Prefatory Note

The attached document represents the most complete and accurate version available based on original files from the FOMC Secretariat at the Board of Governors of the Federal Reserve System.

Please note that some material may have been redacted from this document if that material was received on a confidential basis. Redacted material is indicated by occasional gaps in the text or by gray boxes around non-text content. All redacted passages are exempt from disclosure under applicable provisions of the Freedom of Information Act.

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MARCH 11, 2010

MONETARY POLICY ALTERNATIVES

PREPARED FOR THE FEDERAL OPEN MARKET COMMITTEE
BY THE STAFF OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

RECENT DEVELOPMENTS

SUMMARY

Financial conditions generally remained supportive of economic growth over the intermeeting period. Equity prices increased about 5½ percent, while spreads on corporate bonds edged down amid modest further improvement in indicators of corporate credit quality. Yields on Treasury securities rose slightly. Partly as a result of somewhat weaker-than-expected incoming economic data, TIPS-based inflation compensation decreased at all horizons and the expected path of the target federal funds rate flattened a bit. Although the broad dollar index changed little, on balance, weak incoming data for Europe and concerns about fiscal strains in some European countries contributed to a significant appreciation of the dollar relative to the euro and the British pound. Market functioning was generally stable, even as the Federal Reserve continued to close many of its liquidity facilities. Interest rates on residential mortgages and mortgage-backed securities (MBS) were about flat despite the continued tapering of Federal Reserve purchases of agency debt and MBS as those programs neared completion. Bank loans to both businesses and households declined sharply further in January and February, but bond issuance remained solid over that period, and consumer credit increased in January for the first time in a year.

MONETARY POLICY EXPECTATIONS AND TREASURY YIELDS

The FOMC's decision to keep the target range for the federal funds rate unchanged at the January meeting and its retention of the "extended period" language in the statement were widely anticipated by financial market participants and elicited little reaction.[1] Financial markets also responded little to the release of the minutes of the January FOMC meeting on February 17, although investors reportedly took note

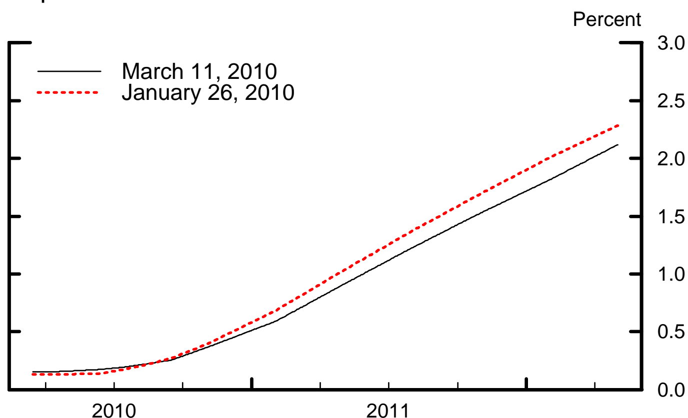
[1] The effective federal funds rate averaged 0.13 percent over the intermeeting period.

of the discussion of potential asset sales and the indication that it would "soon be appropriate" to raise the discount rate. Investors were highly attuned to Federal Reserve communications that could be seen as related to exit strategy. For example, Eurodollar rates moved up and equity futures declined noticeably when the Federal Reserve announced an increase in the primary credit rate from 50 basis points to 75 basis points on February 18. However, that reaction proved transitory as market participants later focused on the part of the announcement that stated the action did not signal any change in the outlook for monetary policy, a message that was reinforced by communications from several Federal Reserve officials. Reaction to the Chairman's testimony accompanying the semiannual Monetary Policy Report was also muted, in part because the material focusing on the exit strategy had been previewed in written testimony released on February 10.

Although Federal Reserve communications had little net effect on the outlook for policy, incoming economic data—particularly lower-than-expected readings on consumer confidence, consumer price inflation, and home sales—led investors to mark down the expected path of the federal funds rate. Futures quotes combined with the staff's standard assumption of a 1-basis-point-per-month term premium in interbank rates imply that the federal funds rate will first increase to more than 25 basis points near the end of the third quarter of 2010 (Chart 1). Market participants now anticipate that the target will reach about 1¾ percent by the end of 2011, roughly 20 basis points lower than at the time of the January FOMC meeting. Market quotes for interest rate caps suggest that investors' assessment of the mode of the funds rate distribution, rather than the mean, was little changed over the intermeeting period, and it appears not to move above 25 basis points until mid-2011. Likewise, the results from the March survey of primary dealers were mostly in line with those from the January survey. The median expectation was for the first increase in the target federal

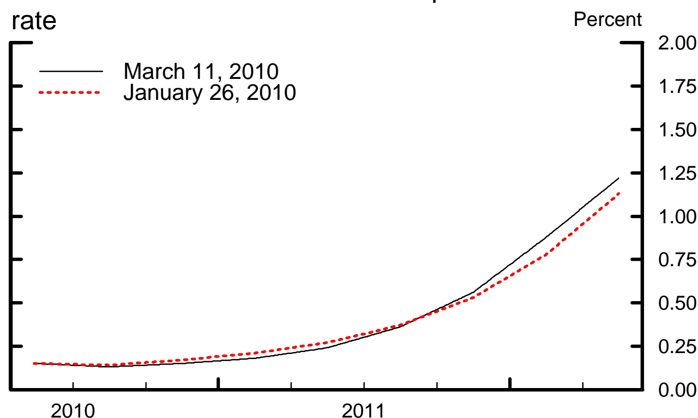
Chart 1
Interest Rate Developments

Expected federal funds rate



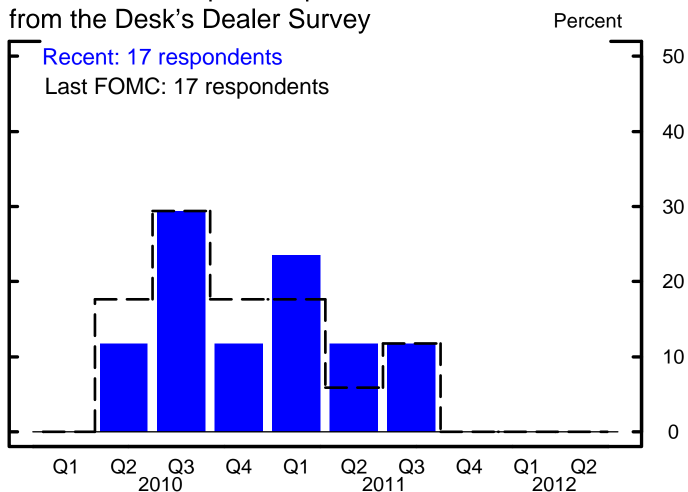
Note. Mean is estimated from federal funds and Eurodollar futures and includes an allowance for term premiums and other adjustments.
Source. CME Group.

Mode of the distribution of the anticipated federal funds rate



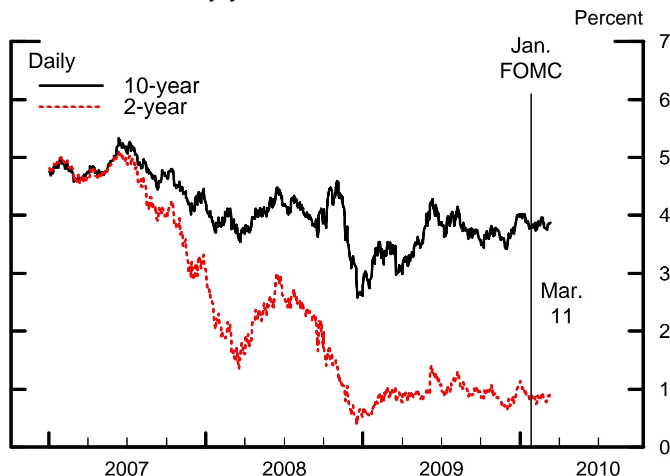
Note. Mode is estimated from distribution of federal funds rate implied by interest-rate caps and includes an allowance for term premiums and other adjustments.
Source. Bloomberg.

Distribution of expected quarter of first rate increase from the Desk's Dealer Survey



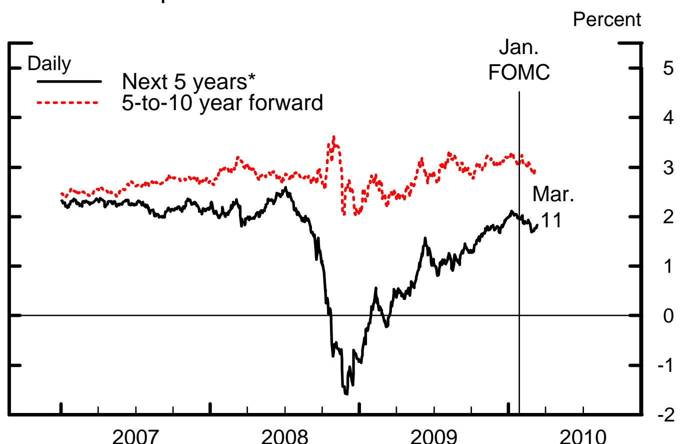
Source. Federal Reserve Bank of New York.

Nominal Treasury yields



Note. Par yields from a smoothed nominal off-the-run Treasury yield curve.
Source. Staff estimates.

Inflation compensation



*Adjusted for the indexation-lag (carry) effect.
Note. Estimates based on smoothed nominal and inflation-indexed Treasury yield curves.
Source. Barclays, PLC., and staff estimates.

10-year Treasury implied volatility

Note. 10-year Treasury note implied volatility derived from options on futures contracts.
Source. Bloomberg.

funds rate to occur in the fourth quarter of this year. Dealers do not anticipate any major changes in the statement at the upcoming meeting.

Yields on 2-year and 10-year nominal Treasury securities edged up, on net, over the intermeeting period. Yields may have been supported by a modest reduction in perceived downside risks to the economic outlook as the economy continued to recover, and by greater optimism that fiscal strains in peripheral Europe will be resolved without undue disruption. Yields on TIPS rose somewhat more than those on their nominal counterparts. Those yields were reportedly buoyed in part by supply pressures, as well as signs of diminished interest in TIPS from retail investors. Reflecting these developments, inflation compensation declined over the period, a move that is consistent with the somewhat weaker-than-expected economic data in addition to the supply factors that contributed to the increase in real yields. Survey measures of long-term inflation expectations also decreased slightly.

The Treasury auctioned more than $300 billion in coupon securities of various maturities over the intermeeting period and indicated that it expected nominal auction sizes to stabilize around their current levels. The auctions were generally well received. Treasury replaced the 20-year TIPS auction with an auction of 30-year TIPS—the first since 2001—and signaled in its mid-quarter refunding statement that it might increase the frequency of TIPS auctions across the curve. On February 12, the President signed legislation that raised the debt ceiling by $1.9 trillion to $14.3 trillion.[2] Treasury's subsequent announcement that it would increase the Supplementary Financing Program (SFP) to $200 billion by April initially generated

[2] According to projections by the staff, the debt ceiling will not become binding again until well into 2011.

some market speculation about its relationship to the onset of policy tightening; as of March 10 these balances totaled $50 billion.[3]

CAPITAL MARKETS

Broad equity price indexes rose 4½ to 6½ percent, on balance, over the intermeeting period, with financial shares gaining about 9 percent (Chart 2).[4] Equity prices were supported by a strong finish to the fourth-quarter earnings season, a development that may also have contributed to a small upward revision in analysts' forecasts of year-ahead earnings through mid-February. The equity premium, measured as the staff's estimate of the expected real return on equities over the next 10 years relative to the real 10-year yield on Treasury securities, remained well above levels observed during the past decade. Option-implied volatility on the S&P 500 index fell back to a fairly low level.

Yields on investment-grade corporate bonds were about unchanged over the intermeeting period, and their spreads over yields on comparable-maturity Treasury securities remained near the levels that prevailed late in 2007. Consistent with improved investor sentiment toward risky assets, yields and spreads on speculative-grade bonds edged down, and secondary market prices of leveraged loans rose further. Indicators of the credit quality of nonfinancial firms continued to improve, on balance. Firms' holdings of liquid assets rose and leverage declined in the fourth

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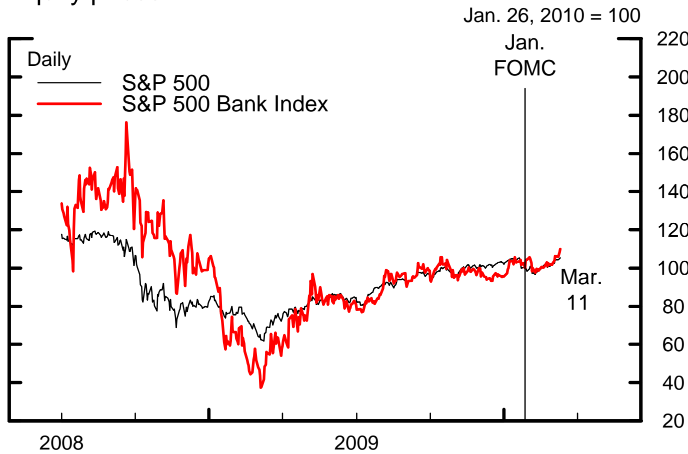
[3] On March 11, the SFP increased to $75 billion.

[4] Some financial markets experienced large price movements in the three business days between the publication of the Bluebook on January 21 and the second day of the January FOMC meeting, January 27. Those movements owed in part to concerns about the announcement of monetary policy tightening in China, greater concerns about fiscal strains in peripheral European countries, and proposed new regulations on U.S. financial institutions. Broad equity price indexes declined about 2¼ percent, on balance over that period, and bond spreads widened noticeably, with yields on investment-grade corporate securities rising almost 10 basis points and yields on speculative-grade debt increasing about 15 basis points, while Treasury yields changed little.

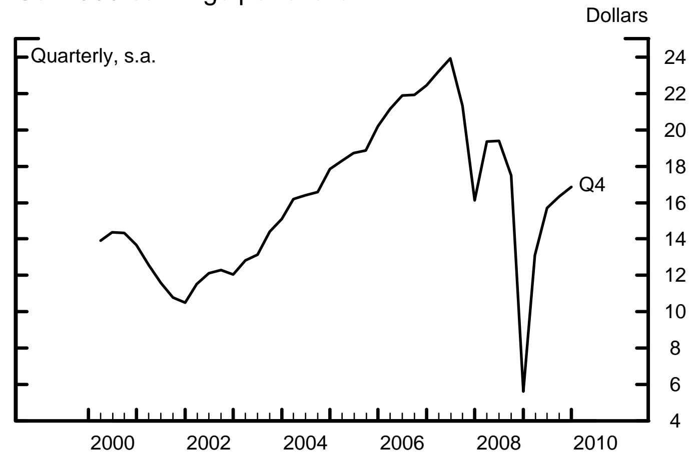
Chart 2
Asset Market Developments

Equity prices



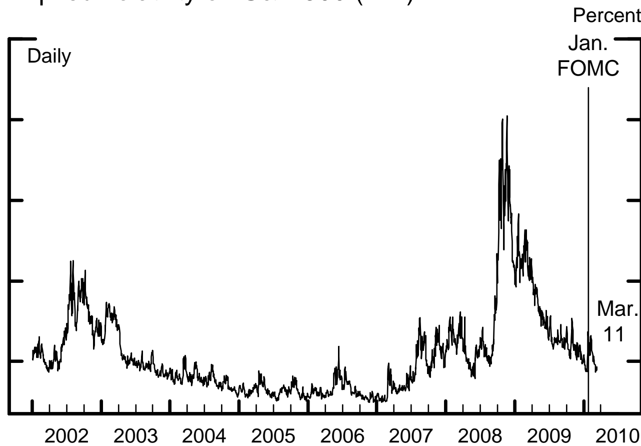
Source. Bloomberg.

S&P 500 earnings per share



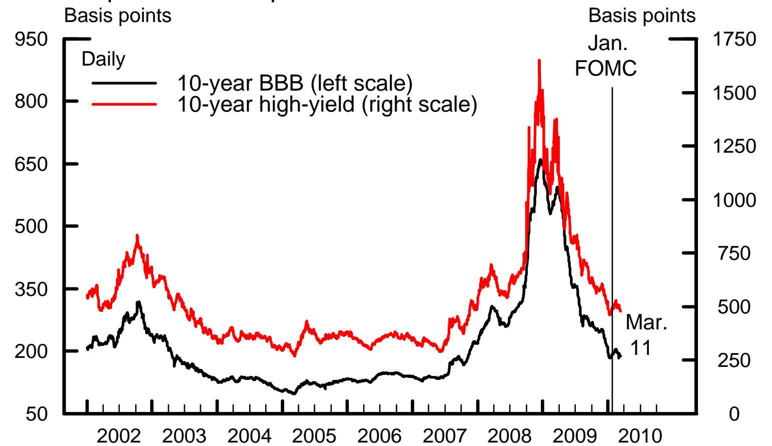
Source. Thomson Financial.

Implied volatility on S&P 500 (VIX)



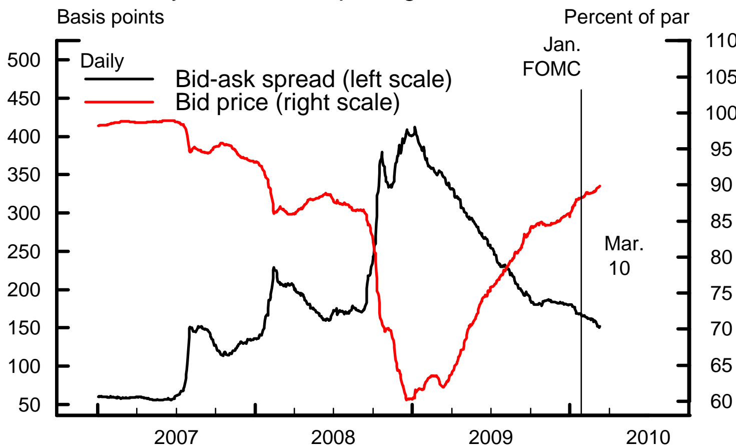
Source. Chicago Board Options Exchange.

Corporate bond spreads



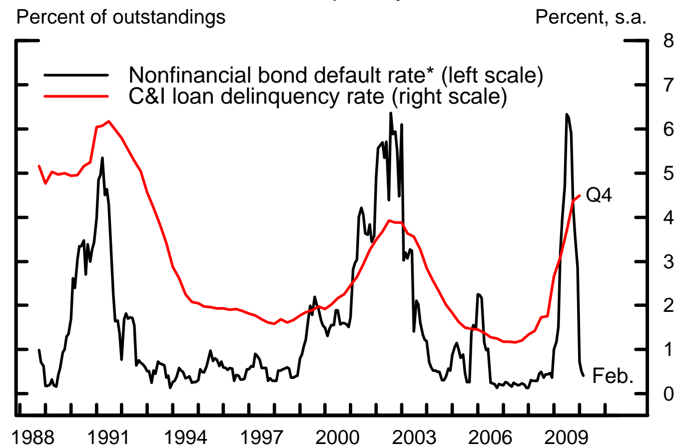
Note. Measured relative to a smoothed nominal off-the-run Treasury yield curve.
Source. Merrill Lynch and staff estimates.

Secondary loan market pricing



Source. LSTA/LPC Mark-to-Market Pricing.

Selected default and delinquency rates



* 6-month trailing defaults divided by beginning-of-period outstandings, at an annual rate.

Source: For default rate, Moody's Investors Service; for delinquency rate, Call Report data.

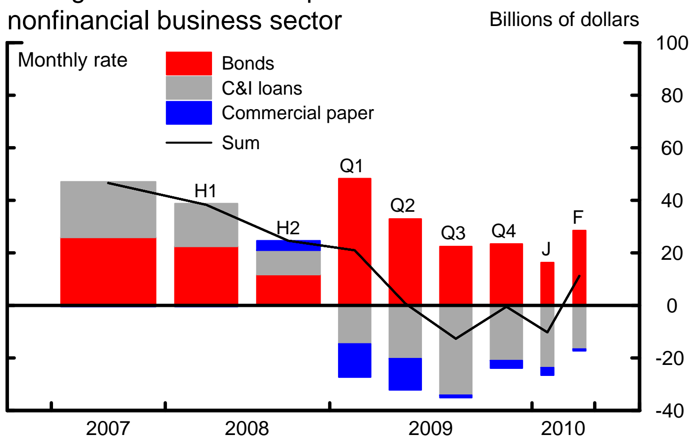
quarter of last year; the rate of increase in the delinquency rate on C&I loans slowed considerably. Meanwhile, the six-month trailing corporate bond default rate has declined further in January and February, reaching a level consistent with those seen in the previous two expansions. Ratings upgrades of nonfinancial bonds continued over the past two months at the same modest pace as in the second half of last year, and downgrades so far this year have not been material. The year-ahead expected default frequency for nonfinancial firms from Moody's KMV moved down on balance in January and February, but remained elevated.

Overall, net debt financing by nonfinancial businesses was near zero in January and February (Chart 3). Gross issuance of investment- and speculative-grade bonds stayed robust over that period, but the steep runoff in C&I loans continued, and commercial paper outstanding decreased further. Net equity issuance by nonfinancial firms turned negative in the fourth quarter. Gross equity issuance so far this year has weakened from its fourth-quarter pace, while announcements of equity repurchases and cash financed mergers and acquisitions appear to have risen a bit. For financial firms, gross public equity issuance dropped off following the fourth-quarter surge associated with the repayment of TARP capital by some large banking organizations, and financial bond issuance remained strong.

Over the intermeeting period, the average interest rate on 30-year conforming fixed-rate residential mortgages was about unchanged, on net, at 4.95 percent. Yields on agency mortgage-backed securities (MBS) were little changed, and the option-adjusted spread stayed at very low levels. Net issuance of MBS by Fannie Mae and Freddie Mac remained sluggish through the end of January. The volume of Federal Reserve purchases of MBS has left certain issues relatively scarce, particularly those with coupons of 5 percent and 5½ percent. Moreover, the cost of failing to deliver MBS collateral is very low, a situation that contrasts with that in the Treasury market, where a fails charge was instituted in May 2009. As a result, investors appear to have

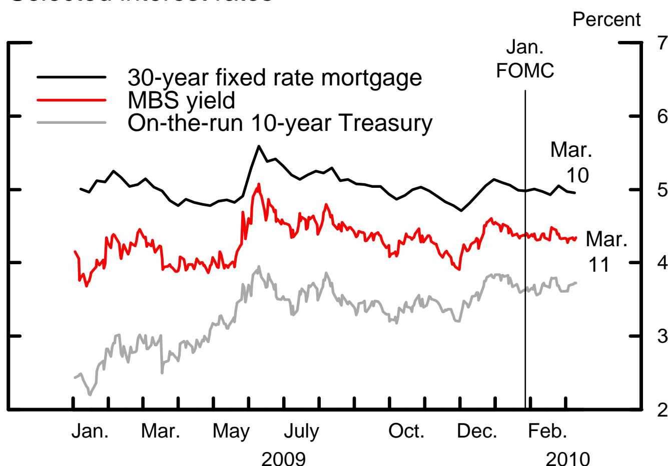
Chart 3
Credit Market Developments

Changes in selected components of debt of the nonfinancial business sector



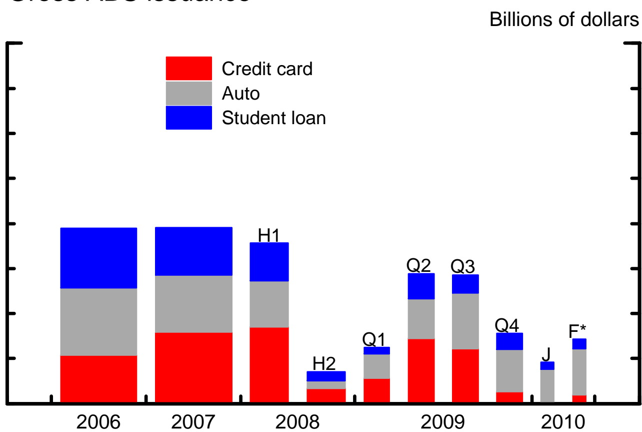
Note. CP and C&I loans are seasonally adjusted; bonds are not.
Source. Depository Trust & Clearing Corporation, Thomson Financial, and Federal Reserve.

Selected interest rates



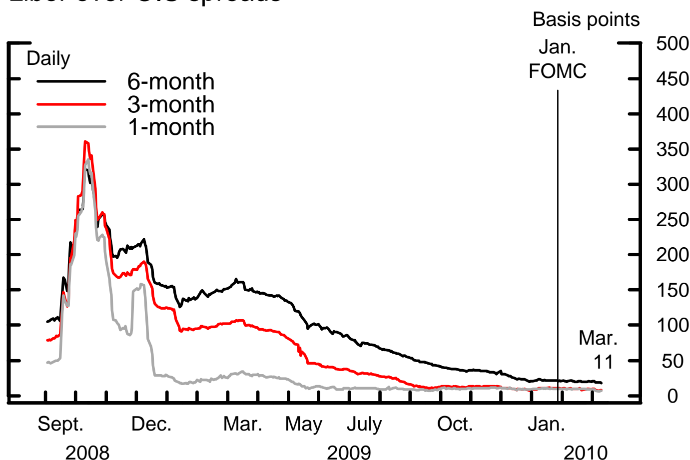
Note. Data are business daily except for the 30-year fixed rate mortgage, which is weekly.
Source. Bloomberg.

Gross ABS issuance



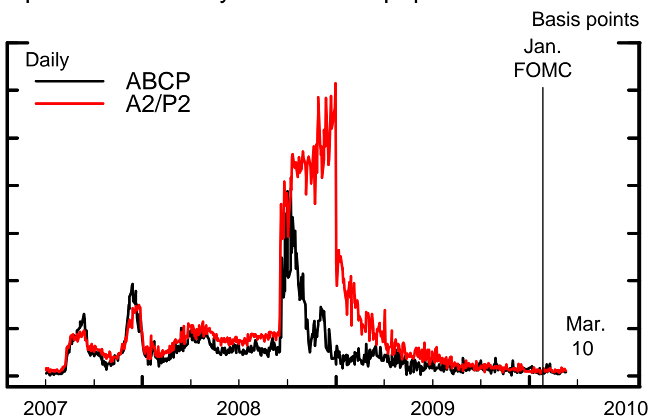
*Issuance for February through February 26, 2010.
Note. Auto ABS include car loans and leases and financing for buyers of motorcycles.
Source. Inside MBS & ABS, Merrill Lynch, Bloomberg, and the Federal Reserve.

Libor over OIS spreads



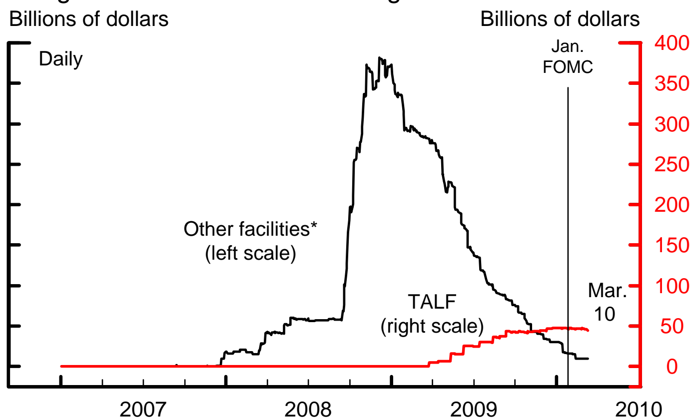
Source. British Bankers' Association and Prebon.

Spreads on 30-day commercial paper



Note. The ABCP spread is the AA ABCP rate minus the AA nonfinancial rate. The A2/P2 spread is the A2/P2 nonfinancial rate minus the AA nonfinancial rate.
Source. Depository Trust & Clearing Corporation.

Usage of TALF and other lending facilities



* Includes primary, secondary, and seasonal credit; TAF; PDCF; dollar liquidity swaps; CPFF; and AMLF.
Source. Federal Reserve.

been reluctant to deliver the portions of those MBS issues that remain available in the secondary market, generating a high rate of fails in those segments.

Market-based indicators of forward spreads in the MBS market do not appear to have priced in an increase in spreads at the end of the purchase program. Market participants attribute the near-term tightness in MBS spreads to several factors, including the expectation that traditional investors that are significantly underweight in MBS will return to the market when the purchase program ends, the reinvestment by investors of the proceeds from the agencies' purchases of delinquent loans from existing MBS pools, and the slow pace of recent mortgage originations. An informal survey conducted by the Desk indicates that on average market participants anticipate that MBS spreads will initially widen about 10 to 15 basis points following the end of the purchase program, a range that is somewhat lower than in the January survey.

Consumer credit increased slightly in January, the first monthly increase since January 2009. The contraction in revolving consumer credit moderated and was more than offset by a modest gain in nonrevolving credit. Although delinquency rates on consumer loans remain very elevated, they have edged down from their recent peaks. Interest rates on new auto loans at dealerships declined over the intermeeting period to about 4¾ percent. By contrast, interest rates on credit cards rose further, on balance, likely reflecting several factors, including lenders' preparations for implementation of the Credit CARD Act in mid-February, regulatory and accounting changes that increase the cost of funds, and the continued high rate of charge-offs. A paucity of asset-backed security (ABS) issuance backed by credit card receivables—reportedly reflecting declines in outstanding balances and a decision by some large banks to fund the loans on their balance sheets amid the implementation of new accounting regulations—held down total consumer ABS issuance during January and February.

MARKET FUNCTIONING AND FEDERAL RESERVE PROGRAMS

Conditions in short-term funding markets remained generally stable over the intermeeting period. One- and three-month Libor-OIS spreads stayed low while six-month spreads edged down further. Spreads of rates on A2/P2-rated commercial paper and AA-rated ABCP over the AA nonfinancial rate were also little changed at low levels. Indicators of functioning in other markets were largely unchanged.

No signs of stress emerged in short-term funding markets following the expiration of several Federal Reserve liquidity facilities on February 1 and the final TAF auction on March 8. (See box entitled "Balance Sheet Developments during the Intermeeting Period.") Consistent with these developments, borrowing from Federal Reserve liquidity facilities for multiple borrowers (including primary, secondary, and seasonal credit; TAF; and CPFF) totaled \$38 billion as of March 10, down \$26 billion since the latest FOMC meeting. However, in early March, the effective federal funds rate temporarily firmed a few basis points, reflecting an uptick in general collateral repo rates related to increased Treasury issuance.[5]

The Federal Reserve Bank of New York announced on March 8 that it was beginning a program to expand its list of counterparties for conducting reverse repos to increase the capacity of such operations to drain reserves beyond what could likely be done through the Primary Dealers. Along with the announcement, it published the eligibility criteria for the first set of expanded counterparties—domestic money market mutual funds—and stated that in coming months it would include additional types of firms and expand eligibility within previously identified types of firms. The announcement reportedly generated little reaction from market participants and no shift in policy expectations.

[5] Market participants also pointed to rumors that the Federal Reserve was considering paying interest on reserves to the GSEs, and that the GSEs had been cutting their deposit lines with foreign banks as reasons for the firming.

Balance Sheet Developments during the Intermeeting Period

The Federal Reserve's total assets continued to edge up over the intermeeting period, reaching $2.3 trillion, as the net increase in securities held outright more than offset the net decline in lending through liquidity and credit facilities.[1]

During the intermeeting period, securities held outright rose, on net, $65 billion. The Open Market Desk purchased $77 billion, on net, in agency mortgage-backed securities (MBS).[2] The Desk also purchased $5.4 billion in agency debt securities; only one additional operation is planned. The increase in outright securities holdings was only partially offset by a $29 billion decline in lending through the System's liquidity and credit facilities.[3] Foreign central bank liquidity swaps, the Primary Dealer Credit Facility (PDCF), the Commercial Paper Funding Facility (CPFF), the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), and the Term Securities Lending Facility (TSLF) all expired on February 1, 2010. The net portfolio holdings of CPFF LLC declined by $1 billion, to $8 billion, of which only $3 billion is outstanding commercial paper, all of which will mature on April 21, 2010; the LLC will hold other assets until it is dissolved.[4] The final Term Auction Facility (TAF) auction occurred on March 8 with a minimum bid rate of 50 basis points; only $3.4 billion in TAF loans were extended, all of which will mature on April 8, 2010. The increase in the primary and secondary credit rates on February 19 had no noticeable impact on borrowing.

Lending through the Term Asset-Backed Securities Loan Facility (TALF) declined $2 billion, on net, over the intermeeting period as three TALF operations settled. About $2.5 billion in loans backed by commercial mortgage-backed securities (CMBS) and about $1 billion in loans secured by non-CMBS were extended. This increase in lending, however, was more than offset by $5.5 billion in loan prepayments. The last non-CMBS TALF subscription, which took place on March 4, saw $4.1 billion in loan requests, all settled on March 11.

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[1] These data are through March 10, 2010.

[2] The figures for securities holdings reflect only trades that have settled. Over the intermeeting period, the Open Market Desk committed to purchase, but has not settled, an additional $86.2 billion of MBS, on net.

[3] Press releases over the intermeeting period discussed the pending sale of certain subsidiaries of American International Group (AIG), with the proceeds intended to pay down the Federal Reserve Bank of New York's preferred interest in American International Assurance Group (AIA) LLC and American Life Insurance Co. (ALICO) LLC, as well as the credit extension to AIG. These transactions are reflected in the projections found in the Long-Run Projections of the Balance Sheet and Monetary base section.

[4] The other assets of CPFF LLC are investments of the fees paid by issuers that have sold commercial paper to the facility.

On the liability side of the Federal Reserve's balance sheet, the U.S. Treasury's general account, which is a volatile balance sheet item, declined $111 billion, while the Treasury's supplementary financing account increased $45 billion with the resumption of bill issuance under the Supplementary Financing Program after the debt ceiling was raised in early February. Reserve balances of depository institutions increased by $87 billion over the intermeeting period.

Federal Reserve Balance Sheet

Billions of dollars

	Change since last FOMC	Current (03/10/2010)	Maximum level	Date of maximum level
Total assets	**36**	**2,286**	**2,295**	**01/13/10**
Selected assets:				
Liquidity programs for financial firms	-25	30	1,247	11/06/08
Primary, secondary, and seasonal credit	-1	14	114	10/28/08
Term auction credit (TAF)	-23	15	493	03/11/09
Foreign central bank liquidity swaps	-0	0	586	12/04/08
Primary Dealer Credit Facility (PDCF)	0	0	156	09/29/08
Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF)	0	0	152	10/01/08
Lending through other credit facilities	-3	52	351	01/23/09
Net portfolio holdings of Commercial Paper Funding Facility LLC (CPFF)	-1	8	351	01/23/09
Term Asset-Backed Securities Loan Facility (TALF)	-2	44	48	12/22/09
Support for specific institutions	-1	115	118	04/02/09
Credit extended to AIG, net	-1	25	91	10/27/08
Preferred interests in AIA Aurora LLC and ALICO Holdings LLC	0	25	25	03/10/10
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	+0	65	75	12/30/08
Securities held outright*	65	1,975	1,976	02/19/10
U.S. Treasury securities	-0	777	791	08/14/07
Agency securities	5	169	169	03/10/10
Agency mortgage-backed securities**	60	1029	1034	02/19/10
Memo: Term Securities Lending Facility (TSLF)	0	0	236	10/01/08
Total liabilities	**36**	**2,233**	**2,243**	**01/13/10**
Selected liabilities:				
Federal Reserve notes in circulation	16	894	894	03/10/10
Reserve balances of depository institutions	87	1,191	1,249	02/24/10
U.S. Treasury, general account	-111	23	187	12/31/09
U.S. Treasury, supplementary financing account	45	50	559	10/22/08
Other deposits	-0	+0	53	04/14/09
Total capital	**-1**	**53**	**55**	**03/02/10**

+0 (-0) denotes positive (negative) value rounded to zero.

* Par value.

** Includes only mortgage-backed security purchases that have already settled. Over the intermeeting period, the Open Market Desk committed to purchase, but has not settled, an additional $86.2 billion of MBS, on net. Total MBS purchases are about $1,226 billion.

The final TALF subscription for non-mortgage asset-backed securities (ABS) settled on March 11.[6] TALF-eligible ABS issuance picked up in February and March, as issuers sought to benefit from TALF financing before the expiration of the program. In total, 14 new TALF-eligible ABS deals totaling $11.4 billion were brought to market during the final two subscriptions—a bit above the average level over the preceding four months. Only about one-fifth of ABS issuance (including non-TALF deals) has been financed by TALF loans on average this year. The final TALF subscription for legacy commercial mortgage-backed securities (CMBS) will take place on March 19 and is expected to garner TALF loan requests of about the same moderate amounts seen in recent months. TALF financing for newly issued CMBS will be available through June, but it is unclear if there will be any loan requests. Market participants expect at most a modest uptick in ABS and CMBS spreads in response to the closing of TALF.

FOREIGN MARKET DEVELOPMENTS

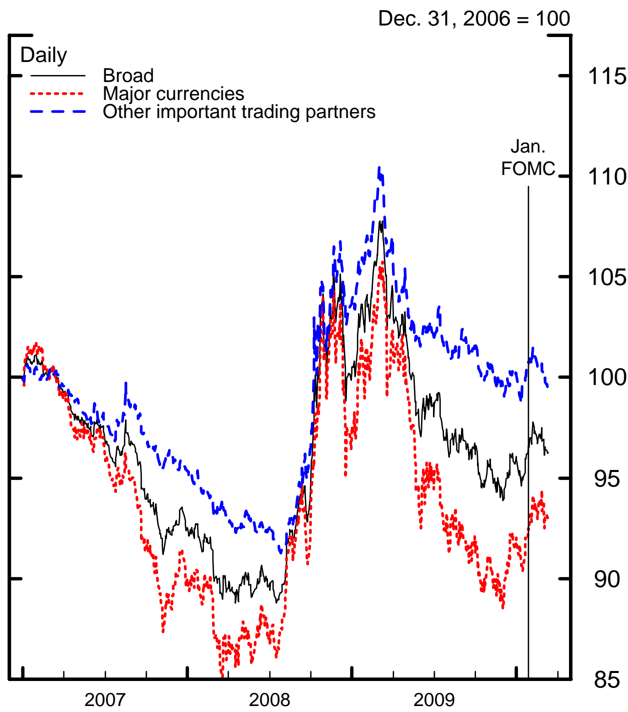
Foreign financial markets and the trade-weighted value of the broad nominal dollar were volatile but generally little changed, on net, since the January FOMC meeting (Chart 4). Much of the volatility was related to concerns spurred by Greece's fiscal problems.

Sovereign risk concerns have continued to focus on Greece and, to a lesser extent, a few other European countries, leading their sovereign bond yields to remain at elevated levels. Spreads on Greek debt relative to German bunds widened as much as 90 basis points early in the intermeeting period. However, they have fallen back more recently, as press reports that euro-area countries are discussing a possible aid package for Greece and the announcement of further deficit reduction measures by the Greek government have helped assuage investor concerns about a Greek default. Spreads

[6] Including the subscription on March 11, TALF loans rose over the intermeeting period to $48.6 billion, as new loan requests were again partially offset by early repayments.

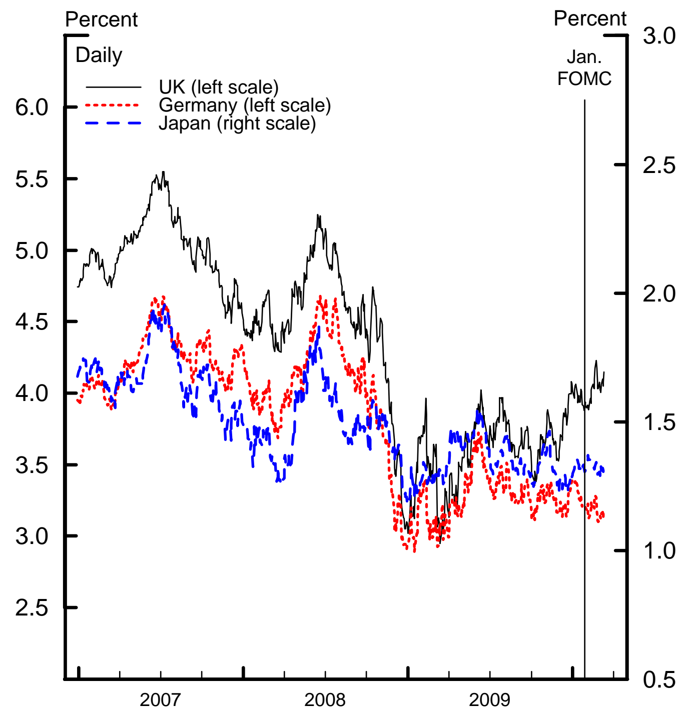
Chart 4
International Financial Indicators

Nominal trade-weighted dollar indexes



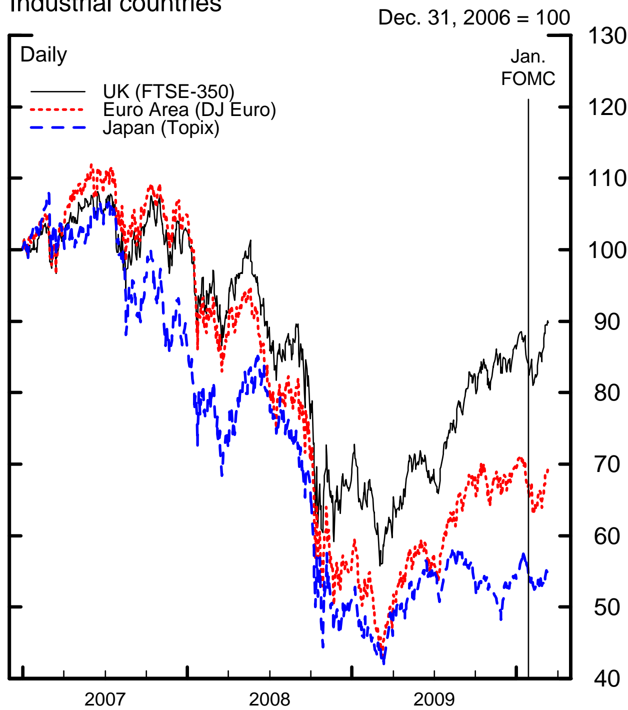
Source. Federal Reserve.

Nominal 10-year government bond yields



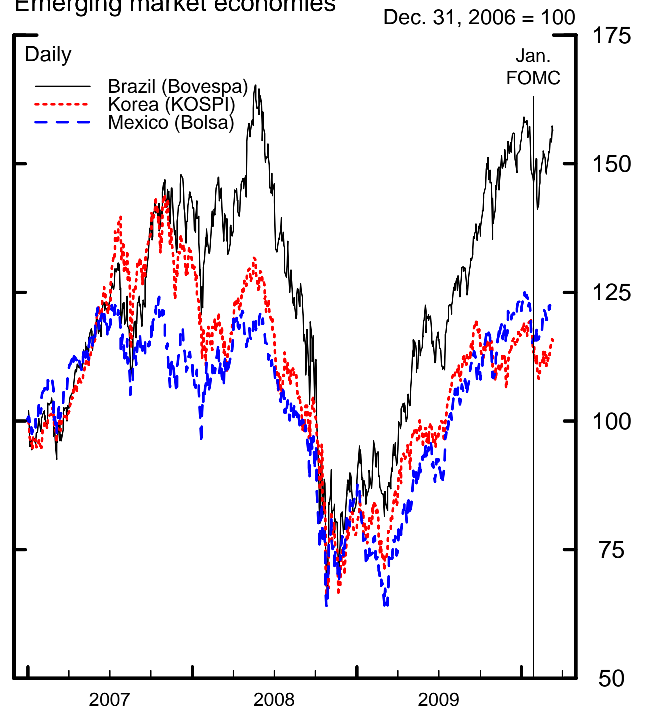
Source. Bloomberg.

Stock price indexes
Industrial countries



Source. Bloomberg.

Stock price indexes
Emerging market economies



Source. Bloomberg.

Note. Last daily observation is for March 11, 2010.

on debt issued by several other European countries with high budget deficits were also volatile but ended the intermeeting period close to their levels at the time of the January FOMC. The fiscal situation in the United Kingdom, particularly the possibility that upcoming elections may result in a politically weak government unable to work towards deficit reduction, also drew some market attention and boosted British sovereign yields. Benchmark sovereign yields in other countries were little changed.

Reflecting these fiscal concerns as well as weak incoming data in Europe, the dollar appreciated notably against sterling and the euro over the intermeeting period, rising 7½ percent against the British pound and 3¼ percent against the euro. Offsetting the appreciation against the euro and sterling, the dollar fell against the Canadian dollar and most emerging market currencies, as data for these countries came in stronger than expected. On net, the major currencies index is up a little less than 1 percent, and the broad nominal index of the dollar is unchanged.

The Bank of England (BOE) and the ECB held rates steady over the period, and the BOE elected not to expand the size of the Asset Purchase Facility, which reached its £200 billion limit at the end of January. In early March, the ECB announced several steps to normalize its provision of liquidity: It will discontinue its six-month refinancing operations after March, and future three-month operations will revert to a fixed-allotment, competitive-rate structure. Shorter-term operations will continue to be fixed-rate and full-allotment through the third quarter. These moves toward normalization notwithstanding, weak incoming data in Europe pushed back market-based expectations for policy tightening by the BOE and the ECB to the first and fourth quarters of 2011, respectively, about two quarters later than at the time of the January FOMC.

Equity markets in most foreign countries are up modestly, on net, since the January FOMC meeting, with equities in some emerging markets leading the way, boosted by strong economic data in those regions.

DEBT, BANK CREDIT, AND MONEY

Aggregate debt of the private domestic nonfinancial sectors fell in the fourth quarter as a result of further declines in business and household debt (Chart 5). By contrast, federal government debt expanded significantly, although its rate of growth slowed relative to earlier in 2009. State and local government debt continued to expand at a moderate pace. All told, the growth rate of domestic nonfinancial sector debt declined from an annual rate of almost 3 percent in the third quarter to about 1½ percent in the fourth quarter.

Bank credit continued to contract sharply during January and February, with both loans and securities moving lower.[7] C&I loans tumbled further, and, according to the February Survey of Terms of Business Lending, the spread of C&I loan rates over Eurodollar and swap rates of comparable maturity increased again. Significant declines in outstanding commercial real estate loans also persisted, reflecting the weak fundamentals in the sector as well as paydowns and charge-offs of existing loans. Banks' holdings of residential mortgages fell over the past two months, as originations reportedly stayed weak and sales of such loans to the GSEs contributed to a large decline in February. Credit card loans originated by banks fell steeply in January and February, reflecting weak demand as well as tight terms. Other consumer loans were about flat on average over the same period, reportedly boosted in part by tax refund loans. However, growth in banks' holdings of Treasury and agency debt securities

[7] These numbers have been adjusted to remove the effects of consolidations of assets under FAS 166 and FAS 167. The box entitled "Effect of FAS 166 and FAS 167 on Commercial Banks" on pages 10-11 of the December 10, 2009, Bluebook provides additional information.

Chart 5
Debt and Money

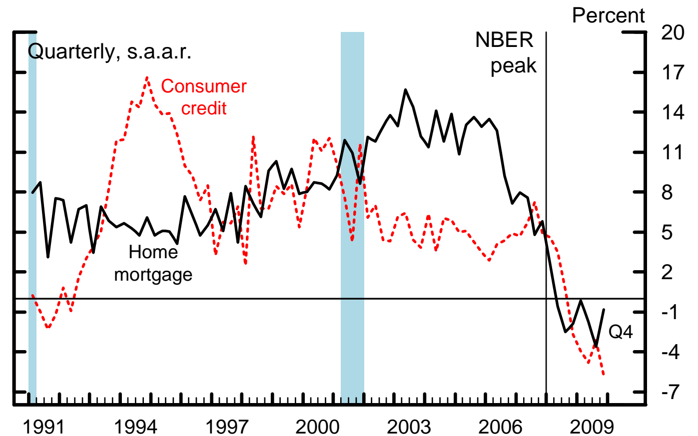
Growth of debt of nonfinancial sectors

Percent, s.a.a.r.

	Total	Business	Household	Government
2007	8.7	13.4	6.7	6.2
2008	5.9	5.2	0.1	17.7
2009				
Q1	4.2	0.4	-1.3	17.9
Q2	4.5	-2.1	-1.7	22.1
Q3	2.9	-2.3	-2.7	17.0
Q4	1.6	-3.2	-1.2	10.8

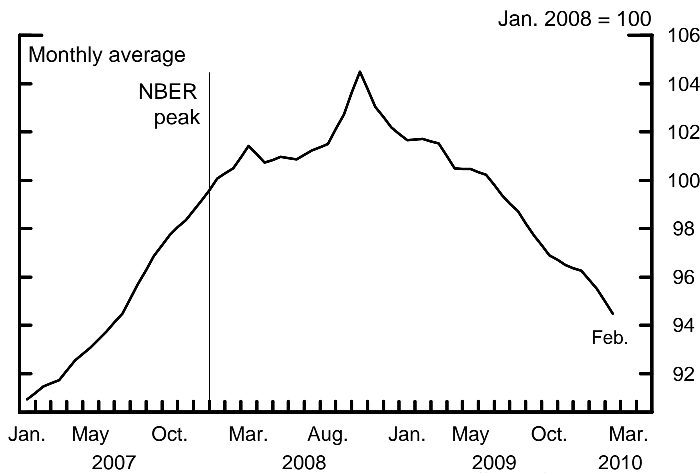
Source. Flow of Funds.

Growth of debt of household sector



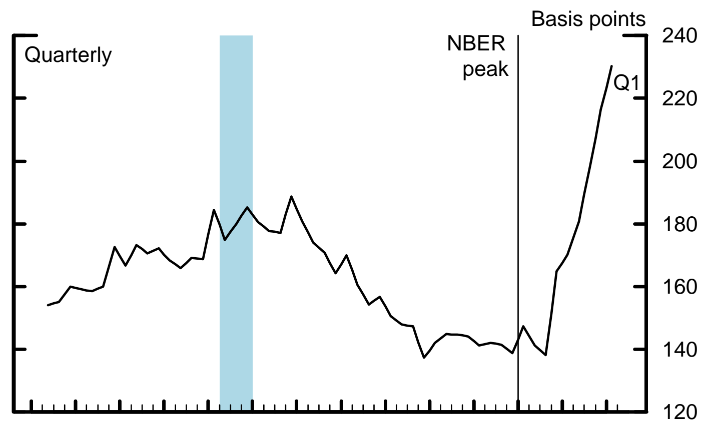
Source. Flow of Funds, Federal Reserve G.19 release.

Bank loans



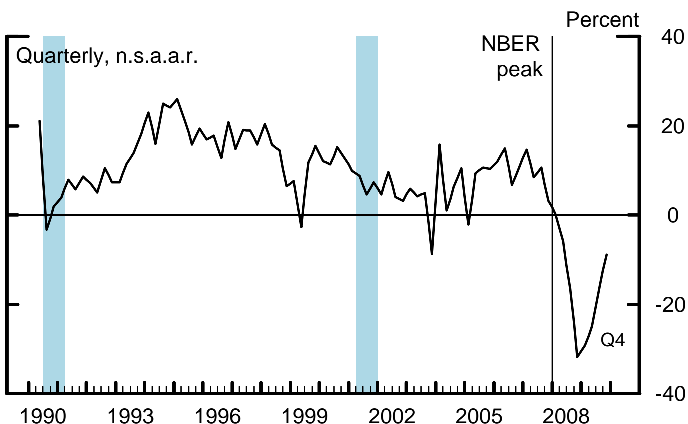
Note. The data have been adjusted to remove the effects of consolidations of assets under FAS 166 and FAS 167.
Source. Federal Reserve.

C&I loan rate spread



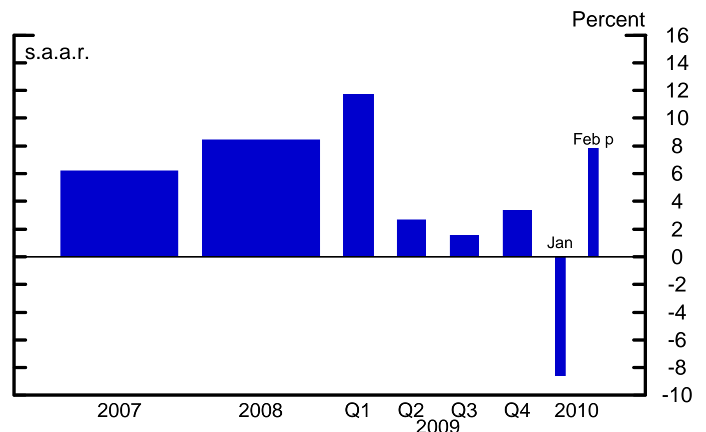
Note. Weighted-average spread for loans less than $25 million over market interest rates on comparable-maturity instruments, adjusted for changes in nonprice loan characteristics.
Source. Survey of Terms of Business Lending.

Growth in unused commitments



Source. Call Report data, adjusted for the effects of merger and failure activity involving large thrift institutions.

Growth of M2



p Preliminary.
Source. Federal Reserve.

remained robust, especially at large banks. Despite the decline in bank credit, total commercial bank assets edged up in February as banks' cash and equivalent assets (a category that includes reserve balances) increased sharply.

According to Call Reports, bank profitability remained very weak in the fourth quarter. The most significant drag on earnings continued to be the very elevated level of loan loss provisions, although provisions declined noticeably. This decline appeared to be conditioned upon some signs of stabilization in the credit quality of several categories of loans in the fourth quarter, particularly credit card loans. Modest profits at banks in the 25 largest bank holding companies were about balanced by a sixth consecutive quarterly loss at all other banks. The better results at larger banks in 2009 primarily reflected their broader sources of noninterest income, such as trading revenue and mortgage servicing; however, net interest margins at the largest banks also moved up over the course of 2009 as they benefited particularly from significant inflows of low-cost core deposits. Amid weak demand and tight supply conditions, the capacity of households and businesses to borrow from banks contracted further in the fourth quarter, as both loans and unused loan commitments shrank. The drop in bank assets combined with additional capital infusions from parent holding companies pushed up regulatory capital ratios from already-high levels.

M2 decreased at about an 8½ percent annual rate in January and increased at roughly an 8 percent pace in February, reflecting, in part, a swing in the growth rate of liquid deposits.[8] The robust growth in liquid deposits seen throughout 2009 paused in January, in part because several large depository institutions opted out of the FDIC's Transaction Account Guarantee Program when participation became more expensive after the turn of the year. In response, depositors reportedly moved

[8] Staff estimates suggest that tax refunds are running a bit above last year's pace, and they are estimated to be boosting M2 growth by roughly 1 percentage point at an annual rate in the first quarter.

uninsured funds to alternative investments outside of M2. These transfers apparently did not continue in February, and liquid deposits returned to double-digit growth. Small time deposits and retail money market mutual funds continued to run off in both January and February, perhaps contributing to strong flows to longer-term mutual funds so far this year. Currency growth remained solid on average in January and February, and the monetary base increased further as a result of continued large-scale asset purchases by the Federal Reserve.

ECONOMIC OUTLOOK

Incoming economic data over the intermeeting period—including readings on real activity and inflation that were somewhat lower than expected on net—led the staff to mark down the forecast for economic growth a little and to trim the inflation projection. Nonetheless, the broad contours of the staff projection are similar to those in the January Greenbook: a gradual recovery in economic activity, unemployment declining slowly from an elevated level, and subdued rates of inflation through 2014.

The staff forecast assumes that the current target range for the federal funds rate will not be raised until the first quarter of 2012—one quarter later than in the January projection—and that no asset purchases will be executed beyond those previously announced.[9] As in January, the staff expects fiscal policy to add about 1 percentage point to real GDP growth this year but to exert a slight drag on growth next year.

Interest rates on 30-year fixed-rate mortgages and longer-term Treasury securities are projected to rise moderately through 2011, with the spread between them gradually widening about 30 basis points over coming months in response to the cessation of purchases of agency MBS by the Federal Reserve. By contrast, yields on investment-grade corporate bonds are expected to remain about flat this year and to increase less than Treasury yields next year, as risk spreads narrow somewhat further against a backdrop of continued improvements in the economic outlook. With the equity risk premium also expected to narrow, stock prices are projected to rise at an

[9] The staff expects that the Federal Reserve will have purchased a total of slightly more than $1.7 trillion of longer-term securities by the end of the current quarter—$300 billion of Treasury debt, about $175 billion of agency debt, and $1.25 trillion of agency mortgage-backed securities (MBS). The System's holdings of these securities are assumed to run off gradually thereafter, declining to just under $1.4 trillion by the end of 2011, as the proceeds from maturing issues and prepayments on agency MBS are not reinvested.

annual rate of around 15 percent over the next two years. Bank lending conditions are anticipated to ease slowly over time but to remain tighter than their ten-year average prior to the recent crisis. House prices are projected to decline somewhat further this year in response to an increased pace of foreclosures and then to rise a bit in 2011 as demand gradually picks up.

The spot price of West Texas intermediate crude oil currently stands at about $82 per barrel, up a little over the intermeeting period, and the staff projects a small further rise to about $86 per barrel by late next year. The real foreign exchange value of the dollar is expected to depreciate at an average annual rate of about 3 percent over the balance of 2010 and 2011 after an appreciation of about 3½ percent in the first quarter of this year.

Against this backdrop, the staff expects real GDP to grow about 3¼ percent this year and about 4½ percent next year, about ¼ percentage point below the January projections. In light of the incoming data, the trajectory for the unemployment rate has been lowered marginally compared to the last Greenbook, with the projection now declining slowly to about 9½ percent at the end of 2010 and 8¼ percent at the end of 2011, well above the staff's estimate of the effective NAIRU over this period.[10] With inflation expectations stable and economic slack forecast to remain substantial, the staff projects core PCE inflation to slow from 1½ percent last year to about 1 percent this year and in 2011. Total PCE inflation is expected to moderate to rates close to those of core inflation later this year and in 2011, after having been boosted by increasing oil prices to 2½ percent in the second half of last year.

[10] As discussed in the Greenbook, the staff's estimate of the NAIRU for the next two years accounts for the effects on the measured unemployment rate of emergency and extended unemployment benefits, which currently appear to be boosting the NAIRU by almost a percentage point. The staff anticipates that this effect will only diminish a bit through next year. Absent these temporary factors, the NAIRU would currently be estimated at 5¼ percent.

Looking further ahead, the staff forecasts above-trend output growth, falling unemployment, and slowly rising inflation. The federal funds rate is assumed to start rising in early 2012 and to reach 3½ percent by late 2014. Real GDP is anticipated to expand 4¾ percent in 2012 before decelerating to 3½ percent in 2014, while potential output is expected to advance about 2½ percent per year on average. As a result, the projected unemployment rate declines to 5¼ percent in 2014, about in line with the staff's estimate of the NAIRU at that time. With a steadily closing output gap and stable expectations for longer-term inflation, total PCE inflation rises slowly after 2011 and by 2014 reaches 1½ percent—a rate still somewhat below the central tendency of policymakers' long-run projections for inflation.

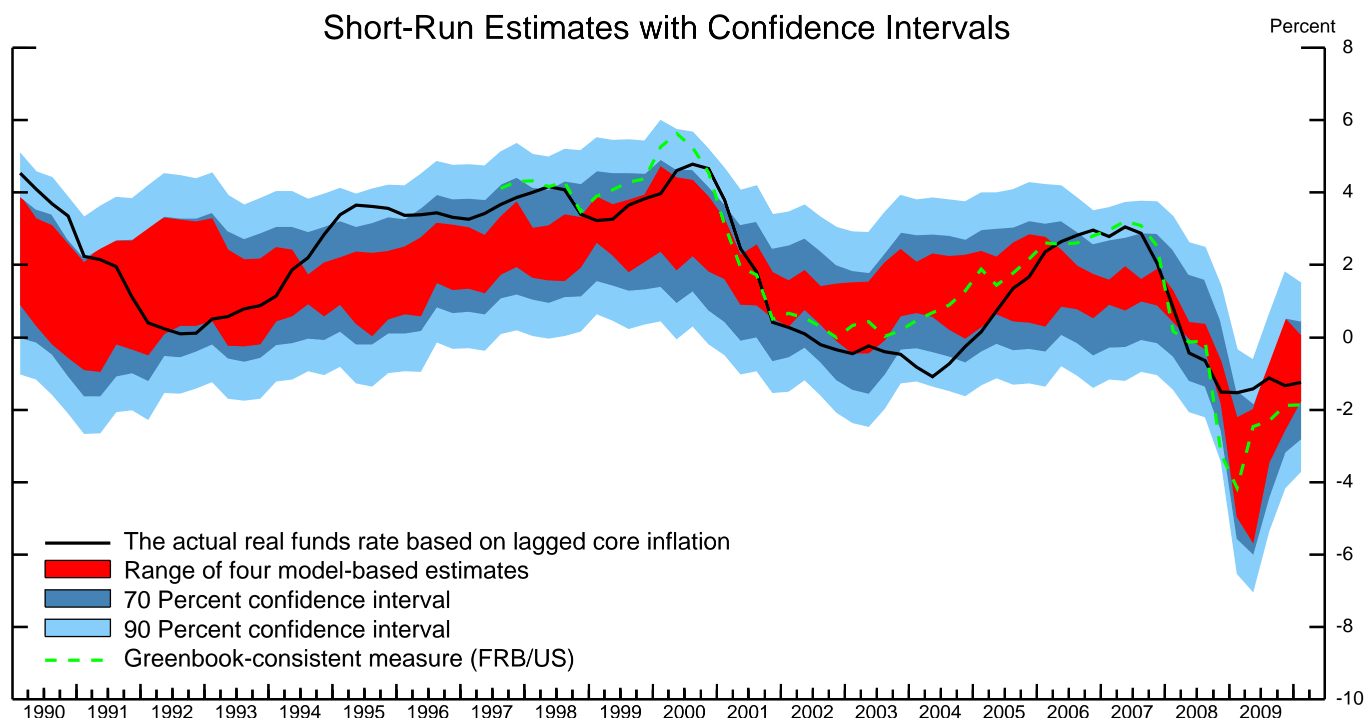
MONETARY POLICY STRATEGIES

Chart 6 displays estimates of short-run *r**, defined as the real federal funds rate that, if maintained over time, would return output to potential in twelve quarters. All but one of the current estimates are lower than their counterparts in the January Bluebook, reflecting the downward revision in the outlook for aggregate demand. The Greenbook-consistent short-run *r** estimate generated by the FRB/US model is -1.9 percent, 40 basis points lower than its value in January and well below the actual real funds rate of -1.2 percent. The Greenbook-consistent *r** estimate derived using the EDO model is now -3.8 percent, 150 basis points below its January value. The Greenbook-consistent *r** estimate from EDO has decreased significantly more than the corresponding estimate from FRB/US because aggregate demand in EDO is less sensitive to changes in the real funds rate, implying that any revision to the output gap requires a relatively greater revision to short-term interest rates in EDO to bring output in line with potential.

While the Greenbook-consistent *r** estimates take as given the staff outlook and assessment of the current degree of slack, the four model-based estimates are conditioned on the respective models' projections of the output gap. The single-equation model, the small structural model, and the EDO model each project a wider output gap for the current quarter than in the previous Bluebook; hence, the *r** estimates from these three models are lower now than in January and, with the exception of the EDO model estimate, lower than the actual real funds rate. In contrast, the FRB/US model-based *r** estimate is little changed, mainly because the data received since January have not significantly affected the FRB/US model's estimate of the underlying level of aggregate demand over the next twelve quarters.

Chart 7 shows the results of optimal control simulations of the FRB/US model. These simulations use the extended staff baseline projection, which incorporates the

Chart 6
Equilibrium Real Federal Funds Rate



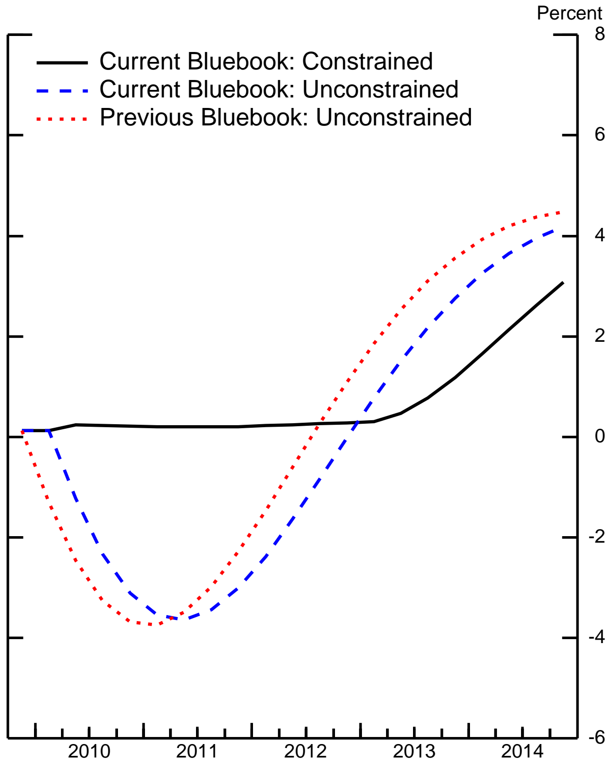
Short-Run and Medium-Run Measures

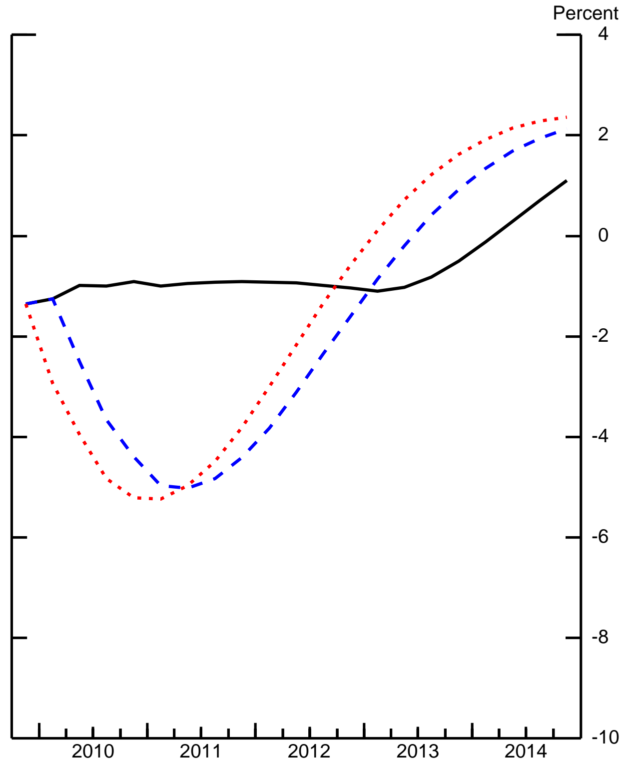
	Current Estimate	*Previous Bluebook*
Short-Run Measures		
Single-equation model	-1.6	*-1.2*
Small structural model	-1.4	*-1.1*
EDO model	0.0	*0.6*
FRB/US model	-1.7	*-1.8*
Confidence intervals for four model-based estimates		
70 percent confidence interval	-2.8 to 0.5	
90 percent confidence interval	-3.7 to 1.5	
Greenbook-consistent measures		
EDO model	-3.8	*-2.3*
FRB/US model	-1.9	*-1.5*
Medium-Run Measures		
Single-equation model	1.1	*1.2*
Small structural model	1.7	*1.9*
Confidence intervals for two model-based estimates		
70 percent confidence interval	0.4 to 2.3	
90 percent confidence interval	-0.4 to 2.8	
TIPS-based factor model	2.0	*2.0*
Memo		
Actual real federal funds rate	-1.2	*-1.3*

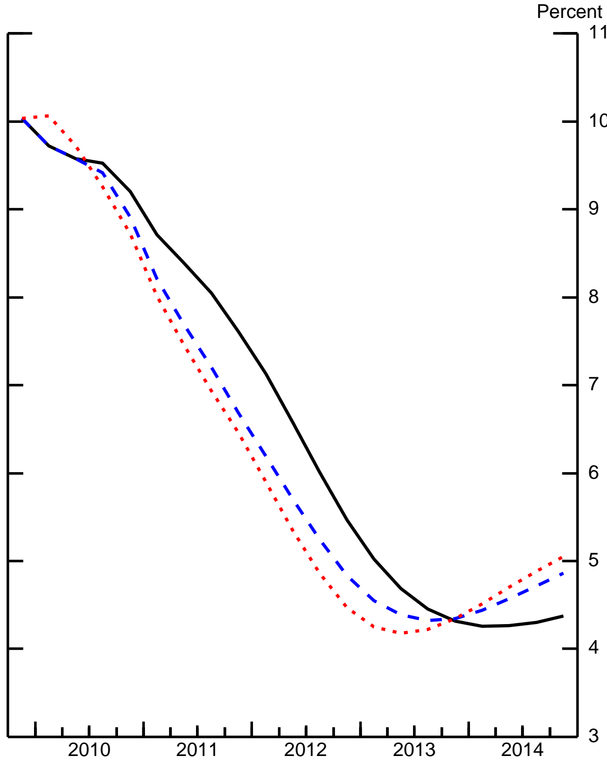
Note: Appendix A provides background information regarding the construction of these measures and confidence intervals. The actual real federal funds rate shown is based on lagged core inflation as a proxy for inflation expectation. For information regarding alternative measures, see Appendix A. The table in the previous Bluebook had another column, "Current Estimate as of Previous Bluebook"; for this Bluebook, the estimates in that column would be the same as in the last column since both the previous and current Bluebooks fall in the same quarter. As a result, we have dropped the additional column for this Bluebook.

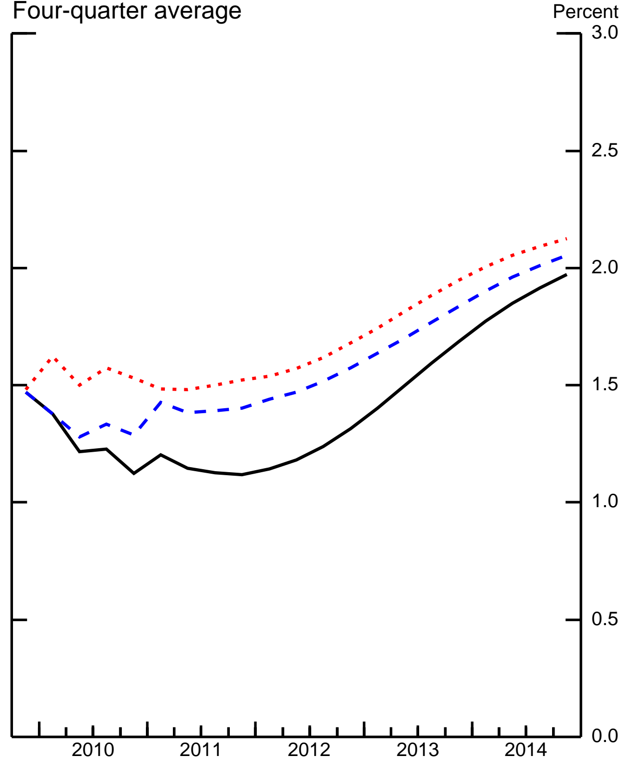
Chart 7

Constrained vs. Unconstrained Monetary Policy
(2 Percent Inflation Goal)









Federal Reserve's large-scale asset purchases, as a starting point. Policymakers are assumed to place equal weight on keeping core PCE inflation close to a 2 percent inflation goal, on keeping unemployment close to the NAIRU (adjusted for the temporary effects of emergency and extended unemployment benefits on the measured unemployment rate), and on minimizing changes in the federal funds rate. As in recent Bluebooks, optimal monetary policy in these simulations is constrained by the effective lower bound, and the nominal funds rate does not leave this bound until early 2013 (black solid lines). Under this policy, the unemployment rate would be projected to remain above the NAIRU through late 2012, while core PCE inflation would stay appreciably below the 2 percent goal through late 2014. The chart also displays the optimal-control results obtained if the nominal funds rate were not constrained by the effective lower bound (blue dashed lines). Absent the constraint, the nominal funds rate would move down to about -3½ percent early next year; the more accommodative policy stance would return the unemployment rate to the NAIRU more quickly and bring the inflation trajectory closer to the assumed 2 percent goal.

As noted in the March Greenbook, the projected gap between actual output and potential output over the forecast period is somewhat wider than in January—consistent with the decrease in the Greenbook-consistent r^* estimates—but, reflecting incoming data, the unemployment projection was revised down. Since the optimal-control simulations use the unemployment rate gap as the measure of real activity and the downward revision to the unemployment rate path roughly offsets the impact of lower inflation, the contour of the unconstrained policy path changed little apart from shifting out by a quarter relative to January (red dotted lines). This shift occurred because this Bluebook's optimal-control simulations jump off from the 2010Q1 level of the federal funds rate, while the previous Bluebook took 2009Q4 as the jumping-off point.

According to Chart 8, the outcome-based policy rule prescribes a trajectory for the federal funds rate somewhat below the one in the previous Bluebook, reflecting the modestly lower paths for output and inflation in this projection (upper-left panel). The nominal funds rate starts rising above the effective lower bound in 2012Q2, two quarters later than in the January Bluebook. According to money-market futures quotes, market participants' expectations regarding the path of the funds rate also shifted down somewhat over the intermeeting period; the expected funds rate between 2011 and 2013 averages about 30 basis points lower than at the time of the previous Bluebook (upper-right panel).

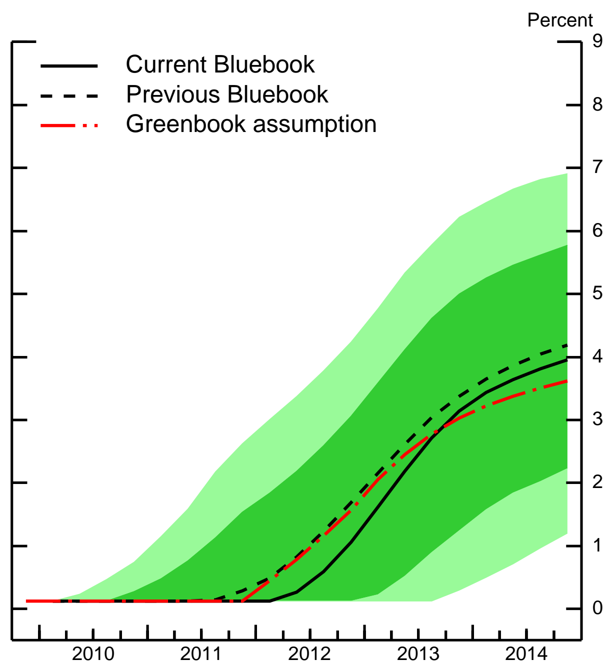
The lower panel of Chart 8 provides near-term prescriptions from simple policy rules. The two variants of the Taylor rule and the two estimated policy rules would keep the federal funds rate at its effective lower bound over the next two quarters. The first-difference rule—because it responds to economic growth rather than to the estimated level of economic slack—prescribes a funds path above the lower bound; still, the prescribed funds rates are below those in the previous Bluebook, reflecting the slightly weaker economic outlook. Likewise, the unconstrained policy prescriptions from the two variants of the Taylor rule are now lower than in January. In contrast, the two estimated policy rules prescribe higher funds rates than in the previous Bluebook, entirely because of the shift in the jumping-off quarter for the rules calculation.[11]

[11] The two estimated rules include lags of the funds rate and prescribe a funds rate path that is decreasing over the next several quarters. In this Bluebook, the rules calculation is conditioned on the funds rate at the effective lower bound in 2010Q1. In contrast, the January simulations jumped from the funds rate at the lower bound in 2009Q4.

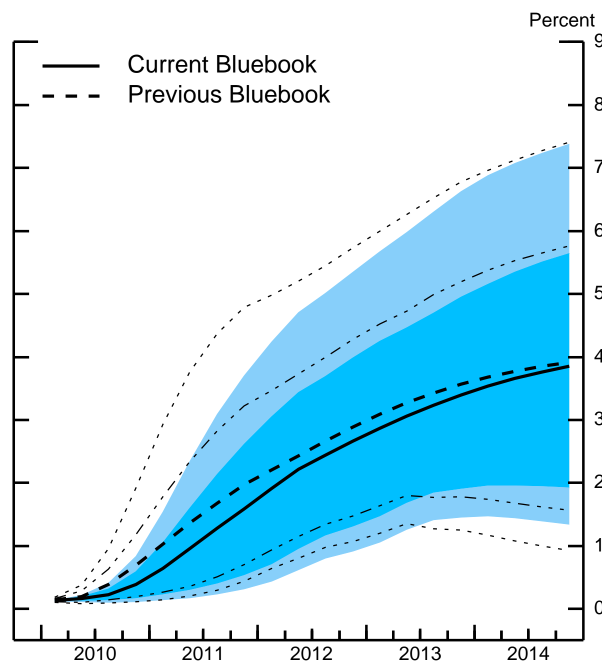
Chart 8

The Policy Outlook in an Uncertain Environment

FRB/US Model Simulations of Estimated Outcome-Based Rule



Information from Financial Markets



Note: In both panels, the dark and light shading represent the 70 and 90 percent confidence intervals respectively.

Near-Term Prescriptions of Simple Policy Rules

	Constrained Policy		Unconstrained Policy	
	2010Q2	2010Q3	2010Q2	2010Q3
Taylor (1993) rule	**0.13**	**0.13**	**-0.77**	**-0.68**
Previous Bluebook	*0.13*	*0.13*	*-0.43*	*-0.28*
Taylor (1999) rule	**0.13**	**0.13**	**-4.29**	**-4.06**
Previous Bluebook	*0.13*	*0.13*	*-3.84*	*-3.49*
Estimated outcome-based rule	**0.13**	**0.13**	**-0.48**	**-1.15**
Previous Bluebook	*0.13*	*0.13*	*-1.05*	*-1.43*
Estimated forecast-based rule	**0.13**	**0.13**	**-0.45**	**-1.04**
Previous Bluebook	*0.13*	*0.13*	*-0.90*	*-1.22*
First-difference rule	**0.27**	**0.46**	**0.27**	**0.46**
Previous Bluebook	*0.69*	*1.09*	*0.69*	*1.09*

Memo

	2010Q2	2010Q3
Greenbook assumption	0.13	0.13
Fed funds futures	0.16	0.23
Median expectation of primary dealers	0.13	0.13
Blue Chip forecast (March 1, 2010)	0.20	0.30

Note: In calculating the near-term prescriptions of these simple policy rules, policymakers' long-run inflation objective is assumed to be 2 percent. Appendix B provides further background information.

POLICY ALTERNATIVES

This Bluebook presents three main policy alternatives—labeled A, B, and C—for the Committee's consideration. A variant of C, labeled as C′, is also presented. The characterization of current conditions and the economic outlook differs somewhat across the alternatives, and each alternative presents a different set of judgments about the appropriate path of policy.[12] Table 1 provides an overview of the key elements of these alternatives. Draft statements are provided in subsequent pages, followed by a summary of the case for each alternative.

Alternative A notes that the deterioration in the labor market is abating but points to prospects for a subpar recovery in the absence of further monetary stimulus. Alternative B suggests that the labor market is stabilizing and states that the pace of recovery is likely to be moderate. Alternative C indicates that the economy is expanding and that the labor market is beginning to stabilize and concludes that a sustainable recovery is now under way.

Alternatives A and B each indicate that substantial resource slack continues to restrain cost pressures, that longer-term inflation expectations remain stable, and that as a consequence inflation is likely to be subdued for some time. Alternative B could include an additional sentence—shown in brackets—stating the Committee's expectation that "over time and with appropriate monetary policy, inflation will run at rates consistent with price stability." Alternative C points out the recent modest pickup in headline inflation due to energy prices, while noting that underlying inflation pressures remain muted; this alternative also states that the Committee "will adjust the stance of monetary policy as necessary over time to ensure that

[12] All three alternatives note that the TALF is scheduled to close on June 30 for loans backed by new-issue CMBS and on March 31 for loans backed by all other types of collateral.

longer-term inflation expectations remain well anchored and that inflation outcomes are consistent with price stability."

All of the alternatives would maintain the target range of 0 to ¼ percent for the federal funds rate during the upcoming intermeeting period. Alternatives A and B indicate—as in recent FOMC statements—that the Committee expects the funds rate to remain exceptionally low "for an extended period." Alternative C modifies that forward guidance by substituting the phrase "for some time" and could also include the modifier "at least through the end of the second quarter." This alternative also notes that monetary conditions will need to be tightened "at the appropriate time" to prevent a buildup of inflationary pressures.

Each of the alternatives states that the Federal Reserve's previously announced purchases of agency MBS and agency debt will be executed by the end of this month. Alternative A announces that an additional $150 billion of agency MBS will be purchased during the second quarter—roughly the same pace of purchases as in the first quarter—and indicates that the Committee will be continuing to evaluate its purchases of securities, thereby leaving the door open to further purchases should circumstances warrant. Alternatives B and C do not make reference to the possibility of further purchases of securities but instead indicate that the Committee will employ its policy tools "as necessary to promote economic recovery and price stability."

Alternatives A and B do not refer to the Federal Reserve's exit strategy, whereas Alternative C and Alternative C′ provide overviews of key elements of that strategy. Both versions of Alternative C put additional emphasis on the prospects for policy tightening by stating that the Committee will monitor the economic outlook and financial developments "in determining the timing and sequence of its measures for policy firming."

Table 1: Overview of Alternative Language for the March 16, 2010 FOMC Announcement

	January FOMC	March Alternatives A	March Alternatives B	March Alternatives C/C′
Economic Activity				
Recent Developments	"has continued to strengthen"	"has continued to strengthen"		"has continued to advance"
Labor Market	abating deterioration, employers reluctant to hire	abating deterioration but unemployment high	appears to be stabilizing but unemployment high	is beginning to stabilize
Outlook	pace of recovery "likely to be moderate"	further monetary stimulus warranted by prospects for subpar recovery	pace of recovery "likely to be moderate"	sustainable recovery "now under way"
Inflation				
Key Factors	substantial resource slack, stable expectations	substantial resource slack, stable expectations		modest pickup due to energy prices, but underlying pressures remain muted
Outlook	"likely to be subdued for some time"	"likely to be subdued for some time"		policy adjustments will ensure outcomes "consistent with price stability"
Timing and Sequence of Policy Firming				
Forward Guidance	"exceptionally low... for an extended period"	"exceptionally low... for an extended period"		"exceptionally low... for some time"
Overview of Exit Strategy*	---	---		reserve draining, then increased IOER and target funds rate
Agency MBS Purchases				
Amount	$1.25 trillion	$1.4 trillion	$1.25 trillion	
Duration	executed by the end of the first quarter	extended through the end of the second quarter	executed by the end of this month	
Focus of Policy Evaluation				
	"its purchases of securities"	"its purchases of securities"	"will employ its policy tools as necessary"	"timing and sequence of its measures for policy firming"

*Alternative C indicates an expectation that asset sales will be gradual and will not be initiated until after policy firming has begun. Alternative C′ states that the Federal Reserve will be redeeming all maturing Treasury securities and points to the possibility that gradual asset sales could commence fairly soon.

January FOMC Statement

Information received since the Federal Open Market Committee met in December suggests that economic activity has continued to strengthen and that the deterioration in the labor market is abating. Household spending is expanding at a moderate rate but remains constrained by a weak labor market, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software appears to be picking up, but investment in structures is still contracting and employers remain reluctant to add to payrolls. Firms have brought inventory stocks into better alignment with sales. While bank lending continues to contract, financial market conditions remain supportive of economic growth. Although the pace of economic recovery is likely to be moderate for a time, the Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability.

With substantial resource slack continuing to restrain cost pressures and with longer-term inflation expectations stable, inflation is likely to be subdued for some time.

The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for an extended period. To provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve is in the process of purchasing $1.25 trillion of agency mortgage-backed securities and about $175 billion of agency debt. In order to promote a smooth transition in markets, the Committee is gradually slowing the pace of these purchases, and it anticipates that these transactions will be executed by the end of the first quarter. The Committee will continue to evaluate its purchases of securities in light of the evolving economic outlook and conditions in financial markets.

In light of improved functioning of financial markets, the Federal Reserve will be closing the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, the Primary Dealer Credit Facility, and the Term Securities Lending Facility on February 1, as previously announced. In addition, the temporary liquidity swap arrangements between the Federal Reserve and other central banks will expire on February 1. The Federal Reserve is in the process of winding down its Term Auction Facility: $50 billion in 28-day credit will be offered on February 8 and $25 billion in 28-day credit will be offered at the final auction on March 8. The anticipated expiration dates for the Term Asset-Backed Securities Loan Facility remain set at June 30 for loans backed by new-issue commercial mortgage-backed securities and March 31 for loans backed by all other types of collateral. The Federal Reserve is prepared to modify these plans if necessary to support financial stability and economic growth.

March FOMC Statement—Alternative A

1. Information received since the Federal Open Market Committee met in **January** suggests that economic activity has continued to strengthen and that the deterioration in the labor market is abating. Household spending is expanding at a moderate rate but remains constrained by **high unemployment**, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software **has risen significantly**. **However,** investment in **nonresidential** structures is still contracting**, housing activity continues to be sluggish,** and employers remain reluctant to add to payrolls. **In light of the weakness in labor markets and prospects for a subpar economic recovery, the Committee judges that further monetary stimulus is warranted.**

2. With substantial resource slack continuing to restrain cost pressures and with longer-term inflation expectations stable, inflation is likely to be subdued for some time.

3. To provide **further** support to mortgage lending and housing markets and to **promote a more robust economic recovery in a context of price stability, the Committee decided to extend its program for purchasing** agency mortgage-backed securities. **The previously announced purchases of** $1.25 trillion **of those** securities will be executed by the end of **this month, and the Committee now anticipates that an additional $150 billion of such securities will be purchased during the second quarter**. The Federal Reserve **has been** purchasing about $175 billion of agency debt, and **those** transactions will be executed by the end of **this month**. The Committee will continue to evaluate its purchases of securities in light of the evolving economic outlook and conditions in financial markets. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for an extended period.

4. In light of improved functioning of financial markets, the Federal Reserve **has been closing the special liquidity facilities that it created to support markets during the crisis**. **The only remaining such program,** the Term Asset-Backed Securities Loan Facility**, is scheduled to close on** June 30 for loans backed by new-issue commercial mortgage-backed securities and **on** March 31 for loans backed by all other types of collateral.

March FOMC Statement—Alternative B

1. Information received since the Federal Open Market Committee met in **January** suggests that economic activity has continued to strengthen and that the labor market **is stabilizing**. Household spending is expanding at a moderate rate but remains constrained by **high unemployment**, modest income growth, lower housing wealth, and tight credit. Business spending on equipment and software **has risen significantly**. **However,** investment in **nonresidential** structures is **declining**, **and housing starts have been flat at a depressed level.** While bank lending continues to contract, financial market conditions remain supportive of economic growth. Although the pace of economic recovery is likely to be moderate for a time, the Committee anticipates a gradual return to higher levels of resource utilization in a context of price stability.

2. With substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time. **[The Committee expects that over time and with appropriate monetary policy, inflation will run at rates consistent with price stability.]**

3. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for an extended period. To provide support to mortgage lending and housing markets and to improve overall conditions in private credit markets, the Federal Reserve **has been** purchasing $1.25 trillion of agency mortgage-backed securities and about $175 billion of agency debt**; those purchases are nearing completion, and the remaining** transactions will be executed by the end of **this month**. **The Committee will continue to monitor the economic outlook and financial developments and will employ its policy tools as necessary to promote economic recovery and price stability.**

4. In light of improved functioning of financial markets, the Federal Reserve **has been closing the special liquidity facilities that it created to support markets during the crisis**. **The only remaining such program,** the Term Asset-Backed Securities Loan Facility**, is scheduled to close on** June 30 for loans backed by new-issue commercial mortgage-backed securities and **on** March 31 for loans backed by all other types of collateral.

March FOMC Statement—Alternative C

1. Information received since the Federal Open Market Committee met in **January indicates** that economic activity **has continued to advance** and that the labor market **is beginning to stabilize**. **Consumer** spending is expanding, business spending on equipment and software **has risen appreciably**, **and firms have brought** inventory stocks into better alignment with sales. While bank lending continues to contract, financial market conditions remain supportive of economic growth. **With a sustainable** economic **recovery now under way,** the Committee anticipates a gradual return to higher levels of resource utilization.

2. **Higher energy prices have been reflected in a recent modest pickup in inflation, but underlying inflation** pressures **remain muted. The Committee will adjust the stance of monetary policy as necessary over time to ensure that** longer-term inflation expectations **remain well anchored and that** inflation **outcomes are consistent with price stability**.

3. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for **some time [, at least through the end of the second quarter]**. The Federal Reserve **has been** purchasing $1.25 trillion of agency mortgage-backed securities and about $175 billion of agency debt**; those purchases are nearing completion, and the remaining** transactions will be executed by the end of **this month**.

4. **Although the federal funds rate is likely to remain exceptionally low for some time, the Federal Reserve will need to begin to tighten monetary conditions at the appropriate time to prevent the development of inflationary pressures. Over coming months, the Federal Reserve will continue to test its tools for draining reserves. In due course, those operations will be scaled up to drain more significant volumes of reserve balances, and then the Federal Reserve will increase the interest rate paid on reserves and its target for the federal funds rate. The Committee anticipates that any sales of the Federal Reserve's securities holdings would be gradual and would not occur until after policy tightening is under way and the economic recovery is sufficiently advanced. The Committee will monitor the economic outlook and financial developments in determining the timing and sequence of its measures for policy firming and will employ its tools as necessary to promote economic recovery and price stability.**

5. In light of improved functioning of financial markets, the Federal Reserve **has been closing the special liquidity facilities that it created to support markets during the crisis**. **The only remaining such program,** the Term Asset-Backed Securities Loan Facility**, is scheduled to close on** June 30 for loans backed by new-issue commercial mortgage-backed securities and **on** March 31 for loans backed by all other types of collateral.

March FOMC Statement—Alternative C'

1. Information received since the Federal Open Market Committee met in **January indicates** that economic activity **has continued to advance** and that the labor market **is beginning to stabilize**. **Consumer** spending is expanding, business spending on equipment and software **has risen appreciably**, **and firms have brought** inventory stocks into better alignment with sales. While bank lending continues to contract, financial market conditions remain supportive of economic growth. **With a sustainable** economic **recovery now under way,** the Committee anticipates a gradual return to higher levels of resource utilization.

2. **Higher energy prices have been reflected in a recent modest pickup in inflation, but underlying inflation** pressures **remain muted. The Committee will adjust the stance of monetary policy as necessary over time to ensure that** longer-term inflation expectations **remain well anchored and that** inflation **outcomes are consistent with price stability**.

3. The Committee will maintain the target range for the federal funds rate at 0 to ¼ percent and continues to anticipate that economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for **some time [, at least through the end of the second quarter]**. The Federal Reserve **has been** purchasing $1.25 trillion of agency mortgage-backed securities and about $175 billion of agency debt**; those purchases are nearing completion, and the remaining** transactions will be executed by the end of **this month**.

4. **Although the federal funds rate is likely to remain exceptionally low for some time, the Federal Reserve will need to begin to tighten monetary conditions at the appropriate time to prevent the development of inflationary pressures. Over coming months, the Federal Reserve will continue to test its tools for draining reserves. In due course, those operations will be scaled up to drain more significant volumes of reserve balances, and then the Federal Reserve will increase the interest rate paid on reserves and its target for the federal funds rate. To reduce the size of its balance sheet over time, the Federal Reserve has been allowing all agency debt and agency mortgage-backed securities to roll off as they mature or are prepaid, and beginning on April 1 the Federal Reserve will begin to redeem all maturing Treasury securities. The Committee will also be assessing the possibility of gradual sales of the Federal Reserve's securities holdings to accomplish further reductions in the size of its portfolio. The Committee will monitor the economic outlook and financial developments in determining the timing and sequence of its measures for policy firming and will employ its tools as necessary to promote economic recovery and price stability.**

5. In light of improved functioning of financial markets, the Federal Reserve **has been closing the special liquidity facilities that it created to support markets during the crisis**. **The only remaining such program,** the Term Asset-Backed Securities Loan Facility**, is scheduled to close on** June 30 for loans backed by new-issue commercial mortgage-backed securities and **on** March 31 for loans backed by all other types of collateral.

THE CASE FOR ALTERNATIVE B

If policymakers expect the pace of economic recovery to be moderate and inflation to be subdued for some time, and if they judge that the potential benefits of further large-scale asset purchases would not outweigh the costs, then the Committee might choose to finish its securities purchases while reiterating that the federal funds rate is likely to remain exceptionally low for an extended period, as in Alternative B.

Committee participants may see data releases and financial market developments over the intermeeting period as broadly consistent with the outlook embedded in their January projections; that is, like the staff, they may have made only modest revisions to their forecasts for economic activity and inflation. Policymakers may view recent readings on nonfarm payrolls as providing tentative evidence of labor market stabilization and pointing toward a gradual decline in unemployment going forward. Nonetheless, they may continue to anticipate that elevated unemployment, tight credit conditions, and waning fiscal stimulus will weigh on aggregate demand over coming quarters. Consistent with that outlook, both of the Greenbook-consistent measures of short-run r^* indicate that extraordinarily accommodative monetary policy—that is, a real funds rate well below zero, and even more negative than at present—would be required to close the output gap by the end of 2012.

Although policymakers may view the anticipated pace of economic recovery as unappealing, the Committee might conclude that expanding its agency MBS purchases would not materially improve that outlook and that further expansion of the Federal Reserve's balance sheet could be associated with significant adverse consequences. In particular, the spread between conventional mortgage rates and comparable Treasury yields has remained quite narrow over recent weeks, even with the approaching completion of the previously announced purchases of agency MBS; consequently, members may see little benefit to extending those purchases beyond the

end of this month. Moreover, they may be concerned that such an extension could undermine the confidence of some investors in the Federal Reserve's exit strategy and hence result in higher premiums on inflation risk in nominal lending contracts.

As in its recent statements, the Committee may continue to judge that "economic conditions, including low rates of resource utilization, subdued inflation trends, and stable inflation expectations, are likely to warrant exceptionally low levels of the federal funds rate for an extended period." Readings on core inflation over the past several months have been at annual rates below 1 percent, consistent with the view that substantial resource slack is continuing to reduce cost pressures, and the Reuters/Michigan survey of longer-term inflation expectations has edged downward and is now close to the lower end of its historical range. In light of that incoming information, members may remain reasonably confident that overall inflation—which has picked up modestly as a result of higher energy prices—is likely to moderate significantly within the next few months and to be subdued for some time.

Even if Committee participants are concerned about the possibility that inflation expectations could drift upward in response to highly accommodative monetary conditions, they may view risk management considerations as warranting a reiteration of the Committee's forward guidance at this juncture. Members might anticipate that the effective lower bound on the funds rate would bind severely if a move toward tighter policy proved premature and led to a substantial deterioration in the economic outlook, especially given the likely limits on the scope for further stimulus from fiscal policy or unconventional monetary policies. Such considerations would be particularly compelling if members are reasonably confident about the Committee's ability to advance the timing and pace of its policy firming in the event of a significant acceleration in the economic recovery or a sudden surge in inflation expectations.

The financial market reaction to a statement like that of Alternative B would likely be muted. The Desk's survey indicates that primary dealers are not anticipating any changes in the Committee's forward policy guidance at this meeting and that they do not expect any further changes in the size or composition of the Federal Reserve's LSAPs. Moreover, market quotes on fed funds futures and options are broadly consistent with the Desk's survey in indicating that investors expect the funds rate to remain within the current target range at least through the third quarter, and hence investors would probably not be surprised if the Committee's announcement at this meeting expresses the same forward guidance as in recent statements. Thus, the adoption of a statement along the lines of that proposed in Alternative B would likely result in little change in bond yields, equity prices, or the foreign exchange value of the dollar.

THE CASE FOR ALTERNATIVE C

If policymakers are confident that a sustainable economic recovery is now under way and see substantial upside risks to the medium-term inflation outlook in the absence of appropriate monetary policy adjustments, then the Committee might choose to issue a statement suggesting a somewhat shorter period over which monetary conditions are likely to remain extraordinarily accommodative, as in Alternative C. In particular, if members anticipate that policy tightening is not likely to be necessary this spring but might well be appropriate over the summer, they could modify the forward guidance given in recent statements by indicating that exceptionally low levels of the funds rate are likely to be warranted "for some time, at least through the end of the second quarter."[13] Alternatively, if members would

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[13] Such language would be roughly similar to the Bank of Canada's current forward guidance, which states that its policy rate is likely to remain at ¼ percent "until the end of the second quarter of 2010." The Bank of Canada introduced this forward guidance last April—at the point when the policy rate was reduced to its effective lower bound—in order to convey

prefer to avoid such specificity about the period over which its guidance applies, the wording could employ only the phrase "for some time."

In light of that outlook for the likely timing of policy firming, the Committee might also wish to convey the key elements of the Federal Reserve's exit strategy, including the testing of new balance sheet tools over coming months and the anticipated sequence in which large-scale draining operations will be followed by increases in the interest rate on reserves and the target federal funds rate. The draft statement for Alternative C does not announce any changes in the Federal Reserve's management of its securities holdings and indicates an expectation that asset sales will be gradual and will not be initiated until after policy firming has begun. In contrast, Alternative C′ states that the Federal Reserve will be redeeming all maturing Treasury securities and points to the possibility that gradual asset sales could commence fairly soon.

To the extent that inflation outcomes are seen as linked mainly to expected inflation rather than to resource slack, Committee participants may view the level of forward inflation compensation (which is at the high end of its historical range) and the substantial degree of dispersion in professional forecasters' longer-run inflation projections as worrisome indicators that inflation expectations may not be anchored very firmly. Indeed, members may view prompt policy firming as needed to maintain the public's confidence in the Federal Reserve's commitment to foster price stability, thereby avoiding outcomes in which inflation expectations become unhinged, as in the Greenbook's "Impaired Credibility" alternative scenario.

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the relatively long period over which the policy rate was expected to remain at that level. By contrast, the phrase "at least until the end of the second quarter" in Alternative C may be seen as indicating that the Committee's expectation of exceptionally low rates extends only a few more months while at the same time suggesting that the Committee sees the likelihood of policy firming within that interval as quite low.

Participants may view the pace of economic recovery over coming quarters as mainly determined by the speed of structural adjustments and see a substantial risk that attempting to bolster the economic recovery by keeping the real funds rate below zero for an extended period would instead primarily result in higher expected and hence actual inflation. Moreover, in light of the extraordinarily high level of excess reserves held by the banking system, some members may be concerned about the possibility that a brisk turnaround in lending and rapid growth in broad monetary aggregates could exert significant upward pressure on inflation or that a buildup of excessive financial market speculation might trigger another credit boom-bust cycle. Even if the probabilities of such outcomes are judged to be low, the adverse consequences might be seen as sufficiently severe to warrant a reduction in the size of the Federal Reserve's balance sheet over coming months.

The adoption of a statement like that of Alternative C would surprise financial market participants. In particular, a statement indicating that conditions would warrant an exceptionally low funds rate "for some time" and that presented the key elements of the Federal Reserve's exit strategy would likely be read by market participants as signaling that the Committee plans to initiate policy firming at least a quarter or two earlier than currently anticipated by most investors. Thus, short- and intermediate-term interest rates would shift up significantly and longer-term yields would likely rise as well. Forward measures of inflation compensation might decline if investors became less concerned about risks to the longer-term inflation outlook. Equity prices would likely decline, and the foreign exchange value of the dollar increase.

Longer-term yields would likely rise even further in response to a statement like that of Alternative C′. The Desk's survey indicates that primary dealers do not expect the Federal Reserve to engage in any substantial sales of its securities holdings before

the middle of 2012. Consequently, term premiums on agency MBS and Treasury securities would likely shift upward as a result of heightened prospects that the Federal Reserve might actively reduce its holdings of securities over the next several quarters, and the levels of actual and implied volatility in these markets would also tend to move up.

THE CASE FOR ALTERNATIVE A

If meeting participants are concerned about prospects for a subpar economic recovery and judge that additional monetary stimulus would help improve the outlook for economic activity and inflation, then they might wish to extend the Federal Reserve's agency MBS purchase program and reiterate that the federal funds rate is likely to remain exceptionally low for an extended period, as in Alternative A. This alternative would entail an additional $150 billion of agency MBS purchases during the second quarter, implying a purchase rate of around $10 billion per week—roughly equal to the average pace of purchases over the past several months.

Policymakers may judge that further monetary stimulus is warranted if they, like the staff, see the unemployment rate remaining above 8 percent through the end of next year and inflation running persistently below the rates that they view as most consistent with the Federal Reserve's dual mandate. Policymakers might feel that the simulations of constrained and unconstrained optimal monetary policy depicted in Chart 7 of the Bluebook support the conclusion that increased stimulus is warranted. Moreover, recent staff work on developing a variety of tools for draining reserves in a timely manner may have strengthened participants' confidence that the Committee's purchase program can be augmented without undermining policymakers' ability to withdraw monetary stimulus at the appropriate time.

Members might perceive an even stronger case for providing additional monetary stimulus if their assessment of the outlook is substantially weaker than that of the staff or if they judge the risks to economic activity and inflation to be tilted predominantly to the downside. Incoming data on housing activity might be read as suggesting that the economic recovery will be more protracted than previously thought, and some participants may be concerned that the recovery of the labor market will be particularly slow, perhaps along the lines of the "Stronger Productivity and Weaker Consumption" alternative scenario in the Greenbook. Moreover, recent low readings on core inflation may have underscored the downside risks to price stability. Indeed, while the staff expects core inflation to remain fairly steady at a rate of about 1 percent over coming quarters, participants may assign a higher probability to alternative scenarios—such as the Greenbook's "Greater Disinflation" scenario—in which persistently large resource slack weighs more heavily on labor compensation and hence generates stronger downward pressure on prices.

Policymakers may also judge that augmenting the Federal Reserve's agency MBS purchases would be helpful in postponing prospective increases in mortgage rates that could impair the recuperation of housing markets and undermine the economic recovery. With the approaching completion of the previously announced purchases, the staff expects the spread of conventional fixed-rate mortgage yields over long-term Treasury rates to widen by about a quarter percentage point over the next few months; however, some analysts have pointed to factors that could generate much sharper increases in spreads going forward.[14] Committee participants may view the

[14] The Federal Reserves' purchases of agency MBS have been associated with historically low levels of the option-adjusted spread (OAS), that is, the spread of agency MBS yields over those on comparable Treasuries adjusted for potential variations in prepayment speeds. While the staff anticipates that over coming months the OAS will rise gradually towards its historical mean, this spread might well widen much more sharply; for example, a 75 basis point increase would bring the OAS to the same level as in the wake of the 2001 recession.

risk of such a jump in mortgage rates as particularly undesirable at the current juncture, given that housing activity remains sluggish, foreclosures are likely to pick up over coming months, and house prices have not yet stabilized.

A statement like Alternative A would come as a surprise to financial market participants, who appear to anticipate that the Federal Reserve's LSAP program will be completed on schedule at the end of this month. The statement would likely cause a modest decline in longer-term yields as a direct consequence of the additional LSAPs; in particular, the staff estimates that a $150 billion increase in agency MBS purchases might reduce mortgage rates and other longer-term yields by about 5 to 15 basis points. Moreover, investors would be likely to lengthen the horizon over which they expected the federal funds rate to remain at exceptionally low levels, pushing down short- and intermediate-term yields. However, any decline in longer-term yields might be offset by an increase in inflation compensation if the Committee's statement undermined investors' confidence in a successful execution of the Federal Reserve's exit strategy. Equity prices would probably rise, while the foreign exchange value of the dollar would likely fall.

LONG-RUN PROJECTIONS OF THE BALANCE SHEET AND MONETARY BASE

In this section, scenarios for the balance sheet are presented that correspond to the paths for large-scale asset purchases (LSAPs) of agency debt securities and agency MBS proposed in the alternatives discussed in the "Policy Alternatives" section of the Bluebook. The baseline scenario corresponds to Alternative B in this Bluebook. For the baseline, we assume that agency MBS purchases of $1.25 trillion and agency debt securities purchases of about $175 billion are executed by the end of March. Additionally, legacy Treasury securities, those securities in the SOMA portfolio prior to the start of the LSAP program, are rolled over as they mature. We also present a projection for Alternative A, in which agency MBS purchases are increased by $150 billion to a total of $1.4 trillion; this additional $150 billion in agency MBS purchases is executed over the second quarter of 2010. Purchases of agency debt securities under this alternative remain at about $175 billion and are executed by the end of March. We do not present balance sheet projections for Alternative C in this Bluebook, because the Committee is continuing to evaluate its strategy for asset sales and the use of other reserve draining tools. The announced LSAP purchases in Alternative B and Alternative C are the same, so the baseline projections for assets and reserve balances can serve as a reference for Alternative C. Each alternative assumes that assets decline gradually over time due to redemptions and prepayments of securities holdings.

Projections for the scenarios are based on assumptions about each component of the balance sheet.[15] Details of these assumptions are described in Appendix C.

[15] The Greenbook projection assumes that the federal funds rate lifts off in 2012. The baseline balance sheet projection assumes that the tools to drain reserve balances are not used, except on a very small scale to test the ability of the Open Market Desk to conduct tri-party reserve repurchase agreements with counterparties other than the primary dealers.

Substantive revisions to these assumptions, relative to the January Bluebook, are noted below.

Under the baseline, total assets are lower over most of the projection period than in the January Bluebook. A significant portion of the downward revision in the size of the balance sheet is the result of a decrease in the projected holdings of agency MBS. In the near term, the downward revision to the path for agency MBS is a result of fewer MBS settling over the intermeeting period than expected; in the long term, the revision is driven by a pace of MBS prepayments that is somewhat higher than assumed in January. The forecast for loans extended through the Term Asset-Backed Securities Lending Facility (TALF) has also been marked down, reflecting a higher assumed path for the prepayment of asset-backed securities pledged as collateral for TALF loans.[16] The assumed timing of the sales of two AIG subsidiaries and the resulting disposition of preferred interests in AIA Aurora LLC and ALICO Holdings LLC has been adjusted. The net effect of this timing difference is that support to AIG through 2012 is higher than in the last Bluebook.[17] Alternative A projects a higher contour of total assets because of the assumed larger purchases of agency MBS.

On the liability side of the balance sheet, the increase in the Treasury's Supplementary Financing Account (SFA) has begun sooner than was anticipated at the time of the last Bluebook. In response to the increase in the federal debt ceiling, Treasury announced a schedule of auctions for Supplementary Finance Program bills

[16] Over the intermeeting period, staff changed the methodology with which it estimates the prepayment of asset-backed securities pledged as collateral for TALF loans.

[17] Consistent with press releases over the intermeeting period referring to Prudential's purchase of AIA and MetLife's purchase of ALICO, the forecast assumes that these two transactions will take place in 2010 and will result in a pay down of the Federal Reserve's support to AIG.

that results in the SFA reaching $200 billion by April 2010. The forecast reflects this schedule and assumes that the SFA remains at $200 billion until the second quarter of 2015 when it is reduced to keep the aggregate level of reserve balances from falling below $25 billion. On net, the revisions in the asset and liability components of the balance sheet imply a moderate downward revision in the level of reserve balances over the majority of the projection period.

Balance Sheet Projections Summary

	Alternative A	Baseline
Agency Debt Securities		
Total purchased	About $175 billion	About $175 billion
December 2016	$16 billion	$16 billion
Agency MBS		
Total purchased	$1.4 trillion	$1.25 trillion
December 2016	$0.80 trillion	$0.70 trillion
Total Assets		
Peak month	September 2010	June 2010
Peak amount	$2.44 trillion	$2.32 trillion
December 2016	$1.55 trillion	$1.47 trillion
Reserve Balances		
Peak month	February 2010	February 2010
Peak amount	$1.23 trillion	$1.23 trillion

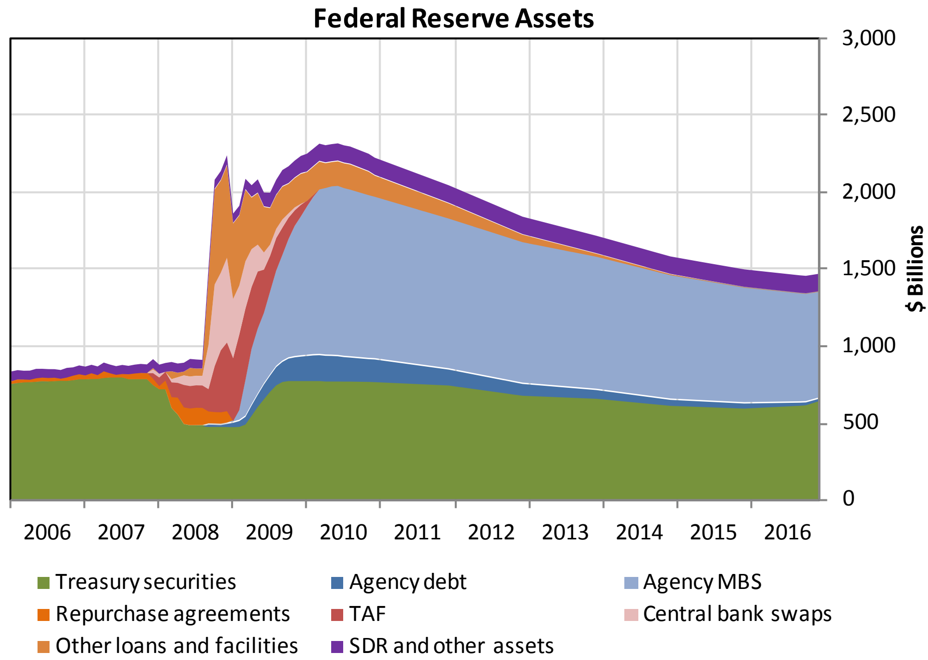
For the baseline scenario, the balance sheet reaches a peak of a little over $2.3 trillion in June 2010. The balance sheet continues to edge up after the March 31 conclusion of large-scale asset purchases because of substantial lags in the settlement of MBS purchases. In Alternative A, the size of the balance sheet peaks at a little over $2.4 trillion, with the peak occurring a few months after the additional MBS purchases

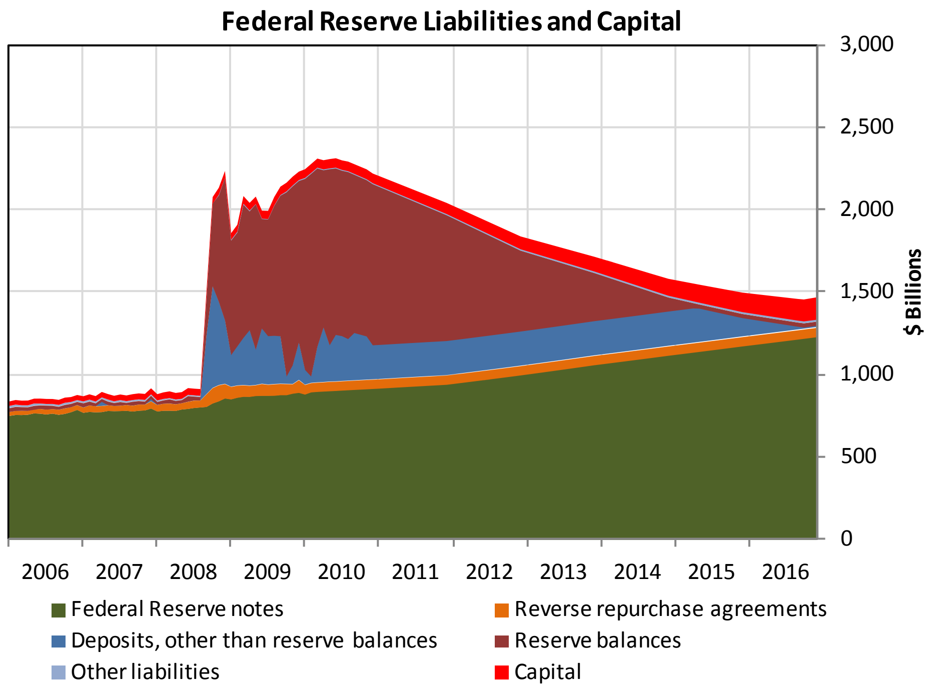
conclude in the second quarter of 2010. By the end of 2016, the size of the balance sheet under both scenarios declines to roughly $1.5 trillion.[18]

Reserve balances decline at the end of the first quarter of 2010, largely as a result of increases in the SFA and the Treasury's General Account. The contraction in the monetary base from the second quarter of 2010 through 2016 is a result of a decline in reserve balances owing to maturing large-scale asset purchases and the prepayment of agency MBS. Since the monetary base is derived from the balance sheet projections of Federal Reserve notes in circulation and reserve balances, and because currency is projected to follow a fairly gradual trajectory, the path of the monetary base in each scenario largely mirrors the path of reserve balances. Specifically, in each scenario, the monetary base peaks at essentially the same time as reserve balances, and as reserve balances decline, the monetary base contracts. Toward the end of the projection period, when reserve balances are assumed to stabilize at $25 billion, the level of the monetary base moves more in line with changes in Federal Reserve notes in circulation.

[18] The composition of Federal Reserve assets in these projections differs notably from historical patterns. Prior to August 2007, U.S. Treasury securities were about 90 percent of assets and the Federal Reserve did not hold any agency mortgage-backed securities. By contrast, under the baseline scenario, Treasury securities are projected to account for only around 35 percent of total assets at the end of 2010 and rise to just 44 percent of total assets at the end of the projection period.

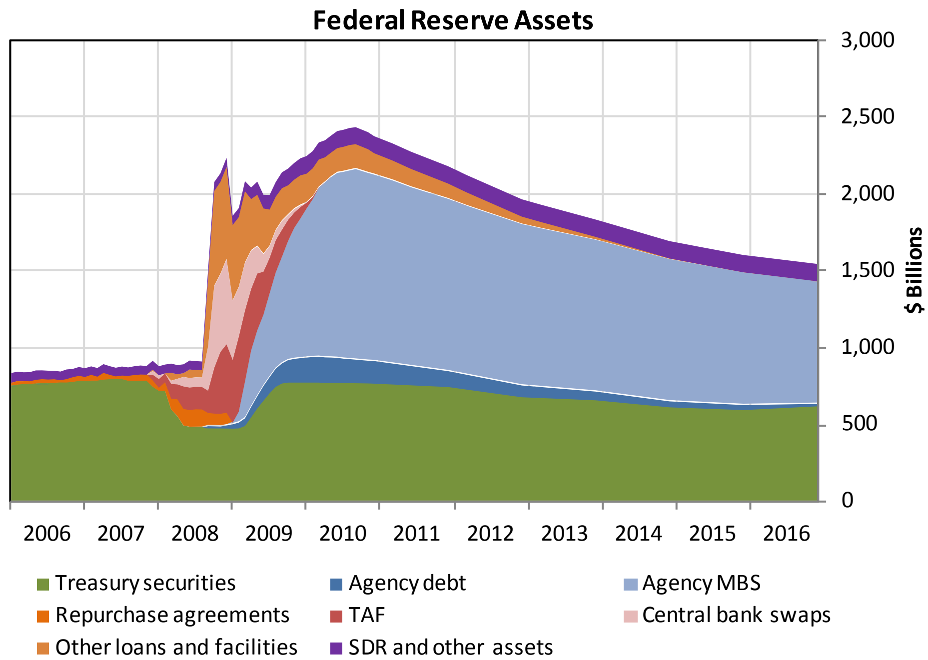
Baseline Scenario (Alternative B)

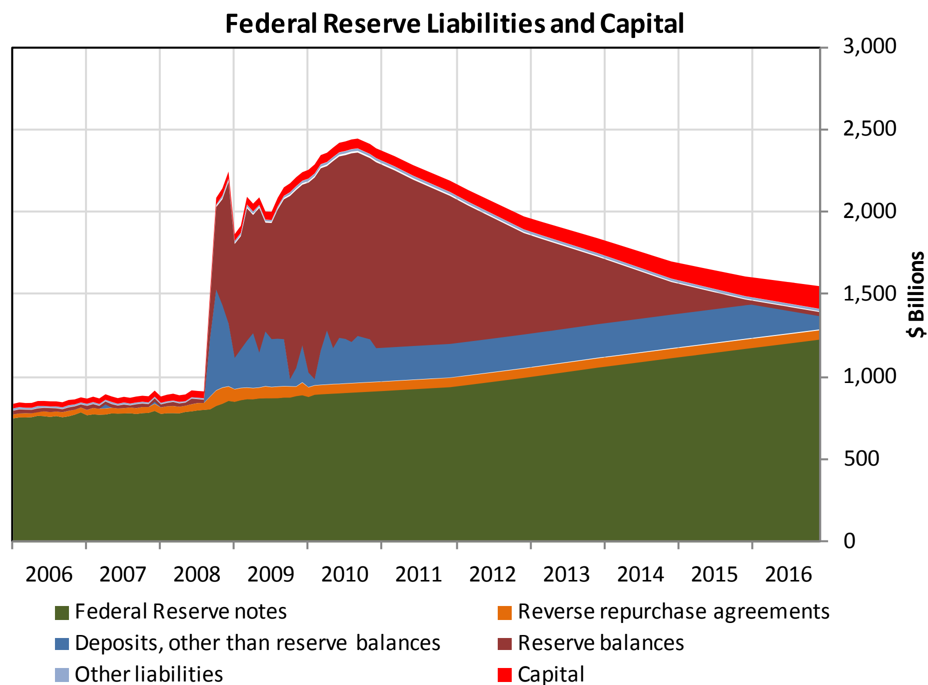




Source. Federal Reserve H.4.1 statistical release and staff calculations.

Alternative A





Source. Federal Reserve H.4.1 statistical release and staff calculations.

DEBT, BANK CREDIT, AND MONEY FORECASTS

The staff projects that domestic nonfinancial sector debt will expand at an annual rate of about 4¾ percent in the first quarter of 2010, reflecting a large increase in government debt and essentially no change in private-sector debt. This pattern is expected to extend over 2010 and 2011, as total domestic nonfinancial debt is projected to increase at an average annual rate of 5½ percent, with rapid growth in federal government debt, a moderate expansion in state and local government debt, and sluggish increases in household and business sector debt. After contracting last year, household debt is projected to be about flat this quarter and to expand slowly over subsequent quarters. Staff expects debt of the nonfinancial business sector to tick down in the current quarter, as robust bond issuance is more than offset by a further contraction in bank loans and other forms of debt. We project only a modest rise in nonfinancial business debt over the forecast period, reflecting relatively small external financing needs and tight credit terms and standards in the banking sector.

Commercial bank credit is expected to contract at an annual rate of about 7¼ percent in the first quarter of 2010, and to decline by roughly 1 percent for 2010 as a whole. Persistent declines in loans over the next couple of quarters are expected to be only partially offset by increases in securities holdings. Real estate loans are expected to contract until late this year due to weak fundamentals and tighter lending standards for commercial real estate, as well as continued strains in residential housing markets. C&I loans are also projected to contract into the second half of 2010, amid nonfinancial firms' subdued demand for bank loans and banks' tight credit policies, while consumer loans continue to run off until mid-year. Total bank loans are expected to resume growth by the fourth quarter, and bank credit is projected to grow around 4¼ percent in 2011.

M2 is expected to be about flat in the current quarter, as a reallocation of household wealth toward higher-yielding non-M2 assets continues to damp money demand. As that process wanes, we expect M2 to increase at a pace closer to that of nominal GDP, given that the opportunity cost of holding money is not projected to change appreciably over the forecast horizon. Small time deposits and retail money market mutual funds are expected to continue declining through 2011, however, the contraction slows through time. A portion of the outflow from these two components is reallocated within M2, boosting liquid deposits, which expand somewhat rapidly through 2011 but nevertheless slow from the pace recorded in 2009. Currency is also predicted to slow from its 2009 pace as precautionary holdings continue to unwind.

Growth Rates for M2
(percent, annual rate)

Monthly Growth Rates		Greenbook Forecast*
	Jul-09	-0.8
	Aug-09	-3.3
	Sep-09	5.6
	Oct-09	4.1
	Nov-09	3.9
	Dec-09	2.2
	Jan-10	-8.6
	Feb-10	7.9
	Mar-10	3.1
	Apr-10	1.3
	May-10	1.3
	Jun-10	1.4
	Jul-10	3.0
	Aug-10	3.3
	Sep-10	3.3
	Oct-10	3.4
	Nov-10	3.5
	Dec-10	3.5
Quarterly Growth Rates		
	2010 Q1	0.1
	2010 Q2	2.4
	2010 Q3	2.6
	2010 Q4	3.4
Annual Growth Rates		
	2009	4.9
	2010	2.1
	2011	4.2
Growth From	To	
Dec-09	Jun-10	1.1
2009 Q4	Mar-10	1.3
2009 Q4	Jun-10	1.3

* This forecast is consistent with nominal GDP and interest rates in the Greenbook forecast. Actual data through March 1, 2010; projections thereafter.

DIRECTIVE

The directive from the January meeting and draft language for the March directive are provided below.

JANUARY FOMC MEETING

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to purchase agency debt and agency MBS during the intermeeting period with the aim of providing support to private credit markets and economic activity. The timing and pace of these purchases should depend on conditions in the markets for such securities and on a broader assessment of private credit market conditions. The Desk is expected to execute purchases of about $175 billion in housing-related agency debt and about $1.25 trillion of agency MBS by the end of the first quarter. The Desk is expected to gradually slow the pace of these purchases as they near completion. The Committee anticipates that outright purchases of securities will cause the size of the Federal Reserve's balance sheet to expand significantly in coming months. The Committee directs the Desk to engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions to be conducted through the end of the first quarter, as directed above. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

MARCH FOMC MEETING — ALTERNATIVE A

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to purchase agency debt and agency MBS during the intermeeting period with the aim of providing support to private credit markets and economic activity. The timing and pace of these purchases should depend on conditions in the markets for such securities and on a broader assessment of private credit market conditions. The Desk is expected to execute purchases of about $175 billion in housing-related agency debt by the end of March and about $1.4 trillion of agency MBS by the end of the second quarter. The Committee anticipates that outright purchases of securities will cause the size of the Federal Reserve's balance sheet to expand significantly in coming months. The Committee directs the Desk to engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions to be conducted through the end of the second quarter, as directed above. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

MARCH FOMC MEETING — ALTERNATIVES B AND C

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to complete the execution of its purchases of about $1.25 trillion of agency MBS and of about $175 billion in housing-related agency debt by the end of March. The Committee directs the Desk to engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

MARCH FOMC MEETING — ALTERNATIVE C′

The Federal Open Market Committee seeks monetary and financial conditions that will foster price stability and promote sustainable growth in output. To further its long-run objectives, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to complete the execution of its purchases of about $1.25 trillion of agency MBS and of about $175 billion in housing-related agency debt by the end of March. The Committee directs the Desk to engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. The Committee directs the Desk to reduce the System's securities holdings by not reinvesting the proceeds of maturing securities or of prepayments from agency MBS. The System Open Market Account Manager and the Secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

APPENDIX A: MEASURES OF THE EQUILIBRIUM REAL RATE

The equilibrium real rate is the real federal funds rate that, if maintained, would be projected to return output to its potential level over time. The short-run equilibrium rate is defined as the rate that would close the output gap in twelve quarters given the corresponding model's projection of the economy. The medium-run concept is the value of the real federal funds rate projected to keep output at potential in seven years, under the assumption that monetary policy acts to bring actual and potential output into line in the short run and then keeps them equal thereafter. The TIPS-based factor model measure provides an estimate of market expectations for the real federal funds rate seven years ahead.

The actual real federal funds rate is constructed as the difference between the nominal rate and realized inflation, where the nominal rate is measured as the quarterly average of the observed federal funds rate, and realized inflation is given by the log difference between the core PCE price index and its lagged value four quarters earlier. If the upcoming FOMC meeting falls early in the quarter, the lagged inflation measure ends in the last quarter. For the current quarter, the nominal rate is specified as the target federal funds rate on the Bluebook publication date.

Measure	Description
Single-equation Model	The measure of the equilibrium real rate in the single-equation model is based on an estimated aggregate-demand relationship between the current value of the output gap and its lagged values as well as the lagged values of the real federal funds rate.
Small Structural Model	The small-scale model of the economy consists of equations for six variables: the output gap, the equity premium, the federal budget surplus, the trend growth rate of output, the real bond yield, and the real federal funds rate.
EDO Model	Estimates of the equilibrium real rate using EDO—an estimated dynamic-stochastic-general-equilibrium (DSGE) model of the U.S. economy—depend on data for major spending categories, price and wages, and the federal funds rate as well as the model's structure and estimate of the output gap.
FRB/US Model	Estimates of the equilibrium real rate using FRB/US—the staff's large-scale econometric model of the U.S. economy—depend on a very broad array of economic factors, some of which take the form of projected values of the model's exogenous variables.
Greenbook-consistent	Two measures are presented—based on the FRB/US and the EDO models. Both models are matched to the extended Greenbook forecast. Model simulations determine the value of the real federal funds rate that closes the output gap conditional on the extended baseline.
TIPS-based Factor Model	Yields on TIPS (Treasury Inflation-Protected Securities) reflect investors' expectations of the future path of real interest rates. The TIPS-based measure of the equilibrium real rate is constructed using the seven-year-ahead instantaneous real forward rate derived from TIPS yields as of the Bluebook publication date. This forward rate is adjusted to remove estimates of the term and liquidity premiums based on a three-factor arbitrage-free term-structure model applied to TIPS yields, nominal yields, and inflation.

Estimates of the real federal funds rate depend on the proxies for expected inflation used. The table below shows estimated real federal funds rates based on lagged core PCE inflation, the definition used in the Equilibrium Real Federal Funds Rate chart; lagged four-quarter headline PCE inflation; and projected four-quarter headline PCE inflation beginning with the next quarter. For each estimate of the real rate, the table also provides the Greenbook-consistent FRB/US-based measure of the short-run equilibrium real rate and the average actual real federal funds rate over the next twelve quarters.

Proxy used for expected inflation	Actual real federal funds rate (current value)	Greenbook-consistent FRB/US-based measure of the equilibrium real funds rate (current value)	Average actual real funds rate (twelve-quarter average)
Lagged core inflation	-1.2	-1.9	-0.5
Lagged headline inflation	-1.8	-2.1	-0.7
Projected headline inflation	-1.1	-1.9	-0.6

APPENDIX B: ANALYSIS OF POLICY PATHS AND CONFIDENCE INTERVALS

RULE SPECIFICATIONS

For the following rules, i_t denotes the federal funds rate for quarter t, while the explanatory variables include the staff's projection of trailing four-quarter core PCE inflation (π_t), inflation two and three quarters ahead ($\pi_{t+2|t}$ and $\pi_{t+3|t}$), the output gap in the current period and one quarter ahead ($y_t - y_t^*$ and $y_{t+1|t} - y_{t+1|t}^*$), and the three-quarter-ahead forecast of annual average GDP growth relative to potential ($\Delta^4 y_{t+3|t} - \Delta^4 y_{t+3|t}^*$), and π^* denotes an assumed value of policymakers' long-run inflation objective. The outcome-based and forecast-based rules were estimated using real-time data over the sample 1988:1-2006:4; each specification was chosen using the Bayesian information criterion. Each rule incorporates a 75 basis point shift in the intercept, specified as a sequence of 25 basis point increments during the first three quarters of 1998. The first two simple rules were proposed by Taylor (1993, 1999). The prescriptions of the first-difference rule do not depend on assumptions regarding r^* or the level of the output gap; see Orphanides (2003).

Outcome-based rule	$i_t = 1.20 i_{t-1} - 0.39 i_{t-2} + 0.19[1.17 + 1.73\pi_t + 3.66(y_t - y_t^*) - 2.72(y_{t-1} - y_{t-1}^*)]$
Forecast-based rule	$i_t = 1.18 i_{t-1} - 0.38 i_{t-2} + 0.20[0.98 + 1.72\pi_{t+2\|t} + 2.29(y_{t+1\|t} - y_{t+1\|t}^*) - 1.37(y_{t-1} - y_{t-1}^*)]$
Taylor (1993) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + 0.5(y_t - y_t^*)$
Taylor (1999) rule	$i_t = 2 + \pi_t + 0.5(\pi_t - \pi^*) + (y_t - y_t^*)$
First-difference rule	$i_t = i_{t-1} + 0.5(\pi_{t+3\|t} - \pi^*) + 0.5(\Delta^4 y_{t+3\|t} - \Delta^4 y_{t+3\|t}^*)$

FRB/US MODEL SIMULATIONS

Prescriptions from the two empirical rules are computed using dynamic simulations of the FRB/US model, implemented as though the rule were followed starting at this FOMC meeting. The dotted line labeled "Previous Bluebook" is based on the current specification of the policy rule, applied to the previous Greenbook projection. Confidence intervals are based on stochastic simulations of the FRB/US model with shocks drawn from the estimated residuals over 1969-2008.

INFORMATION FROM FINANCIAL MARKETS

The expected funds rate path is based on Eurodollar quotes and implied three-month forward rates from swaps, and the confidence intervals for this path are constructed using prices of interest rate caps.

NEAR-TERM PRESCRIPTIONS OF SIMPLE POLICY RULES

These prescriptions are calculated using Greenbook projections for inflation and the output gap. Because the first-difference rule involves the lagged funds rate, the value labeled "Previous Bluebook" for the current quarter is computed using the actual value of the lagged funds rate, and the one-quarter-ahead prescriptions are based on this rule's prescription for the current quarter.

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Orphanides, Athanasios (2003). "Historical Monetary Policy Analysis and the Taylor Rule," *Journal of Monetary Economics*, vol. 50 (July), pp. 983-1022.

APPENDIX C: LONG-RUN PROJECTIONS OF THE BALANCE SHEET AND MONETARY BASE

This appendix presents the assumptions underlying the projections provided in the section entitled "Long-Run Projections of the Balance Sheet and Monetary Base."

GENERAL ASSUMPTIONS

The balance sheet projections are constructed on a monthly frequency from March 2010 to December 2016. The few balance sheet items that are not discussed below are assumed to be constant over the projection period at the level observed on February 26, 2010. The projections for all major asset and liability categories are summarized in the charts and table that follow the bullet points.

The Greenbook projection assumes that the federal funds rate increases in 2012. The balance sheet projections assume that no draining of reserve balances is performed over the forecast horizon.

ASSETS

Asset Purchases

- The baseline scenario, corresponding to Alternative B, incorporates large-scale asset purchases (LSAP) roughly in line with those that have been announced.
  - The Committee purchases about $175 billion in agency debt securities and $1.25 trillion in agency MBS; both types of purchases are to be executed by the end of the first quarter of 2010.
    - Agency debt securities and agency MBS are held to maturity and are not replaced. Prepayments of MBS are not reinvested.
    - Holdings of agency debt securities peak at $169 billion in March 2010, and decline slowly over the remainder of the forecast horizon as they mature. The peak is slightly below the announced purchase amount, reflecting maturing agency debt securities already in the SOMA portfolio.
    - Due to expected settlement lags and prepayments, agency MBS holdings peak at $1.1 trillion in June 2010, a somewhat lower level than the amount purchased.[19] For agency MBS, the rate of prepayment is based on estimates from one of the program's investment managers. The historically low coupon on these securities implies a relatively slow prepayment rate. As a result, at the end of 2016, $697 billion of the $1.25 trillion of MBS purchased remain on the balance sheet.
  - The Committee's purchases of $300 billion in U.S. Treasury securities related to the LSAP program were completed in October 2009.

[19] Prepayments include regular payments of principal and repayments of mortgages.

        - The maturity distribution of the Treasury securities purchased as a part of the LSAP program is based on data from the Federal Reserve Bank of New York's Markets Group. The current weighted average maturity is about six years. The first maturity of an LSAP Treasury security will occur in April of this year.
        - No Treasury securities purchased as a part of the LSAP program are sold, and maturing securities are not rolled over. As a result, total holdings of Treasury securities decline as issues mature. Treasury securities held in the SOMA portfolio prior to the initiation of the LSAP program are assumed to be reinvested as they mature.
- In the scenario corresponding to Alternative A, the Committee increases its purchases of agency MBS by $150 billion to a total of $1.4 trillion and extends the timeframe for these purchases to the end of the second quarter of 2010. The Committee completes its purchase of about $175 billion in agency debt securities by the end of the first quarter of 2010.
- Projections for Alternative C are not presented in this Bluebook, because the Committee has not yet specified a detailed strategy for asset sales or the use of other reserve draining tools. The announced LSAP purchases in Alternative B and Alternative C are the same, so the baseline projections for assets and reserves can serve as a reference for Alternative C.
- A minimum level of $25 billion is set for reserve balances. To ensure that reserve balances do not fall below this minimum level, first the U.S. Treasury's Supplementary Financing Account (SFA) is reduced. If this does not generate enough reserve balances, then Treasury securities are purchased. By the end of the projection period in both alternatives, the expansion of Federal Reserve notes in circulation and capital, combined with a runoff of assets, necessitates not only the reduction of the U.S. Treasury's SFA to zero, but also the resumption of Treasury securities purchases to maintain reserve balances at a level of $25 billion.

Liquidity Programs and Credit Facilities

- Primary credit declines gradually from its current level to $1 billion by the end of 2011 and remains at that level thereafter. Secondary credit is assumed to be zero over the forecast period.
- Credit extended through the Term Auction Facility (TAF) falls to zero by April 2010 and remains at zero thereafter.
- Loans through the Term Asset-Backed Securities Loan Facility (TALF) peaked at $48 billion in December 2009. Credit extended through this facility is assumed to reach zero in the first quarter of 2015, reflecting loan maturities and prepayments.
    - TALF loans are extended with either a three-year or a five-year term.
        - Until loans with a three-year term begin to mature in 2012, the decline in TALF is attributable to prepayments.
        - In 2012, TALF loans outstanding begin to decline more rapidly, reflecting both prepayments and the maturing of three-year loans.

        - After all three-year loans have matured in 2013, TALF declines at a less rapid pace as five-year loans—the amount of which is smaller than three-year loans—prepay and mature.
    - TALF three- and five-year loans backed by asset-backed securities other than commercial mortgage-backed securities (CMBS) plateau at around $37 billion from March 2010 to January 2011. A portion of these loans are expected to prepay, and the quantity outstanding reaches zero by the end of the second quarter of 2014.
    - TALF three- and five-year loans backed by CMBS peaked at $11 billion in February 2010. A portion of these loans are expected to prepay, and the quantity outstanding reaches zero by the end of the first quarter of 2015.
- The assets held by TALF LLC increase to $1 billion by June 2012 and remain at that level through the second quarter of 2015, before dropping down to zero in the third quarter of 2015. Assets held by TALF LLC comprise investments purchased with commitment fees collected by the LLC, and from the U.S. Treasury's initial funding. In this projection, the LLC does not purchase any ABS received by the Federal Reserve Bank of New York in connection with a decision of a borrower not to repay a TALF loan.
- The Commercial Paper Funding Facility (CPFF) and central bank liquidity swap lines expired on February 1, 2010. Central bank liquidity swaps are now zero. CPFF LLC retains its current holdings of commercial paper until maturity, after which the LLC is dissolved. The net portfolio holdings of the CPFF LLC decline to zero in the first half of 2010.
- No credit through either the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) or the Primary Dealer Credit Facility (PDCF) was outstanding when the facilities expired on February 1, 2010.
- Credit extended to AIG, the sum of the Federal Reserve Bank of New York's extension of revolving credit and its preferred interests in AIA Aurora LLC and ALICO Holdings LLC, drops to $41 billion by December 2010 and then declines to zero by the end of 2013.
- The assets held by Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC are sold over time and reach either zero or a nominal level by the end of 2016.

Other Assets

- The Special Drawing Rights (SDR) certificate account increases by $2 billion, to $7 billion, by the third quarter of 2011, as a result of an assumed monetization of the recent allocation of SDRs.

LIABILITIES AND CAPITAL

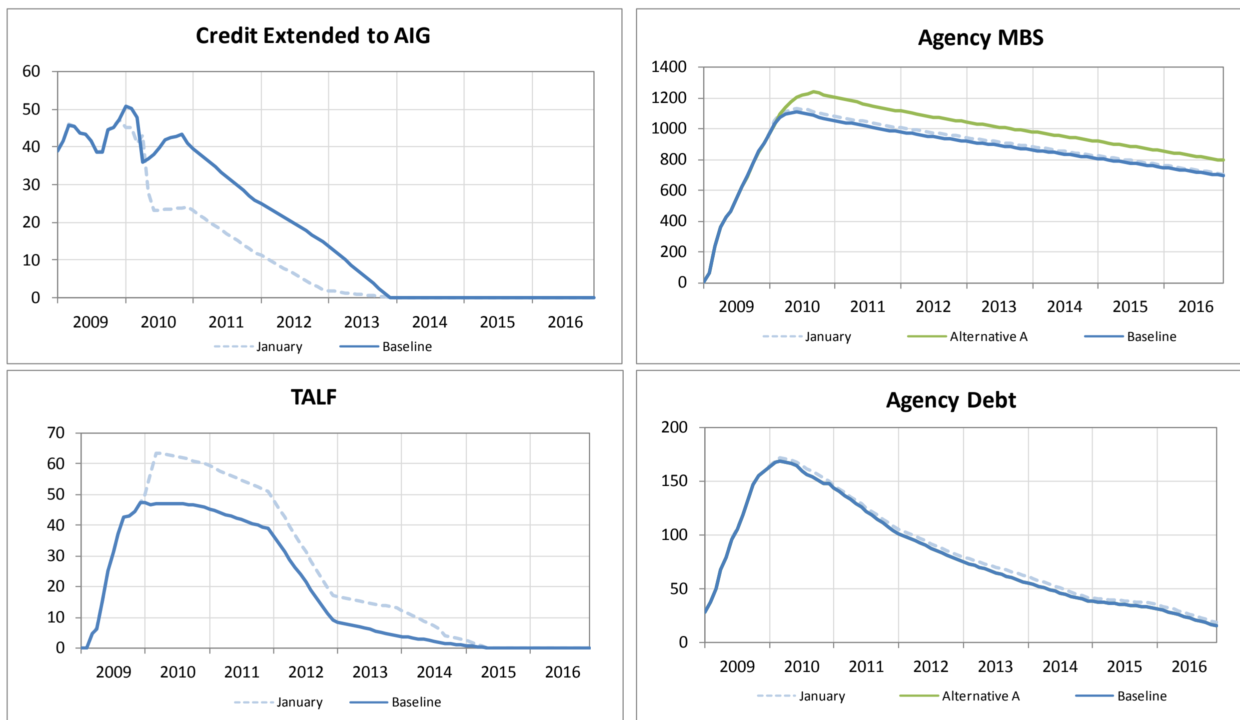
- All liability and capital assumptions in the baseline scenario are the same across scenarios except where noted below.
- Federal Reserve notes in circulation grow in line with the staff forecast for money stock currency through the end of 2011. From 2011 to the end of the projection period, Federal Reserve notes in circulation grow at the same rate as nominal GDP, as projected in the extended Greenbook forecast.

- Reverse repurchase agreements remain roughly at the current level of reverse repurchase agreements with foreign official and international accounts, with some minor fluctuations in the near-term that reflect testing by the Open Market Desk of triparty reverse repurchase agreements with counterparties other than primary dealers.
- The U.S. Treasury's general account (TGA) follows the staff forecast for end-of-month U.S. Treasury operating cash balances through September 2010.[20] Thereafter, the TGA drops back to its historical target level of $5 billion by the end of this year as it is assumed that the Treasury will have implemented a new cash management system that allows it to invest funds in excess of $5 billion. The TGA remains constant at $5 billion over the remainder of the forecast period.
- In response to the increase in the federal debt ceiling, Treasury announced a schedule of auctions for Supplementary Finance Program bills that results in the SFA reaching $200 billion by April 2010. The balances in the SFA remain at this level in each of the scenarios until the SFA is reduced to ensure reserve balance levels do not fall below $25 billion. The timing of when the SFA is reduced to maintain reserve balance levels of $25 billion varies across the scenarios.
- Federal Reserve capital grows 15 percent per year, in line with the average rate of the past ten years.
- In general, the level of assets of the Federal Reserve drives the level of reserve balances. Increases in the levels of other liability items, such as Federal Reserve notes in circulation and the SFA, along with increases in the level of Reserve Bank capital, drain reserve balances. Reserve balances peaked in February 2010. Though reserve balances fall more rapidly in the baseline scenario than in Alternative A, reserve balances fall back to $25 billion by the end of the forecast horizon in both scenarios.

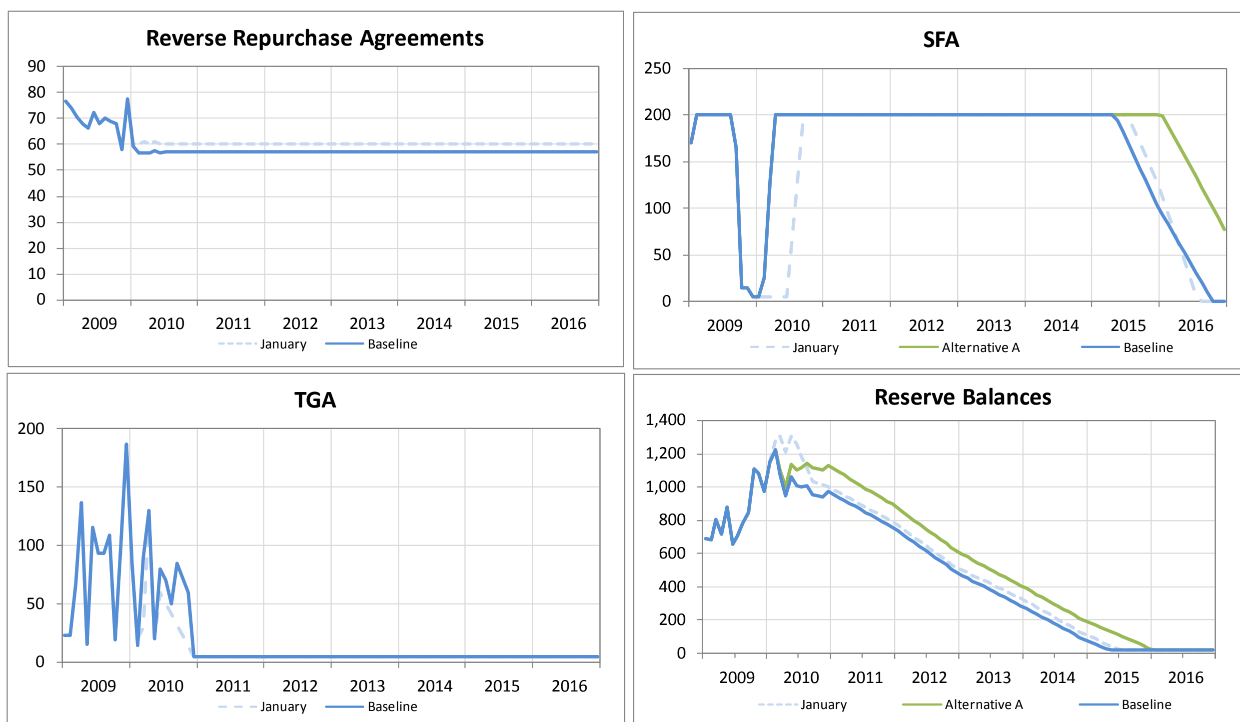
[20] The staff forecast for end-of-month U.S. Treasury operating cash balances includes forecasts of both the TGA and balances associated with the U.S. Treasury's Tax and Loan program. Because balances associated with the Tax and Loan program are $2 billion, for the time being, this forecast is a good proxy for the level of TGA balances.

Appendix C: Individual Balance Sheet Item Profiles

Asset purchases and Federal Reserve liquidity programs and credit facilities



Federal Reserve liabilities



Note. All values are in billions of dollars.

Appendix C: Table

Federal Reserve Balance Sheet: End-of-Year Projections -- Baseline Scenario

		End-of-Year						
	Feb 26, 2010	2010	2011	2012	2013	2014	2015	2016
					$ Billions			
Total assets	2,284	2,226	2,047	1,843	1,719	1,585	1,501	1,471
Selected assets:								
Liquidity programs for financial firms	30	9	1	1	1	1	1	1
Primary, secondary, and seasonal credit	15	9	1	1	1	1	1	1
Term auction credit (TAF)	15	0	0	0	0	0	0	0
Central bank liquidity swaps	0	0	0	0	0	0	0	0
Primary Dealer Credit Facility (PDCF)	0	0	0	0	0	0	0	0
Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF)	0	0	0	0	0	0	0	0
Lending though other credit facilities	55	46	39	9	4	1	0	0
Net portfolio holdings of Commercial Paper Funding Facility LLC (CPFF)	8	0	0	0	0	0	0	0
Term Asset-Backed Securities Loan Facility (TALF)	47	46	39	9	4	1	0	0
Support for specific institutions	116	82	58	38	14	3	2	1
Credit extended to AIG	50	41	26	15	0	0	0	0
Net portfolio holdings of Maiden Lane LLC, Maiden Lane II LLC, and Maiden Lane III LLC	65	41	32	23	14	3	2	1
Securities held outright	1,971	1,977	1,835	1,681	1,586	1,466	1,385	1,357
U.S. Treasury securities	777	770	748	681	661	615	597	644
Agency debt securities	168	148	104	77	57	39	33	16
Agency mortgage-backed securities	1,027	1,059	983	923	868	812	755	697
Repurchase agreements	0	0	0	0	0	0	0	0
Net portfolio holdings of TALF LLC	0	1	1	1	1	1	0	0
Total liabilities	2,230	2,167	1,979	1,765	1,629	1,481	1,382	1,335
Selected liabilities:								
Federal Reserve notes in circulation	891	912	938	995	1,058	1,116	1,173	1,229
Reverse repurchase agreements	57	57	57	57	57	57	57	57
Reserve balances of depository institutions	1,225	974	760	489	290	85	25	25
U.S. Treasury, general account	15	5	5	5	5	5	5	5
U.S. Treasury, supplementary financing account	25	200	200	200	200	200	103	0
Total capital	55	59	68	78	90	103	119	136

Source. Federal Reserve H.4.1 statistical release and staff calculations.