imports have picked up appreciably. Moreover, inflation expectations, especially for the near term, have moved up since the turn of the year. Probably reflecting the elevated level of actual headline inflation, the median expectation for year-ahead inflation in the Reuters/University of Michigan Surveys of Consumers moved up to about 3½ percent at the end of 2007 and then continued to rise in 2008; it reached 5.3 percent in the preliminary July estimate. However, the upward movement in longer-run inflation expectations has been much less pronounced. According to the preliminary July result in the Reuters/University of Michigan survey, median 5- to 10-year inflation expectations were 3.4 percent for a third consecutive month, compared with the readings in the range of 3 percent to 3¼ percent that had prevailed for the preceding few years. Similarly, estimates of 10-year inflation compensation, as measured by the spreads of yields on nominal Treasury securities over those on their inflation-protected counterparts, have moved up about 20 basis points, on balance, since the turn of the year. However, most of that increase reflected higher inflation compensation over the next 5 years; estimates of inflation compensation 5 to 10 years ahead were up only 10 basis points by early July. According to the Survey of Professional Forecasters conducted by the Federal Reserve Bank of Philadelphia, expectations of inflation over the next 10 years ticked up in the first half of 2008, though they remain essentially unchanged since 1998.

Broader, NIPA-based measures of inflation, which are available only through the first quarter of this year, slowed relative to the pace of the past couple of years. The latest data show a

Alternative Measures of Price Change, 2007–08

Percent

Price measure	2007	2008
Chain-type (Q1 to Q1)		
Gross domestic product (GDP)	2.9	2.2
Excluding food and energy	2.9	1.9
Gross domestic purchases	2.6	3.2
Personal consumption expenditures (PCE)	2.3	3.4
Excluding food and energy	2.4	2.0
Market-based PCE excluding food and energy	2.2	1.8
Fixed-weight (Q2 to Q2)		
Consumer price index	4.0	3.8
Excluding food and energy	2.3	2.2

NOTE: Changes are based on quarterly averages of seasonally adjusted data. For the consumer price index, the 2008:Q2 value is calculated as the average for April and May compared with the average for the second quarter of 2007 and is expressed at an annual rate.

SOURCE: For chain-type measures, Department of Commerce, Bureau of Economic Analysis; for fixed-weight measures, Department of Labor, Bureau of Labor Statistics.

rise in the price index for GDP less food and energy of about 2 percent over the year ending in the first quarter, down about 1 percentage point from the figure for the year ending in the first quarter of 2007. In addition to a lower reading for core PCE inflation over the past four quarters, prices for some other components of final demand, especially construction, decelerated.

Financial Markets

The elevated risk spreads, high volatility, and impaired functioning that characterized domestic and international financial markets in the second half of 2007 continued through the first half of 2008. Spillovers from the slumping U.S. housing market were the largest direct source of these pressures, but a generalized flight from riskier assets—particularly structured credit products—and worries about a global economic slowdown also contributed to financial strains.[9] The Federal Reserve lowered the target federal funds rate an additional 225 basis points over the first four months of 2008 in response to a deteriorating outlook for economic activity.

Financial strains increased significantly during the first quarter, leading to a liquidity crisis in March at The Bear Stearns Companies, Inc., a major investment bank, and to its subsequent acquisition by JPMorgan Chase & Co. Additional actions taken by the Federal Reserve to improve market functioning and liquidity, including the introduction of liquidity facilities for primary dealers, appeared to have an ameliorative effect, and tensions eased somewhat in the second quarter. (See the box entitled "The Federal Reserve's Liquidity Operations.") Nevertheless, conditions in a broad range of domestic and international financial markets remained strained relative to previous years. This week, the Board of Governors announced a temporary arrangement that allows the Federal Reserve to extend credit to Fannie Mae and Freddie Mac, if necessary.

Market Functioning and Financial Stability

The deteriorating performance of subprime mortgages in the United States prompted widespread strains and turbulence in domestic and international financial markets in the second half of 2007. Substantial losses on even the highest-rated structured products based on subprime mortgages caused market participants to reassess the risks associated with other structured financial instruments and raised concerns about the exposures of major financial institutions to these assets. As liquidity in markets for structured products evaporated, banks were forced, at least temporarily, to hold more assets on their balance sheets than they anticipated. In addition, banks' losses on mortgage-related securities and other assets prompted credit concerns among counterparties. Both of these factors contributed to strains in bank funding markets. The resulting deleveraging in the financial sector reduced the availability of credit to the overall economy. By late 2007, U.S. house prices had begun to fall, residential investment was contracting sharply, and indicators of overall economic activity had softened noticeably. These developments induced investors to pull back from a broader range of financial assets, leading to impaired liquidity conditions in many

9. In a structured credit product, the credit risk of a portfolio of underlying exposures is segmented into tranches of varying seniority and risk exposure.

The Federal Reserve's Liquidity Operations

In response to serious financial strains, the Federal Reserve has taken a number of steps since August 2007 to enhance liquidity and foster the improved functioning of financial markets and thereby promote its dual objectives of maximum employment and price stability.

The Federal Reserve eased the terms of access for borrowing by depository institutions under the regular primary credit program, or discount window. The spread of the primary credit rate over the target federal funds rate was narrowed from 100 basis points to 50 basis points in August 2007 and to 25 basis points in March. The maximum loan term was extended to 30 days in August 2007 and to 90 days in March; institutions have the option to renew term loans so long as they remain in sound financial condition. Over time, more institutions have used the discount window, and the more accommodative terms for borrowing at the window have reportedly improved confidence by assuring depository institutions that backstop liquidity will be available should they need it.

In December 2007, the Federal Reserve introduced the Term Auction Facility (TAF), through which predetermined amounts of discount window credit are auctioned every two weeks to eligible borrowers for terms of about one month. In effect, TAF auctions are similar to open market operations but are conducted with depository institutions rather than primary dealers and against a much broader range of collateral than is accepted in standard open market operations. The TAF appears to have overcome the reluctance to borrow associated with standard discount window lending because of its competitive auction format, the certainty that a large amount of credit would be made available, and the fact that it is not designed to meet urgent funding needs. Indeed, a large number of banks—ranging at various points in time from around 50 to more than 90—have participated in each of the 16 auctions held thus far. The size of individual TAF auctions was raised in several steps from an initial level of $20 billion at inception last December to $75 billion most recently; the amount of TAF credit currently outstanding is $150 billion.

In conjunction with the introduction of the TAF, the Federal Reserve also established swap lines with the European Central Bank and the Swiss National Bank to provide dollar funds to facilitate dollar lending by those central banks to banks in their jurisdictions. These swap lines have been enlarged over time and currently stand at $50 billion with the European Central Bank and $12 billion with the Swiss National Bank.

In response to the unprecedented pressures in short-term repurchase agreement (repo) markets earlier this year, the Federal Reserve initiated a special program of 28-day term repurchase agreements; $80 billion of such agreements are currently outstanding. These agreements were designed to enhance the ability of primary dealers to obtain term funding for any assets that are eligible as collateral in conventional open market operations. Also, on March 11, the Federal Reserve announced plans to create the Term Securities Lending Facility (TSLF), in which the Federal Reserve lends Treasury securities held in its portfolio at auction against the collateral of high-grade securities held by dealers. In addition to conventional open market operation collateral—Treasury securities, agency securities, and agency-sponsored mortgage-backed securities (MBS)—the Federal Reserve now accepts AAA-rated residential MBS, commercial MBS, and other asset-backed securities as collateral at the TSLF. The Federal Reserve sets a minimum bid rate for each TSLF auction. Bids submitted at most TSLF auctions have fallen short of the announced auction quantities. Nevertheless, market participants have indicated that the TSLF has contributed to improved functioning in repo markets.

Pressures in short-term funding markets worsened sharply in mid-March. On March 13, The Bear Stearns Companies, Inc., a prominent investment bank and primary dealer, advised the Federal Reserve and other government agencies that its liquidity position had deteriorated significantly and that it would be forced to file for bankruptcy the next day unless alternative sources of funds became available. A bankruptcy filing would have forced the secured creditors and counterparties of Bear Stearns to liquidate the underlying collateral, and given the illiquidity of markets, those creditors and counterparties might well have sustained substantial losses. If they had responded to losses or the unexpected illiquidity of their holdings by pulling back from providing secured financing to other firms and by dumping large volumes of illiquid assets on the market, a much broader financial crisis likely would have ensued with consequent harm to the overall economy. In such circumstances, the Federal Reserve Board judged that it was appropriate to use its emergency lending authorities under the Federal Reserve Act to avoid a disorderly closure of Bear Stearns. Accordingly, the Federal Reserve, after discussions with the Securities and Exchange Commission and in close consultation with the Treasury, agreed to provide short-term funding to Bear Stearns through JPMorgan Chase & Co. Over the following weekend, JPMorgan Chase agreed to purchase Bear Stearns and assume the company's financial obligations. The Federal Reserve, again in close consultation with the Treasury, agreed to supply term funding, secured by $30 billion in Bear Stearns assets, to facilitate the purchase. JPMorgan Chase completed the acquisition of Bear Stearns on June 26, and the Federal Reserve extended approximately $29 billion of funding on that date.

In a further effort to prevent a possible downward spiral in financial markets, the Federal Reserve also used its emergency authorities to create the Primary Dealer Credit Facility (PDCF) in mid-March. The PDCF allows primary dealers to borrow at the discount window against collateral that includes a broad range of investment-grade securities. In effect, the PDCF provides primary dealers with a liquidity backstop similar to the discount window that is available to depository institutions.

These liquidity measures appear to have contributed to some improvement in financial markets since late March.

Over recent days, the share prices of Fannie Mae and Freddie Mac dropped sharply on investor concerns about their financial condition and capital position. The Treasury announced a legislative initiative to bolster the capital, access to liquidity, and regulatory oversight of the government-sponsored enterprises (GSEs). As a supplement to the Treasury's existing authority to lend to the GSEs, the Board of Governors established a temporary arrangement that allows the Federal Reserve to extend credit to Fannie Mae and Freddie Mac, if necessary. In establishing this arrangement, the Board exercised its authority under section 13(13) of the Federal Reserve Act. Credit under this arrangement will be extended at the primary credit rate and secured by government and federal agency securities.

markets, with widened risk spreads and elevated volatilities.

This market turbulence continued into early 2008, as liquidity in many financial markets continued to be impaired and risk spreads remained wide. After declining sharply late last year, issuance of non-agency-sponsored mortgage-backed securities essentially came to a halt by the beginning of 2008, and secondary-market trades of these assets were rare. Price indexes of non-agency-sponsored subprime MBS based on derivatives markets declined further. However, the unusual pressures that had been apparent in short-term investment-grade funding markets in December eased considerably in January, owing to a combination of the passing of year-end balance sheet concerns and the provision of additional liquidity by the Federal Reserve and foreign central banks.

In February and March, short- and long-term funding markets came under renewed pressure after reports of further losses and write-downs at major banks, broker-dealers, and the government-sponsored enterprises. Fears of a weakening economy exacerbated a generalized flight from all but the safest assets. Repurchase agreement (repo) market investors exhibited a marked preference for Treasury collateral and pushed rates on Treasury general collateral repos to historical lows that were well below the target federal funds rate. As liquidity for MBS not sponsored by the GSEs and for other private-label asset-backed securities dried up, the heightened uncertainty regarding values of these instruments led to an unprecedented increase in the margin, or "haircut," required on repos based on such collateral; the interest rate spread on these repos also rose. Spreads of corporate and GSE bond yields over yields on comparable-maturity Treasury securities jumped to multiyear highs. Ratios of yields on municipal bonds to yields on Treasury securities spiked, and failures were widespread in the auction rate securities markets for municipal securities, student loans, and other assets. Prices fell in the secondary market for leveraged loans, and implied spreads on indexes of loan-only credit default swaps, or LCDX, reached record levels in February. Liquidity was strained in many markets; for example, in the market for Treasury coupon securities, bid-asked spreads and spreads between yields on off-the-run and on-the-run securities reached multiyear highs. Bid-asked spreads in the leveraged loan market also widened noticeably. The orderly resolution of the Bear Stearns situation along with the implementation of the Primary Dealer Credit Facility and the Term Securities Lending Facility in March appeared to reduce strains in short-term funding markets and to relieve liquidity pressures more broadly across fixed-income markets (see the box entitled "The Federal Reserve's Liquidity Operations.")

Even though conditions in several markets improved somewhat after mid-March, pressures in some short-term funding markets continued to intensify into April. Yield spreads rose in April on unsecured financial, asset-backed, and lower-rated nonfinancial commercial paper. Interbank term funding pressures, as measured by spreads of term London interbank offered rates over comparable-maturity overnight index swap rates, peaked in April but have since moved somewhat lower, at least for terms of three months and less. The expansion in May of the Federal Reserve's Term Auction Facility and of the associated swap lines with the European Central Bank and the Swiss National Bank appears to have contributed to this easing of pressures. However, for interbank funding at terms greater than three months, transaction volumes are reportedly low, and spreads remain high.

In longer-term financial markets, pressures generally eased in April and May. Spreads of conforming mortgage rates and corporate bond yields over yields on comparable-maturity Treasury securities narrowed, and prices and liquidity in the secondary market for leveraged loans increased. However, yield spreads for corporate bonds and mortgages moved higher in June. Equity prices of financial intermediaries, including the housing-related GSEs, Fannie Mae and Freddie Mac, dropped sharply in June and early July as concerns mounted both about their losses and longer-term profitability and about the prospects for earnings dilution given the considerable new capital that may need to be raised. Overall, indicators of financial market strains remain elevated compared with their levels in previous years.

Debt and Financial Intermediation

The total debt of the domestic nonfinancial sector expanded at an annual rate of 6½ percent in the first quarter of 2008, a somewhat slower pace than in 2007. The moderation in borrowing was mainly accounted for by a slowdown in the growth of household debt, particularly mortgage debt. Borrowing by nonfinancial businesses also decelerated, but at a 9¼ percent pace, it was still high by historical standards. Preliminary data suggest that overall debt growth slowed further in the second quarter.

Commercial bank credit increased at an annual rate of 4¾ percent in the first half of 2008, down significantly from the 10¼ percent expansion registered in 2007.[10] Commercial and industrial loans decelerated sharply after growing at an annual rate of more than 25 percent in the fourth quarter of 2007. The surge in C&I loans late last year reportedly reflected, in part, the difficulties that banks faced in selling syndicated loans to nonbank investors; as a result, banks had to fund a number of previously committed large syndicated deals on their balance sheets. In the first quarter of 2008, C&I loans grew at a lower but still quite fast rate of 16¼ percent, with part of the strength reportedly due to increased utilization of existing credit lines, the pricing of which reflected previous lending practices. In the second quarter, C&I lending moderated significantly further, a pattern consistent with reports from the April Senior Loan Officer Opinion Survey, which indicated a further tightening of credit standards and terms and weakening of demand for C&I loans. Commercial real estate loans grew at an annual rate of about 9¾ percent in the first half of 2008, only slightly slower than their pace in 2007.

After contracting sharply in the final quarter of 2007, the outstanding stock of residential mortgages at commercial banks rose 3½ percent in the first quarter, in part because of a sluggish pace of securitization. In the second quarter, however, banks' holdings of residential mortgage loans fell again, a pattern consistent with the ongoing weakness in the housing market and the reduced availability of mortgage credit. Growth of home equity lines of credit picked up significantly in the first half of 2008, likely because of the decline in short-term market rates to which such loans

10. The growth rate of bank credit in 2007 has been adjusted to remove the effects of the conversion of a large commercial bank to a thrift institution.

are generally tied. However, commercial banks have taken steps to limit their exposure to these loans; according to the April Senior Loan Officer Opinion Survey, a significant portion of respondents indicated that they had tightened their credit standards for approving new applications for home equity lines of credit, and a notable proportion reported that they had also firmed lending terms on existing lines, mainly in response to declines in property values. Despite the reported tightening of credit conditions in the household sector, consumer loans grew at a moderate pace in the first half of 2008.

Profitability of the commercial banking sector improved somewhat in the first quarter of 2008 but remained well below the levels seen before the summer of 2007. Many large banks received a significant boost to their first-quarter profits as a result of their stakes in Visa—the initial public offering of which occurred in March. However, continued write-downs of mortgage-related assets and leveraged loans, along with increasing loan-loss provisions, held profits down in the first quarter. Concerns about recent and potential losses have weighed heavily on bank stock prices this year. The median spread on credit default swaps on the senior debt of major banks climbed from 50 basis points at the end of 2007 to more than 100 basis points in mid-March. After declining noticeably in April and May, it returned close to the March peak in late June.

The overall delinquency rate on loans held by commercial banks rose in the first quarter to its highest level since the early 1990s, and the charge-off rate increased to the upper end of its range since 2000. The deterioration in credit quality was accounted for primarily by continued erosion in the performance of residential mortgages and a considerable worsening in construction and land development loans, but performance of most other types of loans also weakened. To bolster equity positions diminished by asset write-downs and loan-loss provisions, commercial banks raised a substantial volume of capital in the first half of 2008; some banks reduced dividends to further shore up their capital.

Equity Markets

Overall, share prices have dropped about 15 percent from the end of 2007. The declines were led by the financial sector, especially depository institutions and broker-dealers, which fell 37 percent and 41 percent, on average, respectively. The energy and basic materials sectors avoided the downtrend and have changed little on net.

Actual and implied volatilities of broad equity price indexes shot up last year with the onset of financial strains. The partial easing of financial strains in the second quarter was associated with modest declines in the actual and implied volatilities of equity prices to levels still above those of the past few years. The 12-month-forward expected earnings-price ratio for S&P 500 firms jumped in the first half of 2008, while the long-term real Treasury yield rose only slightly. The difference between these two values—a rough measure of the premium that investors require for holding equity shares—has reached the high end of its range over the past 20 years.

Policy Expectations and Interest Rates

The current target for the federal funds rate, at 2 percent, is substantially below the level that investors expected as of late December 2007. According to futures quotes at that time, market participants expected that the federal funds rate would be around 3½ percent by July. Looking forward, however, investors now expect that the next policy move will be up, and a small degree of tightening has been priced in by the end of 2008. Measures of uncertainty about the path of policy rose with the onset of financial turbulence last year and are currently near the high end of their range over the past 10 years.

Treasury yields fell sharply from the end of 2007 through March amid concerns about the health of financial firms, severe strains in financial markets, a weakening economic outlook, and lower expectations for future policy rates. Since late March, yields have risen across the curve as fears of a deep economic contraction have receded and concerns about the inflation outlook have increased. On net, 2-year yields are down 65 basis points, and 10-year yields are down 20 basis points since the start of the year.

Yields on Treasury inflation-protected securities largely moved in line with nominal yields—that is, they fell through mid-March and then rose—but the rise since March has been somewhat less than that of nominal yields. In addition, shifting liquidity conditions in the markets for nominal and indexed Treasury securities at times affected the spreads between nominal and indexed yields, also known as inflation compensation. On net, 10-year inflation compensation has risen about 20 basis points since the end of 2007, suggesting some increase in investors' concerns about the inflation outlook. Inflation compensation rose over both the near term and the longer term, but the increase was larger over the near term, as compensation over the next 5 years rose about 30 basis points whereas compensation over the period from 5 years ahead to 10 years ahead rose only 10 basis points. In part because of a lag in the indexation of inflation-protected securities, near-term inflation compensation can be strongly affected by the latest movements in energy and food prices; these prices have risen sharply in recent months.

Money and Reserves

M2 is estimated to have expanded at an annual rate of 7¾ percent over the first half of 2008, notably faster than the likely growth rate of nominal GDP. Demand for money balances was supported by declines in the opportunity cost of holding money relative to other financial assets and by strong demand for safe and liquid assets amid volatility and strains in financial markets. Money market mutual fund shares grew particularly rapidly in the first quarter. However, growth of money market mutual funds dropped considerably in the second quarter, and small time deposits contracted; M2 slowed accordingly. Demand for currency continued to be lackluster for the most of the first half-year, but it picked up noticeably late in the second quarter as domestic demand grew and foreign demand was estimated to be less weak.

The strains in bank funding markets over recent months have posed challenges for the implementation of monetary policy. Banks generally have seemed more cautious in their activity in the federal funds market and less willing to take advantage of potential arbitrage opportunities in that market over the course of a day and across the days of a reserve maintenance period. In this environment, the Open Market Desk's decisions regarding the appropriate quantity of reserves to be supplied each day through open market operations have been complicated, and volatility in the federal funds rate has been elevated. The authority to pay interest on reserves could be helpful to the Federal Reserve in limiting the volatility in the federal funds rate. The ability to pay interest on reserves would also allow the Federal Reserve to manage its balance sheet more efficiently in circumstances in which promoting financial stability required the provision of substantial amounts of discount window credit to the financial sector. In light of these considerations, the Federal Reserve has asked the Congress to accelerate the effective date of statutory authority to pay interest on reserve balances, which is currently October 2011.

International Developments

International Financial Markets

Global financial markets remained distressed over the first half of 2008, primarily because of concerns about weakness in real estate and slowing global economic growth. Amid heightened market turbulence in March, the European Central Bank (ECB), Bank of England, Bank of Canada, and Swiss National Bank (SNB) announced a further set of joint actions with the Federal Reserve to help improve the functioning of short-term funding markets. The Federal Open Market Committee increased its temporary swap line to the ECB in March from $20 billion to $30 billion and its line to the SNB from $4 billion to $6 billion. In May, these amounts were increased further to $50 billion and $12 billion, respectively, and the lines were extended through January 2009. Meanwhile, the Bank of England and the Bank of Canada each introduced new term funding arrangements in their domestic currencies, and the Bank of England also established a facility to swap government bonds for banks' mortgage-backed securities for a term of one to three years. The ECB has also continued to offer longer-term funding in euros, auctioning three-month funds totaling €270 billion in the first quarter and €250 billion in the second quarter and adding a new long-term refinancing operation with a six-month maturity.

Market volatility has persisted in recent months, with ongoing concerns about the balance sheets of financial institutions. Since the middle of last year, European banks have announced about $200 billion in write-downs—largely as a result of indirect exposure to U.S. credit markets through both sponsorship of and investments in structured credit products—and further losses may be recognized in second-quarter financial statements. In addition, mortgage lenders in the United Kingdom have been affected by weakness in property prices there and by reduced access to capital market funding. In general, the institutions that have recognized significant losses have taken prompt steps to replenish capital from a variety of sources; more than $140 billion had been raised by the end of June.

On net, most major equity indexes in the advanced foreign economies stand 12 percent to 25 percent lower in local currency terms compared with the end of 2007. European stock indexes were led lower by the stock prices of financial firms, which declined 34 percent (measured in euros); Japanese financial stocks are down 9 percent on the year. The financial turbulence has had less impact on Latin American stock prices. Equity indexes in Mexico and Brazil were virtually unchanged, on balance, over the first half of 2008. However, Chinese stock prices have tumbled 44 percent since the end of 2007, virtually erasing last year's gains, and other major emerging Asian equity indexes are also down, but to a lesser extent.

Liquidity in European government bond markets was impaired in March but seems to have improved in recent months. Long-term bond yields in the advanced foreign economies fell in the first quarter but have more than reversed these declines as investors no longer expect the ECB and the Bank of England to ease their policy rates. Since the end of 2007, long-term rates have risen, on net, 11 basis points in Germany, 38 basis points in the United Kingdom, and 12 basis points in Japan, and nominal yield curves have flattened. Meanwhile, implied long-term inflation compensation has increased 10 basis points in Japan and nearly 30 basis points in Germany and Canada.

The Federal Reserve's broadest measure of the nominal trade-weighted foreign exchange value of the dollar has declined about 3 percent, on net, since the end of last year. Over the same period, the major currencies index of the dollar has also declined about 3 percent. The dollar depreciated sharply against the euro and the yen in February and March but has recovered some in recent months. On net thus far this year, the dollar is down about 4 percent against the yen and 7 percent against the euro. The dollar is 2 percent higher against the Canadian dollar and slightly higher against sterling. The dollar has declined 6 percent against the Chinese renminbi since the end of 2007.

Advanced Foreign Economies

Economic growth in the major advanced foreign economies appears to have slowed somewhat this year. Although both the euro area and Japan posted strong first-quarter GDP growth rates, recent monthly indicators have been more subdued. In other countries, growth rates declined in the first quarter, and first-quarter real GDP even contracted slightly in Canada, where trade and financial ties to the United States are strong. Surveys of banks in Europe show a further tightening of credit standards in the first half of 2008 for both households and businesses. Lending to businesses appears to have remained solid, but household borrowing has slowed. Housing markets in a number of countries—including Ireland, Spain, and the United Kingdom—have continued to soften.

Since the beginning of the year, headline rates of inflation have continued to move up, on balance, in most economies, mainly because of increasing prices for food and energy. The 12-month change in consumer prices in both the euro area and the United Kingdom increased further from January to mid-2008, while core inflation rates (which exclude the changes in the prices of energy and unprocessed food) have increased much less. In Canada, where food price increases have been muted, inflation is little changed, on balance, since the beginning of the year but has risen in the past couple of months. Japanese consumer prices are roughly unchanged on a 12-month basis when both food and energy prices are excluded.

Over the first half of this year, the focus of the major foreign central banks appears to have shifted somewhat from the impact of financial market strains on growth to the effect of higher commodity prices on inflation. After initially lowering official interest rates, the Bank of Canada and the Bank of England have held their target rates steady since April, and the Bank of Japan has kept its policy rate unchanged at 0.5 percent all year. Recent inflation rates and statements from all of these central banks have led market participants to expect policy rates to increase slightly or to remain on hold. On July 3, the ECB raised its policy rate 25 basis points, to 4.25 percent, but it hinted that further rate hikes were not in the offing.

Emerging Market Economies

Recent data suggest that real GDP growth in China remained strong in the first half of this year. Although export growth slowed, domestic demand appears to have accelerated.

Elsewhere in emerging Asia, recent performance has varied but, on balance, indicators suggest that activity has remained solid in the region. In the first quarter, real GDP growth moderated in Korea, Malaysia, and Thailand but was strong in Hong Kong and Singapore. Exports of the region have generally slowed along with the deceleration in global economic activity; however, domestic demand strengthened in a number of countries.

Economic activity has decelerated in Latin America. In Mexico, output growth slowed to about 2 percent in the first quarter, in line with the step-down in the pace of activity in the United States that began toward the end of last year. In other Latin American countries, notably Brazil and Venezuela, growth also moderated.

Higher prices for food and energy have continued to exert upward pressures on inflation across emerging market economies. In China, headline inflation has risen, reaching roughly 8 percent in recent months. In response to the inflationary pressures, the Chinese authorities have allowed the renminbi to appreciate at a more rapid pace, and the People's Bank of China has further tightened monetary policy. The Bank has raised the required reserve ratio five times this year by a total of 300 basis points, to 17½ percent. Elsewhere in emerging market economies, 12-month headline inflation in a number of countries continued to rise in recent months, thereby prompting many central banks to tighten monetary policy. In some cases, governments also instituted export restrictions or reduced import duties for some food products. The rising cost of energy subsidies has led governments in China, India, Malaysia, Indonesia, and Taiwan to raise administered gasoline prices roughly 10 percent to 40 percent in recent months.

Part 3 Monetary Policy over the First Half of 2008

After easing the stance of monetary policy 100 basis points over the second half of 2007, the Federal Open Market Committee (FOMC) lowered the target federal funds rate 225 basis points further in the first half of 2008.[11] The Federal Reserve also took a number of additional actions to increase liquidity and to improve the functioning of financial markets.

In a conference call on January 9, the Committee reviewed recent economic data and financial market developments. The information, which included weaker-than-expected data on home sales and employment for December as well as a sharp decline in equity prices since the beginning of the year, suggested that the downside risks to growth had increased significantly since the time of the December FOMC meeting. Participants cited concerns that the

11. Members of the FOMC in 2008 consist of members of the Board of Governors of the Federal Reserve System plus the presidents of the Federal Reserve Banks of Cleveland, Dallas, Minneapolis, New York, and Philadelphia. Participants at FOMC meetings consist of members of the Board of Governors and all Reserve Bank presidents.

slowing of economic growth could lead to a further tightening of financial conditions, which in turn could reinforce the economic slowdown. However, core inflation had edged up in recent months, and considerable uncertainty surrounded the inflation outlook. On balance, participants were generally of the view that substantial additional policy easing might well be necessary to support economic activity and reduce the downside risks to growth, and they discussed the possible timing of such actions.

On January 21, the Committee held another conference call. Strains in some financial markets had intensified, and incoming evidence had reinforced the view that the outlook for economic activity was weak. Participants observed that investors apparently were becoming increasingly concerned about the economic outlook and downside risks to activity and that these developments could lead to an excessive pullback in credit availability. In light of these developments, all members judged that a substantial easing in policy was appropriate to foster moderate economic growth and reduce the downside risks to economic activity. The Committee decided to lower the target for the federal funds rate 75 basis points, to 3½ percent, and judged that appreciable downside risks to growth remained. Although inflation was expected to edge lower over the course of 2008, participants underscored their view that this assessment was conditioned upon inflation expectations remaining well anchored and stressed that the inflation situation should continue to be monitored carefully.

The data reviewed at the regularly scheduled FOMC meeting on January 29 and 30 confirmed a sharp deceleration in economic growth during the fourth quarter of 2007 and a continued tightening of financial conditions. With the contraction in the housing sector intensifying and a range of financial markets remaining under pressure, economic growth was expected to stay soft in the first half of 2008 before picking up strength in the second half. However, the ongoing weaknesses in home sales and house prices, as well as the tightening of credit conditions for households and businesses, were seen as posing downside risks to the near-term outlook for economic growth. Moreover, the potential for adverse feedback between the financial markets and the economy was a significant risk. Participants expressed some concern about the disappointing inflation data received over the latter part of 2007. Although many expected that a leveling-out of prices for energy and other commodities, such as that embedded in futures markets, and a period of below-trend growth would contribute to some moderation in inflation pressures over time, the Committee believed that it remained necessary to monitor inflation developments carefully. Against that backdrop, the FOMC decided to lower the target for the federal funds rate 50 basis points, to 3 percent. The Committee believed that this policy action, combined with those taken earlier, would help promote moderate growth over time and mitigate the risks to economic activity. However, members judged that downside risks to growth remained.

In a conference call on March 10, the Committee reviewed financial market developments and considered proposals aimed at supporting the liquidity and orderly functioning of those markets. In light of the sharp deterioration of some key money and credit markets, the Committee approved the establishment of the Term Securities Lending Facility, under which primary dealers would be able to borrow Treasury securities from the System Open Market Account for a term of approximately one month against any collateral eligible for open market operations and the highest-quality private residential mortgage-backed securities (MBS).[12] The new facility was designed to alleviate pressures in the financing markets for securities. In addition, the Committee agreed to expand the existing reciprocal currency agreements with the European Central Bank and the Swiss National Bank to $30 billion and $6 billion, respectively, and to extend the terms of these agreements through September 2008. Over the next few days, financial market strains intensified further. On March 16, the Federal Reserve announced emergency measures to bolster liquidity and promote orderly functioning in financial markets, including the approval of the financing arrangement associated with the acquisition of The Bear Stearns Companies, Inc., by JPMorgan Chase & Co. and the establishment of the Primary Dealer Credit Facility to improve the ability of primary dealers to provide financing to participants in securitization markets. In addition, the primary credit rate was lowered 25 basis points, and the maximum term of primary credit loans was extended to 90 days.

When the Committee met on March 18, financial markets continued to be under great stress, particularly the markets for short-term collateralized and uncollateralized funding. Spreads on interbank loans and lower-rated commercial paper had widened over the intermeeting period, and obtaining credit through repurchase agreements backed by agency and private-label MBS had become more difficult amid reports of increased margin, or "haircuts," being required by lenders. Yields on Treasury bills and repurchase agreements backed by Treasury securities had plummeted, reflecting investors' heightened demand for the safest assets.

Participants at the March 18 FOMC meeting noted that prospects for both economic activity and near-term inflation had deteriorated since January, and many thought that some contraction in economic activity in the first half of 2008 was likely. Although the economy was expected to recover in the second half and to grow further in 2009, considerable uncertainty surrounded this forecast. Some participants expressed concern that falling house prices and financial market stress might lead to a more severe and protracted downturn than anticipated. Recent readings on inflation had been elevated, and some indicators of inflation expectations had risen. However, a flattening-out of prices for oil and other commodities—as implied by futures prices—and the projected easing of pressures on resources were expected to contribute to some moderation in inflation. All in all, most members judged that a 75 basis point reduction in the target federal funds rate, to 2¼ percent, was appropriate to address the combination of risks of slowing economic growth, inflationary pressures, and financial market disruptions. In its statement, the Committee highlighted the further weakening in the outlook for economic activity, but it also emphasized the importance of monitoring inflation developments carefully.

The data reviewed at the meeting on April 29 and 30 indicated that economic growth had been weak in the first three months of 2008 and that core consumer price inflation had slowed, but that overall inflation had remained elevated.

12. By notation vote completed on March 20, AAA-rated commercial MBS were added to the list of acceptable collateral.

FOMC participants indicated that these developments had been broadly consistent with their expectations. Conditions across a number of financial markets were judged to have improved since the March meeting, but financial markets remained under considerable stress. Although the likelihood that economic activity would be severely disrupted by a sharp deterioration in financial markets had apparently receded, most participants thought that the risks to economic growth were still skewed to the downside. All participants expressed concern about upside risks to inflation posed by rising commodity prices and the depreciation of the dollar, but some participants noted that the downside risks to economic activity also implied that there were downside risks to price pressures as well. Participants expressed significant uncertainty concerning the appropriate stance of monetary policy in these circumstances. Some participants noted that the level of the federal funds target, especially when compared with the current rate of inflation, was relatively low by historical standards. Others noted that financial market strains and elevated risk spreads had offset much of the effects of policy easing on the cost of credit to borrowers. On balance, most members agreed that the target for the federal funds rate should be lowered 25 basis points, to 2 percent. The Committee expected that the policy easing would help to foster moderate growth over time without impeding a moderation in inflation. The Committee agreed that, in light of the substantial policy easing to date and the ongoing measures to foster financial market liquidity, the risks to growth were now more closely balanced by the risks to inflation.

In view of persisting strains in funding markets, the FOMC also approved proposals to expand the liquidity arrangements that had been put in place in previous months. The reciprocal currency agreements with the European Central Bank and Swiss National Bank were increased to $50 billion and $12 billion, respectively, and both were extended through January 2009. The collateral accepted by the Term Securities Lending Facility was expanded to include all AAA-rated asset-backed securities. In addition, Chairman Bernanke announced his intention to expand the Term Auction Facility to $150 billion under authority previously delegated by the Board of Governors.

At the time of the meeting held June 24 and 25, the available indicators suggested that economic activity in the first half of the year had not been as weak as had been expected in April. Nevertheless, several factors were viewed as likely to restrain activity in the near term, including the contraction in the housing sector, sharply higher energy prices, and continued tight credit conditions. Although financial market conditions generally appeared to have improved modestly since the April meeting, participants noted that the potential for adverse financial market developments still posed significant downside risks to economic activity. The further large increase in energy prices also prompted an upward revision of projections for overall inflation in the second half of 2008. Most participants expected that a leveling-out of energy prices and continued slack in resource utilization would lead inflation to moderate in 2009 and 2010, but the persistent tendency in recent years for commodity prices to exceed the trajectory implied by futures market prices engendered considerable uncertainty around the projected moderation of inflation. Members generally agreed that the downside risks to growth had eased somewhat since the previous

FOMC meeting while the upside risks to inflation had intensified. Against this backdrop, most members judged that maintaining the current stance of policy at this meeting represented an appropriate balancing of the risks to the economic outlook. Nonetheless, policymakers recognized that circumstances could change quickly and noted that they might need to respond promptly to incoming information about the evolution of risks. ■