Monetary Policy and Economic Developments

Monetary Policy Report of February 2010

Part 1
Overview: Monetary Policy and the Economic Outlook

After declining for a year and a half, economic activity in the United States turned up in the second half of 2009, supported by an improvement in financial conditions, stimulus from monetary and fiscal policies, and a recovery in foreign economies. These factors, along with increased business and household confidence, appear likely to boost spending and sustain the economic expansion. However, the pace of the recovery probably will be tempered by households' desire to rebuild wealth, still-tight credit conditions facing some borrowers, and, despite some tentative signs of stabilization, continued weakness in labor markets. With substantial resource slack continuing to suppress cost pressures and with longer-term inflation expectations stable, inflation is likely to be subdued for some time.

U.S. real gross domestic product (GDP) rose at about a 4 percent pace, on average, over the second half of 2009. Consumer spending—which was boosted by supportive monetary and fiscal policies—posted solid increases, though it remained well below its pre-recession level. Meanwhile, activity in the housing market, which began to pick up last spring, flattened over the second half of 2009. In the business sector, investment in equipment and software posted a sizable gain in the second half of last year, likely reflecting improved conditions in capital markets and brighter sales prospects. In addition, firms reduced the pace of inventory liquidation markedly in the fourth quarter. In contrast, investment in nonresidential structures continued to contract. With the recovery in U.S. and foreign demand, U.S. trade flows rebounded in the second half of 2009 after precipitous declines late in 2008 and early in 2009. Nevertheless, both exports and imports stayed considerably below their earlier peaks.

Despite the pickup in output, employment continued to contract in the second half of 2009, albeit at a markedly slower pace than in the first half. The unemployment rate rose further during the second half, reaching 10 percent by the end of the year—its highest level since the early 1980s—before dropping back in January. Although job losses have slowed, hiring remains weak, and the median duration of unemployment has lengthened significantly.

Headline consumer price inflation picked up in 2009 as energy prices rose sharply: Over the 12 months ending in December, prices for personal consumption expenditures (PCE) increased

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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, 2010, 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 2009 meetings of the Federal Open Market Committee (see the "Records" section) and statistical tables 1–4 (see the "Statistical Tables" section).

about 2 percent, up from ½ percent in 2008. In contrast, price increases for consumer expenditures other than food and energy items—so-called core PCE—slowed noticeably last year. After rising at an annual rate of about 1¾ percent in 2008 and the first half of 2009, core PCE prices increased at an annual rate of just over 1 percent in the second half of the year.

The recovery in financial markets that began last spring continued through the second half of the year and into 2010. Broad equity price indexes increased further, on balance, and risk spreads on corporate bonds narrowed considerably. Conditions in short-term funding markets returned to near pre-crisis levels; liquidity and pricing in bank funding markets continued to normalize, while risk spreads in the commercial paper market were stable at the low end of the range observed since the fall of 2007. The functioning of financial markets more generally improved further.

Investors became more optimistic about the outlook for financial institutions during the first half of last year. That development was bolstered by the release of the results of the Supervisory Capital Assessment Program (SCAP), which were seen as helping clarify the financial conditions of the largest bank holding companies and provided investors with greater assurance about the health of the institutions. Sentiment rose further over the remainder of the year as investors became more optimistic about the economic outlook. Most of the 19 bank holding companies included in the SCAP issued equity, some to augment or improve the quality of their capital and some to repay investments made by the Treasury under the Troubled Asset Relief Program. Still, delinquency and charge-off rates at commercial banks increased further in the second half of the year, and loan losses remained very high.

Nonfinancial firms with access to capital markets took advantage of the improvement in financial conditions to issue corporate bonds and equity shares at a solid pace; a significant portion of issuance likely reflected an effort by businesses to substitute attractively priced longer-term financing for shorter-term debt. In contrast, many small businesses and other firms that depend largely on banks to meet their funding needs found their access to credit severely restricted; banks continued to tighten their lending standards and terms, though to a more limited extent, during the second half of 2009 amid higher loan losses on their commercial loans and reports of lingering uncertainty about business credit quality. According to survey data, demand for business loans was also weak throughout 2009.

Availability of credit for households remained constrained in the second half of 2009, even as interest rates declined for mortgages and many consumer loans. Restrictive bank lending policies to individuals likely were due importantly to banks' concerns about the ability of households to repay loans in an environment of high unemployment and continued softness in house prices. In addition, senior bank loan officers reported weakening loan demand from households throughout 2009. However, in part because of support from the Federal Reserve's Term Asset-Backed Securities Loan Facility, the consumer asset-backed securities market, which is an important funding source for consumer loans, improved. All told, in 2009 nominal household debt experienced its first annual decline since the beginning of the data series in 1951.

The Federal Reserve continued to support the functioning of financial markets and promote recovery in economic activity using a wide array of tools. The Federal Open Market Committee (FOMC) maintained a target range of 0 to ¼ percent for the federal funds rate throughout the second half of 2009 and early 2010 and indicated that economic conditions were likely to warrant exceptionally low levels of the federal funds rate for an extended period. Further, the Federal Reserve continued its purchases of Treasury securities, agency mortgage-backed securities (MBS), and agency debt in order to provide support to mortgage and housing markets and to improve overall conditions in private credit markets. To promote a smooth transition in financial markets as the acquisitions are completed, the Federal Reserve gradually slowed the pace of these purchases in late 2009 and early 2010. The planned acquisitions of $300 billion of Treasury securities were completed by October, while the purchases of $1.25 trillion of MBS and about $175 billion of agency debt are expected to be finished by the end of the first quarter of this year.

In light of the improved functioning of financial markets, the Federal Reserve removed some of the extraordinary support it had provided during the crisis and closed many of its special liquidity facilities and the temporary liquidity swap arrangements with other central banks in the fall of 2009 and early in 2010. The Federal Reserve also began to normalize its lending to commercial banks through the discount window by reducing the maximum maturity of loans extended through the primary credit facility from 90 days to 28 days, effective on January 14, and by announcing that the maturity of those loans will be reduced further to overnight, effective on March 18. The rate charged on primary credit loans was increased from ½ percent to ¾ percent effective February 19. In addition, the Federal Reserve announced that the final auction under the Term Auction Facility will occur in March and later noted that the minimum bid rate for that auction had been increased by ¼ percentage point to ½ percent. Overall, the size of the Federal Reserve's balance sheet increased from about $2 trillion in the summer of 2009 to about $2.3 trillion on February 17, 2010. The composition of the balance sheet continued to shift as a considerable decline in credit extended through various facilities was more than offset by the increase in securities held outright. The Federal Reserve continued to broaden its efforts to provide even more information to the public regarding its conduct of these programs and of monetary policy (see box in Part 3).

The Federal Reserve is taking steps to ensure that it will be able to smoothly withdraw extraordinary policy accommodation when appropriate. Because the Federal Reserve, under the statutory authority provided by the Congress in October 2008, pays interest on the balances depository institutions hold at Reserve Banks, it can put upward pressure on short-term interest rates even with an extraordinarily large volume of reserves in the banking system by raising the interest rate paid on such balances. In addition, the Federal Reserve has continued to develop several other tools that it could use to reinforce the effects of increases in the interest rate on balances at Reserve Banks. In particular, the Federal Reserve has tested its ability to execute reverse repurchase agreements (reverse repos) in the triparty repo market with primary dealers using both Treasury and agency debt as collateral, and it is developing the capability to conduct such transactions with other counterparties and against agency MBS. The Federal Reserve has also announced plans for implementing a term deposit facility. In addition, it has the option of redeeming or selling assets in order to reduce monetary policy accommodation.

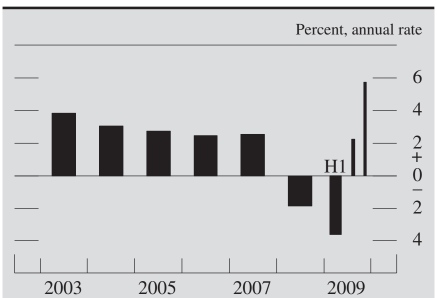
In conjunction with the January 2010 FOMC meeting, the members of the Board of Governors of the Federal Reserve System and presidents of the Federal Reserve Banks, all of whom participate in FOMC meetings, provided projections for economic growth, unemployment, and inflation; these projections are presented in Part 4 of this report. FOMC participants agreed that economic recovery from the recent recession was under way, but that they expected it to proceed at a gradual pace, restrained in part by household and business uncertainty regarding the economic outlook, modest improvement in labor markets, and slow easing of credit conditions in the banking sector. Participants expected that real GDP would expand at a rate that was only moderately above its longer-run sustainable growth rate and that the unemployment rate would decline only slowly over the next few years. Most participants also anticipated that inflation would remain subdued over this period.

Nearly all participants judged the risks to their growth outlook as generally balanced, and most also saw roughly balanced risks surrounding their inflation projections. Participants continued to judge the uncertainty surrounding their projections for economic activity and inflation as unusually high relative to historical norms. Participants also reported their assessments of the rates to which key macroeconomic variables would be expected to converge in 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 to 2.8 percent for real GDP growth, 5.0 to 5.2 percent for the unemployment rate, and 1.7 to 2.0 percent for the inflation rate.

Part 2
Recent Financial and Economic Developments

According to the advance estimate from the Bureau of Economic Analysis, real gross domestic product (GDP) increased at an annual rate of 4 percent in the second half of 2009, retracing part of the sharp decline in activity that began in early 2008 (figure 1). Nonetheless, labor market conditions, which tend to lag changes in economic activity, remain very weak: The unemployment rate rose to 10 percent at the end of last year, 5 percentage points above its level at the start of 2008, before dropping back some in January. Conditions in many financial markets have improved significantly, but lending policies at banks remain stringent. Meanwhile, an increase in energy prices has boosted overall consumer

1. Change in Real Gross Domestic Product, 2003–09



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.

price inflation; however, price inflation for other items has remained subdued, and inflation expectations have been relatively stable.

Conditions in financial markets improved further in the second half of 2009, reflecting a more positive economic outlook as well as the effects of the policy initiatives implemented by the Federal Reserve, the Treasury, and other government agencies to support financial stability and promote economic recovery. Treasury yields, mortgage rates, and other market interest rates remained low while equity prices continued to rise, on net, amid positive earnings news, and corporate bond spreads narrowed substantially. As the functioning of short-term funding markets improved further, the usage of special liquidity facilities declined sharply, and the Federal Reserve closed several of those facilities on February 1, 2010.[1] Investors also seemed to become more optimistic about the prospects for the banking sector, and many of the largest banking institutions issued equity and repaid investments made by the Treasury under the Troubled Asset Relief Program (TARP). Nevertheless, the credit quality of bank loan portfolios remained a concern, particularly for loans secured by commercial and residential real estate loans.

Private domestic nonfinancial sector debt contracted, on balance, in the second half of 2009. On the positive side, firms with access to capital markets issued corporate bonds at a robust pace, with many firms reportedly seeking to lock in long-term, low-interest-rate debt or refinance other debt. By contrast, many small businesses and other firms that depend primarily on banks for their funding needs faced substantial constraints on their access to credit even as demand for such credit remained weak. In the household sector, demand for credit was weak, and supply conditions remained tight, as banks maintained stringent lending standards for both consumer loans and residential real estate loans. However, issuance of asset-backed securities (ABS), which are an important source of funding for consumer loans, strengthened, supported in part by the Federal Reserve's Term Asset-Backed Securities Loan Facility (TALF).

Domestic Developments

The Household Sector

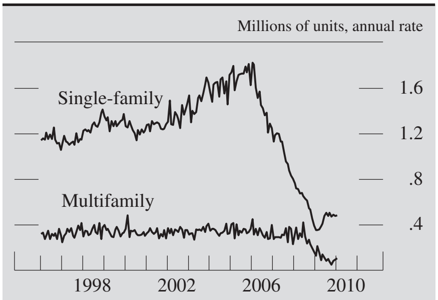
Residential Investment and Housing Finance

The housing market began to recover in the spring of 2009, but the pace of improvement slowed during the second half of the year. After having increased almost 30 percent through mid-2009, sales of new single-family homes retraced about one-half of that gain in the second half of the year. And, although sales of existing single-family homes moved up noticeably through November, they fell back sharply in December, suggesting that some of the earlier strength reflected sales that had been pulled forward in anticipation of the expiration of the first-time homebuyer tax credit.[2] The index of pending

1. Specifically, the Primary Dealer Credit Facility, the Term Securities Lending Facility, the Commercial Paper Funding Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, and the temporary swap lines with foreign central banks were closed.

2. The first-time homebuyer tax credit, which was enacted in February 2009 as part of the American Recovery and Reinvestment Act, was originally scheduled to expire on November 30, 2009. In early November, however, the Congress

2. Private Housing Starts, 1996–2010



NOTE: The data are monthly and extend through January 2010.

SOURCE: Department of Commerce, Bureau of the Census.

home sales, a leading indicator of sales of existing homes, leveled off in December after November's steep decline.

The recovery in construction activity in the single-family sector also decelerated in the second half of 2009. After stepping up noticeably last spring from an exceptionally low level, starts of single-family homes were about flat, on average, from June to December (figure 2). With the level of construction remaining quite low, the inventory of unsold new homes fell sharply and is now less than one-half of the peak reached in 2006. In the much smaller multifamily sector—where tight credit conditions and high vacancies have depressed building—starts deteriorated a bit further in the second half of the year.

After falling sharply for about two and a half years, house prices, as measured by a number of national indexes, were more stable in the second half of 2009. One house price measure with wide geographic coverage—the LoanPerformance repeat-sales index—is up, on net, from its trough earlier in the year, even though the last few readings of that index fell back a bit. According to the Thomson Reuters/University of Michigan Surveys of Consumers, the number of respondents who expect house prices to increase over the next 12 months has moved up and now slightly exceeds the number of respondents who expect prices to decrease.[3] The earlier declines in house prices in combination with the low level of mortgage rates have made housing more affordable, and the apparent stabilization in prices may bring into the market buyers who were reluctant to purchase a home when prices were perceived to be falling. That said, the still-substantial inventory of unsold homes, including foreclosed homes, has continued to weigh on the market.

Even with house prices showing signs of stabilization, home values remained well below the remaining amount of principal on mortgages (so-called underwater loans) for many borrowers in the second half of 2009. Against this backdrop, and with a very high unemployment rate, delinquency rates on all types of residential mortgages continued to move higher. As of December, serious delinquency rates on prime and near-prime loans had climbed to 16 percent for variable-rate loans and to over 5 percent for fixed rate loans.[4] The delinquency rate on all subprime loans was about 35 percent in December. Loans backed by the Federal Housing Administration (FHA) also showed increasing strains, with de-

extended the credit to sales occurring through April 30, 2010, and expanded it to include repeat homebuyers who have owned and occupied a house for at least five of the past eight years.

3. The survey, formerly the Reuters/University of Michigan Surveys of Consumers, was renamed the Thomson Reuters/University of Michigan Surveys of Consumers as of January 1, 2010.

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

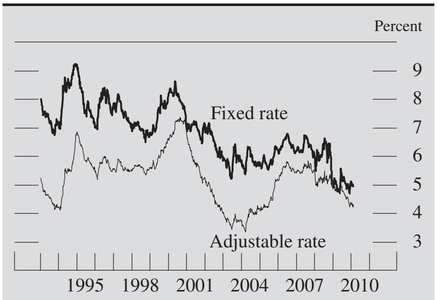
linquency rates moving up to 9 percent at the end of 2009.

Foreclosures remained exceptionally elevated in the second half of 2009. About 1.4 million homes entered foreclosure during that period, similar to the pace earlier in the year. Historically, about one-half of foreclosure starts have resulted in homeowners losing the home. The heightened level of foreclosures has been particularly notable among prime borrowers, for whom the number of foreclosure starts moved up a bit in the second half of the year; by contrast foreclosure starts for subprime borrowers dropped back somewhat. To address the foreclosure problem, the Treasury has intensified efforts through its Making Home Affordable program to encourage loan modifications and to allow borrowers to refinance into mortgages with more-affordable payments.

Interest rates on 30-year fixed-rate conforming mortgages moved down in the second half of 2009, and despite a modest upturn around the start of 2010, they remained near the lowest levels on record (figure 3).[5] The low mortgage rates reflected the generally low level of Treasury yields and the large purchases of agency mortgage-backed securities (MBS) by the Federal Reserve, which were reportedly an important factor behind the narrow spread between these conforming mortgage rates and yields on Treasury securities. Interest rates on nonconforming mortgages, which are not included in the mortgage pools backing MBS that are eligible for purchase by the Federal Reserve, also generally declined, but the spreads between nonconforming mortgage rates and rates on conforming mortgages remained wide by historical standards.

5. 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 in size 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 the area’s median house price, and it cannot exceed $729,750.

3. Mortgage Interest Rates, 1993–2010



Note: The data, which are weekly and extend through February 17, 2010, are contract rates on 30-year mortgages.

Source: Federal Home Loan Mortgage Corporation.

Although mortgage rates fell to low levels, the availability of mortgage financing continued to be sharply constrained. Respondents to the Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS) indicated throughout 2009 that banks continued to tighten their lending standards for all types of mortgage loans, though smaller net fractions reported doing so in the January 2010 survey than had been the case in earlier surveys. Lenders’ reluctance to extend mortgage credit in an environment of declining home values also likely held down refinancing activity, which remained subdued in the second half of 2009 even though mortgage rates decreased. The FHA announced that it was raising mortgage insurance premiums because its capital reserve ratio had fallen below the required threshold; at the same time, the FHA announced that it was increasing down-payment requirements for borrowers with very low credit scores. In recent years, the FHA has assumed a greater role in mortgage markets, especially for borrowers with high loan-to-value ratios or lower credit quality. Overall, residential mortgage debt outstanding contracted at an even faster pace in the second half than in the first half of the year. Net issuance of MBS by Fannie Mae, Freddie Mac, and Ginnie Mae, although brisk in the second half of 2009, was down a bit from the levels seen earlier in the year. The securitization market for mortgage loans not guaranteed by a housing-related government-sponsored enterprise (GSE) or the FHA remained closed.

Consumer Spending and Household Finance

After having been roughly constant in the first half of last year, real personal consumption expenditures (PCE) rose at an annual rate of about 2½ percent in the second half. Sales of new light motor vehicles jumped from an average annual rate of 9½ million units in the first half of 2009 to a rate of 11¼ million units in the second half.[6] Part of this rebound likely reflected the "cash for clunkers" program, but even after the expiration of that program, sales remained close to 11 million units, supported in part by improved credit conditions for auto buyers as the ABS market revived. Real spending on goods excluding motor vehicles also increased at a robust pace in the second half of the year, while real outlays for services rose more modestly.

The rise in consumer spending in 2009 was buoyed by improvements in some of its underlying determinants: Equity prices moved up from their lows reached last March, a development that helped to rebuild household wealth, and household income was lifted by provisions in the fiscal stimulus package. Accordingly, consumer sentiment has rebounded from the very low levels seen earlier in 2009, though it remains low by historical standards. Consumer spending appears to have been financed largely out of current income over the past year, and households were also able to increase their personal saving and begin deleveraging their balance sheets. After increasing sharply in 2008, the saving rate moved up a bit further in 2009.

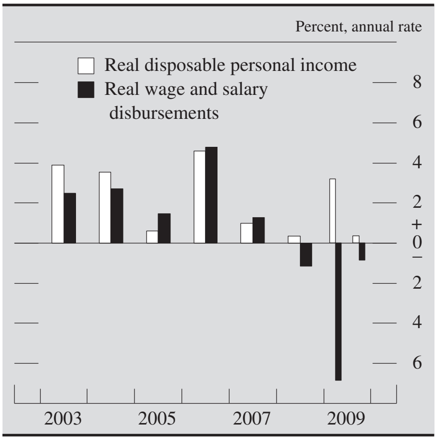
Real disposable personal income—after-tax income adjusted for inflation—increased about 1¾ percent last year, with the effects of the tax cuts and higher social benefit payments included in the 2009 fiscal stimulus package accounting for most of the increase.[7] Real labor income—that is, total wages, salaries, and employee benefits, adjusted for inflation—fell sharply in the first half of the 2009, and edged down a bit further in the second half, as the decline in total employee work hours more than offset an increase in real hourly compensation (figure 4).

After dropping during the preceding 2½ years, household net worth turned up in the second and third quarters of 2009 and likely rose further in the fourth quarter. Much of the recovery

6. Sales dropped back in January, but the decline occurred largely at Toyota, which was confronted by widely publicized problems.

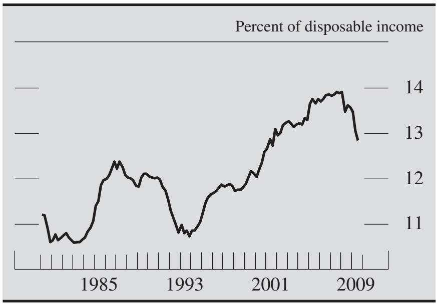
7. The increases in benefit payments under the American Recovery and Reinvestment Act included an expansion of unemployment benefits, increases in food stamps and Pell grants, subsidies for health insurance coverage for the unemployed, and a one-time $250 payment to retirees and veterans.

4. Change in Real Income and in Real Wage and Salary Disbursements, 2003–09



SOURCE: Department of Commerce, Bureau of Economic Analysis.

5. Household Debt Service, 1980–2009



NOTE: The data are quarterly and extend through 2009:Q3. Debt service payments consist of estimated required payments on outstanding mortgage and consumer debt.

SOURCE: Federal Reserve Board, "Household Debt Service and Financial Obligations Ratios," statistical release.

reflected a rebound in equity prices, although the modest gain, on net, in the value of owner-occupied real estate also contributed. With the rise in net worth, the ratio of household wealth to disposable income increased in the second half of the year to about its historical average.

Households began to deleverage around the third quarter of 2008, at the height of the financial crisis, and that process continued during the second half of 2009. The decline in nonmortgage consumer debt intensified during the latter part of last year. The contraction was most pronounced in revolving credit, which fell at about a 10 percent annual rate during the second half of 2009. Nonrevolving credit also decreased. Including the drop in mortgage debt, the Federal Reserve's flow of funds data indicate that total household debt declined in 2009 for the first time since the data series began in 1951. Reflecting these developments, debt service payments—the required principal and interest on existing mortgages and consumer debt—fell as a share of disposable income. At the end of the third quarter, the ratio of debt service payments to disposable income had declined to its lowest level since 2001 (figure 5).

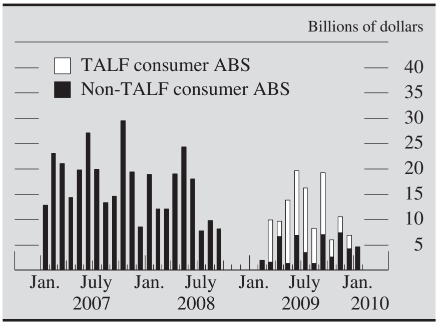
Results from the recent SLOOS suggest that the contraction in consumer credit has been the result of both weak demand and tight supply. A net fraction of about one-third of the bank loan officers that responded to the January SLOOS reported weaker demand for all types of consumer loans. The same survey also indicated that banks continued to tighten terms on credit card loans over the final three months of 2009 by reducing credit limits and raising interest rates charged, though smaller net fractions reported doing so than in previous surveys. After having been tightened significantly in the summer and fall of 2009, standards and terms on consumer loans other than credit card loans were little changed, on balance, in the January survey.

Changes in interest rates on consumer loans were mixed during the second half of 2009. Interest rates on new auto loans generally continued to trend lower, and spreads on these loans relative to comparable-maturity Treasury securities narrowed further. Interest rates on credit card loans, however, jumped near midyear and increased further toward year-end. According to the October SLOOS, some of the increases in credit card interest rates and the tightening of other lending terms reflected adjustments made by banks in anticipation of the imposition of new rules under the Credit Card Accountability Responsibility and Disclosure (Credit CARD) Act.[8]

Concerns about the ability of households to repay loans may also have contributed to the tightening of lending policies for consumer credit over the second half of 2009. Delinquency rates on auto loans at captive finance companies remained elevated, and credit card delinquency rates at commercial banks stayed high at around 6½ percent in the fourth quarter of 2009. In addition, the pace at which lenders were charging off these loans increased sharply in recent quarters. On a more positive note, respondents to the January SLOOS indicated that they expected the credit quality of their consumer loans, other than credit card loans, to stabilize during 2010.

Prior to the crisis, a large portion of consumer credit was funded through the ABS market. After having essentially ground to a halt at the end of 2008, consumer ABS markets recovered in 2009 with the important support of the TALF (figure 6). Much of the ABS issuance through the summer relied heavily on the TALF for financing. By the end of the year, the yields on such securities dropped markedly, and issuance of ABS without TALF support increased accordingly. (Indeed, the interest rates on TALF loans were chosen so that they would become unattractive as market conditions improved.) Issuance of ABS backed by auto loans in the second half of 2009 was roughly on par with issuance prior to the financial crisis, and only a small portion was purchased using loans from the TALF. A renewed ability to securitize auto loans may have contributed to the reduction in the interest rates on these loans. Similarly, ABS issuance backed by credit card receivables gained strength through most of the year, though it experienced a drop early in the fourth quarter because of uncertainty about how the Federal Deposit Insurance Corporation (FDIC) would treat securitized receivables should a sponsoring bank fail. Issuance picked up slightly after the FDIC provided a temporary extension of safe-harbor rules for its handling of

6. Gross Issuance of Selected Asset-Backed Securities, 2007–10



NOTE: Consumer ABS (asset-backed securities) are securities backed by credit card loans, nonrevolving consumer loans, and auto loans. Data for consumer ABS show gross issuance facilitated by the Term Asset-Backed Securities Loan Facility (TALF) and such issuance outside the TALF.

SOURCE: Bloomberg and the Federal Reserve Bank of New York.

8. The Credit CARD Act includes some provisions that place restrictions on issuers' ability to impose certain fees and to engage in risk-based pricing. Some provisions took effect in August 2009, and others did so in February 2010.

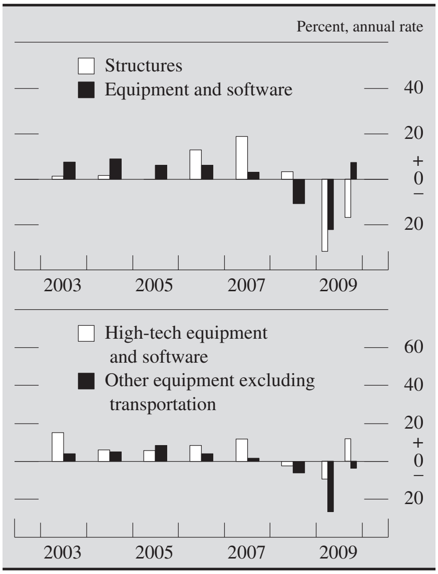
securitized assets in a receivership. By contrast, issuance of ABS backed by private student loans remained almost entirely dependent on financing from the TALF.

The Business Sector

Fixed Investment

After falling throughout 2008 and the first half of 2009, business spending on equipment and software (E&S) began to expand in the second half of last year, as sales prospects picked up, corporate profits increased, and financial conditions for many businesses (especially those with direct access to capital markets) improved (figure 7). Business outlays on transportation equipment rose sharply in the second half as firms rebuilt their fleets of light motor vehicles and accelerated their purchases of large trucks in advance of new environmental regulations on diesel engines. Real spending on information technology capital—computers, software, and communications equipment—also accelerated toward the end of 2009, likely boosted by the desire to replace older, less-efficient equipment. Investment in equipment other than information processing and transportation, which accounts for nearly one-half of E&S outlays, continued to fall during the second half of 2009, but much more slowly than earlier in the year. More recently, orders of nondefense capital goods other than transportation items posted a second strong monthly increase in December, and recent surveys of business conditions have been more upbeat than in several years.

7. Change in Real Business Fixed Investment, 2003–09



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

SOURCE: Department of Commerce, Bureau of Economic Analysis.

In contrast to the upturn in equipment investment, real spending on nonresidential structures continued to decline steeply throughout 2009. Real outlays for construction of structures other than those used for drilling and mining fell at an annual rate of 25 percent in the second half of 2009, likely reflecting the drag from rising vacancy rates and plunging property prices for commercial and office buildings, as well as difficult financing conditions for new projects. Following a steep drop in the first half of the year, real spending on drilling and mining structures increased sharply in the second half, likely in response to the rebound in oil prices.

Inventory Investment

After running off inventories aggressively during the first three quarters of 2009, firms moved to stem the pace of liquidation in the fourth quarter.

Automakers added to their dealers' stocks after cutbacks in production earlier in the year had reduced days' supply of domestic light vehicles to below their preferred levels. Outside of motor vehicles, firms continued to draw down inventories in the fourth quarter, but at a much slower pace than earlier in the year. Indeed, purchasing managers in the manufacturing sector report that their customers' inventories are relatively lean, a development that could lead to some restocking in the coming months.

Corporate Profits and Business Finance

Overall, operating earnings per share for S&P 500 firms rebounded over the course of 2009. Still, earnings were well below the levels experienced prior to the financial market turmoil and the accompanying recession. Within the S&P 500, earnings for financial firms fluctuated around low levels, while earnings for nonfinancial firms rebounded sharply as the economic recovery began to take hold. Data from firms that have reported for the fourth quarter suggest that earnings for nonfinancial firms continued to recover.

The credit quality of nonfinancial corporations improved somewhat over the second part of last year, although signs of stress persisted. Business leverage, as measured by the ratio of debt to assets, fell in the third quarter. Credit rating downgrades outpaced upgrades early in 2009, but the pace of downgrades moderated substantially in the second half of the year, and by the fourth quarter upgrades were outpacing downgrades. In addition, the corporate bond default rate dropped into the range that had prevailed before the financial crisis began in August 2007.

Delinquency rates on loans to nonfinancial businesses, however, rose throughout the year. For commercial and industrial (C&I) loans, delinquencies in the fourth quarter reached 4.5 percent. In response to a special question on the January 2010 SLOOS, a large net fraction of banks reported that in the fourth quarter, the credit quality of their existing C&I loans to small firms was worse than the quality of their loans to larger firms. While survey respondents generally expected the credit quality of their C&I loan portfolios to improve during 2010, banks' outlook for C&I loans to larger firms was more optimistic than it was for such loans to smaller firms. Reflecting deterioration in commercial property markets, delinquency rates on commercial real estate (CRE) loans both in securitized pools and on banks' books moved up sharply in the second half of 2009. Delinquency rates on construction and land development loans climbed to especially high levels. In October 2009, the Federal Reserve joined with other banking regulators to provide guidelines to banks in their efforts to work constructively with troubled CRE borrowers.[9]

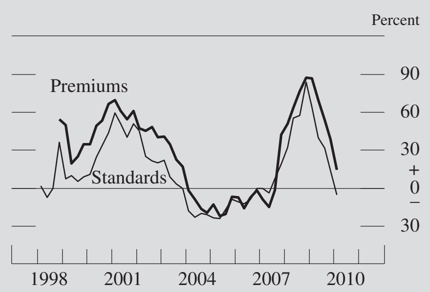
9. This statement updated and replaced existing supervisory guidance to assist examiners in evaluating institutions' efforts to renew or restructure loans to creditworthy CRE borrowers. The statement was intended to promote supervisory consistency, enhance the transparency of CRE workout transactions (that is, transactions intended to renew and restructure the loans), and ensure that supervisory policies and actions do not inadvertently curtail the availability of credit to sound borrowers. For more information, see Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, National Credit Union Administration, Office of the Comptroller of the Currency, Office of Thrift Supervision, and Federal Financial Institutions Examination Council State Liaison Committee (2009), "Policy Statement on Prudent Commercial Real Estate Loan Workouts," attachment to

The debt of domestic nonfinancial businesses contracted slightly during the second half of 2009, and the composition of borrowing continued to shift toward longer-term debt. Net issuance of corporate bonds remained strong as businesses took advantage of favorable market conditions to issue longer-term debt; at the same time, bank loans to businesses—both C&I and CRE loans—contracted, as did commercial paper.

The decline in bank lending to businesses was due partly to the weakness in loan demand. Many banks experiencing steep declines in C&I loans reported that existing loans were paid down across a wide swath of industries. Respondents to the January 2010 SLOOS indicated that weak demand for C&I loans during the second half of 2009 reflected their customers' reduced need to use these loans to finance investment in plant and equipment as well as to finance accounts receivable, inventories, and mergers and acquisitions. In addition, demand was reportedly low for CRE loans amid weak fundamentals in the sector.

The weakness in bank lending to businesses in 2009 was also a consequence of a tightening in lending standards. Responses to the SLOOS indicated that lending standards for C&I loans were tightened significantly in the summer and fall of 2009 and that they remained about unchanged in the final months of the year (figure 8). In addition, many banks continued to tighten some terms throughout the year—for example, by increasing the interest rate premiums charged on riskier loans. Considerable net fractions

8. Net Percentage of Domestic Banks Tightening Standards and Increasing Premiums Charged on Riskier Loans to Large and Medium-Sized Borrowers, 1998–2010



NOTE: The data are drawn from a survey generally conducted four times per year; the last observation is from the January 2010 survey, which covers 2009:Q4. Net percentage is the percentage of banks reporting a tightening of standards or an increase in premiums less the percentage reporting an easing or a decrease. 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.

of banks also continued to report tightening lending standards on CRE loans.

Small businesses have been particularly affected by tight bank lending standards because of their lack of direct access to capital markets. In surveys conducted by the National Federation of Independent Business (NFIB), the net fraction of small businesses reporting that credit had become more difficult to obtain over the preceding three months remained at extremely elevated levels during the second half of 2009. Moreover, considerable net fractions of NFIB survey respondents expected lending conditions to tighten further in the near term. However, when asked about the most important problem they faced, small businesses most frequently cited poor sales, while only a small fraction cited credit availability. Recognizing that small businesses play a crucial role in the economy and that some

Supervision and Regulation Letter SR 09-7 (October 30), www.federalreserve.gov/boarddocs/srletters/2009/sr0907a1.pdf.

are experiencing difficulty in obtaining or renewing credit, the federal financial regulatory agencies and the Conference of State Bank Supervisors issued a statement on February 5, 2010, regarding lending to these businesses.[10] The statement emphasized that financial institutions that engage in prudent small business lending will not be subject to supervisory criticism for small business loans made on that basis. Further, the statement emphasized that regulators are working with the industry and supervisory staff to ensure that supervisory policies and actions do not inadvertently curtail the availability of credit to financially sound small business borrowers.

In the equity market, both seasoned and initial offerings by nonfinancial firms were solid in the second half of 2009. After nearly ceasing earlier in the year, cash-financed mergers picked up toward year-end, mostly as the result of a few large deals. Share repurchases continued to be light.

New issuance in the commercial mortgage-backed securities (CMBS) market—which had ceased in the third quarter of 2008, thus eliminating an important source of financing for many lenders—resumed in November 2009 with a securitization supported by the Federal Reserve's TALF program. A handful of subsequent small securitizations, with more-conservative underwriting and simpler structures than had prevailed during the credit boom, were brought to market and successfully completed without support from the TALF. Nevertheless, issuance of CMBS remains very light, and material increases in issuance appeared unlikely in the near term. Trading in existing CMBS picked up during the second half of 2009, and yield spreads relative to Treasury securities narrowed, although they remain very high by historical standards. Some of the improvement likely reflected support provided by the Federal Reserve through the part of the TALF program that provides loans for the purchase of "legacy" CMBS.

Issuance of leveraged loans, which often involves loan extensions by nonbank financial institutions, also remained weak throughout 2009 although market conditions reportedly improved. Prior to the crisis, this segment of the syndicated loan market provided considerable financing to lower-rated nonfinancial firms. However, issuance of leveraged loans fell to low levels when investors moved away from structured finance products such as collateralized loan obligations, which had been substantial purchasers of such credits. The market began to show signs of recovery last year with secondary-market prices of loans moving higher, and, by late in the year, new loans had found increased investor interest amid some easing in loan terms.

The Government Sector

Federal Government

The deficit in the federal unified budget rose markedly in fiscal year 2009 and reached $1.4 trillion, about $1 trillion higher than in fiscal 2008. The effects of the weak economy on

10. For more information, see Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, the Office of Thrift Supervision, National Credit Union Administration, and Conference of State Bank Supervisors (2010), "Interagency Statement on Meeting the Credit Needs of Creditworthy Small Business Borrowers," attachment to "Regulators Issue Statement on Lending to Creditworthy Small Businesses," joint press release, February 5, www.occ.treas.gov/ftp/release/2010-14.htm.

revenues and outlays, along with the budget costs associated with the fiscal stimulus legislation enacted last February (the American Recovery and Reinvestment Act (ARRA)), the Troubled Asset Relief Program, and the conservatorship of the mortgage-related GSEs, all contributed to the widening of the budget gap. The deficit is expected to remain sharply elevated in fiscal 2010. Although the budget costs of the financial stabilization programs are expected to be lower than in the last fiscal year, the spend-out from last year's fiscal stimulus package is expected to be higher, and tax revenues are anticipated to remain weak. The Congressional Budget Office projects that the deficit will be about $1.3 trillion this fiscal year, just a touch below last year's deficit, and that federal debt held by the public will reach 60 percent of nominal GDP, the highest level recorded since the early 1950s.

The steep drop in economic activity during 2008 and the first half of 2009 resulted in sharply lower tax receipts. After falling about 2 percent in fiscal 2008, federal receipts plunged 18 percent in fiscal 2009, and tax receipts over the first four months of the current fiscal year have continued to decline relative to the comparable year-earlier period. The decline in revenues in fiscal 2009 was particularly steep for corporate taxes, mostly as a result of the sharp contraction in corporate profits in 2008.[11] Individual income and payroll taxes also declined substantially, reflecting the effects of the weak labor market on nominal wage and salary income, a decline in capital gains realizations, and the revenue-reducing provisions of the 2009 fiscal stimulus legislation.

While the outlays associated with the TARP and the conservatorship of the GSEs contributed importantly to the rapid rise in federal spending in fiscal 2009, outlays excluding these extraordinary costs rose a relatively steep 10 percent.[12] Spending for Medicaid and income support programs jumped almost 25 percent in fiscal 2009 as a result of the deterioration in the labor market as well as policy decisions to expand funding for a number of such programs. This category of spending has continued to rise rapidly thus far in fiscal 2010, and most other categories of spending have increased fairly briskly as well.

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—rose at a 4 percent pace in the second half of 2009. Nondefense outlays increased rapidly, in part reflecting the boost in spending from the 2009 fiscal stimulus legislation, while real defense outlays rose modestly.

Federal Borrowing

Federal debt expanded rapidly throughout 2009 and rose to more than 50 percent of nominal GDP by the end of 2009, up from around 35 percent earlier in the decade. To fund the increased borrowing needs, Treasury

11. Because final payments on 2008 liabilities were not due until April of 2009 and because of the difference between fiscal and calendar years, much of the contraction in 2008 corporate profits did not show through to tax revenues until fiscal 2009.

12. In the Monthly Treasury Statements, equity purchases and debt-related transactions under the TARP are recorded on a net present value basis, taking into account market risk, as are the Treasury's purchases of the GSE's MBS. However, equity purchases from the GSEs in conservatorship are recorded on a cash flow basis.

auctions grew to record sizes. However, demand for Treasury issues kept pace, and bid-to-cover ratios at these auctions were generally strong. Foreign demand was solid, and foreign custody holdings of Treasury securities at the Federal Reserve Bank of New York increased considerably over the year.

State and Local Government

Despite the substantial federal aid provided by the ARRA, the fiscal situations of state and local governments remain challenging. At the state level, revenues from income, business, and sales taxes continued to fall in the second half of last year, and many states are currently in the process of addressing shortfalls in their fiscal 2010 budgets. At the local level, revenues have held up fairly well, as receipts from property taxes, on which these jurisdictions rely heavily, have continued to rise moderately, reflecting the typically slow response of property assessments to changes in home values. Nevertheless, the sharp fall in house prices over the past few years is likely to put some downward pressure on local revenues before long. Moreover, many state and local governments have experienced significant capital losses in their employee pension funds, and they will need to set aside resources in coming years to rebuild pension assets.

These budget pressures showed through to state and local spending. As measured in the NIPA, real consumption expenditures of state and local governments declined over the second half of 2009.[13] In particular, these jurisdictions began to reduce employment in mid-2009, and those cuts continued in January. In contrast, investment spending by state and local governments rose moderately during the second half of 2009. The rise in investment spending was supported by infrastructure grants provided by the federal government as part of the ARRA, as well as by a recovery of activity in municipal bond markets that increased the availability and lowered the cost of financing. Also, because capital budgets are typically not encompassed within balanced budget requirements, states were under less pressure to restrain their investment spending.

State and Local Government Borrowing

Borrowing by state and local governments picked up a bit in the second half of the year from its already solid pace in the first half. Gross issuance of long-term bonds, primarily to finance new capital projects, was strong. Issuance was supported by the Build America Bonds program, which was authorized under the ARRA.[14] Short-term issuance was more moderate and generally consistent with typical seasonal patterns. Market participants reported that the market for variable-rate demand obligations, which became severely strained during the financial crisis, had largely recovered.[15]

13. Consumption expenditures by state and local governments include all outlays other than those associated with investment projects.

14. The Build America Bonds program allows state and local governments to issue taxable bonds for capital projects and receive a subsidy payment from the Treasury for 35 percent of interest costs.

15. Variable-rate demand obligations (VRDOs) are taxable or tax-exempt bonds that combine long maturities with floating short-term interest rates that are reset on a weekly, monthly, or other periodic basis. VRDOs also have a contractual liquidity backstop, typically provided by a commercial or investment bank, that ensures that

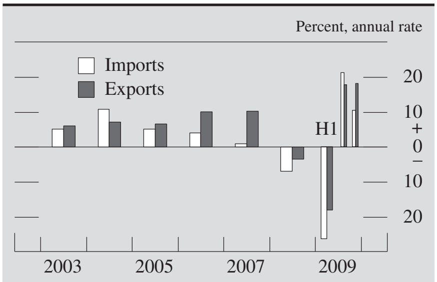
Interest rates on long-term municipal bonds declined during the year, but the ratio of their yields to those on comparable-maturity Treasury securities remained somewhat elevated by historical standards. Credit ratings of state and local governments deteriorated over 2009 as a consequence of budgetary problems faced by many of these governments.

The External Sector

Both exports and imports rebounded in the second half of 2009 from precipitous falls earlier in the year (figure 9). As foreign economic activity began to improve, real exports rose at an annual rate of nearly 20 percent in the second half of the year. Real imports increased at about the same pace, supported by the recovery under way in U.S. demand. The pickup in trade flows was widespread across major types of products and U.S. trading partners but was particularly pronounced for both exports and imports of capital goods. Exports and imports of automotive products also picked up sharply in the second half of last year, reflecting the rise in motor vehicle production in North America, which depends importantly on flows of parts and finished vehicles between the United States, Canada, and Mexico. Despite the bounceback, trade flows only partially retraced the unusually steep declines registered in late 2008 and early 2009. This pattern was also true for global trade flows, as discussed in the box "Developments in Global Trade." The strength of the recovery in global trade so far, however, differs substantially across countries and regions.

bondholders are able to redeem their investment at par plus accrued interest even if the securities cannot be successfully remarketed to other investors.

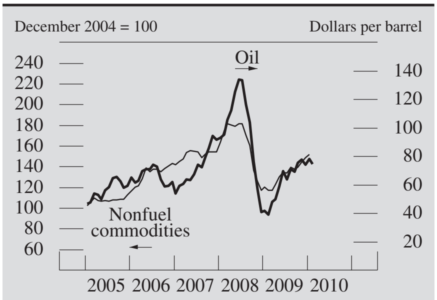
9. Change in Real Imports and Exports of Goods and Services, 2003–09



Source: Department of Commerce, Bureau of Economic Analysis.

Oil and nonfuel commodity prices increased substantially over the year (figure 10). After plunging from a daily high of about \$145 per barrel in mid-2008 to a low of less than \$40 per barrel early in 2009, the spot price of West Texas Intermediate crude oil rose rapidly to reach about \$70 per barrel by the middle of 2009. The price of oil rose further over the second half of the year to reach about \$80 per barrel in November and has fluctuated between \$70 and \$80 per barrel through

10. Prices of Oil and Nonfuel Commodities, 2005–10



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 1–17, 2010. The price of nonfuel commodities is an index of 45 primary-commodity prices and extends through January 2010.

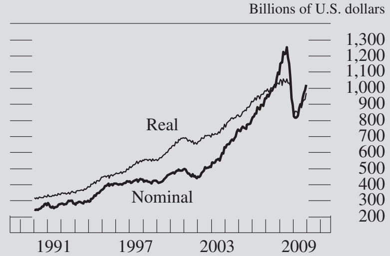
Source: For oil, the Commodity Research Bureau; for nonfuel commodities, International Monetary Fund.

Developments in Global Trade

The downturn in global activity was accompanied by a dramatic collapse in global trade. Measured in U.S. dollars, global exports fell about 35 percent between July 2008 and February 2009.[1] About one-third of the decline was a result of falling prices, notably for oil and other commodities. The volume of global exports is estimated to have contracted about 20 percent between mid-2008 and early 2009, a larger and more abrupt decline than has been observed in previous cycles (figure A).

1. The total includes 44 countries. The emerging Asian economies consist of China, Hong Kong, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, Thailand, and Vietnam; the Latin American economies consist of Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela; the other emerging market economies consist of Hungary, Israel, Poland, Russia, South Africa, and Turkey; and the advanced economies consist of Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

A. Real and Nominal Global Exports, 1990–2009



NOTE: The data are monthly and extend through December 2009. Real global exports are staff estimates expressed in billions of 2007 U.S. dollars.

SOURCE: The nominal data are the sum of U.S. dollar exports from individual country sources via databases maintained by Haver Analytics, CEIC, and the IMF Direction of Trade Statistics, in some cases seasonally adjusted by Federal Reserve staff. Forty-four countries are included. The real data are calculated using trade prices from country sources via Haver Analytics (in some cases interpolated from quarterly or annual data), which are converted to U.S. dollar prices using each country's dollar exchange rate and rebased to 2007.

mid-February 2010. The increase in the price of oil over the course of 2009 was driven in large measure by strengthening global activity, particularly in the emerging market economies. The ongoing effects of earlier restrictions in OPEC supply were another likely contributing factor. The prices of longer-term futures contracts (that is, those expiring in December 2018) for crude oil also moved up and, as of mid-February, were about $96 per barrel. The upward-sloping futures curve is consistent with a view by market participants that oil prices will continue to rise as global demand strengthens over the medium term.

Broad indexes of nonfuel commodity prices also rose from lows near the start of 2009. As with the rise in oil prices, a key driver of the increase in commodity prices has been resurgent demand from emerging market economies, especially China. Market participants expect some further increases in commodity prices as the economic recovery gains strength, albeit increases that are less pronounced than those recorded during last year's rebound.

The steep decline in commodity prices in late 2008 put considerable downward pressure on U.S. import prices for the first half of 2009. Overall for 2009, prices of imported goods fell 1 percent while prices for goods excluding oil fell 2½ percent. Recent upward moves in commodity prices suggest that some of this downward

Developments—continued

The fall in global exports was also more widespread across countries and regions than has typically been the case in past recessions. The severity of the decline in trade was a major factor in the spread of the economic downturn to the emerging market economies in Asia and Latin America, which were generally less directly exposed to the financial crisis than were the advanced economies. Early on, financial and economic indicators in the emerging market economies appeared to be relatively resilient, raising the possibility that those economies had "decoupled" from developments in the advanced economies. However, the trade channel proved quite potent, and most of the emerging market economies experienced deep recessions. A major exception was China, which provided considerable fiscal stimulus to its own economy.

The primary explanation for the deep and abrupt collapse in global trade seems to be that the contraction in global demand was much more severe than in the past. Constraints on the supply of trade finance related to the general credit crunch may have played a role at the beginning, but the fall in demand soon became the more important factor. The sensitivity of trade to the decline in gross domestic product also appears to have been stronger in this cycle than in past cycles, although there is no real agreement on why this might be the case. Greater integration of production across countries and an increase in exports of products for which there are shorter lags between changes in demand and changes in exports—such as electronics—may also have added to the speed and synchronicity of the collapse.

Exports appear to have stopped declining in most economies in the first half of 2009, but so far the strength of the recovery in trade has differed across countries. In particular, exports of the emerging Asian economies are much closer to their previous peaks than are exports of the advanced economies, as the strength of the Chinese economy has so far been a key factor driving exports of the other emerging Asian economies.

pressure on import prices will be reversed in 2010.

The U.S. trade deficit narrowed considerably in the first half of 2009. Nominal imports fell more than nominal exports early in the year, partly reflecting a substantial decline in the value of oil imports. The trade deficit widened moderately over the remainder of the year, however, as both imports and exports picked up in subsequent quarters and oil prices moved higher. In the fourth quarter of 2009, the trade deficit was $440 billion (annual rate), or about 3 percent of nominal GDP, compared with a deficit of 4 percent of nominal GDP a year earlier.

National Saving

Total U.S. net national saving—that is, the saving of households, businesses, and governments, excluding depreciation charges—remained extremely low by historical standards in 2009, averaging about negative 2½ percent of nominal GDP over the first three quarters of the year. After having reached nearly 4 percent of nominal GDP in early 2006, net national saving dropped over the subsequent three years as the federal budget deficit widened substantially and the fiscal positions of state and local governments deteriorated. In contrast, private saving rose considerably, on balance, over this period. National saving will likely remain relatively low this year in light of the continuing high federal budget deficit. If not raised 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, limiting the rise in the standard of living of U.S. residents over time.

The Labor Market

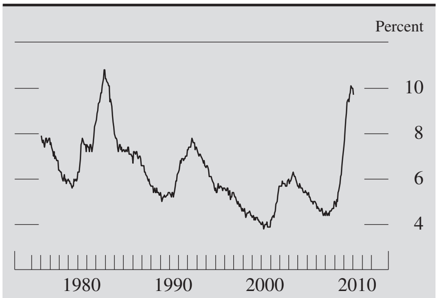
Employment and Unemployment

After falling sharply in the first half of 2009, employment continued to contract through the remainder of the year, but at a gradually moderating pace. Nonfarm private payroll employment fell 725,000 jobs per month, on average, from January to April of 2009; the pace of job loss slowed to about 300,000 per month from May to October, and to an average of 20,000 jobs per month from November to January (figure 11). The moderation in the pace of job losses was relatively widespread across sectors, although cutbacks in employment in the construction industry continued to be sizable through January.

11. Net Change in Private Payroll Employment, 2003–10

NOTE: The data are monthly and extend through January 2010.
SOURCE: Department of Labor, Bureau of Labor Statistics.

12. Civilian Unemployment Rate, 1976–2010



NOTE: The data are monthly and extend through January 2010.
SOURCE: Department of Labor, Bureau of Labor Statistics.

After rising rapidly for more than a year, the unemployment rate stabilized at 10 percent in the fourth quarter of 2009 (figure 12). In January, the jobless rate dropped to 9.7 percent, though it remained 4.7 percentage points higher than its level two years ago.

The slowing in net job losses since mid-2009 primarily reflected a reduction in layoffs rather than an improvement in hiring. Both the number of new job losses and initial claims for unemployment insurance are down significantly from their highs in the spring of 2009, while most indicators of hiring conditions, such as the Bureau of Labor Statistics survey of job openings, remain weak. The average duration of an ongoing spell of unemployment continued to lengthen markedly in the second half of 2009, and joblessness became increasingly concentrated among the long-term unemployed. In January, 6.3 million individuals—more than 40 percent of the unemployed—had been out of work for at least six months. Furthermore, the labor force participation rate has declined steeply since last spring, a development likely related, at least in part, to the reactions of potential workers to the scarcity of employment opportunities.

However, in recent months, labor market reports have included some encouraging signs that labor demand may be firming. For example, employment in the temporary help industry, which frequently is one of the first to see an improvement in hiring, has been increasing since October. In addition, after steep declines in 2008 and the first quarter of 2009, the average workweek of production and nonsupervisory employees stabilized at roughly 33.1 hours per week through the remainder of the year, before ticking up to 33.2 hours in November and December and 33.3 hours in January. Another indicator of an improvement in work hours, the fraction of workers on part-time schedules for economic reasons, increased only slightly, on net, in the second half of the year after a sharp rise in the first half and then turned down noticeably in January.

Productivity and Labor Compensation

Labor productivity surged in 2009, reflecting, at least to some extent, the reluctance of firms to increase hiring even as demand expanded. According to the latest available published data, output per hour in the nonfarm business sector increased at an annual rate of 6¾ percent in the second half of 2009, after rising 3½ percent in the first half, and about 1 percent in 2008.

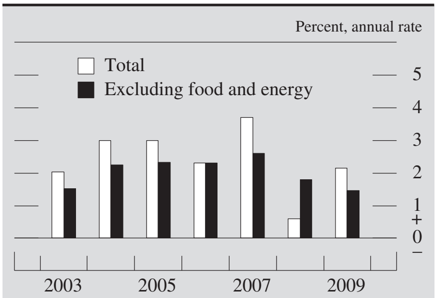
Despite large gains in productivity, increases in hourly worker compensation have remained subdued. The employment cost index for private industry workers, which measures both wages and the cost to employers of providing benefits, rose only 1¼ percent in nominal terms in 2009 after rising almost 2½ percent in 2008. Compensation per hour in the nonfarm business sector—a measure derived from the worker compensation data in the NIPA—showed less deceleration, rising 2.2 percent in nominal terms in 2009, only slightly slower than the 2.6 percent rise recorded for 2008. Real hourly compensation—that is, adjusted for the rise in consumer prices—increased only modestly. Reflecting the subdued increase in nominal hourly compensation, along with the outsized gain in labor productivity noted earlier, unit labor costs in the nonfarm business sector declined 2¾ percent in 2009.

Prices

Headline consumer price inflation picked up in 2009, as sharp increases in energy prices offset reductions in food prices and a deceleration in other prices. After rising ½ percent over the 12 months of 2008, overall prices for personal consumption expenditures rose about 2 percent in 2009. In contrast, the core PCE price index—which excludes the prices of energy items as well as those of food and beverages—increased a little less than 1½ percent in 2009, compared with a rise of roughly 1¾ percent in 2008 (figure 13). Data for PCE prices in January 2010 are not yet available, but information from the consumer price index and other sources suggests that inflation remained subdued.

Consumer energy prices rose sharply in 2009, reversing much of the steep decline recorded in 2008. The retail price of gasoline was up more than 60 percent for the year as a whole, driven higher by a resurgence in the cost of crude oil. Reflecting the burgeoning supplies from new domestic wells, consumer natural gas prices fell sharply over the first half of 2009, before in-

13. Change in the Chain-Type Price Index for Personal Consumption Expenditures, 2003–09



NOTE: Change is from December to December.
SOURCE: Department of Commerce, Bureau of Economic Analysis.

creasing again in the last few months of the year as the economic outlook improved. Electricity prices also fell during the early part of 2009 before retracing part of that decline later in the year. Overall, natural gas prices were down almost 20 percent in 2009, while electricity prices were about unchanged.

After posting sizable declines throughout much of 2009, food prices turned up modestly in the fourth quarter of last year. For the year as a whole, consumer food prices fell 1½ percent after rising 6¾ percent in 2008; these changes largely reflected the pass-through to retail of huge swings in spot prices of crops and livestock over the past two years.

Excluding food and energy, PCE price inflation slowed last year. Core PCE prices rose at an annual rate of 1¾ percent in the first half of 2009, similar to the pace in 2008, and then increased at an annual rate of only a little above 1 percent over the final six months of the year. This slowdown in core inflation was centered in a noticeable deceleration in the prices of nonenergy services. For those prices, firms' widespread cost-cutting efforts over the past year and the continued weakness in the housing market that has put downward pressure on housing costs have likely been important factors. The prices of many core consumer goods continued to rise only moderately in 2009; a notable exception was tobacco, for which tax-induced price hikes were substantial.

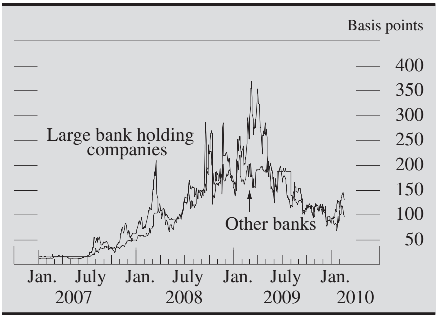
Survey-based measures of near-term inflation expectations, which were unusually low in the beginning of 2009, moved up, on average, over the remainder of the year. According to the Thomson Reuters/University of Michigan Surveys of Consumers, median expectations for year-ahead inflation stood at 2.8 percent in January, up from about 2 percent at the beginning of 2009. Historically, this short-term measure has been influenced fairly heavily by contemporaneous movements in energy prices. Longer-term inflation expectations, by contrast, have been relatively stable over the past year. For example, the Thomson Reuters/University of Michigan survey measure of median 5- to 10-year inflation expectations was 2.9 percent in January of this year, similar to the readings during most of 2009, and near the lower end of the narrow range that has prevailed over the past few years.

Financial Stability Developments

Evolution of the Financial Sector, Policy Actions, and Market Developments

The recovery in the financial sector that began in the first half of 2009 continued through the second half of the year and into 2010, as investor concerns about the health of large financial

14. Spreads on Credit Default Swaps for Selected U.S. Banks, 2007–10

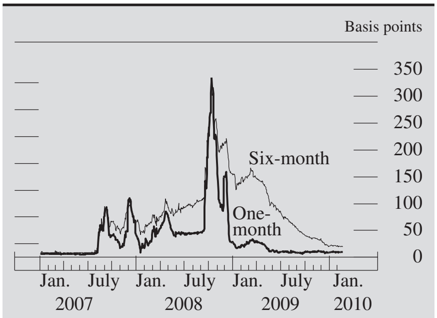


NOTE: The data are daily and extend through February 18, 2010. Median spreads for six bank holding companies and nine other banks.
SOURCE: Markit.

institutions subsided further. Credit default swap (CDS) spreads for banking institutions—which primarily reflect investors' assessments of and willingness to bear the risk that those institutions will default on their debt obligations—fell considerably from their peaks early in 2009, although they remain above pre-crisis levels (figure 14). Bank equity prices have increased significantly since spring 2009. Many of the largest bank holding companies were able to issue equity and repurchase preferred shares that had been issued to the Treasury under the TARP. Nonetheless, conditions in many banking markets remain very challenging, with delinquency and charge-off rates still elevated, especially on commercial and residential real estate loans. Investor concerns about insurance companies—which had come under pressure in early 2009 and a few of which had received capital injections from the Treasury—also diminished, as indicated by narrowing CDS spreads for those firms and increases in their equity prices. In December, the Treasury announced that it was amending the cap on its Preferred Stock Purchase Agreements with Fannie Mae and Freddie Mac to ensure that each firm would maintain positive net worth for the next three years, and it also announced that it was providing additional capital to GMAC under the TARP.

Consistent with diminishing concerns about the conditions of banking institutions, functioning in bank funding markets has improved steadily since the spring of last year. A measure of stress in these markets—the spread between the London interbank offered rate (Libor) and the rate on comparable-maturity overnight index swaps (OIS)—narrowed at all maturities; spreads at shorter maturities reached pre-crisis levels, while those at longer maturities remained somewhat elevated by historical standards (figure 15). Liquidity in term bank funding markets also improved at terms up to six months. Conditions improved in other money markets as well. Bid-asked spreads and haircuts applied to

15. Libor Minus Overnight Index Swap Rate, 2007–10



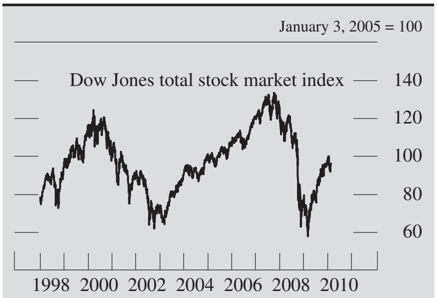
NOTE: The data are daily and extend through February 19, 2010. An overnight index swap (OIS) is an interest rate swap with the floating rate tied to an index of daily overnight rates, such as the effective federal funds rate. At maturity, two parties exchange, on the basis of the agreed notional amount, 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.

collateral in repurchase agreement (repo) markets retraced some of the run-ups that had occurred during the financial market turmoil, though haircuts on most types of collateral continued to be sizable relative to pre-crisis levels. In the commercial paper market, spreads between rates on lower-quality A2/P2 paper and on asset-backed commercial paper over higher-quality AA nonfinancial paper fell to the low end of the range observed since the fall of 2007.

With improved conditions in financial markets, the Federal Reserve and other agencies removed some of the extraordinary support that had been provided during the crisis. Starting in the second half of 2009, the Federal Reserve began to normalize its lending to commercial banks. The amounts and maturity of credit auctioned through the Term Auction Facility (TAF) were reduced over time, and early in 2010 the Federal Reserve announced that the final TAF auction would be conducted in March 2010. Later, the Federal Reserve noted that the minimum bid rate for the final auction would be 50 basis points, ¼ percentage point higher than in recent auctions. The Federal Reserve also shortened the maximum maturity of loans provided under the primary credit program from 90 days to 28 days, effective on January 14, and announced a further reduction of the maximum maturity of those loans to overnight effective March 18. In addition, the rate charged on primary credit loans was increased from ½ percent to ¾ percent effective February 19. Amounts outstanding under many of the Federal Reserve's special liquidity facilities had dwindled to zero (or near zero) over the second half of 2009 as functioning of funding markets, both in the United States and abroad, continued to normalize. The Primary Dealer Credit Facility, the Term Securities Lending Facility, the Commercial Paper Funding Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, and the temporary liquidity swap lines with foreign central banks were all allowed to expire on February 1, 2010. Other government agencies also reduced their support to financial institutions. For instance, to buttress the liquidity of financial institutions, the FDIC had established in October 2008 a program to provide, in exchange for a fee, a guarantee on short- and medium-term debt issued by banking institutions. Financial institutions issued about $300 billion under this program, but use of the program declined after the summer of 2009 as financial institutions were able to successfully issue nonguaranteed debt. In light of these developments, the FDIC announced in late October 2009 that the guarantee program would be extended but with significant restrictions; no debt has been issued under the extended program.

Asset prices in longer-term capital markets have also staged a noticeable recovery since the spring of 2009, and risk premiums have narrowed noticeably as investors' appetite for risk appears to be recovering. In the corporate bond market, risk spreads on both investment- and speculative-grade bonds—the difference between the yields on these securities and those on comparable-maturity Treasury securities—dropped, and by the end of last year those spreads were within ranges observed during the recoveries from previous recessions. During the second half of 2009, the decline in risk spreads was accompanied by considerable inflows into mutual funds that invest in corporate bonds. In the leveraged loan market, the average bid price climbed back toward par, and bid-asked spreads

16. Stock Price Index, 1998–2010



NOTE: The data are daily and extend through February 18, 2010.
SOURCE: Dow Jones Indexes.

narrowed noticeably as trading conditions reportedly improved. Equity markets rebounded significantly over the past few quarters, leaving broad equity market indexes about 65 percent above the low point reached in March 2009 (figure 16).

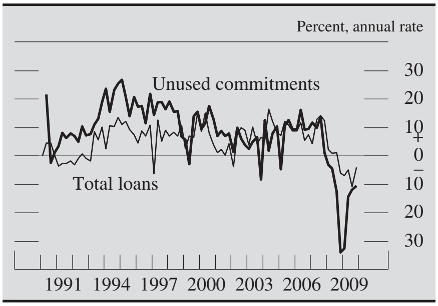
Overall, the rebound in asset prices likely reflected corporate earnings that were generally above market expectations, improved measures of corporate credit quality, and brighter economic prospects. Apparently, investors also became somewhat less concerned about the downside risks to the economic outlook, as suggested by declines in measures of uncertainty and risk premiums. Implied volatility on the S&P 500, as calculated from option prices, held at moderate levels during the second half of 2009 and was well off the peak reached in November 2008. Moreover, a measure of the premium that investors require for holding equity shares—the difference between the ratio of 12-month forward expected earnings to equity prices for S&P 500 firms and the long-term real Treasury yield—narrowed in 2009, though it remains elevated by historical standards.

Banking Institutions

The profitability of the commercial banking sector, as measured by the return on equity, continued to be quite low during the second half of 2009. Elevated loan loss provisioning continued to be the largest factor restraining earnings; however, provisioning decreased significantly in the second half of the year, suggesting that banks believe that credit losses may be stabilizing. While some banks saw earnings boosted earlier last year by gains in trading and investment banking activities, revenue from these sources is reported to have dropped back in the fourth quarter. Although delinquency and charge-off rates for residential mortgages and commercial real estate loans continued to climb in the second half of 2009, for most other types of loans these metrics declined or showed signs of leveling out.

During the year, bank holding companies issued substantial amounts of common equity. Significant issuance occurred in the wake of the release of the Supervisory Capital Assessment Program (SCAP) results, which indicated that some firms needed to augment or improve the quality of their capital in order to assure that, even under a macroeconomic scenario that was more adverse than expected, they would emerge from the subsequent two-year period still capable of meeting the needs of creditworthy borrowers. The 19 SCAP firms issued about $110 billion in new common equity; combined with conversions of preferred stock, asset sales, and other capital actions, these steps have added more than $200 billion to common equity since the beginning of 2009. Equity offerings were also undertaken by other financial firms, and some used the

17. Change in Total Bank Loans and Unused Bank Loan Commitments to Businesses and Households, 1990–2009



NOTE: The data, which are not seasonally adjusted, are quarterly and extend through 2009:Q4. Total loans are adjusted to remove the effects of large thrifts converting to commercial banks or merging with a commercial bank.

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

proceeds to repay funds received as part of the Capital Purchase Program.

Against a backdrop of weak loan demand and tight credit policies throughout 2009, total loans on banks' books contracted even more sharply in the last two quarters taken together than in the first half of the year (figure 17). Outstanding unused loan commitments to both businesses and households also declined, albeit at a slower pace than in early 2009. The decline in loans was partially offset by an increase in holdings of securities, particularly Treasury securities and agency MBS, and a further rise in balances at the Federal Reserve. On balance, total industry assets declined. The decline in assets combined with an increase in capital to push regulatory capital ratios considerably higher.

The Financial Accounting Standards Board published Statements of Financial Accounting Standards Nos. 166 and 167 (FAS 166 and 167) in June 2009. The new standards modified the basis for determining whether a firm must consolidate securitized assets (as well as the associated liabilities and equity) onto its balance sheet; most banking organizations must implement the standards in the first quarter of 2010. Industry analysts estimate that banking organizations will consolidate approximately $600 billion of additional assets as a result of implementing FAS 166 and 167. A small number of institutions with large securitization programs will be most affected. While the regulatory capital ratios of the affected banking organizations may decrease after implementation of FAS 166 and 167, the ratios of organizations most affected by the accounting change are expected to remain substantially in excess of regulatory minimums. The federal banking agencies recently published a related risk-based capital rule that includes an optional one-year phase-in of certain risk-based capital impacts resulting from implementation of FAS 166 and 167.[16]

16. For more information and the text of the final rule, see Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of Thrift Supervision (2010), "Agencies Issue Final Rule for Regulatory Capital Standards Related to Statements of Financial Accounting Standards Nos. 166 and 167," press release, January 21, www.federalreserve.gov/newsevents/press/bcreg/20100121a.htm. The final rule was also published in the *Federal Register;* see Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of Thrift Supervision (2010), "Risk-Based Capital Guidelines; Capital Adequacy Guidelines; Capital Maintenance: Regulatory Capital; Impact of Modifications to Generally Accepted Accounting Principles; Consolidation of Asset-Backed Commercial Paper Programs; and Other Related Issues," final rule, *Federal Register,* vol. 75 (January 28), pp. 4636–54.

Monetary Policy Expectations and Treasury Rates

In July 2009, market participants had expected the target federal funds rate to be close to the current target range of 0 to ¼ percent in early 2010, but they had also anticipated that the removal of policy accommodation would be imminent. Over the second half of 2009, however, investors marked down their expectations for the path of the federal funds rate. Quotes on futures contracts imply that, as of mid-February 2010, market participants anticipate that policy will be tightened beginning in the third quarter of 2010, and that the tightening will proceed at a pace slower than was expected last summer. However, uncertainty about the size of term premiums and potential distortions created by the zero lower bound for the federal funds rate continue to make it difficult to obtain a definitive reading on the policy expectations of market participants from futures prices. The downward revision in policy expectations since July likely has reflected incoming economic data pointing to a somewhat weaker trajectory for employment and a lower path for inflation than had been anticipated. Another contributing factor likely was Federal Reserve communications, including the reiteration in the statement released after each meeting of the Federal Open Market Committee that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period.

Yields on shorter-maturity Treasury securities have edged lower since last summer, consistent with the downward shift in the expected policy path (figure 18). However, yields on longer-maturity nominal Treasury securities have increased slightly, on net, likely in response to generally positive news about the economy and declines in the weight investors had placed on extremely adverse economic outcomes. The gradual tapering and the completion of the Federal Reserve's large-scale asset purchases of Treasury securities in October 2009 appeared to put little upward pressure on Treasury yields.

18. Interest Rates on Selected Treasury Securities, 2004–10

NOTE: The data are daily and extend through February 18, 2010.
SOURCE: Department of the Treasury.

Yields on Treasury inflation-protected securities (TIPS) declined somewhat in the second half of 2009 and into 2010. The result was an increase in inflation compensation—the difference between comparable-maturity nominal yields and TIPS yields. The increase was concentrated at shorter-maturities and was partly a response to rising prices of oil and other commodities. Inflation compensation at more distant horizons was somewhat volatile and was little changed on net. Inferences about investors' inflation expectations have been more difficult to make since the second half of 2008 because special factors, such as safe-haven demands and an increased preference of investors for liquid assets, appear to have significantly affected the relative demand for nominal and inflation-indexed securities. These special factors began to abate in the first half of 2009 and receded further in the second half of the year, and the resulting changes in nominal and inflation-adjusted yields may have accounted for part of the recent increase in inflation compensation. On net, survey measures of longer-run inflation expectations have remained stable.

Monetary Aggregates and the Federal Reserve's Balance Sheet

After a brisk increase in the first half of the year, the M2 monetary aggregate expanded slowly in the second half of 2009 and in early 2010.[17] The rise in the latter part of the year was driven largely by increases in liquid deposits, as interest rates on savings deposits were reduced more slowly than rates on other types of deposits, and households and firms maintained some preference for safe and liquid assets. Outflows from small time deposits and retail money market mutual funds intensified during the second half of 2009, likely because of ongoing declines in the interest rates offered on these products. The currency component of the money stock expanded modestly in the second half of the year. The monetary base—essentially the sum of currency in circulation and the reserve balances of depository institutions held at the Federal Reserve—expanded rapidly for much of the second half of 2009, as the increase in reserve balances resulting from the large-scale asset purchases more than offset the decline caused by reduced usage of the Federal Reserve's credit programs. However, the monetary base increased more slowly toward the end of 2009 and in early 2010 as these purchases were tapered and as use of Federal Reserve liquidity facilities declined.

The nontraditional monetary policy actions taken by the Federal Reserve since the onset of the financial crisis expanded the size of the Federal Reserve's balance sheet considerably during 2008, and it remained very large throughout 2009 and into 2010 (table 1). Total Federal Reserve assets on February 17, 2010, stood at about $2.3 trillion. The compositional shifts that had been under way in the first half of 2009 continued during the remainder of the year. Lending to depository institutions as well as credit extended under special liquidity facilities and the temporary liquidity swaps with foreign central banks contracted sharply. By contrast, the large-scale asset purchases conducted by the Federal Reserve boosted securities held outright. Holdings of agency MBS surpassed $1 trillion early this year, up from about $525 billion in mid-July 2009. For other types of securities, the increases were more modest, with holdings of agency debt expanding from about $100 billion in July 2009 to $165 billion in February and holdings of Trea-

17. 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 issued in amounts of less 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.

1. Selected Components of the Federal Reserve Balance Sheet, 2008–10

Millions of dollars

Balance sheet item	Dec. 31, 2008	July 15, 2009	Feb. 17, 2010
Total assets	**2,240,946**	**2,074,822**	**2,280,952**
Selected assets			
Credit extended to depository institutions and dealers			
Primary credit	93,769	34,743	14,156
Term auction credit	450,219	273,691	15,426
Central bank liquidity swaps	553,728	111,641	0
Primary Dealer Credit Facility and other broker-dealer credit	37,404	0	0
Credit extended to other market participants			
Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility	23,765	5,469	0
Net portfolio holdings of Commercial Paper Funding Facility LLC	334,102	111,053	7,721
Net portfolio holdings of LLCs funded through the Money Market Investor Funding Facility	0	0	0
Term Asset-Backed Securities Loan Facility	. . .	30,121	47,182
Support of critical institutions			
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC[1]	73,925	60,546	65,089
Credit extended to American International Group, Inc.	38,914	42,871	25,535
Preferred interests in AIA Aurora LLC and ALICO Holdings LLC	. . .	. . .	25,106
Securities held outright			
U.S. Treasury securities	475,921	684,030	776,571
Agency debt securities	19,708	101,701	165,587
Agency mortgage-backed securities (MBS)[2]	. . .	526,418	1,025,541
Memo			
Term Securities Lending Facility[3]	171,600	4,250	0
Total liabilities	**2,198,794**	**2,025,348**	**2,228,425**
Selected liabilities			
Federal Reserve notes in circulation	853,168	870,327	892,985
Reserve balances of depository institutions	860,000	808,824	1,205,165
U.S. Treasury, general account	106,123	65,234	49,702
U.S. Treasury, supplemental financing account	259,325	199,939	5,000
Total capital	**42,152**	**49,474**	**52,527**

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 reinvestment 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.

2. Includes only MBS purchases that have already settled.

3. The Federal Reserve retains ownership of securities lent through the Term Securities Lending Facility.

. . . Not applicable.

Source: Federal Reserve Board.

sury securities rising from nearly $700 billion to approximately $775 billion over the same period. The revolving credit provided to American International Group, Inc. (AIG), declined near year-end, as the outstanding balance was reduced in exchange for preferred interests in AIA Aurora LLC and ALICO Holdings LLC, which are life insurance holding company subsidiaries of AIG. Loans related to the Maiden Lane facilities—which represent credit extended in conjunction with efforts to avoid disorderly failures of The Bear Stearns Companies, Inc., and AIG—stayed roughly steady. On the liability side of the Federal Reserve's balance sheet, reserve balances increased from slightly more than $800 billion in July to about $1.2 trillion as of February 17, 2010, while the Treasury's supplementary financing account fell to $5 billion; the decline in the supplementary financing account occurred late in 2009 as part of the Treasury's efforts to retain flexibility in debt management as federal debt approached the debt ceiling.

International Developments

International Financial Markets

Global financial markets recovered considerably in 2009 as the effectiveness of central bank and government actions in stabilizing the financial system became more apparent and as signs of economic recovery began to take hold. Stock markets in the advanced foreign economies registered gains of about 50 percent from their troughs in early March, although they remain below their levels at the start of the financial crisis in August 2007. Stock markets in the emerging market economies rebounded even more impressively over the year. Most Latin American and many emerging Asian stock markets are now close to their levels at the start of the crisis.

As global prospects improved, investors shifted away from the safe-haven investments in U.S. securities they had made at the height of the crisis. As a result, the dollar, which had appreciated sharply in late 2008, depreciated against most other currencies in the second and third quarters of 2009. The dollar depreciated particularly sharply against the currencies of major commodity-producing nations, such as Australia and Brazil, as rising commodity prices supported economic recovery in those countries. In the fourth quarter, the dollar stabilized and has since appreciated somewhat, on net, as investors began to focus more on economic news and prospects for the relative strength of the economic recoveries in the United States and elsewhere (figure 19). Chinese authorities held the renminbi steady against the dollar throughout the year. For 2009 as a whole, the dollar depreciated roughly 4½ percent on a trade-weighted basis against the major foreign currencies and 3½ percent against the currencies of the other important trading partners of the United States.

Sovereign bond yields in the advanced economies rose over most of 2009 as investors moved out of safe investments in government securities and became more willing to purchase riskier securities. Concerns about rising budget deficits in many countries and the associated borrowing needs also likely contributed to the increase in

19. U.S. Dollar Nominal Exchange Rate, Broad Index, 2005–10

Note: The data, which are in foreign currency units per dollar, are daily. The last observation for the series is February 18, 2010. 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, Statistical Release H.10, "Foreign Exchange Rates."

yields. Late in the year, the announcement of a substantial upward revision to the budget deficit in Greece led to a sharp rise in spreads of Greece's sovereign debt over comparable yields on Germany's sovereign debt. These spreads remained elevated in early 2010 and also increased in other euro-area countries with sizable budget deficits, especially Portugal and Spain. Sovereign yields in most of the advanced economies, however, remained significantly lower than prior to the financial crisis, as contained inflation, expectations of only slow economic recovery, and easing of monetary policy by central banks have all worked to keep long-term nominal interest rates low.

Conditions in global money markets have continued to improve. One-month Libor-OIS spreads in euros and sterling are now less than 10 basis points, near their levels before the crisis. Dollar funding pressures abroad have also substantially abated, and foreign firms are more easily able to obtain dollar funding through private markets such as those for foreign exchange swaps. As a result, drawings on the Federal Reserve's temporary liquidity swap lines by foreign central banks declined in the second half of 2009 to only about $10 billion by the end of the year, and funding markets continued to function without disruption as these swap lines expired on February 1, 2010.

The Financial Account

The pattern of financial flows between the United States and the rest of the world in 2009 reflected the recovery under way in global markets. As the financial crisis eased, net bank lending abroad resumed, but the recovery in portfolio flows was mixed.

Total private financial flows reversed from the large net inflows that had characterized the second half of 2008 to large net outflows in the first half of 2009. This reversal primarily reflected changes in net bank lending. Banks located in the United States had sharply curtailed their lending abroad as the financial crisis intensified in the third and fourth quarters of 2008, and they renewed their net lending as functioning of interbank markets improved in the first half of 2009. During the second half of 2009, interbank market conditions continued to normalize, and net bank lending proceeded at a moderate pace. The increased availability of funding in private markets also led to reduced demand from foreign central banks for drawings on the liquidity swap lines with the Federal Reserve. Repayment of the drawings in the first half of 2009 generated sizable U.S. official inflows that offset the large private banking outflows.

Foreign official institutions continued purchasing U.S. Treasury securities at a strong pace throughout 2009, as they had during most of the crisis. Foreign exchange intervention by several countries to counteract upward pressure on their currencies gave a boost to these purchases. Countries conducting such intervention bought U.S. dollars in foreign currency markets and acquired U.S. assets, primarily Treasury securities, with the proceeds.

During the height of the crisis, private foreign investors had also purchased record amounts of U.S. Treasury securities, likely reflecting safe-haven demands. Starting in April 2009, as improvement in financial conditions became more apparent, private foreigners began to sell U.S. Treasury securities, but net sales in the second and third quarters were modest compared with the amounts acquired in previous quarters. The recovery in foreign demand for riskier U.S. securities was mixed. Foreign investment in U.S. equities picked up briskly after the first quarter of 2009, nearly reaching a pre-crisis pace. However, foreign investors continued small net sales of U.S. corporate and agency debt. Meanwhile, U.S. investment in foreign securities bounced back quickly and remained strong throughout 2009.

Advanced Foreign Economies

Economic activity in the advanced foreign economies continued to fall sharply in early 2009 but began to recover later in the year as financial conditions improved and world trade rebounded. The robust recovery in emerging Asia helped the Japanese economy to turn up in the second quarter, and other major foreign economies returned to positive economic growth in the second half. Nevertheless, performance has been mixed. Spurred by external demand and a reduction in the pace of inventory destocking, industrial production has risen in most countries but remains well below pre-crisis levels. Business confidence has shown considerable improvement, and survey measures of manufacturing activity have risen as well. Consumer confidence also has improved as financial markets have stabilized, but household finances remain stressed, with unemployment at high levels and wage gains subdued. Although government incentives helped motor vehicle purchases to bounce back from the slump in early 2009, other household spending has remained sluggish in most countries. Housing prices have recovered somewhat in the United Kingdom and more in Canada but have continued to decline in Japan and in some euro-area countries.

Twelve-month consumer price inflation moved lower through the summer, with headline inflation turning negative in all the major advanced foreign countries except the United Kingdom. However, higher energy prices in the second half of 2009 pushed inflation back into positive territory except in Japan. Core consumer price inflation, which excludes food and energy, has fluctuated less.

Foreign central banks cut policy rates aggressively during the first half of 2009 and left those rates at historically low levels through year-end. The European Central Bank (ECB) has held its main policy rate at 1 percent since May and has made significant amounts of long-term funding available at this rate, allowing overnight interest rates to fall to around 0.35 percent. The Bank of Canada has indicated that it expects to keep its target for the overnight rate at a record low 0.25 percent until at least mid-2010. In addition to their interest rate moves, foreign central banks pursued unconventional monetary easing. The Bank of England continued its purchases of British treasury securities, increasing its Asset Purchase Facility from £50 billion to £200 billion over the course of the year. Amid concerns about persistent deflation, the Bank of Japan announced a new ¥10 trillion three-month secured lending facility at an unscheduled meeting on December 1. The ECB has continued its planned purchases of up to €60 billion in covered bonds, but it has also taken some initial steps toward scaling back its enhanced credit support measures, as it sees reduced need for special programs to provide liquidity.

Emerging Market Economies

Recovery from the global financial crisis has been more pronounced in the emerging market economies than in the advanced foreign economies. In aggregate, emerging market economies continued to contract in the first quarter of 2009, but economic activity in many countries, particularly in emerging Asia, rebounded sharply in the second quarter and remained robust in the second half of the year. The upturn in economic activity was driven largely by domestic demand, which received strong boosts from monetary and fiscal stimulus. By the end of 2009, the level of real GDP in several emerging market economies had recovered to or was approaching pre-crisis peaks. With significant spare capacity as a result of the earlier steep contraction in activity in these economies, inflation remained generally subdued through the first half of last year but moved up in the fourth quarter as adverse weather conditions led to a sharp rise in food prices.

In China, the fiscal stimulus package enacted in November 2008, combined with a surge in bank lending, led to a sharp rise in investment and consumption. Strong domestic demand contributed to a rebound in imports, which helped support economic activity in the rest of Asia and in commodity-exporting countries. Chinese authorities halted the modest appreciation of their currency against the dollar in the middle of 2008, and the exchange rate between the renminbi and the dollar has been unchanged since then. In the second half of 2009, authorities acted to slow the increase in bank lending to a more sustainable pace after the level of outstanding loans rose in the first half of the year by nearly one-fourth of nominal GDP. With the economy booming and inflation picking up, the People's Bank of China (the central bank) increased the required reserve ratio for banks ½ percentage point in January 2010 and again in February, the country's first significant monetary policy tightening moves since the financial crisis. In China and elsewhere in Asia, asset prices have rebounded sharply after falling steeply in the second half of 2008.

In Latin America, the rebound in activity has lagged that in Asia. Economic activity in Mexico, which is more closely tied to U.S. production and was adversely affected by the outbreak of the H1N1 virus last spring, did not turn up until the third quarter of 2009, but it then grew rapidly. In Brazil, the recession was less severe than in Mexico, and economic growth has been fairly strong since the second quarter of last year, supported in part by government stimulus and rising commodity prices.

Russia and many countries in emerging Europe suffered severe output contractions in the first half of 2009 and, in some cases, further financial stresses. In particular, Latvia faced difficulties meeting the fiscal conditions of its international assistance package, which heightened concerns about the survival of the Latvian currency regime. However, economic and financial conditions in emerging Europe began to recover in the second half of the year.

Part 3
Monetary Policy: Recent Developments and Outlook

Monetary Policy over the Second Half of 2009 and Early 2010

In order to provide monetary stimulus to support a sustainable economic expansion, the Federal Open Market Committee (FOMC) maintained a target range for the federal funds rate of 0 to ¼ percent throughout 2009 and into early 2010. The Federal Reserve also continued its program of large-scale asset purchases, completing purchases of $300 billion in Treasury securities and making considerable progress toward completing its announced purchases of $1.25 trillion of agency mortgage-backed securities (MBS) and about $175 billion of agency debt.

However, with financial market conditions improving, the Federal Reserve took steps to begin winding down many of its special credit and liquidity programs in 2009. On June 25, the Federal Reserve announced that it was extending the authorizations of several of these programs from October 30, 2009, to February 1, 2010. However, the terms of some of these facilities were tightened somewhat, the amounts to be offered under the Term Auction Facility (TAF) were reduced, and the authorization for the Money Market Investor Funding Facility was not extended.[18] Over the summer, the Federal Reserve continued to trim the amounts offered through the TAF.

The information reviewed at the August 11–12 FOMC meeting suggested that overall economic activity was stabilizing after having contracted during 2008 and early 2009. Nonetheless, meeting participants generally saw the economy as likely to recover only slowly during the second half of 2009 and as still vulnerable to adverse shocks. Although housing activity apparently was beginning to turn up, the weak labor market continued to restrain household income, and earlier declines in net worth were still holding back spending. Developments in financial markets leading up to the meeting were broadly positive, and the cumulative improvement in market functioning since the spring was significant. However, the pickup in financial markets was seen as due, in part, to support from various government programs. Moreover, credit remained tight, with many banks reporting that they continued to tighten loan standards and terms. Overall prices for personal consumption expenditures (PCE) rose in June after changing little in each of the previous three months. Excluding food and energy, PCE prices moved up moderately in June.

Given the prospects for an initially modest economic recovery, substantial resource slack, and subdued inflation, the Committee agreed at its August meeting that it should maintain its target range for the federal funds rate at 0 to ¼ percent. FOMC participants expected only a gradual upturn in economic activity and subdued inflation and thought it most likely that the federal funds rate would need to be maintained at an exceptionally low level for an extended period. With the downside risks to the economic outlook now considerably reduced but the economic recovery likely to be subdued, the Committee also agreed that neither expansion nor contraction of its program of asset purchases was warranted at the time. The Committee did, however, decide to gradually slow the pace

18. In particular, the Federal Reserve began requiring money market mutual funds to have experienced redemptions exceeding a certain threshold before becoming eligible to borrow from the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility. The Federal Reserve also suspended auctions conducted under the Term Securities Lending Facility (TSLF) involving only Schedule 1 collateral and reduced the frequency of TSLF auctions involving Schedule 2 collateral. Schedule 1 collateral refers to securities eligible for the open market operations arranged by the Federal Reserve's Open Market Trading Desk—generally Treasury securities, agency debt, or agency MBS. Schedule 2 collateral includes all Schedule 1 collateral as well as investment-grade corporate, municipal, mortgage-backed, and asset-backed securities.

of the remainder of its purchases of $300 billion of Treasury securities and extend their completion to the end of October to help promote a smooth transition in financial markets. Policymakers noted that, with the programs for purchases of agency debt and MBS not due to expire until the end of the year, they did not need to make decisions at the meeting about any potential modifications to those programs.

By the time of the September 22–23 FOMC meeting, incoming data suggested that overall economic activity was beginning to pick up. Factory output, particularly motor vehicle production, rose in July and August. Consumer spending on motor vehicles during that period was boosted by government rebates and greater dealer incentives. Household spending outside of motor vehicles appeared to rise in August after having been roughly flat from May through July. Sales data for July indicated further increases in the demand for both new and existing single-family homes. Although employment continued to contract in August, the pace of job losses had slowed noticeably from earlier in the year. Developments in financial markets were again regarded as broadly positive; meeting participants saw the cumulative improvement in market functioning and pricing since the spring as substantial. Despite these positive factors, participants still viewed the economic recovery as likely to be quite restrained. Credit from banks remained difficult to obtain and costly for many borrowers; these conditions were expected to improve only gradually. Many regional and small banks were vulnerable to the deteriorating performance of commercial real estate loans. In light of recent experience, consumers were likely to be cautious in spending, and business contacts indicated that their firms would also be cautious in hiring and investing even as demand for their products picked up. Some of the recent gains in economic activity probably reflected support from government policies, and participants expressed considerable uncertainty about the likely strength of the upturn once those supports were withdrawn or their effects waned. Core consumer price inflation remained subdued, while overall consumer price inflation increased in August, boosted by a sharp upturn in energy prices.

Although the economic outlook had improved further and the risks to the forecast had become more balanced, the recovery in economic activity was likely to be protracted. With substantial resource slack likely to persist and longer-term inflation expectations stable, the Committee anticipated that inflation would remain subdued for some time. Under these circumstances, the Committee judged that the costs of the economic recovery turning out to be weaker than anticipated could be relatively high. Accordingly, the Committee agreed to maintain its target range for the federal funds rate at 0 to ¼ percent and to reiterate its view that economic conditions were likely to warrant an exceptionally low level of the federal funds rate for an extended period. With respect to the large-scale asset purchase programs, the Committee indicated its intention to purchase the full $1.25 trillion of agency MBS that it had previously established as the maximum for this program. With respect to agency debt, the Committee agreed to reiterate its intention to purchase up to $200 billion of these securities. To promote a smooth transition in markets as these programs concluded, the Committee decided to gradually slow the pace of both its agency MBS and agency debt purchases and to extend their completion through the end of the first quarter of 2010. To keep inflation expectations well anchored, policymakers agreed on the importance of the Federal Reserve continuing to communicate that it has the tools and willingness to begin withdrawing monetary policy accommodation at the appropriate time and pace to prevent any persistent increase in inflation.

On September 24, the Board of Governors announced a gradual reduction in amounts to be auctioned under the TAF through January and indicated that auctions of credit with maturities longer than 28 days would be phased out by the end of 2009. Usage of the TAF had been declining in recent months as financial market conditions had continued to improve. The Money Market Investor Funding Facility, which had been established in October 2008 to help arrest a run on money market mutual funds, expired as scheduled on October 30, 2009.

At the November 3–4 FOMC meeting, participants agreed that the incoming information suggested that economic activity was picking up as anticipated, with output continuing to expand in the fourth quarter. Business inventories were being brought into better alignment with sales, and the pace of inventory runoff was slowing. The gradual recovery in construction of single-family homes from its extremely low level earlier in the year appeared to be continuing. Consumer spending appeared to be rising even apart from the effects of fiscal incentives to purchase autos. Financial market developments over recent months were generally regarded as supportive of continued economic recovery. Further, the outlook for growth abroad had improved since earlier in the year, especially in Asia, auguring well for U.S. exports. Meanwhile, consumer price inflation remained subdued. In spite of these largely positive developments, participants at the November meeting noted that they were unsure how much of the recent firming in final demand reflected the effects of temporary fiscal programs. Downside risks to economic activity included continued weakness in the labor market and its implications for the growth of household income and consumer confidence. Bank credit remained tight. Nonetheless, policymakers expected the recovery to continue in subsequent quarters, although at a pace that would be rather slow relative to historical experience after severe downturns. FOMC participants noted the possibility that some negative side effects might result from the maintenance of very low short-term interest rates for an extended period, including the possibility that such a policy stance could lead to excessive risk-taking in financial markets or an unanchoring of inflation expectations. The Committee agreed that it was important to remain alert to these risks.

Based on this outlook, the Committee decided to maintain the target range for the federal funds rate at 0 to ¼ percent and noted that economic conditions, including low levels of resource utilization, subdued inflation trends, and stable inflation expectations, were likely to warrant exceptionally low rates for an extended period. With respect to the large-scale asset purchase programs, the Committee reiterated its intention to purchase $1.25 trillion of agency MBS by the end of the first quarter of 2010. Because of the limited availability of agency debt and concerns that larger purchases could impair market functioning, the Committee also agreed to specify that its agency debt purchases would cumulate to about $175 billion by the end of the first quarter, $25 billion less than the previously announced maximum for these purchases. The Committee also decided to reiterate its intention to gradually slow the pace of purchases of agency MBS and agency debt to promote a smooth transition in markets as the announced purchases are completed.

On November 17, the Board of Governors announced that, in light of continued improvement in financial market conditions, in January 2010 the maximum maturity of primary credit loans at the discount window for depository institutions would be reduced to 28 days from 90 days.

The information reviewed at the December 15–16 FOMC meeting suggested that the recovery in economic activity was gaining momentum. Although the unemployment rate remained very elevated and capacity utilization low, the pace of job losses had slowed noticeably since the summer, and industrial production had sustained the broad-based expansion that began in the third quarter. Consumer spending expanded solidly in October. Sales of new homes had risen in October after two months of little change, while sales of existing homes continued to increase strongly. Financial market conditions were generally regarded as having become more supportive of continued economic recovery during the intermeeting period. A jump in energy prices pushed up headline inflation somewhat, but core consumer price inflation remained subdued. Although some of the recent data had been better than anticipated, policymakers generally saw the incoming information as broadly in line with their expectations for a moderate economic recovery and subdued inflation. Consistent with experience following previous financial crises here and abroad, FOMC participants broadly anticipated that the pickup in output and employment would be rather slow relative to past recoveries from deep recessions.

The Committee made no changes to either its large-scale asset purchase programs or its target range for the federal funds rate of 0 to ¼ percent and, based on the outlook for a relatively sluggish economic recovery, decided to reiterate its anticipation that economic conditions, including low levels of resource utilization, subdued inflation trends, and stable inflation expectations, were likely to warrant exceptionally low rates for an extended period. Committee members and Board members agreed that substantial improvements in the functioning of financial markets had occurred; accordingly, they agreed that the statement to be released following the meeting should note the anticipated expiration of most of the Federal Reserve's special liquidity facilities on February 1, 2010.

At the January 26–27 meeting, the Committee agreed that the incoming information, though mixed, indicated that overall economic activity had strengthened in recent months, about as expected. Consumer spending was well maintained in the fourth quarter, and business expenditures on equipment and software appeared to expand substantially. However, the improvement in the housing market slowed, and spending on nonresidential structures continued to fall. Recent data suggested that the pace of inventory liquidation diminished considerably last quarter, providing a sizable boost to economic activity. Indeed, industrial production advanced at a solid rate in the fourth quarter. In the labor market, layoffs subsided noticeably in the final months of last year, but the unemployment rate remained elevated and hiring stayed quite limited. The weakness in labor

Federal Reserve Initiatives to Increase Transparency

Transparency is a key tenet of modern central banking both because it contributes importantly to the accountability of central banks to the government and the public and because it can enhance the effectiveness of central banks in achieving their macroeconomic objectives. In recognition of the importance of transparency, the Federal Reserve has provided detailed information on the nontraditional policy actions taken to address the financial crisis, and generally aims to maximize the amount of information it can provide to the public consistent with its broad policy objectives.

The Federal Reserve has significantly enhanced its transparency in a number of important dimensions over recent years. On matters related to the conduct of monetary policy, the Federal Reserve has long been one of the most transparent central banks in the world. Following each of its meetings, the Federal Open Market Committee (FOMC) releases statements that provide a rationale for the policy decision, along with a record of the Committee's vote and explanations for any dissents. In addition, detailed minutes of each FOMC meeting are made public three weeks following the meeting. The minutes provide a great deal of information about the range of policymakers' views on the economic situation and outlook as well as on their deliberations about the appropriate stance of monetary policy. Recently, the Federal Reserve further advanced transparency by initiating a quarterly Summary of Economic Projections of Federal Reserve Board members and Reserve Bank presidents. These projections and the accompanying summary analysis contain detailed information regarding policymakers' views about the future path of real gross domestic product, inflation, and unemployment, including the long-run values of these variables assuming appropriate monetary policy.[1]

During the financial crisis, the Federal Reserve implemented a number of credit and liquidity programs to support the functioning of key financial markets and institutions and took complementary steps to ensure appropriate transparency and accountability in operating these programs. The Board's weekly H.4.1 statistical release has been greatly expanded to provide detailed information on the Federal Reserve's balance sheet and the operation of the various credit and liquidity facilities.[2] The release is closely watched in financial markets and by the public for nearly real-time information on the evolution of the Federal Reserve's balance sheet.

The Federal Reserve also developed a public website focused on its credit and liquidity programs that provides background information on all the facilities.[3] In addition, starting in December 2008 the Federal Reserve has issued

1. FOMC statements and minutes, the Summary of Economic Projections, and other related information are available on the Federal Reserve Board's website. See Board of Governors of the Federal Reserve System, "Federal Open Market Committee," webpage, www.federalreserve.gov/monetarypolicy/fomc.htm.

2. Board of Governors of the Federal Reserve System, Statistical Release H.4.1, "Factors Affecting Reserve Balances," webpage, www.federalreserve.gov/releases/h41.

3. Board of Governors of the Federal Reserve System, "Credit and Liquidity Programs and the Balance Sheet," webpage, www.federalreserve.gov/monetarypolicy/bst.htm.

Federal Reserve Initiatives—continued

bi-monthly reports to the Congress in fulfillment of section 129 of the Emergency Economic Stabilization Act of 2008; in October 2009, the Federal Reserve began incorporating these reports into its monthly report on credit and liquidity programs and the balance sheet.[4] The monthly report, which is available on the Federal Reserve's website, provides more-detailed information on the full range of credit and liquidity programs implemented during the crisis. This report includes data on the number and types of borrowers using various facilities and on the types and value of collateral pledged; information on the assets held in the so-called Maiden Lane facilities—created to acquire certain assets of The Bear Stearns Companies, Inc., and of American International Group, Inc. (AIG)—and in other special lending facilities; and quarterly financial statements for the Federal Reserve System. Furthermore, the monthly reports provide detailed information on all of the programs that rely on emergency lending authorities, including the Federal Reserve's assessment of the expected cost to the Federal Reserve and the U.S. taxpayer of various Federal Reserve programs implemented during the crisis. To provide further transparency regarding its transactions with AIG, the Federal Reserve recently indicated that it would welcome a full review by the Government Accountability Office of all aspects of the Federal Reserve's involvement with the extension of credit to AIG.[5]

The Federal Reserve has also been transparent about the management of its programs. Various programs employ private-sector firms as purchasing and settlement agents and to perform other functions; the contracts for all of these vendor arrangements are available on the website of the Federal Reserve Bank of New York.[6] Moreover, the Federal Reserve has recently begun to publish detailed CUSIP-number-level data regarding its holdings of Treasury, agency, and agency mortgage-backed securities; these data provide the public with precise information about the maturity and asset composition of the Federal Reserve's securities holdings.[7] On January 11, 2010, the Federal Reserve Bank of New York published a revised policy governing the designation of primary dealers.[8] An important motivation in issuing revised guidance in this area was to make the process for becoming a primary dealer more transparent.

4. Board of Governors of the Federal Reserve System, Federal Reserve System Monthly Report on Credit and Liquidity Programs and the Balance Sheet (Washington: Board of Governors).

5. Ben S. Bernanke (2010), letter to Gene L. Dodaro, January 19, www.federalreserve.gov/monetarypolicy/files/letter_aig_20100119.pdf.

6. Federal Reserve Bank of New York, "Vendor Information," webpage, www.newyorkfed.org/aboutthefed/vendor_information.html.

7. Federal Reserve Bank of New York, "System Open Market Account Holdings," webpage, www.newyorkfed.org/markets/soma/sysopen_accholdings.html.

CUSIP is the abbreviation for Committee on Uniform Securities Identification Procedures. A CUSIP number identifies most securities, including stocks of all registered U.S. and Canadian companies and U.S. government and municipal bonds. The CUSIP system—owned by the American Bankers Association and operated by Standard & Poor's—facilitates the clearing and settlement process of securities.

8. Federal Reserve Bank of New York (2010), "New York Fed Publishes Revised Policy for Administration of Primary Dealer Relationships," press release, January 11, www.newyorkfed.org/newsevents/news/markets/2010/ma100111.html.

markets continued to be an important concern for the Committee; moreover, the prospects for job growth remained a significant source of uncertainty in the economic outlook, particularly in the outlook for consumer spending. Financial market conditions were supportive of economic growth. However, net debt financing by nonfinancial businesses was near zero in the fourth quarter after declining in the third, consistent with sluggish demand for credit and tight credit standards and terms at banks. Increases in energy prices pushed up headline consumer price inflation even as core consumer price inflation remained subdued.

In their discussion of monetary policy for the period ahead, the Committee agreed that neither the economic outlook nor financial conditions had changed appreciably since the December meeting and that no changes to the Committee's large-scale asset purchase programs or to its target range for the federal funds rate of 0 to ¼ percent were warranted at this meeting. Further, policymakers reiterated their anticipation that economic conditions, including low levels of resource utilization, subdued inflation trends, and stable inflation expectations, were likely to warrant exceptionally low rates for an extended period. The Committee affirmed its intention to purchase a total of $1.25 trillion of agency MBS and about $175 billion of agency debt by the end of the current quarter and to gradually slow the pace of these purchases to promote a smooth transition in markets. Committee members and Board members agreed that with substantial improvements in most financial markets, including interbank markets, the statement would indicate that on February 1, 2010, the Federal Reserve was closing several special liquidity facilities and that the temporary swap lines with foreign central banks would expire. In addition, the statement would say that the Federal Reserve was in the process of winding down the TAF and that the final auction would take place in March 2010.

On February 1, 2010, given the overall improvement in funding markets, the Federal Reserve allowed the Primary Dealer Credit Facility, the Term Securities Lending Facility, the Commercial Paper Funding Facility, and the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility to expire. The temporary swap lines with foreign central banks were closed on the same day. On February 18, 2010, the Federal Reserve announced a further normalization of the terms of loans made under the primary credit facility: The rate charged on these loans was increased from ½ percent to ¾ percent, effective on February 19, and the typical maximum maturity for such loans was shortened to overnight, effective on March 18, 2010. On the same day, the Federal Reserve also announced that the minimum bid rate on the final TAF auction on March 8 had been raised to 50 basis points, ¼ percentage point higher than in previous auctions. The Federal Reserve noted that the modifications are not expected to lead to tighter financial conditions for households and businesses and do not signal any change in the outlook for the economy or for monetary policy.

Over the course of 2009, the Federal Reserve continued to undertake initiatives to improve communications about its policy actions. These initiatives are described in detail in the box "Federal Reserve Initiatives to Increase Transparency."

Monetary Policy as the Economy Recovers

The actions taken by the Federal Reserve to support financial market functioning and provide extraordinary monetary stimulus to the economy have led to a rapid expansion of the Federal Reserve's balance sheet, from less than $900 billion before the crisis began in 2007 to about $2.3 trillion currently. The expansion of the Federal Reserve's balance sheet has been accompanied by a comparable increase in the quantity of reserve balances held by depository institutions. Bank reserves are currently far above their levels prior to the crisis. Even though, as noted in recent statements of the FOMC, economic conditions are likely to warrant exceptionally low rates for an extended period, in due course, as the expansion matures, the Federal Reserve will need to begin to tighten monetary conditions to prevent the development of inflation pressures. That tightening will be accomplished partly through changes that will affect the composition and size of the Federal Reserve's balance sheet. Eventually, the level of reserves and the size of the Federal Reserve's balance sheet will be reduced substantially.

The Federal Reserve has a number of tools that will enable it to firm the stance of policy at the appropriate time and to the appropriate degree, some of which do not affect the size of the balance sheet or the quantity of reserves. Most importantly, in October 2008 the Congress gave the Federal Reserve statutory authority to pay interest on banks' holdings of reserve balances at Federal Reserve Banks. By increasing the interest rate paid on reserves, the Federal Reserve will be able to put significant upward pressure on all short-term interest rates, because banks will not supply short-term funds to the money markets at rates significantly below what they can earn by simply leaving funds on deposit at the Federal Reserve Banks. Actual and prospective increases in short-term interest rates will be reflected, in turn, in longer-term interest rates and in financial conditions more generally through standard transmission mechanisms, thus preventing inflationary pressures from developing.

The Federal Reserve has also been developing a number of additional tools that will reduce the quantity of reserves held by the banking system and lead to a tighter relationship between the interest rate that the Federal Reserve pays on banks' holdings of reserve balances and other short-term interest rates. Reverse repurchase agreements (reverse repos) are one such tool; in a reverse repo, the Federal Reserve sells a security to a counterparty with an agreement to repurchase it at some specified date in the future. The counterparty's payment to the Federal Reserve has the effect of draining an equal quantity of reserves from the banking system. Recently, by developing the capacity to conduct such transactions in the triparty repo market, the Federal Reserve has enhanced its ability to use reverse repos to absorb very large quantities of reserves. The capability to carry out these transactions with primary dealers, using the Federal Reserve's holdings of Treasury and agency debt securities, has already been tested and is currently available if and when needed. To further increase its capacity to drain reserves through reverse repos, the Federal Reserve is also in the process of expanding the set of counterparties with which it can transact and is developing the infrastructure necessary to use its MBS holdings as collateral in these transactions.

As a second means of draining reserves, the Federal Reserve is also developing plans to offer to depository institutions term deposits, which are roughly analogous to certificates of deposit that the institutions offer to their customers. The Federal Reserve would likely offer large blocks of such deposits through an auction mechanism. The effect of these transactions would be to convert a portion of depository institutions' holdings of reserve balances into deposits that could not be used to meet depository institutions' very short-term liquidity needs and could not be counted as reserves. The Federal Reserve published in the *Federal Register* a proposal for such a term deposit facility and is in the process of reviewing the public comments received. After a revised proposal is approved by the Board, the Federal Reserve expects to be able to conduct test transactions in the spring and to have the facility available if necessary shortly thereafter. Reverse repos and the deposit facility would together allow the Federal Reserve to drain hundreds of billions of dollars of reserves from the banking system quite quickly should it choose to do so.

The Federal Reserve also has the option of redeeming or selling securities as a means of applying monetary restraint. A reduction in securities holdings would have the effect of further reducing the quantity of reserves in the banking system as well as reducing the overall size of the Federal Reserve's balance sheet. It would likely also put at least some direct upward pressure on longer-term yields.

The Treasury's temporary Supplementary Financing Program (SFP)—through which the Treasury issues Treasury bills to the public and places the proceeds in a special deposit account at the Federal Reserve—could also be used to drain reserves and support the Federal Reserve's control of short-term interest rates. However, the use of the SFP must be compatible with the Treasury's debt-management objectives. The SFP is not a necessary element in the Federal Reserve's set of tools to achieve an appropriate monetary policy stance in the future; still, any amount outstanding under the SFP will result in a corresponding decrease in the quantity of reserves in the banking system, which could be helpful in the Federal Reserve's conduct of policy.

The exact sequence of steps and combination of tools that the Federal Reserve chooses to employ as it exits from its current very accommodative policy stance will depend on economic and financial developments. One possible trajectory would be for the Federal Reserve to continue to test its tools for draining reserves on a limited basis in order to further ensure preparedness and to give market participants a period of time to become familiar with their operation. As the time for the removal of policy accommodation draws near, those operations could be scaled up to drain more-significant volumes of reserve balances to provide tighter control over short-term interest rates. The actual firming of policy would then be implemented through an increase in the interest rate paid on reserves. If economic and financial developments were to require a more rapid exit from the current highly accommodative policy, however, the Federal Reserve could increase the interest rate on reserves at about the same time it commences draining operations.

The Federal Reserve currently does not anticipate that it will sell any of its securities holding in the near term, at least until after policy tightening has gotten under way and the economy is clearly in a sustainable recovery. However, to help reduce the size of its balance sheet and the quantity of reserves, the Federal Reserve is allowing agency debt and MBS to run off as they mature or are prepaid. The Federal Reserve is rolling over all maturing Treasury securities, but in the future it might decide not to do so in all cases. In the long run, the Federal Reserve anticipates that its balance sheet will shrink toward more historically normal levels and that most or all of its securities holdings will be Treasury securities. Although passively redeeming agency debt and MBS as they mature or are prepaid will move the Federal Reserve in that direction, the Federal Reserve may also choose to sell securities in the future when the economic recovery is sufficiently advanced and the FOMC has determined that the associated financial tightening is warranted. Any such sales would be gradual, would be clearly communicated to market participants, and would entail appropriate consideration of economic conditions.

As a result of the very large volume of reserves in the banking system, the level of activity and liquidity in the federal funds market has declined considerably, raising the possibility that the federal funds rate could for a time become a less reliable indicator than usual of conditions in short-term money markets. Accordingly, the Federal Reserve is considering the utility, during the transition to a more normal policy configuration, of communicating the stance of policy in terms of another operating target, such as an alternative short-term interest rate. In particular, it is possible that the Federal Reserve could for a time use the interest rate paid on reserves, in combination with targets for reserve quantities, as a guide to its policy stance, while simultaneously monitoring a range of market rates. No decision has been made on this issue, and any deliberation will be guided in part by the evolution of the federal funds market as policy accommodation is withdrawn. The Federal Reserve anticipates that it will eventually return to an operating framework with much lower reserve balances than at present and with the federal funds rate as the operating target for policy.

Part 4 Summary of Economic Projections

The following material appeared as an addendum to the minutes of the January 26–27, 2010, meeting of the Federal Open Market Committee.

In conjunction with the January 26–27, 2010, 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, submitted projections for output growth, unemployment, and inflation for the years 2010 to 2012 and over the longer run. The projections were based on information available through the end of the meeting and on each participant's assumptions about factors likely to affect economic outcomes, including his or her assessment of appropriate monetary policy. "Appropriate monetary policy" is defined as the future path of policy that the participant deems most likely to foster outcomes for economic activity and inflation that best satisfy his or her interpretation of the Federal Reserve's dual objectives of maximum employment and stable prices. 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' forecasts for economic activity and inflation were broadly similar to their previous projections, which were made in conjunction with the November 2009 FOMC meeting. As depicted in figure 1, the economic recovery from the recent recession was expected to be gradual, with real gross domestic product (GDP) expanding at a rate that was only moderately above participants' assessment of its longer-run sustainable growth rate and the unemployment rate declining slowly over the next few years. Most participants also anticipated that inflation would remain subdued over this period. As indicated in table 1, a few participants made modest upward revisions to their projections for real GDP growth in 2010. Beyond 2010, however, the contours of participants' projections for economic activity and inflation were little changed, with participants continuing to expect that the pace of the economic recovery will be restrained by household and business uncertainty, only gradual improvement in labor market conditions, and slow easing of credit conditions in the banking sector. Participants generally expected that it would take some time for the economy to converge fully to its longer-run path—characterized by a sustainable rate of output growth and by rates of employment and inflation consistent with their interpretation of the Federal Reserve's dual objectives—with a sizable minority of the view that the convergence process could take more than five to six years. As in November, nearly all participants judged the risks to their growth outlook as generally balanced, and most also saw roughly balanced risks surrounding their inflation projections. Participants continued to judge the uncertainty surrounding their projections for economic

Table 1. Economic Projections of Federal Reserve Governors and Reserve Bank Presidents, January 2010

Percent

Variable	Central tendency[1]				Range[2]			
	2010	2011	2012	Longer run	2010	2011	2012	Longer run
Change in real GDP	2.8 to 3.5	3.4 to 4.5	3.5 to 4.5	2.5 to 2.8	2.3 to 4.0	2.7 to 4.7	3.0 to 5.0	2.4 to 3.0
November projection	2.5 to 3.5	3.4 to 4.5	3.5 to 4.8	2.5 to 2.8	2.0 to 4.0	2.5 to 4.6	2.8 to 5.0	2.4 to 3.0
Unemployment rate	9.5 to 9.7	8.2 to 8.5	6.6 to 7.5	5.0 to 5.2	8.6 to 10.0	7.2 to 8.8	6.1 to 7.6	4.9 to 6.3
November projection	9.3 to 9.7	8.2 to 8.6	6.8 to 7.5	5.0 to 5.2	8.6 to 10.2	7.2 to 8.7	6.1 to 7.6	4.8 to 6.3
PCE inflation	1.4 to 1.7	1.1 to 2.0	1.3 to 2.0	1.7 to 2.0	1.2 to 2.0	1.0 to 2.4	0.8 to 2.0	1.5 to 2.0
November projection	1.3 to 1.6	1.0 to 1.9	1.2 to 1.9	1.7 to 2.0	1.1 to 2.0	0.6 to 2.4	0.2 to 2.3	1.5 to 2.0
Core PCE inflation[3]	1.1 to 1.7	1.0 to 1.9	1.2 to 1.9		1.0 to 2.0	0.9 to 2.4	0.8 to 2.0	
November projection	1.0 to 1.5	1.0 to 1.6	1.0 to 1.7		0.9 to 2.0	0.5 to 2.4	0.2 to 2.3	

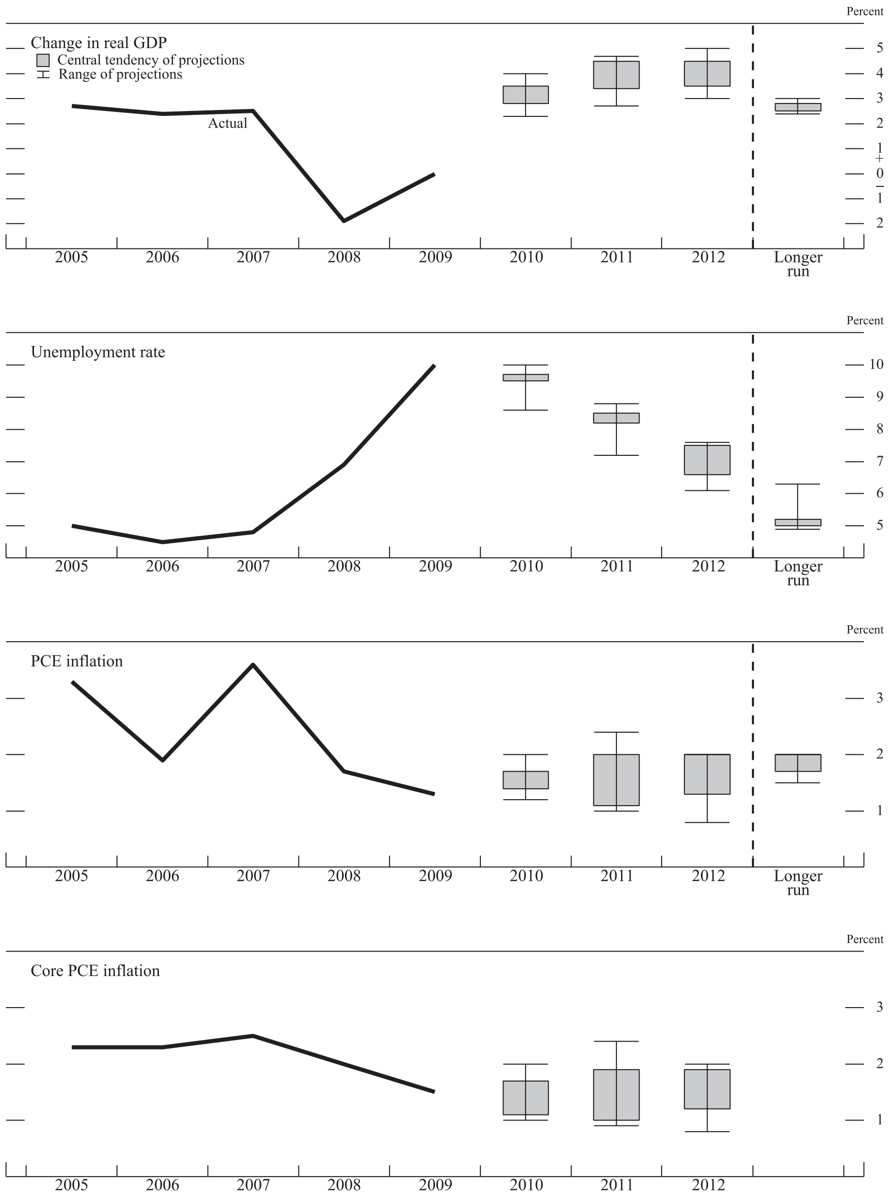
NOTE: Projections of change in real gross domestic product (GDP) and in inflation are from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption 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 November projections were made in conjunction with the meeting of the Federal Open Market Committee on November 3–4, 2009.

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 consists of 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, 2010–12 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. The data for the change in real GDP, PCE inflation, and core PCE inflation shown for 2009 incorporate the advance estimate of GDP for the fourth quarter of 2009, which the Bureau of Economic Analysis released on January 29, 2010; this information was not available to FOMC meeting participants at the time of their meeting.

activity and inflation as unusually high relative to historical norms.

The Outlook

Participants' projections for real GDP growth in 2010 had a central tendency of 2.8 to 3.5 percent, a somewhat narrower interval than in November. Recent readings on consumer spending, industrial production, and business outlays on equipment and software were seen as broadly consistent with the view that economic recovery was under way, albeit at a moderate pace. Businesses had apparently made progress in bringing their inventory stocks into closer alignment with sales and hence would be likely to raise production as spending gained further momentum. Participants pointed to a number of factors that would support the continued expansion of economic activity, including accommodative monetary policy, ongoing improvements in the conditions of financial markets and institutions, and a pickup in global economic growth, especially in emerging market economies. Several participants also noted that fiscal policy was currently providing substantial support to real activity, but said that they expected less impetus to GDP growth from this factor later in the year. Many participants indicated that the expansion was likely to be restrained not only by firms' caution in hiring and spending in light of the considerable uncertainty regarding the economic outlook and general business conditions, but also by limited access to credit by small businesses and consumers dependent on bank-intermediated finance.

Looking further ahead, participants' projections were for real GDP growth to pick up in 2011 and 2012; the projections for growth in both years had a central tendency of about 3½ to 4½ percent. As in November, participants generally expected that the continued repair of household balance sheets and gradual improvements in credit availability would bolster consumer spending. Responding to an improved sales outlook and readier access to bank credit, businesses were likely to increase production to rebuild their inventory stocks and increase their outlays on equipment and software. In addition, improved foreign economic conditions were viewed as supporting robust growth in U.S. exports. However, participants also indicated that elevated uncertainty on the part of households and businesses and the very slow recovery of labor markets would likely restrain the pace of expansion. Moreover, although conditions in the banking system appeared to have stabilized, distress in commercial real estate markets was expected to pose risks to the balance sheets of banking institutions for some time, thereby contributing to only gradual easing of credit conditions for many households and smaller firms. In the absence of further shocks, participants generally anticipated that real GDP growth would converge over time to an annual rate of 2.5 to 2.8 percent, the longer-run pace that appeared to be sustainable in view of expected demographic trends and improvements in labor productivity.

Participants anticipated that labor market conditions would improve only slowly over the next several years. Their projections for the average unemployment rate in the fourth quarter of 2010 had a central tendency of 9.5 to 9.7 percent, only a little below the levels of about 10 percent that prevailed late last year. Consistent with their outlook for moderate output growth, participants generally expected that the unemployment rate would decline only about 2½ percentage points by the end of 2012 and would still be well above its longer-run sustainable rate. Some participants also noted that considerable uncertainty surrounded their estimates of the productive potential of the economy and the sustainable rate of employment, owing partly to substantial ongoing structural adjustments in product and labor markets. Nonetheless, participants' longer-run unemployment projections had a central tendency of 5.0 to 5.2 percent, the same as in November.

Most participants anticipated that inflation would remain subdued over the next several years. The central tendency of their projections for personal consumption expenditures (PCE) inflation was 1.4 to 1.7 percent for 2010, 1.1 to 2.0 percent for 2011, and 1.3 to 2.0 percent for 2012. Many participants anticipated that global economic growth would spur increases in energy prices, and hence that headline PCE inflation would run slightly above core PCE inflation over the next year or two. Most expected that substantial resource slack would continue to restrain cost pressures, but that inflation would rise gradually toward their individual assessments of the measured rate of inflation judged to be most consistent with the Federal Reserve's dual mandate. As in November, the central tendency of projections of the longer-run inflation rate was 1.7 to 2.0 percent. A majority of participants anticipated that inflation in 2012 would still be below their assessments of the mandate-consistent inflation rate, while the remainder expected that inflation would be at or slightly above its longer-run value by that time.

Uncertainty and Risks

Nearly all participants shared the judgment that their projections of future economic activity and unemployment continued to be subject to greater-than-average uncertainty.[19] Participants generally saw the risks to these projections as roughly balanced, although a few indicated that the risks to the unemployment outlook remained tilted to the upside. As in November, many participants highlighted the difficulties inherent in predicting macroeconomic outcomes in the wake of a financial crisis and a severe recession. In addition, some pointed to uncertainties regarding the extent to which the recent run-up in labor productivity would prove to be persistent, while others noted the risk that the deteriorating performance of commercial real estate could adversely affect the still-fragile state of the banking system and restrain the growth of output and employment over coming quarters.

As in November, most participants continued to see the uncertainty surrounding their inflation projections as higher than historical norms. However, a few judged that uncertainty in the outlook for inflation was about in line with typical levels, and one viewed the uncertainty surrounding the inflation outlook as lower than average. Nearly all participants judged the risks to the inflation outlook as roughly balanced; however, two saw these risks as tilted to the upside, while one regarded the risks as weighted to the downside. Some participants noted that inflation expectations could drift downward in response to persistently low inflation

19. 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 1989 to 2008. 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 risk attending participants' projections.

Table 2. Average Historical Projection Error Ranges

Percentage points

Variable	2010	2011	2012
Change in real GDP[1]	±1.3	±1.5	±1.6
Unemployment rate[1]	±0.6	±0.8	±1.0
Total consumer prices[2]	±0.9	±1.0	±1.0

NOTE: Error ranges shown are measured as plus or minus the root mean squared error of projections for 1989 through 2008 that were released in the winter 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 (Washington: 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.

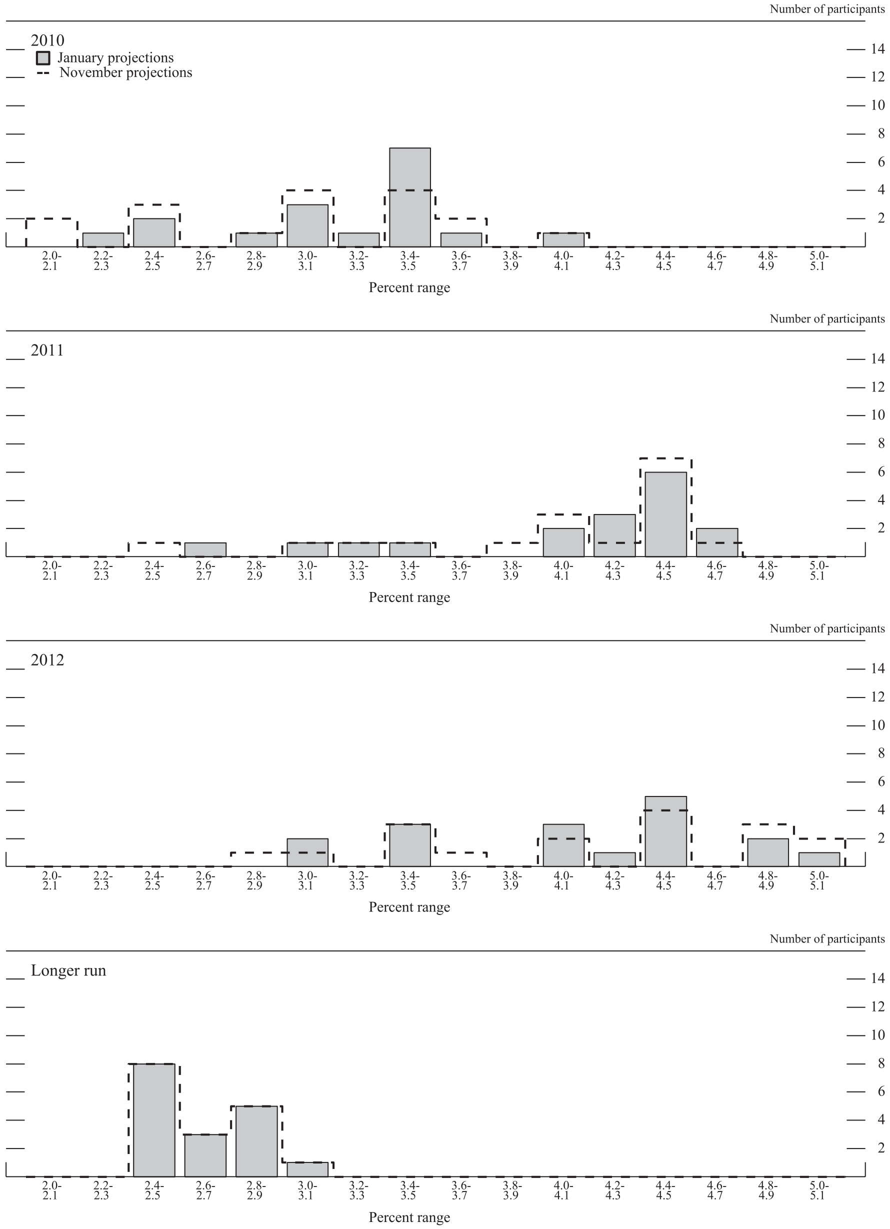
and continued slack in resource utilization. Others pointed to the possibility of an upward shift in expected and actual inflation, especially if extraordinarily accommodative monetary policy measures were not unwound in a timely fashion. Participants also noted that an acceleration in global economic activity could induce a surge in the prices of energy and other commodities that would place upward pressure on overall inflation.

Diversity of Views

Figures 2.A and 2.B provide further details on the diversity of participants' views regarding the likely outcomes for real GDP growth and the unemployment rate in 2010, 2011, 2012, and over the longer run. The distribution of participants' projections for real GDP growth this year was slightly narrower than the distribution of their projections last November, but the distributions of the projections for real GDP growth in 2011 and in 2012 were little changed. The dispersion in participants' output growth projections reflected, among other factors, the diversity of their assessments regarding the current degree of underlying momentum in economic activity, the evolution of consumer and business sentiment, and the likely pace of easing of bank lending standards and terms. Regarding participants' unemployment rate projections, the distribution for 2010 narrowed slightly, but the distributions of their unemployment rate projections for 2011 and 2012 did not change appreciably. The distributions of participants' estimates of the longer-run sustainable rates of output growth and unemployment were essentially the same as in November.

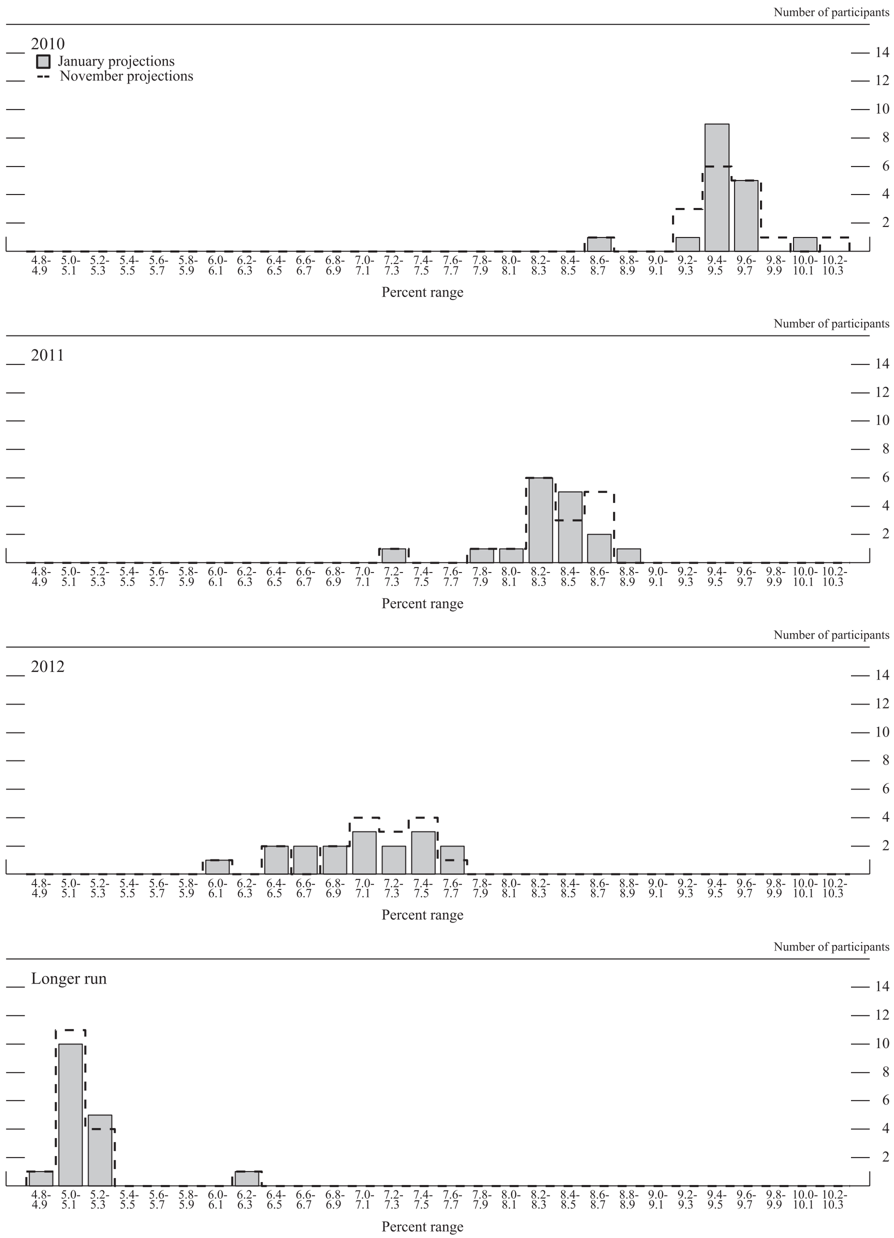
Figures 2.C and 2.D provide corresponding information about the diversity of participants' views regarding the inflation outlook. For overall and core PCE inflation, the distributions of participants' projections for 2010 were nearly the same as in November. The distributions of overall and core inflation for 2011 and 2012, however, were noticeably more tightly concentrated than in November, reflecting the absence of forecasts of especially low inflation. The dispersion in participants' projections over the next few years was mainly due to differences in their judgments regarding the determinants of inflation, including their estimates of prevailing resource slack and their assessments of the extent to which such slack affects actual and expected inflation. In contrast, the relatively tight distribution of participants' projections for longer-run inflation illustrates their substantial agreement about the measured rate of inflation that is most consistent with the Federal Reserve's dual objectives of maximum employment and stable prices.

Figure 2.A. Distribution of Participants' Projections for the Change in Real GDP, 2010–12 and over the Longer Run



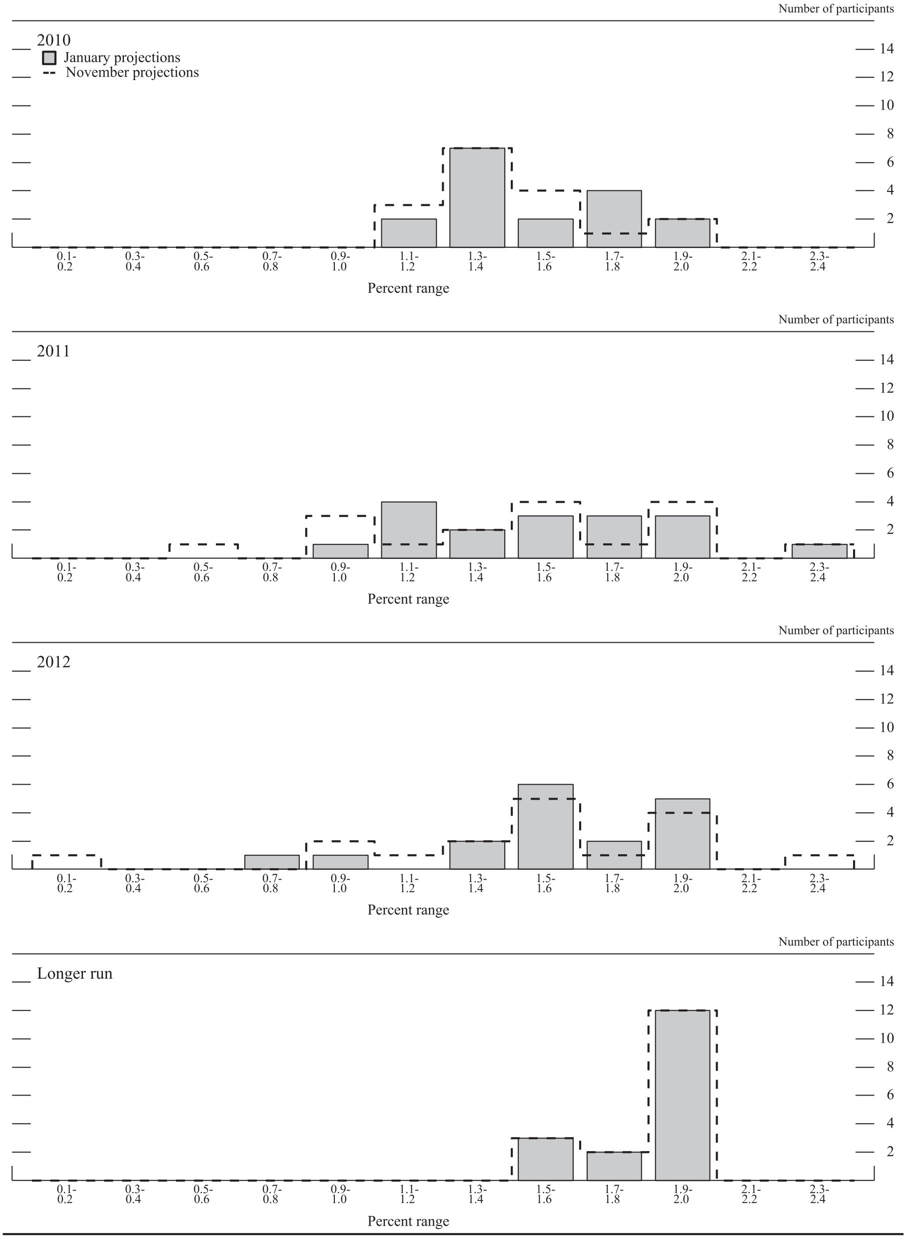
NOTE: Definitions of variables are in the general note to table 1.

Figure 2.B. Distribution of Participants' Projections for the Unemployment Rate, 2010–12 and over the Longer Run



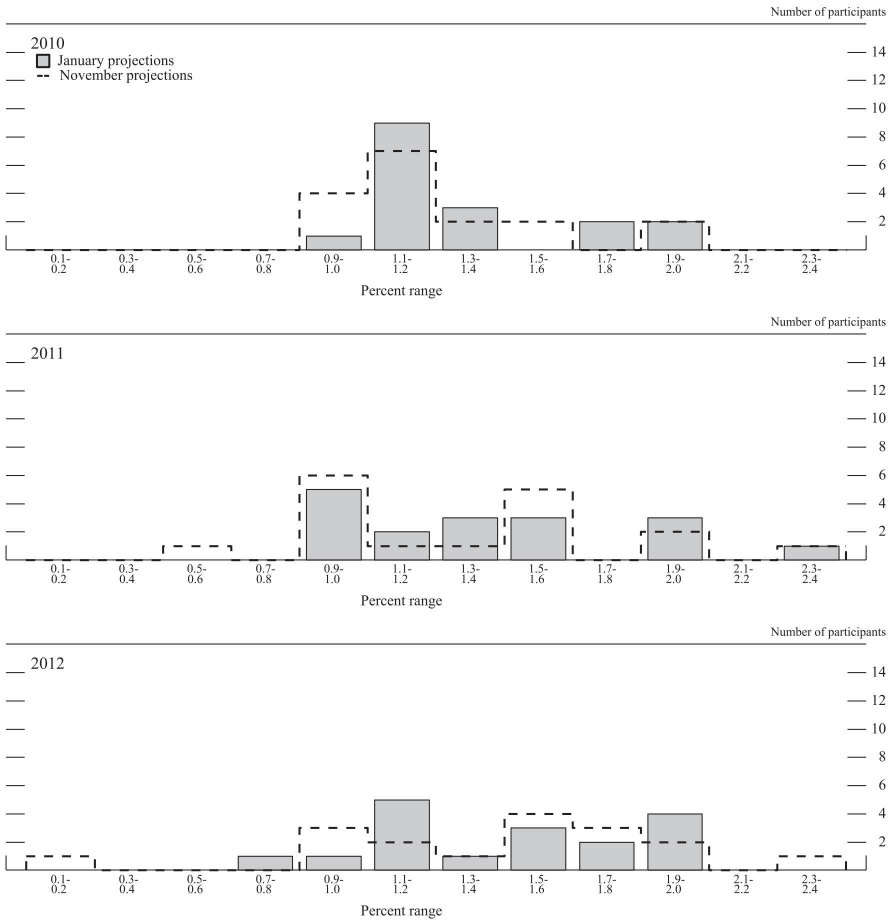
NOTE: Definitions of variables are in the general note to table 1.

Figure 2.C. Distribution of Participants' Projections for PCE Inflation, 2010–12 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, 2010–12



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 gross domestic product (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 within a range of 1.7 to 4.3 percent in the current year, 1.5 to 4.5 percent in the second year, and 1.4 to 4.6 percent in the third year. The corresponding 70 percent confidence intervals for overall inflation would be 1.1 to 2.9 percent in the current year and 1.0 to 3.0 percent in the second and third years.

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, are weighted to the 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.

Abbreviations

ABS	asset-backed securities
AIG	American International Group, Inc.
ARRA	American Recovery and Reinvestment Act
CDS	credit default swap
C&I	commercial and industrial
CMBS	commercial mortgage-backed securities
CRE	commercial real estate
Credit CARD Act	Credit Card Accountability Responsibility and Disclosure Act
CUSIP	Committee on Uniform Securities Identification Procedures
ECB	European Central Bank
E&S	equipment and software
FAS	Financial Accounting Standards
FDIC	Federal Deposit Insurance Corporation
FHA	Federal Housing Administration
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
GSE	government-sponsored enterprise
Libor	London interbank offered rate
LLC	limited liability company
MBS	mortgage-backed securities
NFIB	National Federation of Independent Business
NIPA	national income and product accounts
OIS	overnight index swap
PCE	personal consumption expenditures
repo	repurchase agreement
SCAP	Supervisory Capital Assessment Program
SFP	Supplementary Financing Program
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
TAF	Term Auction Facility
TALF	Term Asset-Backed Securities Loan Facility
TARP	Troubled Asset Relief Program
TIPS	Treasury inflation-protected securities

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Monetary Policy Report of July 2009

Part 1
Overview: Monetary Policy and the Economic Outlook

Amid a severe global economic downturn, the U.S. economy contracted further and labor market conditions worsened over the first half of 2009. In the early part of the year, economic activity deteriorated sharply, and strains in financial markets and pressures on financial institutions generally intensified. More recently, however, the downturn in economic activity appears to be abating and financial conditions have eased somewhat, developments that partly reflect the broad range of policy actions that have been taken to address the crisis. Nonetheless, credit conditions for many households and businesses remain tight, and financial markets are still stressed. In the labor market, employment declines have remained sizable—although the pace of job loss has diminished somewhat from earlier in the year—and the unemployment rate has continued to climb. Meanwhile, consumer price inflation has remained subdued.

U.S. real gross domestic product (GDP) fell sharply again in the first quarter of 2009, but the contraction in overall output looks to have moderated somewhat of late. Consumer spending—which has been supported recently by the boost to disposable income from the tax cuts and increases in various benefit payments that were implemented as part of the 2009 fiscal stimulus package—appears to be holding reasonably steady so far this year. And consumer sentiment is up from the historical lows recorded around the turn of the year. In the housing market, a leveling out of home sales and construction activity in the first half of 2009 suggests that the demand for new houses may be stabilizing following three years of steep declines. Businesses, however, have continued to cut capital spending and liquidate inventories in response to soft demand and excessive stocks. Economic activity abroad plummeted in the first quarter and has continued to fall, albeit more slowly, in recent months. Slumping foreign demand led to a sharp drop in U.S. exports during the first half of the year. However, the ongoing contraction in U.S. domestic demand triggered an even sharper drop in imports.

The further contraction in domestic economic activity during the first half of 2009 was accompanied by a significant deterioration in labor market conditions. Private-sector payroll employment fell at an average monthly rate of 670,000 jobs in the first four months of this year before declining by 312,000 jobs in May and 415,000 jobs in June. Meanwhile, the unemployment rate moved up steadily from 7¼ percent at the turn of the year to 9½ percent in June. With the sharp reductions in em-

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 21, 2009 (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 23–24, 2009, meeting of the Federal Open Market Committee and is presented with those minutes in the "Records" section of this annual report.

ployment, the wage and salary incomes of households, adjusted for price changes, fell during this period.

Overall consumer price inflation, which slowed sharply late last year, remained subdued in the first half of this year as the margin of slack in labor and product markets widened considerably further and as prices of oil and other commodities retraced only a part of their earlier steep declines. All told, the 12-month change in the personal consumption expenditures (PCE) price index was close to zero in May, while the 12-month change in PCE prices excluding food and energy was 1¾ percent. Survey measures of longer-term inflation expectations have remained relatively stable this year and currently stand at about their average values in 2008.

During the first few months of 2009, pressures on financial firms, which had eased late last year, intensified again. Equity prices of banks and insurance companies fell amid reports of large losses in the fourth quarter of 2008, and market-based measures of the likelihood of default by those institutions rose. Broad equity price indexes also fell in the United States and abroad, and measures of volatility in such markets stayed at near-record levels. In addition, bank funding markets were strained, flows of credit to businesses and households were impaired, and many securitization markets remained shut.

The Federal Reserve and other government entities continued to respond forcefully to these adverse financial market developments. The Federal Reserve kept its target for the federal funds rate at a range between 0 and ¼ percent and purchased additional agency mortgage-backed securities (MBS) and agency debt. Throughout the first half of the year, the Federal Reserve also continued to provide funding to financial institutions and markets through a variety of credit and liquidity facilities. In February, the Treasury, the Federal Reserve, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision announced the Financial Stability Plan. The plan included, among other elements, a Capital Assistance Program designed to assess the capital needs of banking institutions under a range of economic scenarios (through the Supervisory Capital Assessment Program (SCAP), or stress test) and, if necessary, to assist banking institutions in strengthening the amount and quality of their capital. In early March, the Federal Reserve and the Treasury launched the Term Asset-Backed Securities Loan Facility (TALF), an initiative designed to catalyze the securitization markets by providing financing to investors to support their purchases of certain AAA-rated asset-backed securities. At the March meeting of the Federal Open Market Committee (FOMC), the Committee decided to expand its purchases of agency MBS and agency debt and to begin buying longer-term Treasury securities to help improve conditions in private credit markets. In May, the Federal Reserve announced an expansion of eligible collateral under the TALF program. In the same month, the results of the SCAP were announced and were positively received in financial markets.

These policy actions, and ones previously taken, have helped stabilize a number of financial markets and, in some cases, have led to significant improvements. In recent months, strains in short-term funding markets have eased, with some credit spreads in those markets returning close to precrisis levels. The narrowing in spreads likely reflects, in part, a decrease in the probability that market participants assign to extremely adverse outcomes for the economy in light of the apparent moderation in the rate of economic contraction. Global equity prices have recouped some of their earlier declines, and measures of volatility in equity and other financial markets have retreated somewhat, though they remain at elevated levels. Issuance in some securitization markets that were essentially shut down earlier has begun to increase. Although yields on longer-term Treasury securities have risen, some of these increases are likely attributable to improvement in the economic outlook and a reversal in flight-to-quality flows. Mortgage rates have risen about in line with Treasury yields, but corporate bond yields have continued to decline. By early June, the 10 banking organizations required by the SCAP to bolster their capital buffers had issued new common equity in amounts that either met or came close to meeting the SCAP requirements. Nonetheless, despite these notable improvements, strains remain in most financial markets, many financial institutions face the possibility of significant additional losses, and the flow of credit to some businesses and households remains constrained.

In conjunction with the June 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. FOMC participants generally viewed the outlook for the economy as having improved modestly in recent months. Participants expected real GDP to bottom out in the second half of this year and then to move onto a path of gradual recovery, bolstered by an accommodative monetary policy, government efforts to stabilize financial markets, and fiscal stimulus. However, all participants expected that labor market conditions would continue to deteriorate during the remainder of this year and improve only slowly over the subsequent two years, with the unemployment rate still elevated at the end of 2011. FOMC participants expected total and core inflation to be lower in 2009 than during 2008 as a whole, in part because of the sizable amount of slack in resource utilization; inflation was forecast to remain subdued in 2010 and 2011.

Participants generally judged that the degree of uncertainty surrounding the medium-term outlook for both economic activity and inflation exceeded historical norms. Participants viewed the risks to their projections of economic growth over the medium run as either balanced or tilted to the downside, and most saw the risk to their projections of medium-run inflation as balanced. Participants also reported their assessments of the rates to which key macroeconomic variables would be expected to converge in the longer run under appropriate monetary policy and in the absence of further shocks to the economy. Most participants expected real GDP to grow in the longer run at an annual rate of about 2½ percent, the unemployment rate to be about 5 percent, and the rate of consumer price inflation to be about 2 percent.

Part 2
Recent Financial and Economic Developments

Economic activity, which fell sharply in the fourth quarter of 2008, declined at nearly the same rate in the first quarter of 2009. However, the pace of contraction appears to have moderated somewhat of late. To be sure, businesses have continued to cut back on investment spending, and firms have reacted to the abrupt rise in inventory-sales ratios around the turn of the year by cutting production and running down inventories at a more rapid pace, particularly in the motor vehicle sector. Nevertheless, consumer spending seems to have stabilized, on balance, in the first half of this year, and housing activity, while still quite depressed, has leveled off in recent months. And, while the recession abroad led to another sharp drop in export demand in the first quarter, the latest indicators suggest that the contraction in foreign activity has lessened, especially in emerging Asian economies. In the labor market, the pace of job loss has diminished in recent months from the rate earlier this year; nonetheless, employment declines have remained sizable, and the unemployment rate has risen sharply. Meanwhile, inflation remained subdued in the first half of this year.

In early 2009, strains in some financial markets appeared to intensify from the levels seen in late 2008. Market participants' concerns about major financial institutions increased, equity prices for such institutions fell, and their credit default swap (CDS) spreads widened substantially. These developments spilled over to broader markets, with equity prices falling and spreads of yields on corporate bonds over those on comparable-maturity Treasury securities moving to near-record highs. Deterioration in the functioning of many financial markets restricted the flow of credit to businesses and households.

In response to these financial market stresses, the Federal Reserve and other government entities implemented additional policy initiatives to support financial stability and promote economic recovery. Federal Reserve initiatives included expanding direct purchases of agency debt and agency mortgage-backed securities (MBS), beginning direct purchases of longer-term Treasury securities, and providing loans against consumer and other asset-backed securities (ABS).[1] Other government entities also undertook new measures to support the financial sector, including the provision of more capital to banking institutions under the Capital Purchase Program, or CPP, and the announcement of programs to help banks manage their legacy assets. In addition, the bank supervisory agencies undertook a special assessment of the capital strength of the largest U.S. banking organizations (the Supervisory Capital Assessment Program, or SCAP).

Partly as a result of these efforts, conditions in financial markets began to show signs of improvement starting in March, although they remained strained. During the subsequent few months, both equity prices of financial firms and broad equity price indexes rose, on balance, and corporate bond spreads narrowed. Firms responded by substituting longer-term financing through the corporate bond market for shorter-term funding from bank loans and commercial paper (CP). Supported by the Federal Reserve's Term Asset-Backed Securities Loan Facility (TALF), issuance of consumer ABS began to approach pre-crisis levels. Short-term interbank funding markets

1. For more information, see Board of Governors of the Federal Reserve System (2009), *Federal Reserve System Monthly Report on Credit and Liquidity Programs and the Balance Sheet* (Washington: Board of Governors, July).

also showed substantial improvement, and banking institutions involved in the SCAP were able to issue significant amounts of public equity and nonguaranteed debt. However, outstanding bank loans to households and nonfinancial businesses continued to decline amid expectations that borrower credit quality would deteriorate further, risk spreads in many markets that were still quite elevated, and financial conditions that remained somewhat strained.

Domestic Developments

The Household Sector

Residential Investment and Housing Finance

Although home prices have continued to fall, the steep declines in housing demand and construction that began in late 2005 appear to be abating. Sales of existing single-family homes have flattened out at a little more than 4 million units at an annual rate since late last year, and sales of new single-family homes have been little changed since January at a bit below 350,000 units. That said, the pace of sales for both new and existing homes is still very low by historical standards.

In the single-family housing sector, starts of new units appear to have firmed of late, though they remain at a depressed level. With this restrained level of construction, months' supply of unsold new homes relative to sales has come down somewhat from its peak at the turn of the year, but it still remains quite high compared with earlier in the decade. Starts in the multifamily sector—which had held up well through the spring of 2008 even as single-family activity was plummeting—have deteriorated considerably over the past year. These declines have coincided with a substantial worsening of many of the economic and financial factors that influence construction in this sector, including reports of a pullback in the availability of credit for new projects and a sharp decline in the price of apartment buildings following a multiyear run-up.

House prices continued to fall in the first part of this year. The latest readings from national indexes show price declines for existing homes over the past 12 months in the range of 7 to 18 percent. One such measure with wide geographic coverage, the LoanPerformance repeat-sales price index, fell more than 9 percent over the 12 months ending in May and is now 20 percent below the peak that it achieved in mid-2006. Price declines have been particularly marked in areas of the country that have experienced a large number of foreclosure-related sales, such as Nevada, Florida, California, and Arizona. Lower prices improve the affordability of homeownership for potential new buyers and, all else being equal, should eventually help bolster housing demand. However, expectations of further declines in house prices can make potential buyers reluctant to enter the market. Although consumer surveys continue to suggest that a sizable portion of households expect house prices to fall in the coming year, the share of such households appears to have subsided in recent months.

With house prices still falling, conditions in the labor market deteriorating, and household financial conditions remaining weak, delinquency rates continued to rise across all categories of mortgage loans. As of April 2009, nearly 40 percent of adjustable-rate subprime loans and 15 percent of fixed-rate subprime loans were seriously delinquent.[2] In May 2009, delinquency rates for prime and near-prime loans reached about 12 percent for adjustable-rate loans and 4 percent for fixed-rate loans, representing substantial increases over the past year to historic highs.

Foreclosures also jumped in 2009. Over the last three quarters of 2008, about 600,000 homes entered the foreclosure process each quarter. During the first quarter of 2009, about 750,000 homes entered the process. The increase may be related to the expiration of temporary foreclosure moratoriums that were put in place by some state and local governments, some private firms, and the government-sponsored enterprises (GSEs) late last year. The Treasury Department has recently established the Making Home Affordable program, which encompasses several efforts designed to lower foreclosure rates. The program includes a provision to allow borrowers to refinance easily into mortgages with lower payments and a provision to encourage mortgage lenders and servicers to modify delinquent mortgages.

Interest rates on 30-year fixed-rate conforming mortgages declined during early 2009; although those rates have risen more recently, about in line with increases in Treasury rates, mortgage rates remain at historically low levels. Part of the decrease may have reflected expansion of the Federal Reserve's agency MBS purchase program. Early in the year, spreads of rates on conforming fixed-rate mortgages over long-term Treasury yields fell to their lowest levels in more than a year. Offer rates on nonconforming jumbo fixed-rate loans fell slightly but continued to be well above rates on conforming loans.[3] Although the declines in rates and spreads made borrowing relatively less expensive for those qualified for conforming mortgages, access to credit remained limited for many other borrowers. In the April 2009 Senior Loan Officer Opinion Survey on Bank Lending Practices, a majority of respondents indicated that they had tightened standards on residential mortgages over the preceding three months, an extension of the prevailing trend in earlier quarters, that about 40 percent of banks had reduced the size of existing home equity lines of credit, and that only a few of the banks reported having made subprime loans. The secondary market for conventional mortgage loans not guaranteed by Fannie Mae or Freddie Mac remained essentially shut.

Mortgage debt outstanding was about flat in the first quarter of 2009, with the effects of the weakness in the housing market and relatively restricted access to credit offsetting the influence of lower mortgage rates. The available indicators suggest that mortgage debt likely remained very soft in the second quarter. Refinancing activity was somewhat elevated early in the year, probably due to low mortgage interest rates and the waiver of many fees and easing of many underwriting terms by the GSEs. However, such activity

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

3. 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 in size 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 the 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.

moderated considerably when interest rates rose during the past few months.

Consumer Spending and Household Finance

Consumer spending appears to have leveled off so far this year after falling sharply in the second half of last year. Continued widespread job losses and the drag from large declines in household wealth have weighed on consumption; however, spending lately has been supported by the boost to household incomes from the fiscal stimulus package enacted in February. Measures of consumer sentiment, while still at depressed levels, have nonetheless moved up from the historical lows recorded around the turn of the year.

Real personal consumption expenditures (PCE), although variable from month to month, have essentially moved sideways since late last year. Sales of new light motor vehicles continued to contract early this year but have stabilized in recent months—at an average annual rate of 9.7 million units over the four months ending in June. Outlays on other goods, which plunged in 2008, have remained at extremely low levels, while spending on services has only edged up so far this year.

Real disposable personal income, or DPI—that is, after-tax income adjusted for inflation—has risen at an annual rate of about 9 percent so far this year, a substantial pickup from the increase of 1¼ percent posted in 2008. Gains in after-tax income have been bolstered by the tax cuts and increases in social benefit payments that were implemented as part of the 2009 fiscal stimulus package. In contrast, nominal labor income has been declining steeply. Although nominal hourly compensation has risen at a faster pace than overall prices, sizable reductions in employment and the workweek have cut deeply into total hours worked and hence overall labor compensation. With real after-tax income up appreciably in the first half of the year and consumer outlays leveling off, the personal saving rate jumped during the spring, reaching nearly 7 percent in May compared with the 1¾ percent average recorded during 2008.

Household net worth continued to fall in the first quarter of this year as a result of the ongoing declines in house prices and a further drop in equity prices. However, equity prices have recorded substantial gains since March, helping to offset continued declines in the value of real estate wealth. The recent stimulus-induced jump in real disposable income and the improvement in equity wealth since this spring apparently helped lift consumer sentiment somewhat from its earlier very low levels.

Nonmortgage consumer debt outstanding is estimated to have fallen at an annual rate of 2 percent in the first half of 2009, extending a decline that began in the final quarter of 2008. The decreases likely reflect both reduced demand for loans as a result of the restrained pace of consumer spending and a restricted supply of credit. The April 2009 Senior Loan Officer Opinion Survey showed a further tightening of standards and terms on consumer loans over the preceding three months, actions that included lowering credit limits on existing credit card accounts.

The tightening in standards and terms likely reflected, in part, concerns by financial institutions about consumer credit quality. Delinquency rates on most types of consumer lending—credit card loans, auto loans, and other nonrevolving loans—continued to rise during the first half of 2009. The increase in credit card loan delinquency rates at banks was particularly sharp, and at 6½ percent as of the end of the first quarter of 2009, such delinquencies exceeded the level reached during the 2001 recession. Household bankruptcy rates continued the upward trend that has been evident since the bankruptcy law reform in 2005; the recent increases likely reflect the deterioration in household financial conditions.

Changes in interest rates on consumer loans were mixed over the first half of the year. Auto loan rates were about flat, credit card rates ticked upward, and rates on other consumer loans showed a slight decline. Spreads of these rates over those on comparable-maturity Treasury securities remained at elevated levels.

Before the onset of the financial crisis, the market for ABS provided significant support for consumer lending by effectively reducing the cost to lenders of providing such credit. The near-complete cessation of issuance in this market in the fourth quarter of 2008 thus likely contributed importantly to the curtailment of consumer credit. Issuance of credit card, auto, and student loan ABS began to pick up in March and approached pre-crisis levels in April and May. Spreads of yields on AAA-rated credit card and auto ABS over yields on swaps fell sharply in early 2009, although they remained at somewhat elevated levels. The increased issuance and falling spreads appeared to reflect importantly the TALF program, which had been announced in late 2008 and began operation in March 2009. Availability of loans to purchase automobiles, which had declined sharply at the end of 2008, rebounded in early 2009 as some auto finance companies accessed credit through the TALF and others received funding directly from the government.

The Business Sector

Fixed Investment

Businesses have continued to cut back capital spending, with declines broadly based across equipment, software, and structures. Real business fixed investment fell markedly in the final quarter of 2008 and the first quarter of this year. The cutbacks in business investment were prompted by a deterioration late last year and early this year in the economic and financial conditions that influence capital expenditures: In particular, business output contracted steeply, corporate profits declined, and credit availability remained tight for many borrowers. More recently, it appears that the declines in capital spending may be abating, and financing conditions for businesses have improved somewhat.

Real business outlays for equipment and software dropped at an annual rate of 34 percent in the first quarter of 2009 after falling nearly as rapidly in the fourth quarter. In both quarters, business purchases of motor vehicles plunged at annual rates of roughly 80 percent, and real spending on high-tech capital—computers, software, and communications equipment—fell at an annual rate of more than 20 percent. Real investment in equipment other than high tech and transportation, which accounts for nearly one-half of outlays for equipment and software, dropped at an annual rate of about 35 percent in the first quarter after falling at a 20 percent rate in the previous quarter. The available indicators suggest that real spending on equipment and software fell further in the second quarter, though at a much less precipitous pace: Although shipments of nondefense capital goods other than transportation items continued to fall in

April and May, the rate of decline slowed from the first-quarter pace. In addition, business purchases of new trucks and cars appear to have stabilized in the second quarter (albeit at low levels), and recent surveys of business conditions have been generally less downbeat than earlier this year.

Real spending on nonresidential structures turned down late last year and fell sharply in the first quarter. Outlays for construction of commercial and office buildings declined appreciably late last year and have contracted further so far this year. Spending on drilling and mining structures, which had risen briskly for a number of years, has plunged this year in response to the substantial net decline in energy prices since last summer. In contrast, outlays on other energy-related projects—such as new power plants and the expansion and retooling of existing petroleum refineries—have been growing rapidly for some time now and continued to post robust gains through May. On balance, the recent data on construction expenditures suggest that declines in spending on nonresidential structures may have slowed in the second quarter. However, weak business output and profits, tight financing conditions, and rising vacancy rates likely will continue to weigh heavily on this sector.

Inventory Investment

Businesses ran off inventories aggressively in the first quarter, as firms entered the year with extremely high inventory-sales ratios despite having drawn down stocks throughout 2008. Much of the first-quarter liquidation occurred in the motor vehicle sector, where production was cut sharply and remained low in the second quarter. As a result, days' supply of domestic light vehicles dropped from its peak of about 100 days in February to less than 70 days at the end of June, closer to the automakers' preferred level.

Firms outside of the motor vehicle sector also have been making significant production adjustments to bring down inventories. Factory output (excluding motor vehicles and parts) plunged in the first quarter, and inventories of nonfarm goods other than motor vehicles were drawn down noticeably in real terms. According to the available data, this pattern of production declines and inventory liquidation appears to have continued in the second quarter as well. Although inventory-sales ratios remain elevated in many industries, some recent business surveys suggest that firms have become more comfortable in recent months with the current level of inventories.

Corporate Profits and Business Finance

Operating earnings per share for S&P 500 firms in the first quarter were about 35 percent below their year-earlier levels. Profitability of both financial and nonfinancial firms showed steep declines. Analysts' forecasts suggest that the pace of profit declines moderated only slightly in the second quarter, although downward revisions to forecasts for earnings over the next two years have slowed recently.

Business financial conditions in the first half of the year were characterized by lower demand for funds, even as financial conditions eased somewhat on balance. Borrowing by domestic nonfinancial businesses fell slightly in the first half of 2009 after having slowed markedly in the second half of 2008. The composition of borrowing shifted, with net issuance of corporate bonds surging, while both commercial and industrial (C&I) loans and CP outstanding fell. This reallocation of borrowing may have reflected a desire by businesses to strengthen their balance sheets by substituting longer-term sources of financing for shorter-term sources during a period when the cost of bond financing was generally falling. In particular, yields on both investment- and speculative-grade corporate bonds dropped sharply, and their spreads over yields on comparable-maturity Treasury securities narrowed appreciably, as investors' concerns about the economic outlook eased. Nonetheless, bond spreads remained somewhat elevated by historical standards.

C&I and commercial real estate (CRE) lending by commercial banks were both quite weak in the first half of 2009, likely reflecting reduced demand for loans and a tighter lending stance on the part of banks. The results of the April 2009 Senior Loan Officer Opinion Survey indicated that commercial banks had tightened terms and standards on C&I and CRE loans over the preceding three months. The market for commercial mortgage-backed securities (CMBS)—an important source of funding before the crisis—remained shut.

Both seasoned and initial equity offerings by nonfinancial corporations were modest over the first half of 2009. Equity retirements are estimated to have slowed in early 2009 from their rapid pace during the second half of 2008. As a result, net equity issuance in the first quarter declined by the smallest amount since 2002.

The credit quality of nonfinancial firms continued to deteriorate in the first half of 2009. The pace of rating downgrades on corporate bonds increased, and upgrades were relatively few. Delinquency rates on banks' C&I loans continued to increase in the first quarter, while those on CRE loans rose substantially. Delinquency rates on construction and land development loans for one- to four-family residential properties increased to more than 20 percent. Banks that responded to the Senior Loan Officer Opinion Survey conducted in April 2009 expected delinquency and charge-off rates on such loans to increase over the rest of 2009, assuming that economic activity progressed in line with consensus forecasts.

Financial firms issued bonds at a solid pace, including both debt issued under the Temporary Liquidity Guarantee Program of the Federal Deposit Insurance Corporation (FDIC) and debt issued without such guarantees. Equity issuance by such firms picked up substantially from a very low level following the completion of the SCAP reviews in May.

The Government Sector

Federal Government

The deficit in the federal unified budget has increased substantially during the current fiscal year. The budget costs associated with the Troubled Asset Relief Program (TARP), the conservatorship of the mortgage-related GSEs, and the fiscal stimulus package enacted in February, along with the effects of the weak economy on outlays and revenues, have all contributed to the widening of the budget gap. Over the first nine months of fiscal year 2009—from October through June—the unified budget recorded a deficit of about $1.1 trillion. The deficit is expected to widen further over the rest of the fiscal year because of the continued slow pace of economic activity, additional spending increases and tax cuts associated with the fiscal stimulus legislation, and further costs related to financial stabilization programs. The budget released by the Office of Management and Budget in May, which included the effects of the President's budget proposals, calculated that the deficit for fiscal 2009 would total more than $1.8 trillion (13 percent of nominal GDP), significantly larger than the deficit in fiscal 2008 of $459 billion (3¼ percent of nominal GDP).[4]

The decline in economic activity has cut deeply into tax receipts so far this fiscal year. After falling about 2 percent in fiscal 2008, federal receipts dropped about 18 percent in the first nine months of fiscal 2009 compared with the same period in fiscal 2008. The decline in revenue has been particularly pronounced for corporate receipts, which have plunged as corporate profits have contracted and as firms have presumably adjusted payments to take advantage of the bonus depreciation provisions contained in the Economic Stimulus Act of 2008 and the American Recovery and Reinvestment Act of 2009. Individual income and payroll tax receipts have also declined noticeably, reflecting the weakness in nominal personal income and reduced capital gains realizations.[5]

Nominal federal outlays have risen markedly of late. After having increased about 9 percent in fiscal 2008, outlays in the first nine months of fiscal 2009 were almost 21 percent higher than during the same period in fiscal 2008. Spending was boosted, in part, by $232 billion in outlays recorded for activities under the TARP and the conservatorship of the GSEs so far this fiscal year.[6] Spending for income support—particularly for unemployment insurance benefits—has been pushed up by the deterioration in labor market conditions as well as by policy decisions to expand funding for a number of benefit programs. Meanwhile, federal spending on defense, Medicare, and Social Security also has recorded sizable increases. In contrast, net interest payments declined compared with the same year-earlier period, as the reduction in interest rates on Treasury debt more than offset the rise in Treasury debt.

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—fell at an annual rate of 4½ percent in the first quarter following its steep rise of more than 8 percent in 2008. Real defense spending more than accounted for the first-quarter contraction, as nondefense outlays increased slightly. However, in the second quarter, defense spending appears to have rebounded, and it is likely to rise further in coming quarters given currently enacted appropriations.

4. The President's budget includes a placeholder for additional funds for financial stabilization programs that have not been enacted but have an estimated budget cost of $250 billion.

5. While the 2009 stimulus plan has reduced individual taxes by around $13 billion so far in fiscal 2009, the stimulus tax rebates in 2008 lowered individual taxes by about $50 billion during the same period last year. Thus, the tax cuts associated with fiscal stimulus have not contributed to the year-over-year decline in individual tax receipts.

6. In the Monthly Treasury Statements and the Administration's budget, both equity purchases and debt-related transactions under the TARP are recorded on a net-present-value basis, taking into account market risk, and the Treasury's purchases of the GSE's MBS are recorded on a net-present-value basis. However, equity purchases from the GSEs in conservatorship are recorded on a cash-flow basis.

Federal Borrowing

Federal debt continued to increase in the first half of 2009, although at a slightly less rapid pace than had been posted in the second half of 2008. Despite the considerable issuance of Treasury securities in the first half of the year, demand at Treasury auctions generally kept pace, with bid-to-cover ratios within historical ranges. Foreign custody holdings of Treasury securities at the Federal Reserve Bank of New York grew steadily over the first half of the year. Fails-to-deliver of Treasury securities, which were elevated earlier in the year, generally decreased after the May 1 implementation of the Treasury Market Practices Group's recommendation of a mandatory charge for delivery failures.[7]

State and Local Government

The fiscal positions of state and local governments have deteriorated significantly over the past year, and budget strains are particularly acute in some states, as revenues have come in weaker than policymakers expected. At the state level, revenues from income, business, and sales taxes have declined sharply.[8] Plans by states to address widening projected budget gaps have included cutting planned spending, drawing down rainy day funds, and raising taxes and fees. In coming quarters, the grants-in-aid included in the fiscal stimulus legislation will likely mitigate somewhat the pressures on state budgets, but many states are still expecting significant budget gaps for the upcoming fiscal year. At the local level, revenues have held up fairly well; receipts from property taxes have continued to rise moderately, reflecting the typically slow response of property taxes to changes in home values.[9] Nevertheless, the sharp fall in house prices over the past two years is likely to put downward pressure on local revenues before long. Moreover, many state and local governments have experienced significant capital losses in their employee pension funds in the past year, and they will need to set aside money in coming years to rebuild pension assets.

Outlays by state and local governments have been restrained by the pressures on their budgets. As measured in the NIPA, aggregate real expenditures on consumption and gross investment

7. The fails charge is incurred when a party to a repurchase agreement or cash transaction fails to deliver the contracted Treasury security to the other party by the date agreed upon. The charge is a share of the value of the security, where the share is the greater of 3 percent (at an annual rate) minus the target federal funds rate (or the bottom of the range when the Federal Open Market Committee specifies a range) and zero. Previously, the practice was that a failed transaction was allowed to settle on a subsequent day at an unchanged invoice price; therefore, the cost of a fail was the lost interest on the funds owed in the transaction, which was minimal when short-term interest rates were very low. The new practice of a fails charge ensures that the total cost of a fail is at least 3 percent.

8. Sales taxes account for nearly one-half of the tax revenues collected by state governments.

9. The delay between changes in house prices and changes in property tax revenues likely occurs for three reasons. First, property taxes are based on assessed property values from the previous year. Second, in many jurisdictions, assessments are required to lag contemporaneous changes in market values (or they lag such changes for administrative reasons). Third, many localities are subject to state limits on the annual increases in total property tax payments and property value assessments. Thus, increases and decreases in market prices for houses tend not to be reflected in property tax bills for quite some time.

by state and local governments—the part of state and local spending that is a direct component of GDP—fell in both the fourth quarter of last year and the first quarter of this year, led by sharp declines in real construction spending. However, recent data on construction expenditures suggest that investment spending in the second quarter picked up, reversing a portion of the earlier declines. State and local employment has remained about flat over the past year, although some state and local governments are in the process of reducing outlays for compensation through wage freezes and mandatory furloughs that are not reflected in the employment figures.

State and Local Government Borrowing

On net, bond issuance by state and local governments picked up in the second quarter of 2009 after having been tepid during the first quarter. Issuance of short-term debt remained modest, although about in line with typical seasonal patterns. Issuance of long-term debt, which is generally used to fund capital spending projects or to refund existing long-term debt, increased from the sluggish pace seen in the second half of 2008. The composition of new issues continued to be skewed toward higher-rated borrowers.

Interest rates on long-term municipal bonds declined in April as investors' concerns about the credit quality of municipal bonds appeared to ease somewhat with the passage of the fiscal stimulus plan, which included a substantial increase in the amount of federal grants to states and localities. That bill also aided the finances of state and local governments by establishing Build America Bonds, taxable state and local government bonds whose interest payments are subsidized by the Treasury at a 35 percent rate. Yields on municipal securities rose somewhat in May and June, concomitant with the rise in other long-term interest rates over that period; even so, the ratio of municipal bond yields to those on comparable-maturity Treasury securities dropped to its lowest level in almost a year.

In contrast to long-term municipal bond markets, conditions in short-term municipal bond markets continued to exhibit substantial strains. Market participants continued to report that the cost of liquidity support and credit enhancement for variable-rate demand obligations (VRDOs)—bonds that combine long maturities with floating short-term interest rates—remained substantially higher than it had been a year earlier.[10] In addition, auctions of most remaining auction-rate securities failed. Some municipalities were able to issue new VRDOs, but many lower-rated issuers appeared to be either unwilling or unable to issue this type of debt at the prices that would be demanded of them. However, the seven-day Securities Industry and Financial Markets Association swap index, a measure of yields for high-grade VRDOs, declined to the lowest level on record, suggesting that the market was working well for higher-rated issuers.

10. VRDOs are taxable or tax-exempt bonds that combine long maturities with floating short-term interest rates that are reset on a weekly, monthly, or other periodic basis. VRDOs also have a contractual liquidity backstop, typically provided by a commercial or investment bank, that ensures that bondholders are able to redeem their investment at par plus accrued interest even if the securities cannot be successfully remarketed to other investors.

The External Sector

The demand for U.S. exports dropped sharply in the first quarter. However, U.S. demand for imports fell even more precipitously, softening the decline in real GDP.

Real exports of goods and services declined at an annual rate of 31 percent in the first quarter, exceeding even the 24 percent rate of decline in the fourth quarter of 2008. Exports in almost all major categories contracted, with exports of machinery, industrial supplies, automotive products, and services recording large decreases. (Exports of aircraft were the exception, with increases following the end of strike-related production disruptions in the fourth quarter.) All of our major trading partners reduced their demand for U.S. exports, with exports to Canada, Europe, and Mexico exhibiting especially significant declines. Data for April and May suggest that exports in the second quarter continued to fall, although more moderately, reflecting a slowing in the rate of contraction in foreign economic activity.

Real imports of goods and services fell at an annual rate of more than 36 percent in the first quarter. The drop in imports was widespread across U.S. trading partners, with large declines observed for imports from Canada, Europe, Japan, and Latin America. All major categories of imports fell, with imports of machinery, automotive products, and industrial supplies displaying particularly pronounced declines. The sharp fall in exports and imports of automotive products partly reflected cutbacks in North American production of motor vehicles, which relies heavily on flows of parts and finished vehicles among the United States, Canada, and Mexico.

In the first quarter of 2009, the U.S. current account deficit was $406 billion at an annual rate, a bit less than 3 percent of GDP, considerably narrower than the $706 billion deficit recorded in 2008. The narrowing largely reflected the sharp reduction in the U.S. trade deficit, with the contraction in real imports described earlier being compounded by a steep fall in the value of nominal oil imports as oil prices declined.

Import prices fell sharply in late 2008 and the first quarter of this year, but they have stabilized over the past few months. This pattern was influenced importantly by the swing in prices for oil and non-oil commodities, which turned back up in the second quarter. Prices for finished goods declined only slightly in the last quarter of 2008 and the first quarter of this year and have increased slightly in recent months.

The price of crude oil in world markets rose considerably over the first half of this year. After plunging from a record high of more than $145 per barrel in mid-July 2008 to a December average of about $40, the spot price of West Texas intermediate (WTI) crude oil rebounded to about $60 per barrel in mid-July of this year. The rebound in oil prices appears to reflect the view that the global demand for oil has begun to pick up once again. In addition, the ongoing effects of previous reductions in OPEC supply seem to be putting upward pressure on oil prices. The prices of longer-term futures contracts for crude oil have moved up to around $85 per barrel, reflecting the view that the market will continue to tighten as global demand strengthens over the medium term.

National Saving

Total net national saving—that is, the saving of households, businesses, and governments, excluding depreciation charges as measured in the NIPA—fell to a level of negative 1½ percent of nominal GDP in the first quarter of this year, its lowest reading in the post–World War II period. After having reached 3½ percent of nominal GDP in early 2006, net national saving dropped over the subsequent three years as the federal budget deficit widened substantially and the fiscal positions of state and local governments deteriorated. In contrast, private saving has risen considerably, on balance, over this period, as a decline in business saving has been more than offset by the recent jump in personal saving. National saving will likely remain very low this year in light of the weak economy and the probable further widening of the federal budget deficit. 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.

The Labor Market

Employment and Unemployment

The labor market deteriorated significantly further in the first half of this year as employment continued to fall and the unemployment rate rose sharply. The job losses so far this year have been widespread across industries and have brought the cumulative decline in private employment since December 2007 to more than 6½ million jobs. In recent months, however, the pace of job loss has moderated somewhat. Private nonfarm payroll employment fell by 670,000 jobs, on average, per month from January to April, but the declines slowed to 312,000 in May and 415,000 in June. In contrast, the civilian unemployment rate has continued to move up rapidly so far this year, climbing 2¼ percentage points between December 2008 and June to 9½ percent.

Virtually all major industries experienced considerable job losses in the first few months of the year. More recently, employment declines in many industry groups have eased, and some industries have reported small gains. The May and June declines in construction jobs were the smallest since last fall, job declines in temporary help services slowed noticeably, and employment in nonbusiness services turned up in May and increased further in June. Meanwhile, in the manufacturing sector, employment declines have subsided a bit in recent months but still remain sizable; job losses in this sector have totaled 1.9 million since the start of the recession.

In addition to shedding jobs, firms have cut their labor input by shortening hours worked. Average weekly hours of production and nonsupervisory workers on private payrolls dropped sharply through June. In addition, the share of persons who reported that they were working part time for economic reasons—a group that includes individuals whose hours have been cut by their employers as well as those who would like to move to full-time jobs but are unable to find them—is high.

Since the beginning of the recession in December 2007, the unemployment rate has risen more than 4½ percentage points. The rise in joblessness has been especially pronounced for those who lost their jobs permanently; these individuals tend to take longer to find new jobs than those on temporary layoffs or those who left their jobs voluntarily, and their difficulty in finding new jobs has been exacerbated by the ongoing weakness in hiring. Accordingly, the median duration of uncompleted spells of unemployment has increased from 8½ weeks in December 2007 to 18 weeks in June 2009, and the number of workers unemployed more than 15 weeks has moved up appreciably.

The labor force participation rate, which typically weakens during periods of rising unemployment, decreased gradually through March but has moved up somewhat, on balance, in recent months. The emergency unemployment insurance programs that were introduced last July have likely contributed to the higher participation rate and unemployment rate by encouraging unemployed individuals to remain in the labor force to continue to look for work. In addition, anecdotes suggest that the impairment of household balance sheets during this recession may have led some workers to delay retirement and other workers to enter the labor force.

Other more recent indicators suggest that conditions in the labor market remain very weak. Initial claims for unemployment insurance, which rose dramatically earlier this year, have fallen noticeably from their peak but remain elevated, and the number of individuals receiving regular and emergency unemployment insurance benefits climbed, reaching nearly 10 million at the end of June.

Productivity and Labor Compensation

Labor productivity has continued to increase at a surprising rate during the most recent downturn, in part because firms have responded to the contraction in aggregate demand by aggressively reducing employment and shortening the workweeks of their employees. According to the latest available published data, output per hour in the nonfarm business sector increased at an annual rate of about 1½ percent in the first quarter after rising 2¼ percent during all of 2008. If these productivity estimates prove to be accurate, they would suggest that the fundamental factors that have supported a solid trend in underlying productivity in recent years—such as the rapid pace of technological change and ongoing efforts by firms to use information technology to improve the efficiency of their operations—remain in place.

Alternative measures of nominal hourly compensation and wages suggest, on balance, that increases in labor costs have slowed this year in response to the sizable amount of slack in labor markets. The employment cost index (ECI) for private industry workers, which measures both wages and the cost to employers of providing benefits, has decelerated considerably over the past year. This measure of compensation increased less than 2 percent in nominal terms between March 2008 and March 2009 after rising 3¼ percent in each of the preceding two years. Average hourly earnings of production and nonsupervisory workers—a more timely, but narrower, measure of wage developments—have also decelerated significantly, especially in recent months. In contrast, compensation per hour (CPH) in the nonfarm business sector—an alternative measure of hourly compensation derived from the data in the NIPA—increased about 4 percent over the year ending in the first quarter of 2009, similar to the rate of increase seen during the past several years.

The much slower pace of overall consumer price inflation over the past year has supported real wage growth. Indeed, changes in both broad measures of hourly compensation—the ECI and CPH—have picked up in real terms over the past year, as has the inflation-adjusted increase in average hourly earnings. Nonetheless, as noted previously, with the sharp reduction in total hours worked, real wage and salary income of households has fallen over this period.

Prices

Headline consumer prices, which fell sharply late last year with the marked deterioration in economic activity and drop-off in the prices of crude oil and other commodities, have risen at a moderate pace so far this year. While the margin of slack in product and labor markets has widened considerably further this year, putting downward pressure on inflation, many commodity prices have retraced part of their earlier declines. All told, the chain-type price index for personal consumption expenditures increased at an annual rate of about 1¾ percent between December 2008 and May 2009, compared with its ¾ percent rise over the 12 months of 2008. The core PCE price index—which excludes the prices of energy items as well as those of food and beverages—also has increased at a moderate pace so far this year following especially low rates of increase late in 2008. Data for PCE prices in June are not yet available, but information from the consumer price index and other sources suggests that total PCE prices posted a relatively large increase that month as gasoline prices jumped; core consumer price increases were moderate.

Consumer energy prices flattened out, on balance, in the first five months of 2009 following their sharp drop late last year. However, crude oil prices have turned up again, with the spot price of WTI rising to around \$60 per barrel in mid-July from about \$40, on average, last December. The increase in crude costs has been putting upward pressure on the price of gasoline at the pump in recent months. In contrast, natural gas prices continued to plunge over the first half of this year in response to burgeoning supplies from new wells in Louisiana, North Dakota, Pennsylvania, and Texas that boosted inventories above historical midyear averages. Consumer prices for electricity have edged down so far this year—after rising briskly through the end of last year—as fossil fuel input costs have continued to decline.

Food prices decelerated considerably in the first part of this year in response to the dramatic downturn in spot prices of crops and livestock in the second half of last year. After climbing nearly 6½ percent in 2008, the PCE price index for food and beverages decreased at an annual rate of 1 percent between December 2008 and May 2009.

Core PCE prices rose at an annual rate of 2½ percent over the first five months of the year, compared with 1¾ percent over all of 2008. The pickup in core inflation during the first part of this year reflected, in part, a jump in the prices of tobacco products associated with large increases in federal and state excise taxes this spring; excluding tobacco prices—for which the large increases likely were one-off adjustments—core inflation was unchanged at 1¾ percent over this period. Aside from tobacco, prices for other core goods snapped back early this year—following heavy discounting at the end of last year in reaction to weak demand and excess inventories—but have been little changed for the most part in recent months. In contrast, prices for a wide range of non-energy services have decelerated noticeably further this year.

Survey-based measures of near-term inflation expectations declined late last year and early this year as actual headline inflation came down markedly, but, in recent months, some measures have moved back up close to their average levels of recent years. According to the Reuters/University of Michigan Surveys of Consumers, median expectations for year-ahead inflation stood at 3.0 percent in the preliminary estimate for July, up from about 2 percent around the turn of the year. Indicators of longer-term inflation expectations have been steadier over this period. These expectations in the Reuters/University of Michigan survey stood at 3.1 percent in the preliminary July release, about the measure's average value over all of 2008.

Financial Stability Developments

Evolution of the Financial Turmoil, Policy Actions, and the Market Response

Stresses in financial markets intensified in the first few months of 2009 but have eased more recently. Credit default swap spreads for bank holding companies—which primarily reflect investors' assessments of the likelihood of those institutions defaulting on their debt obligations—rose sharply in early January on renewed concerns that some of those firms could face considerable capital shortfalls and liquidity difficulties. Equity prices for banking and insurance companies fell in the first quarter of the year as a number of large financial institutions reported substantial losses for the fourth quarter of 2008.

Strains in short-term funding markets persisted in January and February. A measure of stress in the interbank market, the spread of the London interbank offered rate (Libor) over the rate on comparable-maturity overnight index swaps (OIS), remained at elevated levels early in the year. Required margins of collateral (also known as haircuts) and bid-asked spreads generally continued to be wide in the markets for repurchase agreements backed by many types of securities.

Other financial markets also continued to show signs of stress during the first two months of the year. In the leveraged loan market, bid prices remained close to historical lows, and issuance—particularly of loans intended for nonbank lenders—dropped to very low levels. Issuance of securities backed by credit card loans, nonrevolving consumer loans, and auto loans continued to be minimal in the first few months of the year, and there was no issuance of CMBS in the first half of 2009. An index based on CDS spreads on AAA-rated CMBS widened and neared the peak levels seen in November. Broad equity price indexes continued to fall, and measures of equity price volatility remained very high.

Nonetheless, a few financial markets showed signs of improvement early in the year. In the CP market, spreads on shorter-maturity A1/P1 nonfinancial and financial CP as well as on asset-backed commercial paper (ABCP) over AA nonfinancial CP declined modestly. Although part of the improvement likely reflected greater demand from institutional investors as short-term Treasury yields declined to near zero on occasion, CP markets continued to be supported by the Federal Reserve's Commercial Paper Funding Facility (CPFF). More notably, spreads on shorter-maturity A2/P2 CP, which is not eligible for purchase under the CPFF, also fell. In the corporate bond market, spreads of yields on BBB-rated and speculative-grade bonds relative to yields on comparable-maturity Treasury securities narrowed in January and February, although they remained at historically high levels. Spreads on 10-year Fannie Mae debt and option-adjusted spreads on Fannie Mae mortgage-backed securities over comparable-maturity Treasury securities dropped early in the year, reflecting, in part, the effects of Federal Reserve purchases of agency debt and agency MBS. Interest rates on 30-year fixed rate conforming mortgages also fell.

In an effort to help restore confidence in the strength of U.S. financial institutions and restart the flow of lending to businesses and households, on February 10, the Treasury, the Federal Reserve, the FDIC, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision announced the Financial Stability Plan. The plan included the Capital Assistance Program (CAP), designed to assess the capital needs of depository institutions under a range of economic scenarios and to help increase the amount and strengthen the quality of their capital if necessary; a new Public-Private Investment Program, or PPIP, which would combine public and private capital with government financing to help banks dispose of legacy assets and strengthen their balance sheets, thereby supporting new lending; an expansion of the Federal Reserve's TALF program; and an extension of the senior debt portion of the FDIC's Temporary Liquidity Guarantee Program to October 31, 2009.

The announcement of the plan did not lead to an immediate improvement in financial market conditions. Bank and insurance company equity prices continued to decline, and CDS spreads of such institutions widened to levels above those observed the previous fall. Market participants were reportedly unclear about the methodology that would underlie the assessment of bank capital needs. The timing of the announcement of the results and the likely policy responses from this part of the CAP—formally named the SCAP, but popularly known as the stress test—were also sources of uncertainty. (CAP and SCAP are described in greater detail in the box titled "Capital Assistance Program and Supervisory Capital Assessment Program.") On March 2, American International Group, Inc. (AIG), reported losses of more than $60 billion for the fourth quarter of 2008, and the Treasury and the Federal Reserve announced a restructuring of the government assistance to AIG to enhance the company's capital and liquidity in order to facilitate the orderly completion of its global divestiture program.

On March 3, the Treasury and the Federal Reserve announced the launch of the TALF. In the initial phase of the program, the Federal Reserve offered to provide up to $200 billion of three-year loans on a nonrecourse basis secured by AAA-rated ABS backed by newly and recently originated auto loans, credit card loans, student loans, and loans guaranteed by the Small Business Administration. The Treasury's TARP would purchase $20 billion of subordinated debt in a special purpose vehicle (SPV) created by the Federal Reserve Bank of New York. The SPV would purchase and manage any assets received by the New York Fed in connection with any TALF loans. The demand for TALF funding was initially

Capital Assistance Program and Supervisory Capital Assessment Program

On February 10, 2009, the Treasury, Federal Reserve, Federal Deposit Insurance Corporation (FDIC), Office of the Comptroller of the Currency, and Office of Thrift Supervision announced a Capital Assistance Program (CAP) to ensure that the largest banking institutions would be appropriately capitalized with high-quality capital. As part of this program, the federal banking supervisors undertook a Supervisory Capital Assessment Program (SCAP) to evaluate the capital needs of the largest U.S. bank holding companies (BHCs) under a more challenging economic environment than generally anticipated. The Treasury and federal banking agencies believe it important for the largest BHCs to have a capital buffer sufficient to withstand losses and allow them to meet the credit needs of their customers if the economy were to weaken more than expected in order to help facilitate a broad and sustainable economic recovery.

The SCAP was initiated on February 25, 2009, and results were released publicly on May 7, 2009. U.S. BHCs with risk-weighted assets of more than $100 billion at the end of 2008 were required to participate. The objective of the exercise was to conduct a comprehensive and consistent assessment simultaneously on the largest BHCs using a common set of alternative macroeconomic scenarios and a common forward-looking conceptual framework. Extensive information was collected on the characteristics of the major loan, securities, and trading portfolios, revenues, and modeling methods of the institutions. With this information, supervisors were able to apply a consistent and systematic approach across firms to estimate losses, revenues, and reserves for 2009 and 2010, and to determine whether firms would need to raise capital to build a buffer to withstand larger-than-expected losses. The SCAP buffer for each BHC was sized to achieve a Tier 1 risk-based ratio of 6 percent and a Tier 1 Common risk-based ratio of 4 percent at the end of 2010 under a more severe macroeconomic scenario than expected.

Supervisors took the unusual step of publicly reporting the findings of the SCAP. The decision to depart from the standard practice of maintaining confidentiality of examination information stemmed from the belief that greater

modest, reportedly on concerns that future changes in government policies could adversely affect TALF borrowers.

Financial markets began to show signs of improvement in early March when a few large banks indicated that they had been profitable in January and February. Sentiment continued to improve after the March 17-18 meeting of the Federal Open Market Committee (FOMC), at which, against a backdrop of weakening economic activity and significant financial market strains, the Committee announced that it would expand its purchases of agency MBS by $750 billion, and of agency debt by $100 billion; in addition it would also purchase up to $300 billion of longer-term Treasury securities over the next six months. Yields on a wide range of longer-term debt securities dropped substantially within a day of the release of the Committee's statement. First-quarter earnings results pre-announced by some large financial institutions were substantially better than expected, although some of the surprise was attributable to greater-than-anticipated clarity around the SCAP process and findings would make the exercise more effective at reducing uncertainty and restoring confidence in financial institutions.[1]

Results of the SCAP indicated that 10 firms would need to augment their capital or improve the quality of the capital from 2008:Q4 levels; the combined amount totaled $185 billion, nearly all of which is required to meet the target Tier 1 Common risk-based ratio. Between the end of 2008 and the release of the results in May, many firms had already completed or contracted for asset sales or restructured existing capital instruments. After adjusting for these transactions and revenues that exceeded what had been assumed in the SCAP, the combined amount of additional capital needed to establish the buffer was $75 billion. The 10 firms are required to raise the additional capital by November 9, 2009.

Since the release of the results, almost all of the 10 firms that were asked to raise capital buffers issued new common equity in the public markets and raised about $40 billion; they also raised a substantial additional amount of capital by exchanging preferred shares to common shares and selling assets. Firms that do not meet their buffer requirement can issue mandatory convertible shares to the Treasury in an amount up to 2 percent of the institution's risk-weighted assets (or higher on request), as a bridge to private capital. In addition, firms can apply to the Treasury to exchange their existing Capital Purchase Program preferred stock to help meet their buffer requirement. To protect taxpayers, firms will be expected to have issued private capital before or simultaneously with the exchange.

The firms not asked to augment their capital also raised about $20 billion in common equity in May and early June. Most of these firms and others applied for and received approval from their supervisors to repay their outstanding Capital Purchase Program preferred stock. In early June, 10 large BHCs repaid about $68 billion to the Treasury. A number of banks have also been able to issue debt not guaranteed by the FDIC's Temporary Liquidity Guarantee Program.

1. A description of the methodology and a summary of results, including loss rates on major loan categories for each firm, is available at www.federalreserve.gov/bankinforeg/scap.htm.

effects of revisions in accounting rules.[11] Equity prices of banks and insurance companies rose, and CDS spreads for such institutions narrowed, although to still-elevated levels. Broad stock price indexes also climbed and measures of equity price volatility declined. Libor-OIS spreads began to edge down. Spreads on lower-rated investment-grade and speculative-grade corporate bonds over comparable-maturity Treasury securities also fell, though again to levels that remained high by historical standards. Bid-asked

11. In early April, the Financial Accounting Standards Board issued new guidance related to fair value measurements and other-than-temporary impairments (OTTIs). The new fair value guidance reduces the emphasis to be placed on the "last transaction price" in valuing assets when markets are not active and transactions are likely to be forced or distressed. The new OTTI guidance will require impairment write-downs through earnings only for the credit-related portion of a debt security's fair value impairment when two criteria are met: (1) The institution does not have the intent to sell the debt security, and (2) it is unlikely that the institution will be required to sell the debt security before a forecasted recovery of its cost basis. The two changes have resulted in higher fair value estimates and reductions in impairments, improving institutions' reported first-quarter earnings.

spreads on speculative-grade bonds declined. Similarly, bid-asked spreads narrowed in the leveraged loan market.

Conditions in financial markets continued to improve in the second quarter, aided in part by the emergence of more detail on the SCAP program and the release of its results on May 7. Market participants reportedly viewed the amount of additional capital that banks were required to raise in conjunction with the SCAP as relatively modest. With uncertainty about the SCAP results resolved, and amid the ongoing improvements in financial markets, market participants appeared to mark down the probability of extremely adverse financial market outcomes. Equity prices for many large banks and insurance companies rose even as substantial equity issuance by banks covered by the SCAP program added to supply. The secondary market for leveraged loans also showed improvement, with the average bid price rising considerably; issuance, however, particularly of institutional loans, remained very weak. Short-term interbank funding markets continued to improve, with Libor-OIS spreads at one-month tenors declining to near precrisis levels; spreads at longer tenors also fell but remained very high. Demand for TALF funds increased in May and June, particularly for securities backed by credit card and auto loans. Supported by the TALF, issuance of consumer ABS picked up further in May, and it began to approach precrisis levels. Also in May, the Federal Reserve announced that, starting in June, CMBS and securities backed by insurance premium finance loans would be eligible collateral under the TALF. Financial markets abroad also improved during the second quarter, reflecting improved global economic prospects and positive news from the banking sector (see "International Developments" for additional detail).

In early June, the Federal Reserve outlined the criteria it would use to evaluate applications to redeem Treasury capital from participants in the SCAP. On June 17, 10 banking institutions redeemed about $68 billion in Treasury capital. At about the same time, the 10 banking organizations that had been required under the SCAP to bolster their capital buffers all submitted plans that would provide sufficient capital to meet the required buffer under the assessment's more adverse scenario. On June 25, the Federal Reserve announced that while it would extend a number of its liquidity facilities through early 2010, in light of the improvement in financial conditions and reduced usage of some of its facilities, it would trim their size and adjust some of their terms.

Banking Institutions

Profitability of the commercial banking sector, as measured by return on assets and return on equity, recovered somewhat in the first quarter after having posted near-record lows in the fourth quarter of 2008. Profits were concentrated at the largest banks and were driven by a rebound in trading revenue as well as reduced noninterest expense related to smaller write-downs of intangible assets. Smaller banks, in contrast, continued to lose money amid mounting credit losses. Indeed, at the industry level, loan quality deteriorated substantially from the already poor levels recorded late last year, with delinquency rates on credit card loans reaching their highest level on record (back to 1991). Delinquency rates on residential mortgages held by banks soared to 8 percent. Regulatory capital ratios improved in the fourth quarter of 2008 and the first quarter of 2009 as commercial banks received substantial capital infusions—likely related to funds received by their parent bank holding companies under the Capital Purchase Program—while total assets declined. Despite a decline in loans outstanding, unused commitments to fund loans to both households and businesses shrank at an annual rate of more than 30 percent in the first quarter of 2009.

Commercial bank lending contracted at an annual rate of nearly 7 percent during the first half of 2009, reflecting weak loan demand and tight credit conditions. C&I loans fell at an annual rate of about 14 percent over this period, partly as a result of broad and sustained paydowns of outstanding loans amid weak investment spending by businesses. Some of these paydowns also were likely related to increased issuance of longer-term corporate debt, as nonfinancial firms—especially those rated as investment grade—tapped the corporate bond market. CRE loans ran off steadily, likely a result of continued weakness in that sector. Bank loans to households also fell over the first half of the year, particularly in the spring, as banks reportedly sold or securitized large volumes of residential mortgages and consumer credit card loans. Loan loss reserves reported by large banks increased considerably in the second quarter, suggesting continued deterioration in credit quality and further pressure on earnings.

The Senior Loan Officer Opinion Survey conducted in April 2009 indicated that large fractions of banks continued to tighten standards and terms on loans to businesses and households over the preceding three months. For most loan categories, however, the fractions of banks that reported having done so decreased from the January survey. The majority of respondents to the April survey indicated that they expected the credit quality of their loan portfolios to worsen over the remainder of the year. Demand for most types of loans also reportedly weakened over the survey period, with the noticeable exception of demand from prime borrowers for mortgages to purchase homes—a development that coincided with a temporary rise in applications to refinance home mortgages.

Data from the February and May Surveys of Terms of Business Lending indicated that the spreads of yields on C&I loans over those on comparable-maturity market instruments rose noticeably. The increase in the May survey was partly attributable to a steep increase in spreads on loans made under commitment, as a larger share of loans in the May survey were drawn from commitments arranged after the onset of the financial crisis.

Monetary Policy Expectations and Treasury Rates

The current target range for the federal funds rate, 0 to ¼ percent, is in line with the level that investors expected at the end of 2008. However, over the first half of 2009, investors marked down, on balance, their expectation for the path of the federal funds rate for the remainder of the year. Early in the year, the markdown was attributable to continued concerns about the health of financial institutions, weakness in the real economy, and a moderation in inflation pressures. Later in the period, FOMC communications indicating that the federal funds rate would likely remain low for an extended period reportedly also contributed to the downward revision to policy expectations. In contrast, investors marked up their expectations about the pace with which policy accommodation will be removed in 2010, likely in light of increased optimism about the economic outlook. Futures quotes currently suggest that investors expect the federal funds rate to remain within the current target range for the remainder of this year and then to rise in 2010. However, uncertainty about the size of term premiums and potential distortions created by the zero lower bound for the federal funds rate continue to make it difficult to obtain a definitive reading on the policy expectations of market participants from futures prices. Options prices suggest that investor uncertainty about the future path for policy increased, on balance, during the first half of 2009.

Yields on longer-maturity Treasury securities increased substantially, on net, over the first half of 2009, in response to better-than-expected economic data releases, declines in the weight investors attached to highly adverse economic outcomes, signs of thawing in the credit markets, technical factors related to the hedging of mortgage holdings, and the large increase in the expected supply of such securities. The rise in Treasury yields has likely been mitigated somewhat by the implementation of the Federal Reserve's large-scale asset purchases, under which the Federal Reserve is conducting substantial purchases of agency debt, agency MBS, and longer-maturity Treasury securities. On net, yields on 2- and 10-year Treasury notes rose about 50 and 115 basis points, respectively, during the first half of 2009, with the rise concentrated in the second quarter, after having declined 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) declined over the first half of 2009, which resulted in a noticeable increase in measured inflation compensation—the difference between comparable-maturity nominal yields and TIPS yields. Inferences about inflation expectations from inflation compensation have been difficult to make since the second half of 2008 because yields on nominal and TIPS issues appear to have been affected significantly by movements in liquidity premiums, and because other special factors have buffeted yields on nominal Treasury issues. Some of these special factors have begun to subside in recent months, suggesting that the increase in inflation compensation since year-end is partly due to an improvement in market functioning and other special factors, although near-term inflation expectations may have been boosted by rising energy prices.

Monetary Aggregates and the Federal Reserve's Balance Sheet

The M2 monetary aggregate expanded at an annual rate of 7¾ percent during the first half of 2009, reflecting robust growth in the first quarter and more moderate growth in the second.[12] This

12. 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 issued in amounts of less than $100,000) less individual retirement account (IRA) and Keogh balances at depository institutions; and (7) balances in retail money

expansion was due in part to the relatively small difference between market interest rates and the rates offered on M2 assets, as well as an increased desire of households and firms to hold safe and liquid assets because of the financial turmoil. Strong growth in liquid deposits was partially offset by rapid declines in small time deposits and retail money market mutual funds, as yields on the latter two assets dropped relative to rates on liquid deposits. The currency component of the money stock also increased, with a notable rise in the first quarter that appeared to reflect strong demand for U.S. banknotes from both foreign and domestic sources. The monetary base—essentially the sum of currency in the hands of the public and the reserve balances of depository institutions held at the Federal Reserve—continued to expand rapidly in the first quarter of 2009, albeit at a slower pace than in the second half of 2008. The expansion of the monetary base slowed further in the second quarter of 2009, as a decline in amounts outstanding under the Federal Reserve's credit and liquidity programs partially offset the effects on reserve balances of the Federal Reserve's large-scale asset purchases.

The nontraditional monetary policy actions employed by the Federal Reserve since the onset of the current episode of financial turmoil have resulted in a considerable expansion of the Federal Reserve's balance sheet (table 1). On December 31, 2007, prior to much of the financial market turmoil, the Federal Reserve's assets totaled nearly $920 billion, the bulk of which was Treasury securities. Its liabilities included nearly $800 billion in Federal Reserve notes (currency in circulation) and about $20 billion in reserve balances held by depository institutions.

By December 31, 2008, after the introduction of several new Federal Reserve policy initiatives, assets had more than doubled to about $2.2 trillion. Holdings of U.S. Treasury securities had declined by nearly one-half. At that point, the majority of Federal Reserve assets consisted of credit extended to depository institutions, other central banks, and primary dealers.[13] The Federal Reserve had extended about $330 billion in funding to the CPFF and was providing more than $100 billion in support of certain critical institutions. The growth in assets was largely funded by an increase in reserve balances, which, at $860 billion, slightly exceeded currency in circulation.

Over the first half of this year, total Federal Reserve assets decreased slightly, on net, to about $2.1 trillion, though there were large changes in the composition of those assets. Holdings of Treasury securities increased to nearly $685 billion, and holdings of agency debt and MBS rose to more than $625 billion as a result of large-scale asset purchases. Credit extended to depository institutions, primary dealers, and other market participants fell as market functioning improved. The decline importantly reflected a decrease in foreign central banks' draws on dollar liquidity swap lines and a runoff in credit extended through the CPFF and the Term Auction Facility (TAF). The amount of credit extended in support of certain critical institutions remained about unchanged. On the liability side,

market mutual funds less IRA and Keogh balances at money market mutual funds.

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

1. Selected Components of the Federal Reserve Balance Sheet, 2007–09

Millions of dollars

Balance sheet item	Dec. 31, 2007	Dec. 31, 2008	July 15, 2009
Total assets	**917,922**	**2,240,946**	**2,074,822**
Selected assets			
Credit extended to depository institutions and dealers			
Primary credit	8,620	93,769	34,743
Term auction credit	40,000	450,219	273,691
Central bank liquidity swaps	24,000	553,728	111,641
Primary Dealer Credit Facility and other broker-dealer credit	...	37,404	0
Credit extended to other market participants			
Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility	...	23,765	5,469
Net portfolio holdings of Commercial Paper Funding Facility LLC	...	334,102	111,053
Net portfolio holdings of LLCs funded through the Money Market Investor Funding Facility	...	0	0
Term Asset-Backed Securities Loan Facility	...	...	30,121
Support of critical institutions			
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC[1]	...	73,925	60,546
Credit extended to American International Group, Inc.	...	38,914	42,871
Securities held outright			
U.S. Treasury securities	740,611	475,921	684,030
Agency debt securities	0	19,708	101,701
Agency mortgage-backed securities (MBS)[2]	...	...	526,418
Memo			
Term Securities Lending Facility[3]	...	171,600	4,250
Total liabilities	**881,023**	**2,198,794**	**2,025,348**
Selected liabilities			
Federal Reserve notes in circulation	791,691	853,168	870,327
Reserve balances of depository institutions	20,767	860,000	808,824
U.S. Treasury, general account	16,120	106,123	65,234
U.S. Treasury, supplemental financing account	...	259,325	199,939
Total capital	**36,899**	**42,152**	**49,474**

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 reinvestment 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.

2. Includes only MBS purchases that have already settled.

3. The Federal Reserve retains ownership of securities lent through the Term Securities Lending Facility.

. . . Not applicable.

Source: Federal Reserve Board.

reserve balances fell somewhat, while currency in circulation rose.

International Developments

International Financial Markets

During most of the first quarter of 2009, fears that global economic activity would spiral further downward led to a sharp selloff in foreign equity markets and to rising spreads on foreign corporate debt. Stock indexes in Europe and Japan fell about 20 percent, and European bank shares fell more than 40 percent in response to weak earnings reports and rising fears about the exposure of many Western European banks to emerging Europe. Interbank funding markets were supported by government guarantees of bank debt and other policies put in place during 2008 to aid wholesale funding. These markets remained more stressed than before the financial crisis, but their functioning continued to gradually improve from the serious disarray that occurred last fall.

Rapidly easing monetary policies in many foreign economies, along with further safe-haven flows into Treasury securities, fueled continued dollar appreciation over the first two months of the year. The Federal Reserve's broadest measure of the nominal trade-weighted foreign exchange value of the dollar rose more than 6 percent during January and February. However, beginning in March, the dollar depreciated as the global outlook improved a bit and investors accordingly shifted away from Treasury securities to riskier assets abroad, reversing the pattern observed in the fourth quarter of 2008. During the spring, the dollar fell most sharply against currencies of major commodity-producing economies such as Australia and Canada, as the improvement in the global outlook also boosted commodity prices. On net, the Federal Reserve's broad measure of the nominal exchange value of the dollar is about 2 percent lower than it was at the start of the year but remains well above its mid-2008 lows.

Stock markets around the world rebounded in the second quarter along with prospects for global growth. Financial stocks led this rise in the advanced foreign economies as some large banks reported strong earnings growth, which benefited from the low interest rate environment. On net, headline European stock indexes are now about where they were at the start of the year. Equity prices in the emerging market economies, which were helped both by the improved outlook and by an increased willingness on the part of investors to hold riskier assets, are now 20 to 75 percent higher than at the start of the year.

The decisions of several foreign central banks to engage in nontraditional monetary policies appeared to have some effect on longer-term interest rates. Yields on long-term British gilts fell 60 basis points around the March 5 announcement by the Bank of England that it would begin purchasing government securities, and yields on European covered bonds fell nearly 30 basis points over the week following the May 7 announcement by the European Central Bank (ECB) that it would purchase covered bonds. However, as the economic outlook improved some in the second quarter, and amid concerns about mounting fiscal deficits and debts, yields on nominal benchmark bonds rose. On balance, nominal benchmark bond yields in major foreign countries are higher than at the start of the year, even as yields on inflation-protected bonds have fallen.

The Financial Account

The pattern of financial flows between the United States and the rest of the world was strongly affected by the intensification of financial turmoil in the fall of 2008 and, more recently, by the easing of strains in financial markets. In the second half of 2008, U.S. investors withdrew to some extent from foreign securities, and foreigners slowed their purchases of U.S. assets. At the same time, foreigners noticeably shifted their purchases away from U.S. corporate and agency securities and toward safer U.S. Treasury securities. For 2008 as a whole, the size of the purchases of U.S. Treasury securities by foreigners was unprecedented, nearly doubling the previous record.

The pattern of flows has normalized somewhat this year. The pace of private foreign net Treasury purchases slowed in the first quarter, and in April flows turned to net sales, primarily of short-term Treasury securities, signaling some reversal of the flight to safety. Foreign demand for most other U.S. securities, however, remained extremely weak throughout the first part of 2009. Foreigners continued to sell U.S. corporate and agency securities through April, although they did show renewed interest in U.S. corporate stocks in March, April, and particularly May.

Foreign official institutions resumed strong net purchases of U.S. assets in the first several months of 2009, although acquisitions remained centered on U.S. Treasury securities. This development followed net sales in the fourth quarter of 2008 as some countries sold reserves to support their currencies; although foreign official institutions made large net purchases of Treasury securities, they sold larger amounts of other U.S. assets. Foreign official acquisitions of Treasury securities were concentrated in short-term bills for some months during the winter, but official acquisitions of long-term notes and bonds have been similar to those of bills over the period since February.

Resumption of portfolio investment abroad by U.S. investors in 2009 also pointed to reduced risk aversion in financial markets. Following unprecedented net inflows in this category in 2008 resulting from U.S. residents bringing home their foreign investments, outflows resumed in early 2009 as U.S. investors returned to net purchases of foreign securities. Finally, starting this year, improvements in the tone of interbank funding markets led to a resumption of net lending abroad by U.S. banks after a sharp contraction of lending in the fourth quarter. As private sources of dollar liquidity re-emerged, foreign banks were able to repay the loans they had received from their central banks. These foreign central banks, in turn, reduced the outstanding amounts of U.S. dollars drawn on swap lines from the Federal Reserve.

Advanced Foreign Economies

The contraction of economic activity in the major advanced foreign economies deepened in the first quarter, as financial turbulence, shrinking world trade, adverse wealth effects, and eroding business and consumer confidence continued to weigh on activity. GDP fell particularly sharply in Germany and Japan, which were hit hard by a contraction in manufacturing exports. Domestic demand plummeted across the advanced foreign economies, with double-digit declines in investment spending and sizable negative contributions of inventories to economic growth. Housing markets also continued to weaken in the first quarter, with prices and building activity declining. By the second quarter, however, monthly indicators of economic activity in these economies began to show some moderation in the pace of contraction. Purchasing managers indexes and surveys of business confidence rebounded in the second quarter from the exceptionally low levels reached in the first quarter, while industrial production stabilized somewhat.

Twelve-month consumer price inflation continued to decline during the first half of the year, driven down by the fall in oil and other commodity prices since mid-2008 and the significant increase in economic slack. Headline inflation fell to near or below zero in all major economies except the United Kingdom, where the depreciation of the pound late last year contributed to keeping inflation around 2 percent. Excluding food and energy prices, the slowing in consumer prices in these economies was more limited.

Foreign central banks responded to worsening economic conditions and reduced inflation by aggressively cutting policy rates and, in some cases, initiating unconventional monetary easing. The ECB and Bank of England each reduced its key policy rate 150 basis points over the first half of 2009, while the Bank of Canada lowered its rate 125 basis points. The Bank of Japan, which had already cut the overnight uncollateralized call rate to 10 basis points, kept rates at that minimal level. As policy rates fell to very low levels, central banks implemented nontraditional policies to provide further support to activity. The Bank of England established an Asset Purchase Facility to purchase up to £125 billion in government and corporate debt; the Bank of Japan announced that it would increase its purchase of Japanese government bonds, including longer-term bonds, and would purchase commercial paper outright; and the ECB announced plans to purchase as much as €60 billion in covered bonds over the next year and conducted its first one-year financing operations on June 24, allocating €442 billion.

Emerging Market Economies

The global financial crisis took its toll on the emerging market economies as well. After falling steeply in the fourth quarter, economic activity contracted sharply again in the first quarter. However, recent data on business sentiment, production, and retail sales suggest that economic activity may be starting to recover.

Among the larger developing economies, only China and India have maintained positive growth during the global slowdown. Chinese growth was supported in the first quarter and boosted significantly further in the second quarter by a large fiscal stimulus package, which focused on infrastructure investment, and by an enormous jump in credit growth. India's economy also was supported by fiscal stimulus and was relatively insulated from the negative global shock because it is less open. Elsewhere in emerging Asia, the economies of Hong Kong, Malaysia, Singapore, South Korea, Taiwan, and Thailand all contracted at double-digit annual rates in at least one quarter, in line with their deep trade and financial linkages with the global economy. More recently, however, indicators such as industrial production have turned up in some of these countries. In addition, exports, although they remain weak, have edged higher in some countries, partly because of stimulus-driven demand from China.

Economic activity in Mexico contracted sharply late last year and again in the first quarter, owing largely to Mexico's strong ties to the United States. The outbreak of the H1N1 virus was a significant drag on Mexican economic activity in the second quarter. In addition, the economies of Mexico and some other Latin American countries continued to be negatively affected by the sharp fall in commodity prices in the second half of last year. However, as in Asia, industrial production in several Latin American countries has recently turned higher. In Brazil, the automobile sector, which has received government support, appears to have led a rebound in output.

Several countries in emerging Europe continued to experience intense financial stress and sharp economic contractions in the first quarter, with activity declining at an especially precipitous rate in Latvia. The region has faced external financing difficulties as a result of large external imbalances and high dependence on foreign capital flows. Hungary, Latvia, Romania, and Ukraine are among the countries that have received official assistance from the International Monetary Fund.

As the global economy has slowed, inflation in emerging market economies has diminished. Inflation in emerging Asia has decreased significantly, especially in China where consumer prices in June were below their year-earlier levels. Reduced price pressures and weak economic growth prompted significant monetary easing in several Asian emerging market economies. Inflation in Latin America has fallen less sharply. Notably, Mexican inflation remains near its recent high, due in part to pass-through from the peso's depreciation earlier this year. In these circumstances, monetary easing has taken place in Latin America, but nominal interest rates remain somewhat higher than in Asia. Many emerging market economies have undertaken fiscal stimulus this year, although the degree has varied and all stimulus packages have been smaller than that in China.

Part 3
Monetary Policy: Recent Developments and Outlook

Monetary Policy over the First Half of 2009

Over the second half of 2008, the Federal Open Market Committee (FOMC) eased the stance of monetary policy by decreasing its target for the federal funds rate from 2 percent to a range between 0 and ¼ percent and took a number of additional actions to increase liquidity and improve the functioning of financial markets. During the first half of 2009, the FOMC maintained its target range for the federal funds rate of 0 to ¼ percent, and it extended and modified the nontraditional policy actions taken previously.

The data reviewed at the January 27–28 FOMC meeting indicated a continued sharp contraction in economic activity. The housing market remained on a steep downward trajectory, consumer spending continued its significant decline, the slowdown in business equipment investment intensified, and foreign demand had weakened. Conditions in the labor market had continued to deteriorate rapidly, and the drop in industrial production had accelerated. Headline consumer prices fell in November and December, reflecting declines in consumer energy prices; core consumer prices were about flat in those months. Although credit conditions generally had remained tight, some financial markets—particularly those that were receiving support from Federal Reserve liquidity facilities and other government actions—exhibited modest signs of improvement. Meeting participants—Federal Reserve Board governors and Federal Reserve Bank presidents—anticipated that a gradual recovery in U.S. economic activity would begin in the second half of the year in response to monetary easing, additional fiscal stimulus, relatively low energy prices, and continued efforts by the government to stabilize the financial sector and increase the availability of credit. Committee members agreed that keeping the target range for the federal funds rate at 0 to ¼ percent would be appropriate. In its January statement, the FOMC reiterated that the Federal Reserve would 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 mortgage-backed securities (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 indicated that it would continue to monitor carefully the size and composition of the Federal Reserve's balance sheet in light of evolving financial market developments. It would 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.

On February 7, 2009, the Committee met by conference call in a joint session with the Board of Governors to discuss the potential role of the Federal Reserve in the Treasury's forthcoming Financial Stability Plan. The Federal Reserve's primary direct role in the plan would be through an expansion of the previously announced Term Asset-Backed Securities Loan Facility (TALF), which would be supported by additional funds from the Treasury's Troubled Asset Relief Program (TARP). It was anticipated that such an expansion would provide additional assistance to financial markets and institutions in meeting the credit needs of households and businesses and thus would support overall economic activity.

At the March FOMC meeting, nearly all participants indicated that economic conditions had deteriorated relative to their expectations at the time of the January meeting. Economic activity continued to fall sharply, with widespread declines in payroll employment and industrial production. Consumer spending had remained flat at a low level, the housing market weakened further, and nonresidential construction fell. Business spending on equipment and software had continued to decline across a broad range of categories. Despite the cutbacks in production, inventory overhangs appeared to have worsened in a number of areas. Of particular note was the sharp fall in foreign economic activity, which was having a negative effect on U.S. exports. Both headline and core consumer prices had edged up in January and February. Credit conditions remained very tight, and financial markets continued to be fragile and unsettled, with pressures on financial institutions generally having intensified over the past few months. Overall, participants expressed concern about downside risks to an outlook for activity that was already weak. Nonetheless, looking beyond the very near term, participants saw a number of market forces and policies then in place as eventually leading to economic recovery. Notably, the low level of mortgage interest rates, reduced house prices, and the Administration's new programs to encourage mortgage refinancing and mitigate foreclosures ultimately could bring about a lower cost of homeownership, a sustained increase in home sales, and a stabilization of house prices.

In light of the deterioration in the economic situation and outlook, Committee members agreed that substantial additional purchases of longer-term assets would be appropriate. In its March statement, the Committee announced that, to provide greater support to mortgage lending and housing markets, it would increase the size of the Federal Reserve's balance sheet further by purchasing up to an additional \$750 billion of agency MBS, bringing its total purchases of these securities up to \$1.25 trillion in 2009, and that it would increase its purchases of agency debt this year by up to \$100 billion to a total of up to \$200 billion. Moreover, to help improve conditions in private credit markets, the Committee decided to purchase up to \$300 billion of longer-term Treasury securities over the next six months. The Committee decided to maintain the target range for the federal funds rate at 0 to ¼ percent and noted in its March statement that it anticipated that economic conditions were likely to warrant exceptionally low levels of the federal funds rate for an extended period. The Committee also noted that the Federal Reserve had launched the TALF to facilitate the extension of credit to households and small businesses, and it anticipated that the range of eligible collateral for this facility was likely to be expanded to include other financial assets. The Committee stated that it would continue to carefully monitor the size and composition of the Federal Reserve's balance sheet in light of evolving financial and economic developments.

On March 23, the Federal Reserve and the Treasury issued a joint statement on the role of the Federal Reserve in preserving financial and monetary stability. In the statement, the Federal Reserve and the Treasury agreed to continue to cooperate on measures to improve the stability and functioning of the financial system while minimizing the associated credit risk to the Federal Reserve and preserving the ability of the Federal Reserve to achieve its monetary policy objectives. The two government entities also agreed to work together with the Congress on a comprehensive resolution regime for systemically important financial institutions, and the Treasury promised to remove the emergency loans for systemically important institutions from the Federal Reserve's balance sheet over time to the extent its authorities permit.

At the FOMC meeting on April 28 and 29, participants noted that the pace of decline in some components of final demand appeared to have slowed. Consumer spending firmed in the first quarter after dropping markedly during the second half of 2008. Housing activity remained depressed but seemed to have leveled off in February and March. In contrast, businesses had cut production and employment substantially in recent months—reflecting, in part, inventory overhangs that had persisted into the early part of the year—and fixed investment continued to contract. Headline and core consumer prices rose at a moderate pace over the first three months of the year. Participants noted that financial market conditions had generally strengthened, and surveys and anecdotal reports pointed to a pickup in household and business confidence, which nonetheless remained at very low levels. Yields on Treasury and agency securities had fallen after the release of the March FOMC statement, which noted the increase in planned purchases of longer-term securities. However, this initial drop was subsequently reversed amid the improved economic outlook, an easing of concerns about financial institutions, and perhaps some unwinding of flight-to-quality flows. Participants anticipated that the acceleration in final demand and economic activity over the next few quarters would be modest, with growth of consumption expenditures likely to be restrained and business investment spending probably shrinking further. Looking further ahead, participants considered a number of factors that would be likely to restrain the pace of economic recovery over the medium term. Strains in credit markets were expected to recede only gradually as financial institutions continued to rebuild their capital and remained cautious in their approach to asset-liability management, especially given that the outlook for credit performance would probably remain weak. Households would likely continue to be cautious, and their desired saving rates would be relatively high over the extended period that would be required to bring their wealth back up to more normal levels relative to income. The stimulus from fiscal policy was expected to diminish over time as the government budget moved to a sustainable path. Demand for U.S. exports would also take time to revive, reflecting the gradual recovery of economic activity in our major trading partners.

Against this backdrop, the FOMC indicated that it would maintain the target range for the federal funds rate at 0 to ¼ percent and anticipated that economic conditions would be likely to warrant exceptionally low levels of the federal funds rate for an extended period. The Committee reiterated that, to provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve would purchase a total of up to $1.25 trillion of agency MBS and up to $200 billion of agency debt by the end of the year. In addition, the Federal Reserve would buy up to $300 billion of Treasury securities by autumn. The Committee would continue to evaluate the timing and overall amounts of its purchases of securities in light of the evolving economic outlook and conditions in financial markets. The Federal Reserve was facilitating the extension of credit to households and businesses and supporting the functioning of financial markets through a range of liquidity programs. The Committee indicated that it would continue to carefully monitor the size and composition of the Federal Reserve's balance sheet in light of financial and economic developments.

The information reviewed at the June 23–24 FOMC meeting suggested that the economy remained weak, though declines in activity seemed to be lessening. Consumer spending appeared to have stabilized, sales and starts of new homes flattened out, and the recent declines in capital spending did not look as severe as those that had occurred around the turn of the year. At the same time, labor markets and industrial production continued to deteriorate sharply. Apart from a tax-induced jump in tobacco prices, consumer price inflation was fairly quiescent in recent months, although an upturn in energy prices appeared likely to boost headline inflation in June. Conditions and sentiment in financial markets had continued to show signs of improvement since the last meeting. The results of the Supervisory Capital Assessment Program (SCAP) were positively received by financial markets, credit default swap spreads of banking organizations declined considerably, and the institutions involved in the SCAP were subsequently able to issue significant amounts of public equity and nonguaranteed debt. The functioning of short-term funding markets improved, broad stock price indexes increased, and spreads on corporate bonds continued to narrow. Nominal Treasury yields climbed steeply, reflecting investors' perceptions of an improved economic outlook, a reversal of flight-to-quality

2. Extensions and Modifications of Federal Reserve Liquidity Programs

Liquidity program	Extension	Modification
Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF)	Extended to February 1, 2010	Money market mutual funds have to experience material outflows before being able to sell asset-backed commercial paper that would be eligible collateral for AMLF loans.
Central bank swap lines	Extended to February 1, 2010	. . .
Commercial Paper Funding Facility	Extended to February 1, 2010	. . .
Money Market Investor Funding Facility	Expiration date remains at October 30, 2009	. . .
Primary Dealer Credit Facility	Extended to February 1, 2010	. . .
Term Asset-Backed Securities Loan Facility	Expiration date remains at December 31, 2009	. . .
Term Auction Facility	No fixed expiration date	Auction amounts reduced initially to $125 billion.
Term Securities Lending Facility	Extended to February 1, 2010	Auctions backed by Schedule 1 collateral suspended effective July 1, 2009. Auctions backed by Schedule 2 collateral now conducted every four weeks. Total amount offered reduced initially to $75 billion.

. . . Not applicable.
Source: Federal Reserve Board.

flows, and technical factors related to the hedging of mortgage holdings.

In its June statement, the FOMC reiterated that it would employ all available tools to promote economic recovery and preserve price stability. It noted that it would maintain its target range for the federal funds rate at 0 to ¼ percent and continued to anticipate that economic conditions would likely warrant exceptionally low levels of the federal funds rate for an extended period. The FOMC indicated that, as it had previously announced, to provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve would purchase a total of up to $1.25 trillion of agency MBS and up to $200 billion of agency debt by the end of the year. In addition, the Federal Reserve would buy up to $300 billion of Treasury securities by autumn. The Committee noted that it would continue to evaluate the timing and overall amounts of its purchases of securities in light of the evolving economic outlook and conditions in financial markets. The FOMC also stated that the Federal Reserve was monitoring the size and composition of its balance sheet and would make adjustments to its credit and liquidity programs as warranted.

Conditions in financial markets had improved notably by the end of June, although market functioning in many areas remained impaired and seemed likely to remain strained for some time. Usage of some of the Federal Reserve's liquidity programs had also decreased in recent months. Against this backdrop, on June 25, the Federal Reserve announced extensions of and modifications to a number of its liquidity programs (see table 2 for a summary of the changes).[14] The Federal Reserve noted that the Board and the

14. For more details, see Board of Governors of the Federal Reserve System (2009), "Federal Reserve Announces Extensions of and Modifica-

FOMC would continue to monitor closely the condition of financial markets and the need for and effectiveness of the Federal Reserve's special liquidity facilities and arrangements. Should the recent improvements in market conditions continue, the Board and the FOMC anticipated that a number of the facilities might not need to be extended beyond February 1, 2010. However, if financial stresses did not moderate as expected, the Board and the FOMC were prepared to extend the terms of some or all of the facilities as needed to promote financial stability and economic growth. The public would receive timely notice of planned extensions, discontinuations, or modifications of Federal Reserve programs. The next section of this report, "Monetary Policy as the Economy Recovers," has further discussion related to the evolution of these programs.

Over the first half of the year, the Federal Reserve also undertook a number of initiatives to improve communications about its policy actions. These initiatives are described more fully in the box titled "Federal Reserve Initiatives to Increase Transparency."

Monetary Policy as the Economy Recovers

At present, the focus of monetary policy is on stimulating economic activity in order to limit the degree to which the economy falls short of full employment and to prevent a sustained decline in inflation below levels consistent with the Federal Reserve's legislated objectives. Economic conditions are likely to warrant accommodative monetary policy for an extended period. At some point, however, economic recovery will take hold, labor market conditions will improve, and the downward pressures on inflation will diminish. When this process has advanced sufficiently, the stance of policy will need to be tightened to prevent inflation from rising above levels consistent with price stability and to keep economic activity near its maximum sustainable level. The FOMC is confident that it has the necessary tools to withdraw policy accommodation, when such action becomes appropriate, in a smooth and timely manner.

Monetary policy actions taken over the past year have led to a considerable increase in the assets held by the Federal Reserve. This increase in assets reflects both the expansion of Federal Reserve liquidity facilities and the purchases of longer-term securities. On the margin, the extension of credit and acquisition of assets by the Federal Reserve has been funded by crediting the reserve accounts of depository institutions (henceforth referred to as banks). Thus, the increase in Federal Reserve assets has been associated with substantial growth in banks' reserve balances, leaving the level of reserves far above that typically observed when short-term interest rates were significantly greater than zero.

To some extent, a contraction in the stock of reserve balances will occur automatically as financial conditions improve. In particular, most of the liquidity facilities deployed by the Federal Reserve in the current period of financial turmoil are priced at a premium over normal interest rate spreads or have a minimum bid rate that is high enough to make them unattractive under normal market conditions. Thus, the sizes of these programs, as well as the stock of reserve balances they create, will tend to diminish automatically as financial strains abate. Indeed, as

tions to a Number of Its Liquidity Programs," press release, June 25.

Federal Reserve Initiatives to Increase Transparency

The Federal Reserve took a number of nontraditional policy actions during the current episode of financial turmoil. In late 2008, Chairman Bernanke asked Vice Chairman Kohn to lead a review of how Federal Reserve disclosure policies should be adapted to make more information about these programs available to the public and to the Congress. A guiding principle of the review was that the Federal Reserve would seek to provide to the public as much information and analysis as possible, consistent with its objectives of promoting maximum employment and price stability. The Federal Reserve subsequently created a separate section of its website devoted to providing data, explanations, and analyses of its lending programs and balance sheet.[1] Postings in the first half of 2009 included additional explanatory material and details about a number of Federal Reserve credit and liquidity programs, the annual financial statements of the 12 Federal Reserve Banks, the Board of Governors, and the limited liability companies (LLCs) created in 2008 to avert the disorderly failures of The Bear Stearns Companies, Inc., and American International Group, Inc., as well as the most recent reports to the Congress on the Federal Reserve's emergency lending programs.

On June 10, the Federal Reserve issued the first of a series of monthly reports to provide more information on its credit and liquidity programs.[2] For many of those programs, the new information provided in the report includes the number of borrowers and the amounts borrowed by type of institution, collateral by type and credit rating, and data on the concentration of borrowing. The report also includes information on liquidity swap usage by country, quarterly income earned on different classes of Federal Reserve assets, and asset distribution and other information on the LLCs. In addition, the report summarizes and discusses recent developments across a number of Federal Reserve programs. In addition to the new report, the Federal Reserve Bank of New York recently made available the investment management agreements related to its financial stability and liquidity activities.[3]

1. This section of the Board's website is available at www.federalreserve.gov/monetarypolicy/bst.htm.

2. See Board of Governors of the Federal Reserve System (2009), *Federal Reserve System Monthly Report on Credit and Liquidity Programs and the Balance Sheet* (Washington: Board of Governors, July).

3. Federal Reserve Bank of New York (2009), "Vendor Information," www.newyorkfed.org/aboutthefed/vendor_information.html.

noted elsewhere in this report, total credit extended to banks and other market participants (excluding support of critical institutions) declined from about $1.5 trillion as of December 31, 2008, to less than $600 billion as of July 15, 2009, as financial conditions improved. In addition, redemptions of the Federal Reserve's holdings of agency debt, agency MBS, and longer-term Treasury securities are expected to occur at a rate of $100 billion to $200 billion per year over the next few years, leading to further reductions in reserve balances.

But even after lending facilities have wound down and holdings of long-term assets have begun to run off, the volume of assets on the Federal Reserve's balance sheet may remain very large for some time. Without additional actions, the level of bank reserves would continue to remain elevated as well.

Despite continued large holdings of assets, the Federal Reserve will have at its disposal two broad means of tightening monetary policy at the appropriate time. In principle, either of these methods would suffice to raise short-term interest rates; however, to ensure effectiveness, the two methods will most likely be used in combination.

The first method for tightening monetary policy relies on the authority that the Congress granted to the Federal Reserve last fall to pay interest on the balances maintained by banks. By raising the rate it pays on banks' reserve balances, the Federal Reserve will be able to tighten monetary policy by inducing increases in the federal funds rate and other short-term market interest rates. In general, banks will not supply funds to the money market at an interest rate lower than the rate they can earn risk free at the Federal Reserve. Moreover, they should compete to borrow any funds that are offered in the market at rates below the rate of interest paid by the Federal Reserve, as such borrowing allows them to earn a spread without any risk. Thus, raising the interest rate paid on balances that banks hold at the Federal Reserve should provide a powerful upward influence on short-term market interest rates, including the federal funds rate, without the need to drain reserve balances. A number of foreign central banks have been able to maintain overnight interbank interest rates at or above the level of interest paid on bank reserves even in the presence of unusually high levels of reserve balances (see the box titled "Foreign Experience with Interest on Reserves").

Despite this logic, the federal funds rate has been somewhat lower than the rate of interest banks earn on reserve balances; the gap was especially noticeable in October and November 2008, when payment of interest on reserves first began. This gap appears to have reflected several factors: First, the Federal Reserve is not allowed to pay interest on balances held by nondepository institutions, including some large lenders in the federal funds market such as the government-sponsored enterprises (GSEs). Such institutions may have an incentive to lend at rates below the rate that banks receive on reserve balances. Second, the payment of interest on reserves was a new policy at the time that the gap was particularly noticeable, and banks may not have had time to adjust their operations to the new regime. Third, the unusually strained conditions in financial markets at that time may have reduced the willingness of banks to arbitrage by borrowing in the federal funds market at rates below the rate paid on reserve balances and earning a higher rate by increasing their deposits at the Federal Reserve. The latter two factors are not likely to persist, particularly as the economy and financial markets recover. Moreover, if, as the economy recovers, large-scale lending in the federal funds market by nondepository institutions threatens to hold the federal funds rate below its target, the Federal Reserve has various options to deal with the problem. For example, it could offer these institutions the option of investing in reverse repurchase agreements. Under these transactions, the Federal Reserve sells securities from its portfolio, thereby removing funds from the market, and agrees to buy back the securities at a later date.[15] Eliminating the incentive of nondepository institutions to lend their excess funds into

15. These transactions are referred to as reverse repurchase agreements to distinguish them from repurchase agreements in which the Federal Reserve is the investor.

Foreign Experience with Interest on Reserves

Paying interest on excess reserve balances, either directly or by allowing banks to place excess balances into an interest-bearing account, is a standard tool used by major foreign central banks. Many have used interest on reserves, in combination with other tools, to maintain a floor under overnight interbank interest rates both in normal circumstances and during the period of financial turmoil. The European Central Bank (ECB), for example, has long allowed banks to place excess reserves into a deposit facility that pays interest at a rate below the ECB's main refinancing rate (its bellwether policy rate). The quantity of funds that banks hold in that facility increased sharply as the ECB expanded its liquidity-providing operations last fall and has remained well above pre-crisis levels; as a result, the euro-area overnight interbank rate fell from a level close to the main refinancing rate toward the rate the ECB pays on deposits—but, importantly, not below that rate. Since November 2008, the Bank of Japan (BOJ) on a temporary basis has paid interest on excess reserve balances, at a rate of 10 basis points per year, which is also its current target for the overnight uncollateralized call rate; the BOJ noted that its action was intended to keep the call rate close to the targeted level as it supplied additional liquidity to the banking system. Indeed, the overnight rate has traded near 10 basis points in recent months, even as reserve balances at the BOJ have risen substantially, returning to their level during much of 2002, when the BOJ was implementing its Quantitative Easing Policy and the call rate was trading at 1 basis point or below. The Bank of Canada and the Bank of England also have used their standing deposit facilities to help manage interbank interest rates.

short-term money markets would help ensure that raising the rate of interest paid on reserves would raise the federal funds rate and tighten monetary conditions even if the level of reserve balances were to remain high.

The second method for tightening monetary policy, despite a high level of assets on the Federal Reserve's balance sheet, is to take steps to reduce the overall level of reserve balances. Policymakers have several options for reducing the level of reserve balances should such action be desired. First, the Federal Reserve could engage in large-scale reverse repurchase agreements with financial market participants, including GSEs as well as other institutions. Reverse repurchase agreements are a traditional tool of Federal Reserve monetary policy implementation. Second, the Treasury could sell more bills and deposit the proceeds with the Federal Reserve. The Treasury has been conducting such operations since last fall; the resulting deposits are reported on the Federal Reserve balance sheet as the Supplementary Financing Account. One limitation on this option is that the associated Treasury debt is subject to the statutory debt ceiling. Also, to preserve monetary policy independence, the Federal Reserve must ensure that it can achieve its policy objectives without reliance on the Treasury if necessary. A third option is for the Federal Reserve to offer banks the opportunity to hold some of their balances as term deposits. Such deposits would pay interest but would not have the liquidity and transactions features of reserve balances. Term deposits could not be counted toward reserve requirements, nor could they be used to avoid overnight overdraft penalties in reserve accounts.[16] Each of these three policy options would allow a tightening of monetary policy by draining reserve balances and raising short-term interest rates. As noted earlier, measures to drain reserves will likely be used in conjunction with increases in the interest rate paid on reserves to tighten conditions in short-term money markets.

Raising the rate of interest on reserve balances and draining reserves through the options just described would allow policy to be tightened even if the level of assets on the Federal Reserve's balance sheet remained very high. In addition, the Federal Reserve retains the option to reduce its stock of assets by selling off a portion of its holdings of longer-term securities before they mature. Asset sales by the Federal Reserve would serve to raise short-term interest rates and tighten monetary policy by reducing the level of reserve balances; in addition, such sales could put upward pressure on longer-term interest rates by expanding the supply of longer-term assets available to investors. In an environment of strengthening economic activity and rising inflation pressures, broad-based increases in interest rates could facilitate the achievement of the Federal Reserve's dual mandate.

In short, the Federal Reserve has a wide range of tools that can be used to tighten the stance of monetary policy at the point that the economic outlook calls for such action. However, economic conditions are not likely to warrant a tightening of monetary policy for an extended period. The timing and pace of any future tightening, together with the mix of tools employed, will be calibrated to best foster the Federal Reserve's dual objectives of maximum employment and price stability. ■

16. To be successful, especially in a period of rising interest rates, such deposits likely would have to pay rates of interest above the overnight rate on reserve balances. To prevent banks from earning risk-free profits by borrowing from the Federal Reserve and investing the proceeds in term deposits, the rate of remuneration on term deposits would have to be kept lower than the rates the Federal Reserve charges on its lending facilities, such as the discount window.