Prefatory Note

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APRIL 22, 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

Investors seemed to become more upbeat about economic prospects over the intermeeting period. Equity prices moved higher, buoyed by positive earnings news, and spreads on corporate bonds edged down further on signs of improvement in corporate credit quality. Yields on Treasury securities rose slightly, on net, and the expected path of the federal funds rate edged down. Market functioning was generally stable, with no apparent adverse reaction to the end of the Federal Reserve's programs to purchase agency debt and agency mortgage-backed securities (MBS) at quarter-end. Corporate bond issuance surged over the intermeeting period, while bank loans to both businesses and households continued to decline in March. Results from the April Senior Loan Officer Opinion Survey (SLOOS) indicated that the tightening of bank lending standards likely came to an end, on net, in the first quarter, but banks continued to tighten loan terms, particularly for risky borrowers, and to experience weaker loan demand. Across the globe, equity indexes rose, evidently reflecting growing confidence that the global recovery is gaining momentum, although concerns about fiscal sustainability in Greece intensified.

MONETARY POLICY EXPECTATIONS AND TREASURY YIELDS

Despite the more optimistic tone in financial markets regarding the economic outlook, policy expectations edged down, on net, over the intermeeting period. The expected path of the federal funds rate declined modestly after the release of the statement following the March FOMC meeting, as some market participants reportedly interpreted the retention of the "extended period" language as pointing to a longer period of low rates than previously expected. That downward revision in policy expectations was reinforced by subsequent communications by Federal Reserve officials that were read by investors as somewhat more cautious about the economic recovery than had been expected.

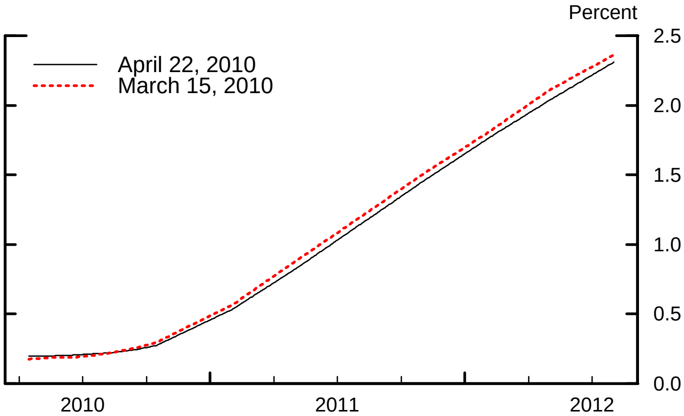
Futures quotes combined with the staff's standard assumption regarding the term premium suggest that the expected path of the funds rate starts to rise above 25 basis points in the fourth quarter of this year and reaches just above 1½ percent by the end of 2011, a bit lower than at the time of the last FOMC meeting (Chart 1). Market quotes for interest rate caps provide information about the distribution of the anticipated federal funds rate at points in the future, and these data suggest that the modal path of the federal funds rate lies well below the mean path captured by federal funds futures. The April survey of primary dealers asked them to assign probabilities to the event that the first increase in the FOMC's target funds rate would occur in a given quarter over the next couple of years. The responses indicated that the dealers see probabilities that the first target rate increase will occur in the second half of this year, the first half of next year, or in the second half of next year and beyond of about 40 percent, 35 percent, and 23 percent, respectively.

On net, yields on 2- and 10-year Treasury securities edged up, on balance, over the intermeeting period, reportedly reflecting in part some concerns about the fiscal outlook and modestly improved prospects for economic growth. Trading was volatile at times, particularly in late March, and option-implied measures of uncertainty about longer-term Treasury yields moved higher, on balance. The rise in implied volatility is consistent with model estimates pointing to an increase in term premiums. Near-term inflation compensation rose some over the period. Longer-term inflation compensation increased 11 basis points, but survey measures of longer-term inflation expectations were about unchanged.

Chart 1

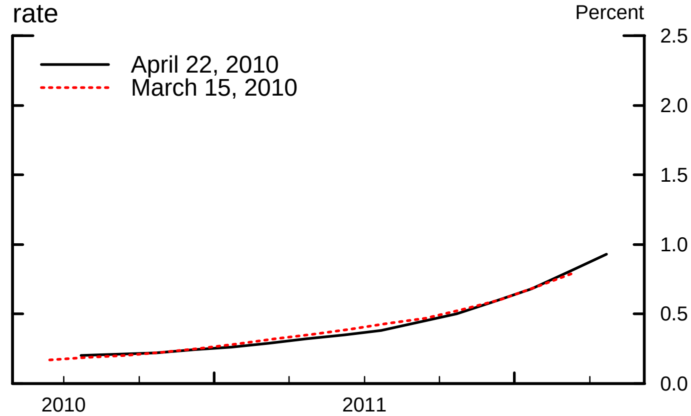
Interest Rate Developments

Expected federal funds rate



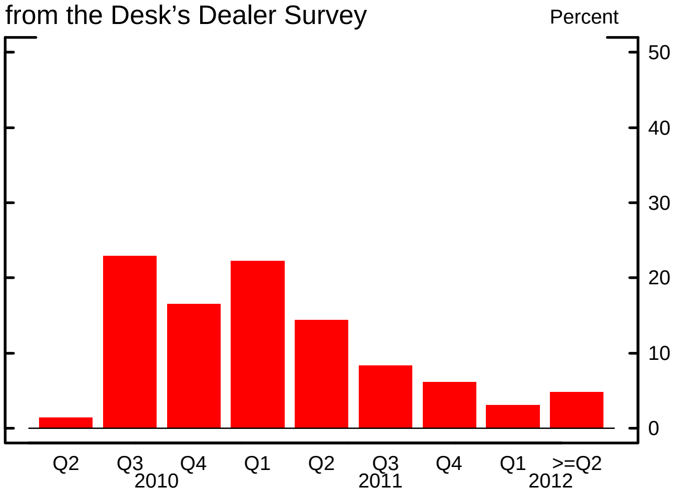
Note. Mean is estimated from federal funds and Eurodollar futures and includes an allowance for term premiums and other adjustments.
Source. CME Group.

Mode of the distribution of the anticipated federal funds rate



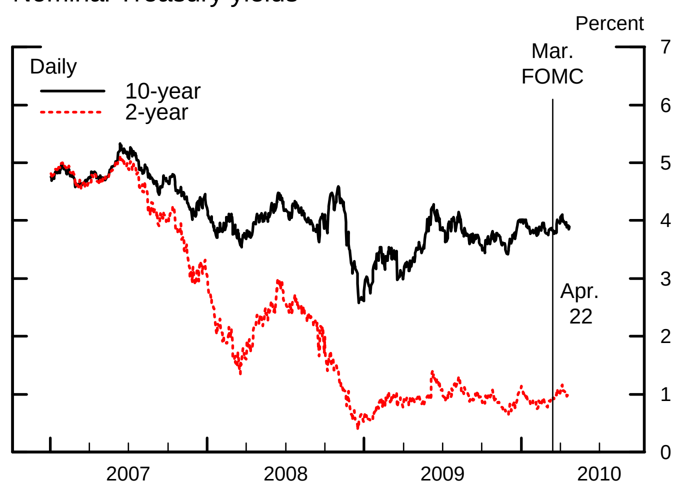
Note. Mode is estimated from distribution of federal funds rate implied by interest-rate caps and includes an allowance for term premiums and other adjustments.
Source. Bloomberg.

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



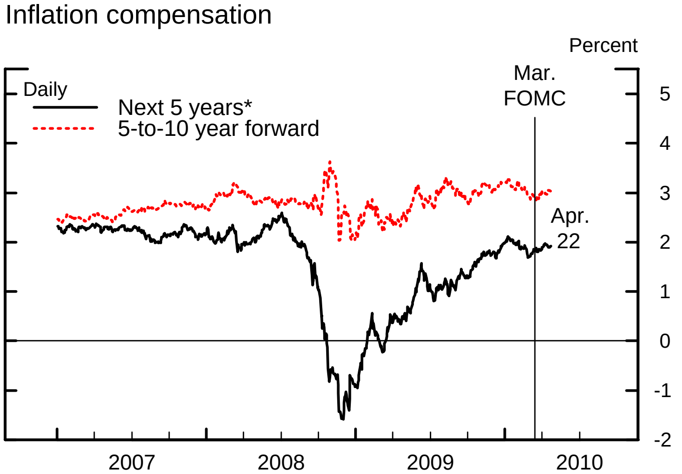
Note. Distribution is derived from the responses of 18 primary dealers to the Desk's Dealer Survey.
Source. Federal Reserve Bank of New York.

Nominal Treasury yields



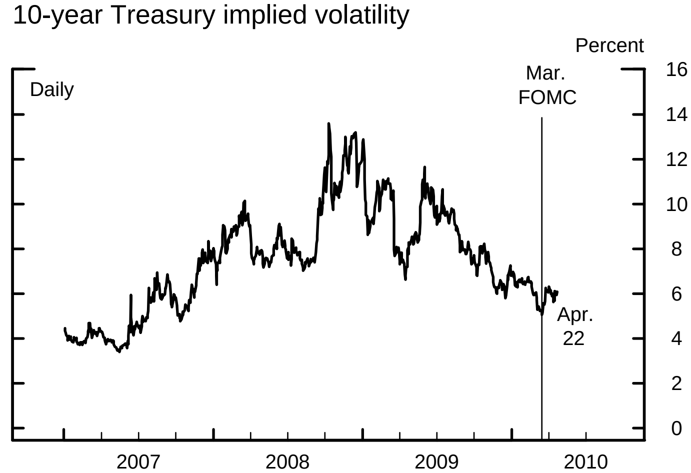
Note. Par yields from a smoothed nominal off-the-run Treasury yield curve.
Source. Staff estimates.

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.

The Treasury auctioned about $200 billion in coupon securities of various maturities over the intermeeting period. Some of the auctions held in late March, particularly those for 5- and 7-year notes, had stop-out rates that were somewhat above when-issued rates. By contrast, the coupon auctions that took place in April had strong bid-to-cover ratios and stopped out at rates just above or somewhat below when-issued rates. The 10-year TIPS auction in April also experienced robust demand. Concerns about the fiscal outlook seemed to be a factor contributing to the continued narrowing of ten-year swap spreads over the period. (See box entitled "Determinants of the Ten-Year Swap Spread.")

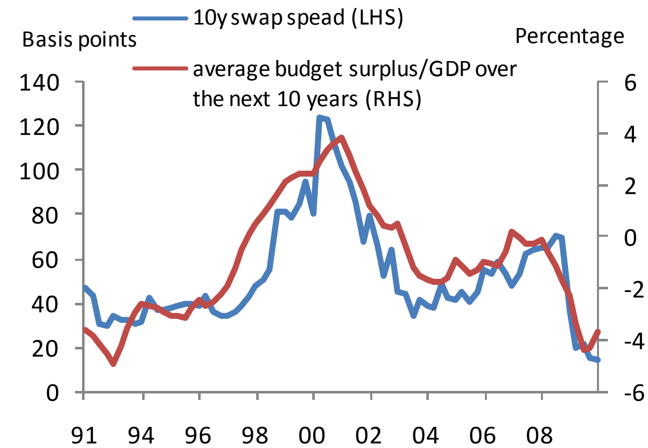
CAPITAL MARKETS

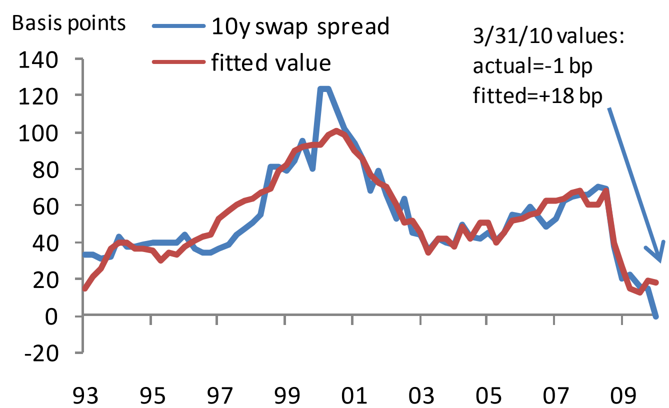
Broad equity indexes rose 5 to 9 percent, on balance, over the intermeeting period, with bank shares gaining 12 percent (Chart 2). Equity prices were supported by generally positive macroeconomic data and a favorable response by investors to the initial batch of first-quarter corporate earnings reports. The first-quarter earnings of banking institutions were well above expectations, on balance, with the largest banks posting strong capital markets revenue, and banks of all sizes reporting a decrease in loan loss provisioning that boosted earnings more broadly. 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 Treasury yield, remained well above levels observed during the past decade, while option-implied volatility on the S&P 500, which spiked briefly on the news of the SEC's fraud case against Goldman Sachs, declined, on balance, over the intermeeting period.

Yields on investment-grade corporate bonds edged down, leaving their spreads to comparable-maturity Treasury securities a bit lower at levels around those that prevailed in late 2007. Consistent with more favorable investor sentiment toward risky assets, yields and spreads on speculative-grade corporate bonds declined, and

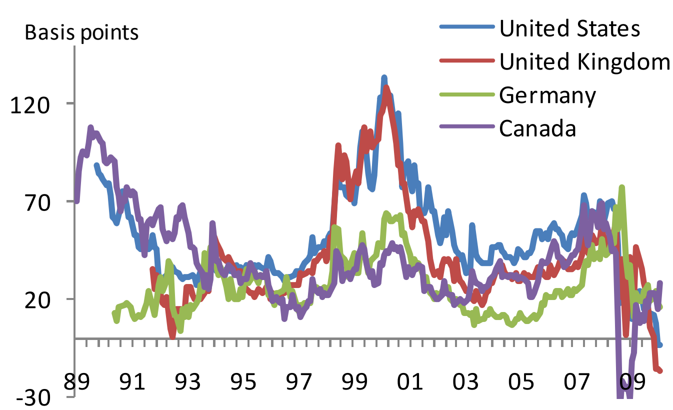
Determinants of the Ten-Year Swap Spread

The ten-year swap spread (based on dollar Libor rates) has narrowed significantly since the fall of 2008 and recently turned slightly negative.[1] Several factors have been mentioned as contributing to the decline in U.S. swap spreads: (1) concerns about the U.S. fiscal outlook, (2) reduced mortgage hedging demand as a consequence of large MBS purchases by the Federal Reserve, (3) recent elevated bond issuance by firms that subsequently swapped fixed rates on the bonds into floating rates, (4) diminished credit risks of the banking sector, (5) concerns about U.S. sovereign credit risk, and (6) effects of ongoing deleveraging by financial firms.





Based on regression analysis over the 1993:Q1 to 2009:Q4 period, the deterioration in the fiscal outlook appears to be the single most important factor influencing the ten-year swap spread. We measure this variable by the average ratio of the federal budget surplus to nominal GDP over the next ten years based on the baseline projections by the



[1] A negative swap spread does not indicate that corporations can issue long-term debt at a lower cost than the U.S. Treasury. This is because, in order to do so, companies would need to either keep rolling over short-term debt over the next ten years or issue ten-year floating-rate bonds, while in the meantime swapping the floating-rate liabilities into fixed rates. The former arrangement exposes them to the risk that their short-term borrowing cost might rise in the future, while in the latter scenario, the floating-rate debt is typically issued at a spread over Libor that is sufficiently large to result in an overall borrowing cost exceeding the ten-year Treasury yield.

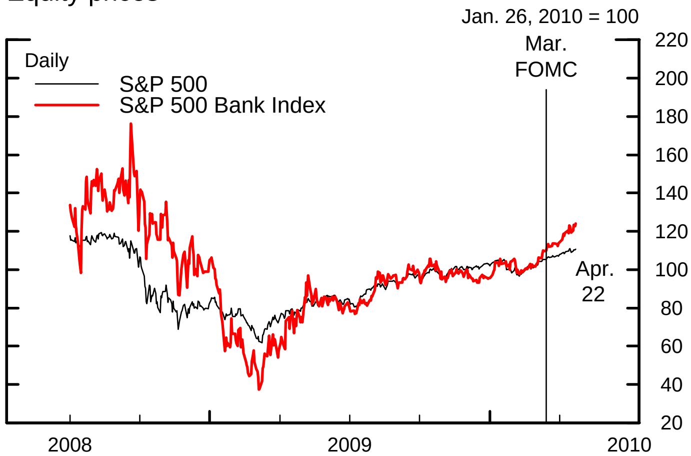
Congressional Budget Office (CBO) and plotted it as the red line in the top panel. This variable alone explains about 80 percent of the variation in swap spreads over the sample period. A proxy for the credit risk of the banking sector (the Libor-OIS spread) and a measure of mortgage hedging demand (MBS duration adjusted for purchases by the Federal Reserve and the Treasury) also have significant explanatory power; available proxies for all other factors mentioned above appear to be insignificant over this period as a whole.

This model accounts for about 2/3 of the swap spread narrowing since late 2008. However, as shown in the middle panel, the model is unable to account for the recent sharp drop in swap spreads into negative territory, suggesting that other transitory market factors—such as strong corporate bond issuance and the unwinding of swap-spread-widening positions amid narrowing swap spreads—may have been at play in recent weeks. In addition, market participants reportedly saw the passage in March of health care reform by the Congress as implying more deterioration in the fiscal outlook than suggested by the CBO budget estimates.

Of note, as shown in the bottom panel, swap spreads in other countries have behaved similarly to those in the United States. Staff work suggests that these spreads are also reflective, in part, of concerns about the future supply of government securities.

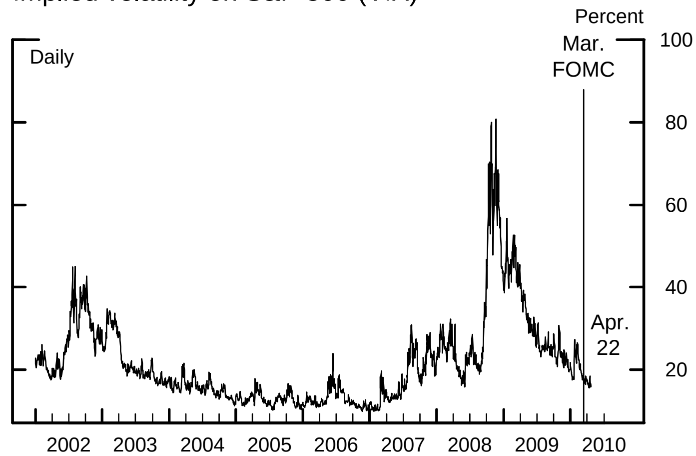
Chart 2
Asset Market Developments

Equity prices



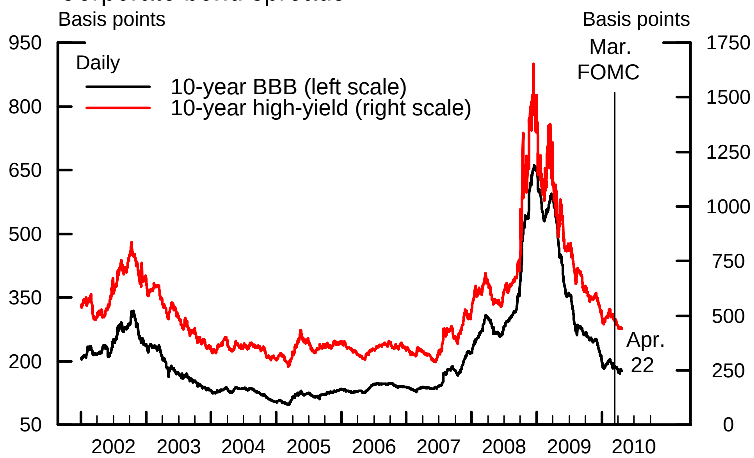
Source. Bloomberg.

Implied volatility on S&P 500 (VIX)



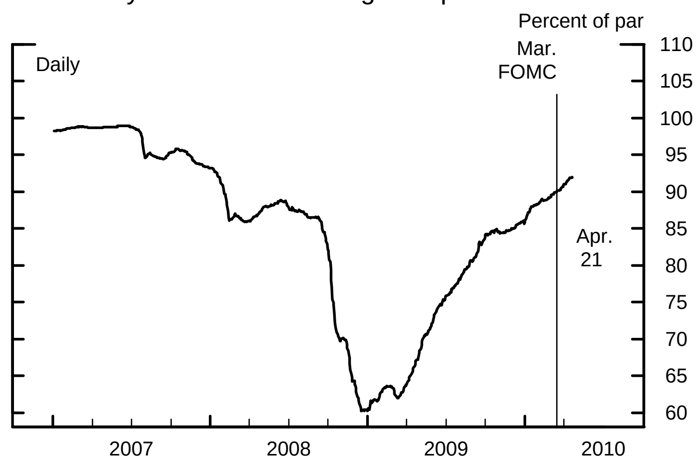
Source. Chicago Board Options Exchange.

Corporate bond spreads



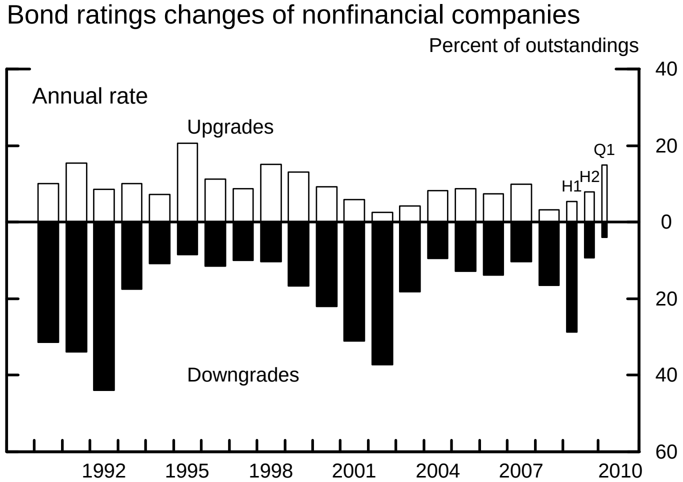
Note. Measured relative to a smoothed nominal off-the-run Treasury yield curve.
Source. Merrill Lynch and staff estimates.

Secondary loan market average bid price



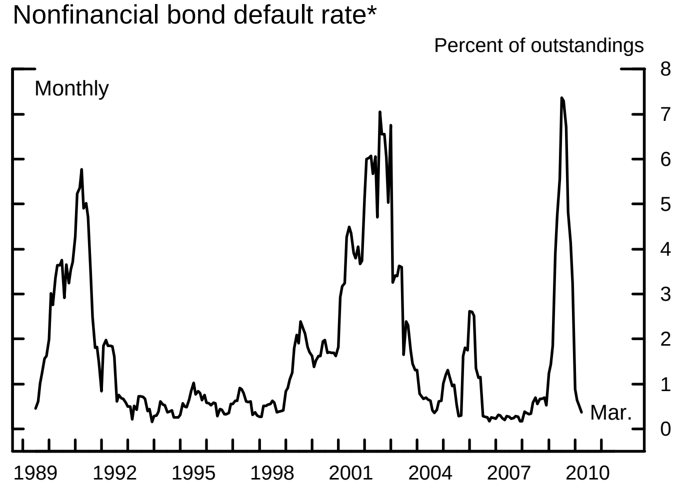
Source. LSTA/LPC Mark-to-Market Pricing.

Bond ratings changes of nonfinancial companies



Source. Calculated using data from Moody's Investors Service.

Nonfinancial bond default rate*



* 6-month trailing defaults divided by beginning-of-period outstandings, at an annual rate.
Source. Moody's Investors Service.

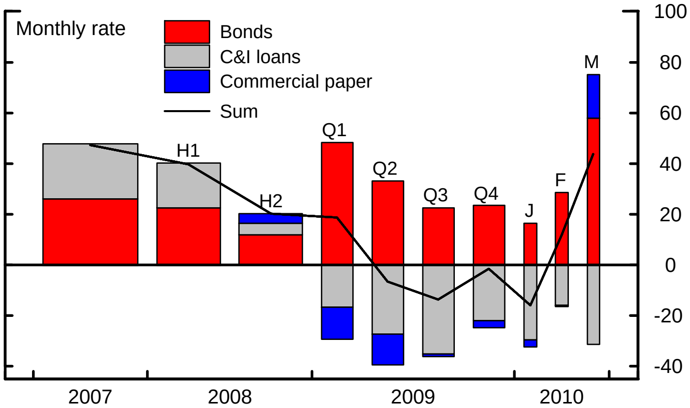
secondary market prices of syndicated leveraged loans rose further. Indicators of credit quality for nonfinancial firms continued to improve. The number of nonfinancial corporate bonds that Moody's upgraded in the first quarter far exceeded the number it downgraded. No defaults on nonfinancial bonds were recorded in March, bringing the six-month trailing average down even further. The year-ahead expected default frequency for nonfinancial firms from Moody's KMV declined again in March, but remained somewhat elevated.

Overall, net debt financing by nonfinancial firms was solidly positive in March (Chart 3). Issuance of nonfinancial bonds surged and net issuance of commercial paper rebounded appreciably. Reportedly, a portion of the proceeds from the increased bond issuance went to pay down other debt. Institutional investors, including collateralized loan obligation pools, were said to have used the significant amount of cash provided by the resulting loan prepayments to purchase new loans in the primary market. Consequently, issuance of leveraged loans picked up in the first quarter. Meanwhile, the contraction in C&I loans at banks continued at roughly its recent pace; anecdotal information from banks indicated this decline was also attributable in part to continued paydowns of existing loans. Net equity issuance by nonfinancial firms was negative again in the first quarter as the solid pace of gross public equity issuance was more than offset by equity retirements from both cash-financed mergers and share repurchases. Financial firms issued a robust volume of debt securities in the first quarter, and also raised a moderate amount of gross funds in the equity market; this pattern appears to have continued in the first half of April.

The conclusion of purchases under the Federal Reserve's agency MBS program had only a modest market effect. The spread of yields on 30-year current coupon MBS over yields on 10-year Treasury securities retraced much of the increase seen around the time of the program's conclusion, ending the period roughly where it

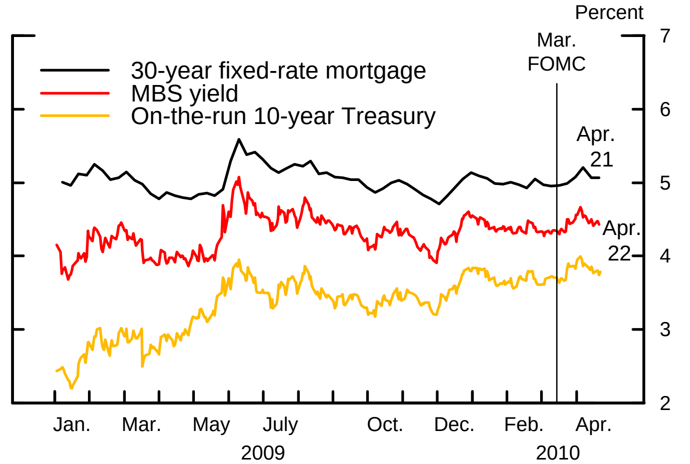
Chart 3
Credit Market Developments

Changes in selected components of debt of the nonfinancial business sector



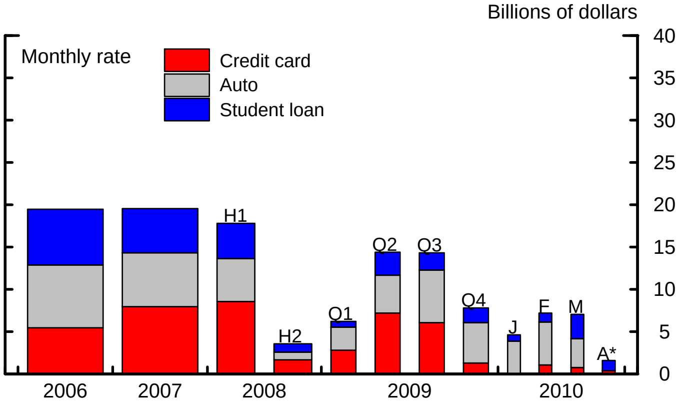
Note. CP and C&I loans are seasonally adjusted; bonds are not.
Source. Depository Trust & Clearing Corporation, Thomson Financial, and Federal Reserve.

Selected interest rates



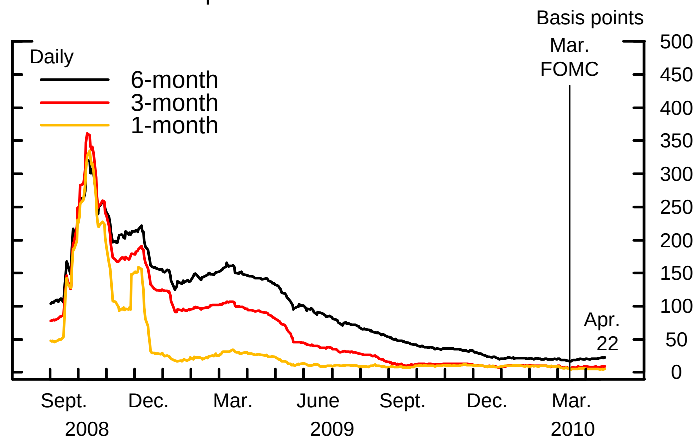
Note. Data are business daily except for the 30-year fixed-rate mortgage, which is weekly.
Source. Bloomberg.

Gross ABS issuance



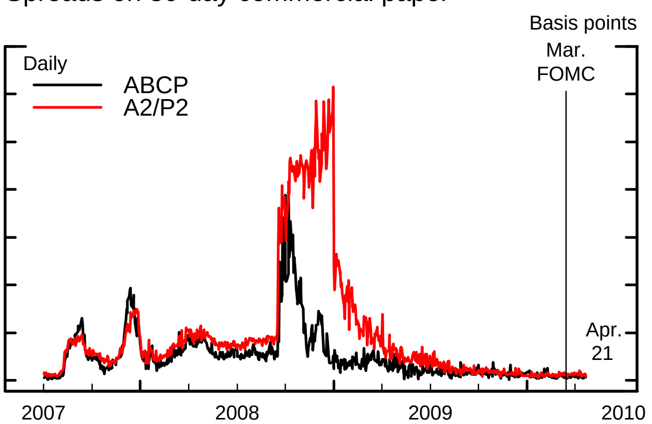
*Issuance for April is through April 16, 2010.
Note. Auto ABS include car loans and leases and financing for buyers of motorcycles.
Source. Inside MBS & ABS, Merrill Lynch, Bloomberg, and the Federal Reserve.

Libor over OIS spreads



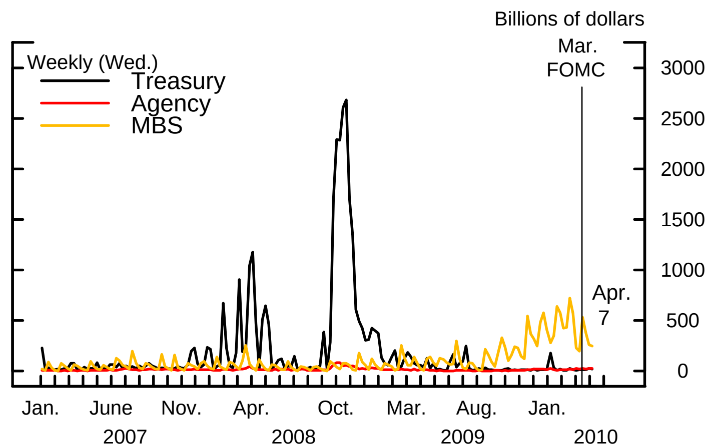
Source. British Bankers' Association and Prebon.

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.

Fails to deliver



Source. FR2004.

began it. However, the spread of option-adjusted yields on MBS over yields on Treasury securities widened some. The average interest rate on 30-year conforming fixed-rate mortgages increased about 10 basis points to 5.07, about in line with the increase in 10-year Treasury yield, leaving the spread between these two rates roughly unchanged. Market-based indicators of investor expectations do not point to a widening of MBS spreads in the near term. The factors contributing to the still-low MBS and mortgage spreads include the low level of mortgage originations, which has damped the supply of new MBS, and the GSEs' increased purchases of mortgages through their buyouts of delinquent loans. In addition, market participants have noted that a number of traditional investors that have been underweight in mortgages over recent months have reportedly become active buyers of mortgages since the conclusion of the Federal Reserve's purchases of MBS.

Consumer credit continued to trend lower in recent months, pushed down by a steep decline in revolving credit. Spreads on high-quality credit card and auto loan asset-backed securities (ABS) edged down over the period, with little upward pressure evident from the end of the portion of the Term Asset-Backed Securities Loan Facility (TALF) supporting ABS. Still, fewer ABS were issued in the first quarter than in the fourth quarter, reflecting continued weakness in loan originations. Delinquency rates on consumer loans edged down further in February but remained very elevated. Spreads of interest rates on credit cards over yields on two-year Treasury securities continued to drift upward. By contrast, interest rates on new auto loans at dealerships and their spread over yields on five-year Treasury securities declined further.

Market Functioning and Federal Reserve Programs

Overall, conditions in short-term funding markets remained generally stable during the intermeeting period. Libor-OIS spreads at the one-, three-, and six-month tenors stayed around levels that prevailed in late 2007, as did spreads in the commercial paper market.[1] The effective federal funds rate was somewhat firm relative to the recent past, averaging 18 basis points compared to 13 basis points over the previous intermeeting period. The firming was likely the result in part of higher levels of the Treasury general collateral (GC) repo rate, which in turn largely reflected continued increases in the supply of Treasury debt including Supplementary Financing Program bills. Moreover, Fannie Mae reportedly reduced its lending in the federal funds market over the intermeeting period, using a substantial portion of its short-term liquidity to fund part of its buybacks of delinquent loans. Futures market quotes suggest that market participants expect the effective federal funds rate to stay near current levels for some time.

Funding pressures in financial markets were muted in the run-up to quarter-end. Rates in some money markets, including those on very short-term Treasury bills, did decline sharply on the quarter-end, but not as sharply as at the December year-end, and they normalized quickly thereafter. Market participants indicated that rates may have been supported at the end of the quarter by a number of factors, including a large month-end settlement of Treasury coupon issues that provided approximately $90 billion in net new collateral to the market, issuance of Treasury bills under the Supplementary Financing Program, and a decrease in quarter-end window dressing by banks as fewer were subject to FDIC fee assessments after opting out of the Transaction Account Guarantee Program (TAGP) following year-end.[2]

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[1] Although Libor-OIS spreads were little changed, anecdotal reports late in the period suggested that some institutions might be experiencing a modest increase in funding pressures. A number of possible causes were cited, included potential concerns about institutions' perceived exposures to Greece.

[2] To minimize the dollar amount of the assessment fee for the TAGP at each quarter-end, some banks reportedly sought to encourage their customers to shift funds from transaction deposits, which were subject to the assessment, to other types of investments that were not. The resulting shifts put downward pressure on GC repo rates and other short-term money

Outflows from institutional money market mutual funds intensified in March. The acceleration appears to reflect at least in part the increase in rates in money markets over the period. Rates on money market mutual funds adjust to changes in rates paid on underlying instruments with a lag, and some investors apparently reacted to the widening in spreads by substituting away from money market mutual funds and directly into higher-yielding money market instruments.

The volume of fails in the MBS market dropped significantly relative to its recent peak in March, apparently reflecting in part the active efforts of market participants to reduce their fails positions. Investors noted the announcement by the Treasury Market Practices Group that it planned to expand its scope to include the agency MBS and agency debt markets. Some market participants reportedly interpreted the announcement as likely to presage the establishment of a fails charge in the MBS market similar to the one instituted in the Treasury market in May 2009.

In addition to completing its purchases of agency MBS, the Federal Reserve also concluded its purchases of agency debt and held its last TALF subscription for legacy commercial mortgage-backed securities (CMBS). (See box entitled "Balance Sheet Developments during the Intermeeting Period.") These events passed with no major adverse effects on markets or institutions. The last purchase of agency debt was made on March 24; since then, agency debt spreads to Treasury securities have been roughly unchanged. The final legacy CMBS TALF subscription settled on March 29. Spreads of AAA-rated CMBS to 10-year Treasury securities, which remain elevated relative to pre-crisis levels, decreased substantially over the intermeeting period, reportedly reflecting increased demand. These developments suggest that the end of the portion of the TALF program supporting legacy CMBS did not cause significant strains in the

market rates. Now that most large banks are no longer subject to the assessment fee, the shift into GC repo at quarter-end has eased, implying less downward pressure on rates.

Balance Sheet Developments during the Intermeeting Period

The Federal Reserve's total assets edged up over the intermeeting period to just over \$2.3 trillion.[1] An increase in securities held outright, as purchases under the large-scale asset purchases (LSAPs) continued to settle, more than offset a decline in lending through liquidity and credit facilities.

During the intermeeting period, securities held outright rose, on net, \$39 billion, reflecting increases of \$1 billion in agency debt securities and \$38 billion in agency mortgage-backed securities (MBS).[2] The Desk completed purchases of agency debt under the agency LSAP program by the end of March. However, given the lags in the settlement of agency MBS purchase transactions and the dollar roll transactions conducted by the Desk, the final agency MBS purchases under the agency MBS LSAP program will likely not settle until late June.

Credit provided through the System's liquidity and credit programs contracted further over the intermeeting period. Credit outstanding under the Term Auction Facility (TAF) dropped to zero on April 8, and primary credit declined by \$5 billion to \$7 billion over the period. The last \$3 billion of commercial paper holdings of the Commercial Paper Funding Facility (CPFF) will mature on April 26.[3]

Loans extended through the Term Asset-Backed Securities Loan Facility (TALF) decreased by about \$1 billion, on net. About \$857 million in loans backed by legacy commercial mortgage-backed securities (CMBS) settled in the final legacy TALF subscription on March 29. This increase in lending was offset by about \$2 billion in loan prepayments. No loans secured by newly issued CMBS were requested at the April 21 subscription, and it appears unlikely that there will be any such loan requests before the facility closes on June 30.

On the liability side of the Federal Reserve's balance sheet, the U.S. Treasury's general account declined \$39 billion over the period. However, the Treasury's supplementary financing account increased \$125 billion, bringing the balance to \$200 billion, the level the Treasury intends to maintain going forward. Reserve balances of depository institutions decreased by \$49 billion over the intermeeting period.

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[1] These data are through April 21, 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 \$25.8 billion of MBS, on net.

[3] The remaining assets of CPFF LLC—investments of the fees paid by issuers that sold commercial paper to the facility—will remain on the Federal Reserve's balance sheet until the LLC is dissolved, which will likely occur in late May 2010.

Federal Reserve Balance Sheet

Billions of dollars

	Change since last FOMC	Current (04/21/2010)	Maximum level	Date of maximum level
Total assets	**33**	**2,341**	**2,343**	**04/14/10**
Selected assets:				
Liquidity programs for financial firms	-9	7	1,247	11/06/08
Primary, secondary, and seasonal credit	-5	7	114	10/28/08
Term auction credit (TAF)	-3	0	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	-1	55	351	01/23/09
Net portfolio holdings of Commercial Paper Funding Facility LLC (CPFF)	+0	8	351	01/23/09
Term Asset-Backed Securities Loan Facility (TALF)	-1	47	49	03/11/10
Support for specific institutions	+0	115	118	04/02/09
Credit extended to AIG, net	-0	25	91	10/27/08
Preferred interests in AIA Aurora LLC and ALICO Holdings LLC	+0	25	25	04/21/10
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*	39	2,048	2,048	04/20/10
U.S. Treasury securities	+0	777	791	08/14/07
Agency securities	1	169	169	03/11/10
Agency mortgage-backed securities**	38	1,102	1,102	04/20/10
Memo: Term Securities Lending Facility (TSLF)	0	0	236	10/01/08
Total liabilities	**33**	**2,287**	**2,288**	**04/14/10**
Selected liabilities:				
Federal Reserve notes in circulation	2	895	896	04/07/10
Reserve balances of depository institutions	-49	1,059	1,249	02/24/10
U.S. Treasury, general account	-39	62	187	01/01/10
U.S. Treasury, supplementary financing account	125	200	559	10/22/08
Other deposits	-4	+0	81	03/12/10
Total capital	**-0**	**54**	**55**	**04/20/10**

+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 an additional $25.8 billion of MBS, on net. Total MBS purchases are about $1.25 trillion.

CMBS market. Prices of indexes of CDS on AAA-rated CMBS rose, and the first multi-borrower CMBS deal since the summer of 2008 was issued by the Royal Bank of Scotland without TALF support. This deal was well received by the market, with spreads narrower than the single-borrower deals issued last spring. Although the portion of TALF supporting new-issue CMBS deals does not close until the end of June, the Federal Reserve Bank of New York requested that investors submit term sheets by April 19 for any new-issue CMBS they intended to finance through the TALF; no new term sheets were received. The first new-issue non-agency residential MBS deal since 2007 came to market on April 21. The deal is relatively small in size, at roughly $200 million dollars, and backed by high-quality jumbo mortgages. There reportedly has been significant demand for the syndication.

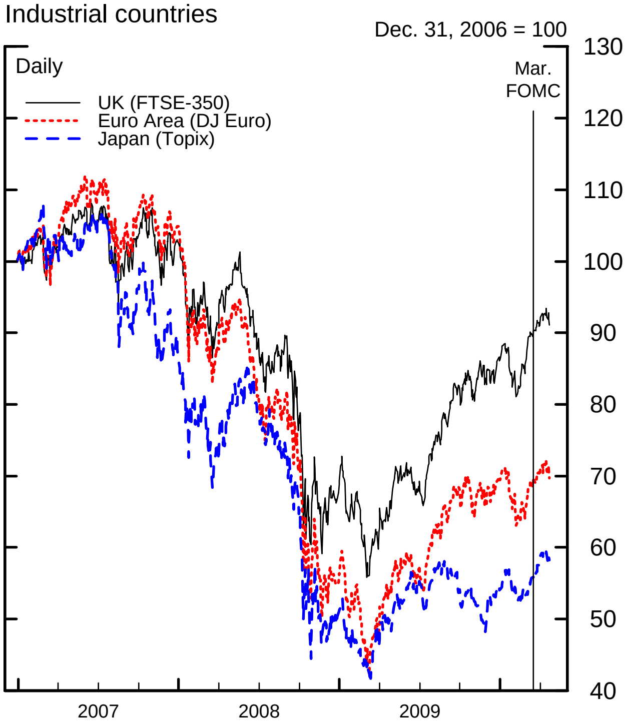
FOREIGN MARKET DEVELOPMENTS

During the intermeeting period, equity indexes rose across the globe, implied volatilities remained low, and emerging-market risk spreads generally declined (Chart 4). These moves appeared to reflect growing confidence that the global recovery is gaining momentum, particularly in emerging market economies. However, Greek sovereign debt remained under pressure despite the European Union's announcement that a substantial package of financial assistance would be offered by the International Monetary Fund (IMF) and euro-area countries.

Spreads of Greek sovereign debt over German debt rose in the second half of March and early April prompting the European Union to announce details of an assistance package for Greece, consisting of up to €45 billion in bilateral loans from euro-area countries and the IMF; Greek spreads fell on the news. However, spreads moved higher again over the following days as market participants recognized that parliamentary approval for the aid would be required in several countries, including Germany. After Greece's deficit figures were again revised higher, spreads on Greek

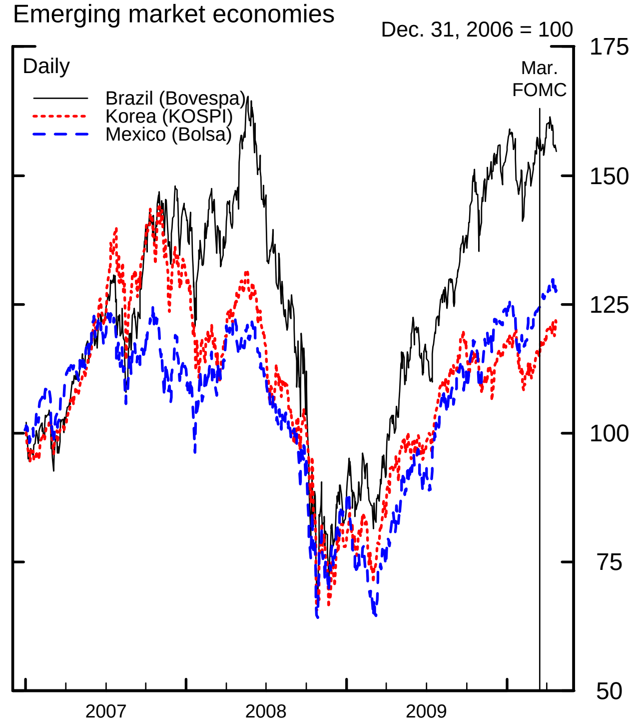
Chart 4
International Financial Indicators

Stock price indexes
Industrial countries



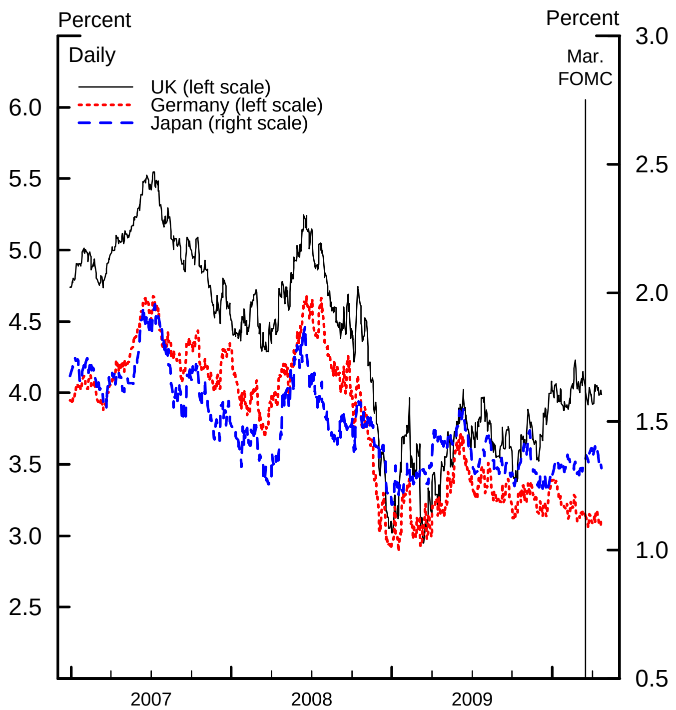
Source. Bloomberg.

Stock price indexes
Emerging market economies



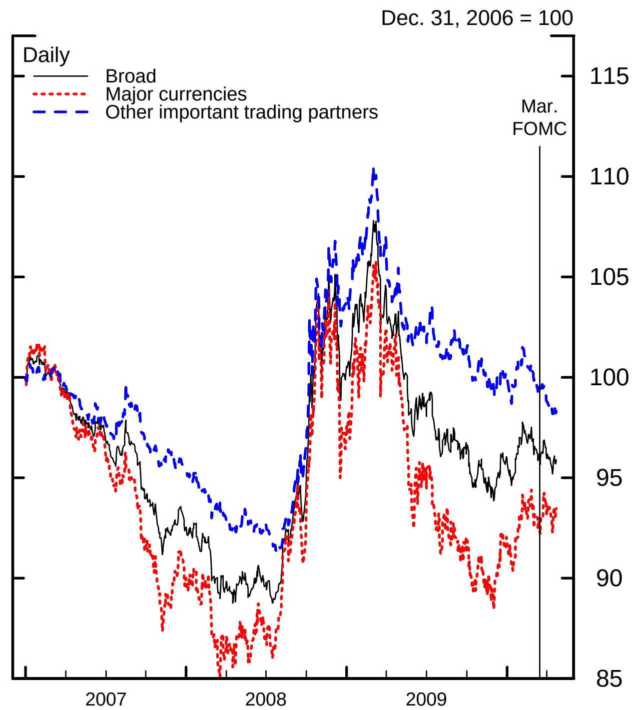
Source. Bloomberg.

Nominal 10-year government bond yields



Source. Bloomberg.

Nominal trade-weighted dollar indexes



Source. Federal Reserve.

Note. Last daily observation is for April 22, 2010.

debt increased further to a record level of 580 basis points. Debt spreads of other peripheral euro-area countries generally moved in synch with Greek spreads since the last FOMC meeting, but these moves were muted by comparison; Portuguese debt spreads increased the most, rising to about 190 basis points. After the close of the European sovereign bond markets today, Moody's downgraded Greece's sovereign debt rating one notch to A3, and Greek CDS spreads widened considerably further.

The trade-weighted value of the dollar, as measured by the staff's broad nominal index, changed little, on net, over the intermeeting period; gains against the euro and yen were offset by declines against the Canadian dollar and most emerging market currencies. Chinese authorities did not allow the renminbi spot exchange rate to fluctuate meaningfully against the dollar, but by the end of the intermeeting period, rumors were widespread that China would let the renminbi appreciate soon, and the dollar continued to depreciate against most other emerging-Asian currencies. The dollar ended the period up 2½ percent, on balance, versus the euro, which was buffeted daily by news and rumors about the fiscal situation in Greece. The depreciation of the euro also prompted the Swiss National Bank to renew its intervention operations, purchasing euros in order to limit further appreciation of the Swiss franc. The dollar also rose against the yen as Japanese investors reportedly sought to invest in higher-yielding foreign assets.

Yields on ten-year German sovereign issues and on debt of other core euro-area countries were little changed, on balance, over the intermeeting period, as were yields on U.K. and Japanese debt. However, Canadian yields rose about 20 basis points, and market expectations of policy tightening in Canada increased sharply as strong economic growth and rising inflation prompted the Bank of Canada to drop its conditional commitment to keeping rates steady through the first half of this year. Policy rates of central banks in the major advanced economies were unchanged, but the terms of some lending facilities were adjusted. The European Central Bank (ECB) announced that it would extend its relaxed collateral rules into 2011 and that it would not impose further haircuts on lower-rated sovereign debt. Both moves helped reduce some of the pressure on Greek banks. The Bank of Japan doubled the size of its 3-month fixed-rate funds supplying operations to ¥20 trillion. The Reserve Bank of Australia raised its policy rate 25 basis points to 4¼ percent.

DEBT, BANK CREDIT, AND MONEY

Aggregate debt of the U.S. domestic private sectors appears to have expanded slightly in the first quarter after having contracted for the previous five quarters (Chart 5). The staff estimates that the growth rates of both nonfinancial business debt and household debt turned positive in the first quarter. Issuance of federal government debt remained rapid over the same period, while state and local government debt continued to expand moderately. All told, the growth rate of domestic nonfinancial sector debt appears to have increased to an annual rate of about 5 percent in the first quarter, up from roughly 1½ percent in the final quarter of 2009.

After adjusting to remove the effects of banks' adoption of Financial Accounting Standards (FAS) 166 and 167, bank credit continued to contract in March, as both loans and securities holdings declined. (See box entitled "Effects of FAS 166/167 on Banks' Balance Sheets.") This decrease was driven by a fall in core loans, which ran off at a 9 percent annual rate, about the same pace as in recent months. The contraction in C&I loans remained pronounced. The drop in commercial real estate loans also persisted, reflecting weak fundamentals in the sector as well as charge-offs of existing loans. Bank holdings of residential real estate loans fell again in March, as did credit card and other consumer loans. Securities declined in March for the second consecutive month as robust growth in banks' holdings of Treasury and agency debt

Chart 5
Debt and Money

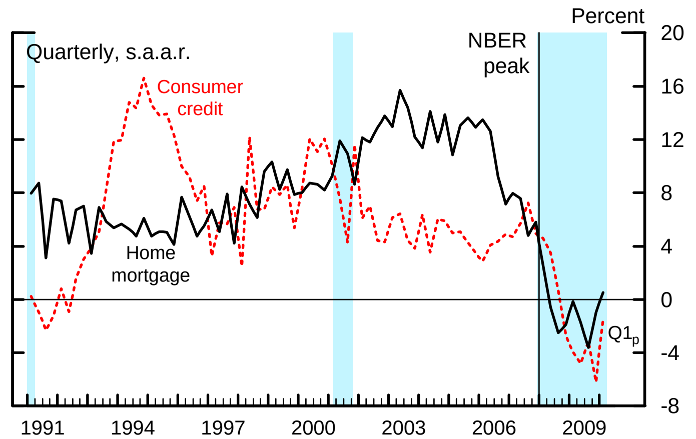
Growth of debt of nonfinancial sectors

Percent, s.a.a.r.

	Total	Business	Household	Government
2008	6.0	5.5	0.1	17.7
2009	3.0	-2.7	-1.8	18.0
Q1	3.8	-0.7	-1.3	17.9
Q2	4.1	-3.2	-1.7	22.1
Q3	2.6	-3.3	-2.7	17.0
Q4	1.4	-3.6	-1.4	10.8
2010 Q1 p	5.1	1.6	0.4	15.1

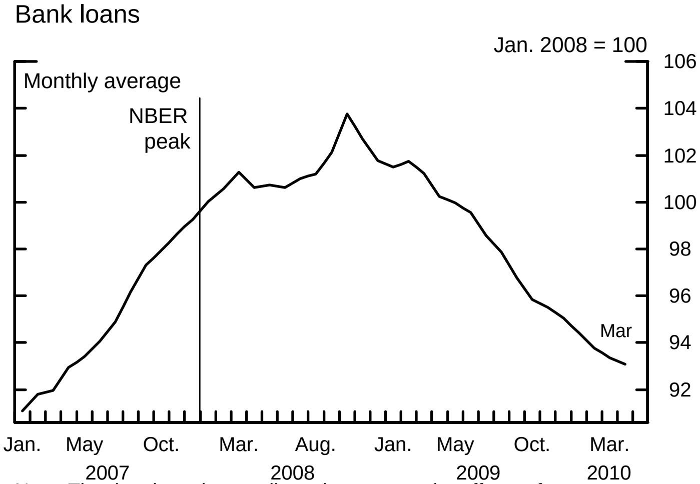
Source. Flow of Funds.
p Projected.

Growth of debt of household sector



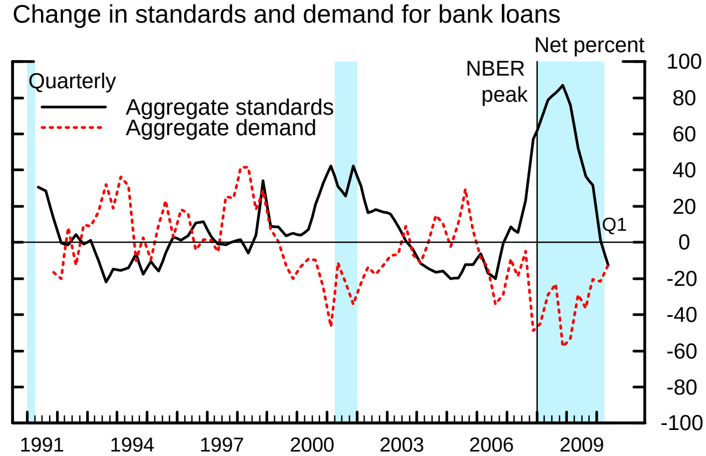
Source. Flow of Funds, Federal Reserve G.19 release.
p Projected.

Bank loans



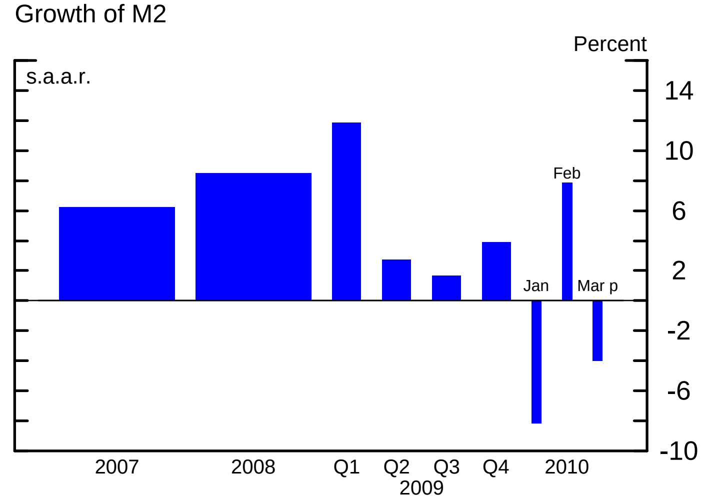
Note. The data have been adjusted to remove the effects of consolidations of assets under FAS 166 and FAS 167.
Source. Federal Reserve.

Change in standards and demand for bank loans



Note. The composite index of changes in lending standards or loan demand can be interpreted as the net percentage of core loans on SLOOS respondents' balance sheets that were in categories for which banks reported tighter lending standards or stronger loan demand.
Source. Senior Loan Officer Opinion Survey.

Growth of M2



Source. Federal Reserve.
p Preliminary.

Growth of M2 and its components

Percent, s.a.a.r.

	M2	Liquid deposits	Small time deposits	RMMF	Curr.	Memo: Monetary base
2008	8.5	6.9	12.3	13.4	5.8	70.3
2009	5.1	17.2	-15.9	-21.6	7.0	41.6
H1	7.4	16.0	-6.0	-15.7	10.8	46.3
H2	2.8	17.0	-26.5	-29.9	2.9	29.9
2010						
Jan	-8.2	-1.6	-28.8	-31.3	-1.4	-18.4
Feb	7.8	17.5	-18.4	-23.6	8.5	74.0
Mar p	-4.0	3.9	-21.8	-47.8	6.1	-19.3

Source. Federal Reserve.
p Preliminary.

Effects of FAS 166/167 on Banks' Balance Sheets

By the end of the first quarter of this year, all U.S. banks were required to adopt the Financial Accounting Standards Board's (FASB) Financial Accounting Statements No. 166 (FAS 166), *Accounting for Transfers of Financial Assets*, and No. 167 (FAS 167), *Amendments to FASB Interpretation No. 46(R)*. The new standards made achieving off-balance-sheet treatment of assets much more difficult. As a result, according to the Federal Reserve's weekly bank balance sheet data through March 31, 2010, a total of 29 banks had brought about $450 billion in gross loans back onto their balance sheets, increasing banks' books by 7 percent.[1]

Some earlier estimates by industry analysts of the likely effects of these changes in accounting rules had been quite a bit higher, with some reaching $1 trillion. However, subsequent to those estimates, FASB indefinitely deferred the implementation date for the consolidation of certain bank-sponsored investment funds such as mutual funds. Additionally, since the publication of the new rules last June, Federal Reserve data indicate that securitized credit card pools have run off significantly, and some banks reportedly also sold the residual tranches of their institution's private mortgage-backed securities issues in order to avoid having to consolidate the underlying loans.

Despite the increase in loans on banks' books, the capital ratios of the banks affected by the accounting change are estimated to have remained well in excess of the levels required to maintain well-capitalized status under regulatory standards. In addition, according to a special question in the April Senior Loan Officer Opinion Survey, none of the banks surveyed indicated that they had changed their lending standards or terms on loans to businesses and households in response to the new accounting rules.

As shown in the table below, the reported on-balance-sheet amounts of credit card loans and related plans nearly doubled as a result of the accounting changes, while other categories of loans increased to a lesser degree. Nearly all previously

[1] The weekly data show that balance sheet positions for 17 of the 25 largest domestic banks, 8 smaller domestically chartered commercial banks, and 4 foreign-related institutions were affected by FAS 166/167. The March Call Report may show that balance sheet positions of some banks that are not in our weekly sample were also affected by FAS 166/167. The estimated net effect on total assets of the accounting changes was an increase of about $400 billion or 4 percent (total assets are measured net of banks' allowance for loan and lease losses, and banks' adoption of FAS 166/167 extinguished some asset-backed securities previously held on banks' books). The major liability item affected was borrowings from nonbanks.

securitized credit card loans were returned to the balance sheets.[2] Other consumer loans increased $41 billion; commercial and industrial loans rose $33 billion; and residential real estate loans increased $27 billion. In addition, banks augmented the allowance for loan and lease losses by $36 billion.

The effects of FAS 166 and 167 on bank balance sheets was much larger than previous changes to accounting standards that forced the grossing up of balance sheets. For instance, FASB's Interpretation No. 46(R), *Consolidation of Variable Interest Entities,* brought about $160 billion of assets, or 2 percent of the total at the time, back onto banks' books between 2003 and 2005.

Effects of FAS 166/167 on Selected Bank Loan Categories

Loan Category	Effects of FAS 166/167 ($billions)	*Memo:* Level March 31, 2010 ($billions)
Total loans and leases	451	6,958
Credit cards and related plans	322	662
Other consumer loans	41	536
Commercial and industrial loans	33	1,267
Residential real estate loans*	27	2,122
All other loans	28	2,371
Allowance for loan and lease losses	36	236

* Includes closed-end residential mortgages and revolving home equity lines of credit.
Source. Federal Reserve.

[2] The remaining securitized credit card balance is held by one reporter, and is expected to be consolidated by the bank holding company.

securities was more than offset by declines in their holdings of MBS and other securities. Reflecting the decline in bank credit as well as a drop in cash assets (which includes reserve balances), total commercial bank assets decreased in March.

The April SLOOS indicated that banks' lending standards changed little, on balance, in the first quarter, and demand for loans declined further. Information from this survey, taken together with the survey results from the fourth quarter, suggests that the episode of substantial tightening of lending standards that took place over the past several years is drawing to a close. Indeed, if bank responses are weighted by outstanding loan amounts, domestic banks eased standards somewhat last quarter, on net, for the first time in about three years, a move that mainly reflected an easing in standards on some loans to both businesses and households by a few large banks. However, banks continued to tighten some terms on loans to both businesses and households, on balance, particularly for riskier borrowers. In addition, moderate net fractions of banks continued to report that demand for all major categories of loans weakened further in the first quarter. For most loan categories, the net fraction of banks reporting weaker demand waned, but more banks experienced weaker demand for residential mortgages than in the fourth quarter.

M2 decreased at an annual rate of 4 percent in March, reflecting a slowing in the expansion of liquid deposits along with a further contraction in small time deposits and a steep runoff in retail money market mutual funds. Currency grew at an annual rate of about 6 percent; staff estimates suggest this was a result of continued demand for U.S. banknotes from abroad coupled with solid domestic demand. The monetary base contracted in March as the effect on reserves of purchases under the Federal Reserve's large-scale asset purchase programs was more than offset by a further contraction in credit outstanding under liquidity and credit facilities and an increase in the Treasury's balances at the Federal Reserve.

ECONOMIC OUTLOOK

On balance, the data on economic activity received over the intermeeting period were a little stronger than anticipated by the staff while core inflation came in somewhat below expectations. In response, the staff marked up slightly its outlook for real activity this year and revised down its projection for core inflation a bit. The broad contours of the staff's medium-term forecast are the same as those in the March Greenbook—a moderate 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 early 2012—as in the March projection—and that no further asset purchases will be conducted.[3] As in the March Greenbook, fiscal policy is expected to add about 1 percentage point to real GDP growth this year and then be a neutral influence on growth next year. House prices are projected to decline about 3 percent this year in response to the large volume of foreclosed properties and then to edge up in 2011 as demand gradually picks up.

Interest rates on 30-year fixed-rate mortgages and longer-term Treasury securities are projected to rise moderately through 2011. The spread between the two rates is assumed to widen about 20 basis points by the end of this summer—slightly less than in the March projection—in response to the cessation of purchases of agency MBS by the Federal Reserve, and then level off over the medium term. Risk spreads on investment-grade bonds are expected to narrow somewhat more as the economic

[3] The staff forecast also assumes there will be no asset sales. The Federal Reserve currently holds about $1.5 trillion of longer-term securities associated with the recently completed large-scale asset purchase program. The System's holdings of these securities are assumed to run off gradually, declining to about $1.4 trillion by the end of 2011; maturing Treasury securities are assumed to be rolled over into new issues, but proceeds from maturing agency debt issues and prepayments on agency MBS are not reinvested.

expansion becomes more firmly established; as a result, yields on these securities move only slightly higher over the remainder of this year and in 2011. With the equity risk premium also expected to decline over the forecast period, stock prices are projected to rise at an annual rate of 13½ percent over the next two years, slightly less than in the March Greenbook, but starting from a higher level because of an increase in equity prices since the previous projection. Credit conditions are anticipated to improve slowly as banks gradually ease their lending standards and terms.

The spot price of West Texas intermediate crude oil has risen about $1 per barrel since the March projection, to $83 per barrel, and, consistent with futures prices, the staff projects a further rise to about $90 per barrel by the end of next year. Following an appreciation in the first quarter, the real foreign exchange value of the dollar is expected to decline at an annual rate of 5 percent in the current quarter and at a rate of about 3½ percent over the remainder of this year and during 2011.

Against this backdrop, the staff expects real GDP to grow about 3½ percent this year, slightly more than in the March projection, and about 4½ percent in 2011. In light of incoming data on the labor market and the higher projection for output growth in 2010, the trajectory for the unemployment rate has been lowered marginally compared to the last Greenbook. The projected rate now declines to about 9¼ percent at the end of 2010 and 8¼ percent at the end of 2011, still well above the staff's estimate of the effective NAIRU over this period. With inflation expectations stable and economic slack forecast to remain substantial, the staff projects that core PCE prices will rise just under 1 percent this year and next. Total PCE inflation is expected to be a bit above core inflation this year, reflecting the rise in energy prices, but to move close to the rate of core inflation in 2011.

Looking farther ahead, the staff forecasts above-trend output growth, falling unemployment, and slowly rising inflation over 2012-2014. The federal funds rate is assumed to start rising in early 2012 and to reach a bit more than 3½ percent by late 2014. Real GDP is anticipated to expand 4¾ percent in 2012 before decelerating to 3½ percent by 2014, while potential output is expected to advance slightly more than 2½ percent per year on average. As a result, the projected unemployment rate declines to 5¼ percent in late 2014, about in line with the staff's estimate of the NAIRU at that time. With a steadily narrowing output gap and stable expectations for longer-term inflation, total PCE inflation rises slowly after 2011 and reaches 1½ percent by 2014—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 of the estimates of short-run *r** have increased since the March Bluebook. The Greenbook-consistent estimates of short-run *r** generated by the FRB/US and EDO models are up by 50 basis points and 70 basis points, respectively. These increases primarily reflect the one-quarter shift in the time period entering the calculation of *r**, with the somewhat stronger staff projection for economic activity also making a contribution.[4] Like the Greenbook-consistent estimates, the four model-based estimates of short-run *r** are above those shown in March, reflecting both the shift in the window used for the *r** calculation and a higher projected path for economic activity in these models. In particular, higher equity prices have boosted *r** modestly in the FRB/US model and the small structural model.

Chart 7 shows the results of optimal control simulations of the FRB/US model. In these simulations, 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 effective NAIRU, 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

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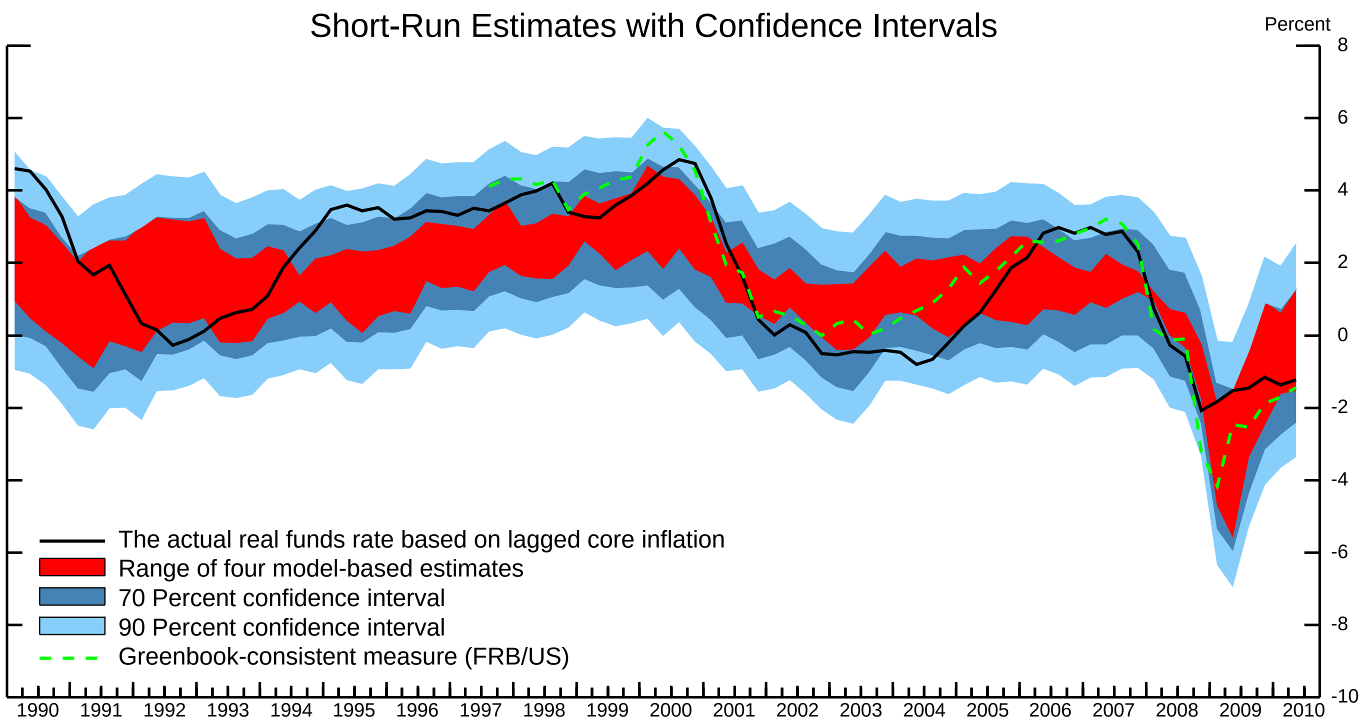
[4] Moving the first quarter of this period forward to the second quarter of 2010 implies that resource utilization is higher at the end of the twelve-quarter window used in the calculation. As a result, less policy stimulus is required to move output back to potential by the end of that window, raising the estimated level of *r**. The upward effect on *r** of moving the window is expected to be repeated going forward, as resource slack continues to diminish.

Chart 6
Equilibrium Real Federal Funds Rate



Short-Run and Medium-Run Measures

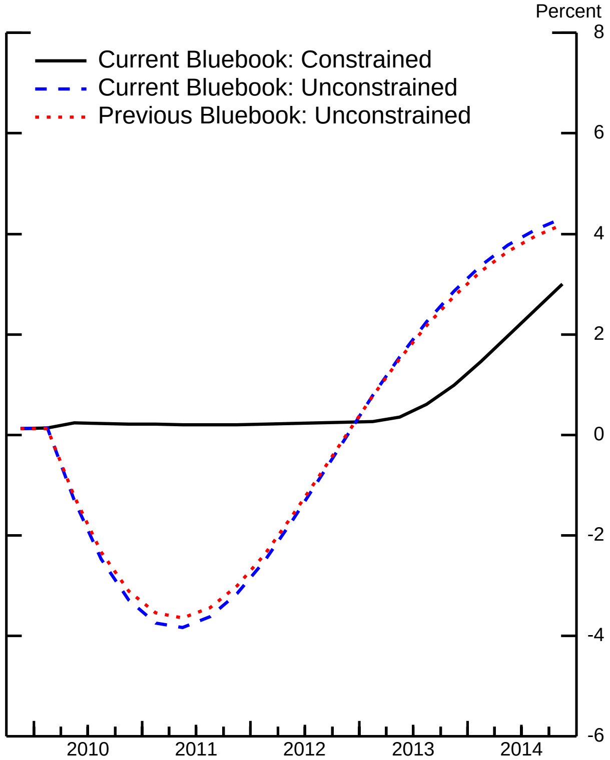
	Current Estimate	*Current Estimate as of Previous Bluebook*	*Previous Estimate*
Short-Run Measures			
Single-equation model	-1.5	*-1.8*	*-1.6*
Small structural model	-0.7	*-1.0*	*-1.4*
EDO model	1.2	*1.1*	*0.0*
FRB/US model	-1.3	*-1.6*	*-1.7*
Confidence intervals for four model-based estimates			
70 percent confidence interval	-2.4 to 1.3		
90 percent confidence interval	-3.4 to 2.5		
Greenbook-consistent measures			
EDO model	-3.1	*-3.2*	*-3.8*
FRB/US model	-1.4	*-1.5*	*-1.9*
Medium-Run Measures			
Single-equation model	1.1	*1.1*	*1.1*
Small structural model	1.8	*1.7*	*1.7*
Confidence intervals for two model-based estimates			
70 percent confidence interval	0.5 to 2.4		
90 percent confidence interval	-0.3 to 2.9		
TIPS-based factor model	2.0		*2.0*
Memo			
Actual real federal funds rate	-1.2		*-1.2*

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 did not have the column, "Current Estimate as of Previous Bluebook", because the estimates from that column would have been the same as the last column since the previous two Bluebooks fell in the same quarter.

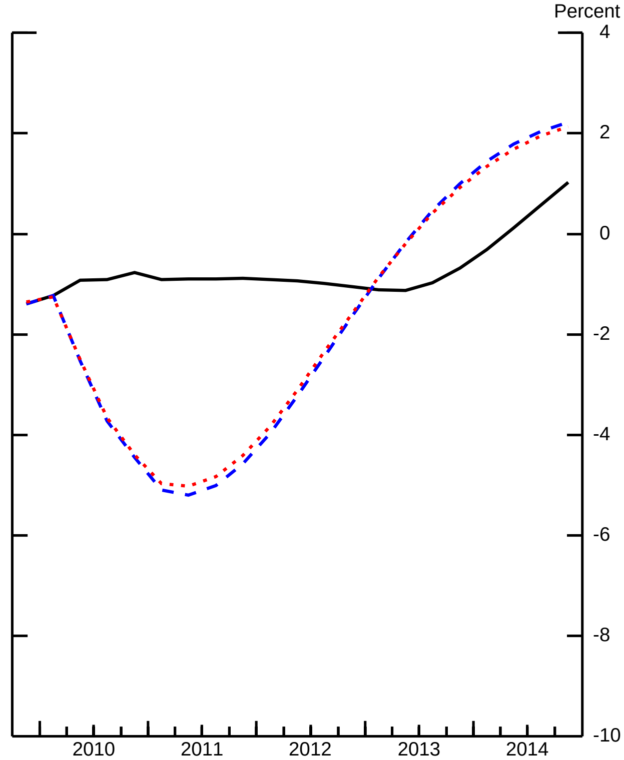
Chart 7

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

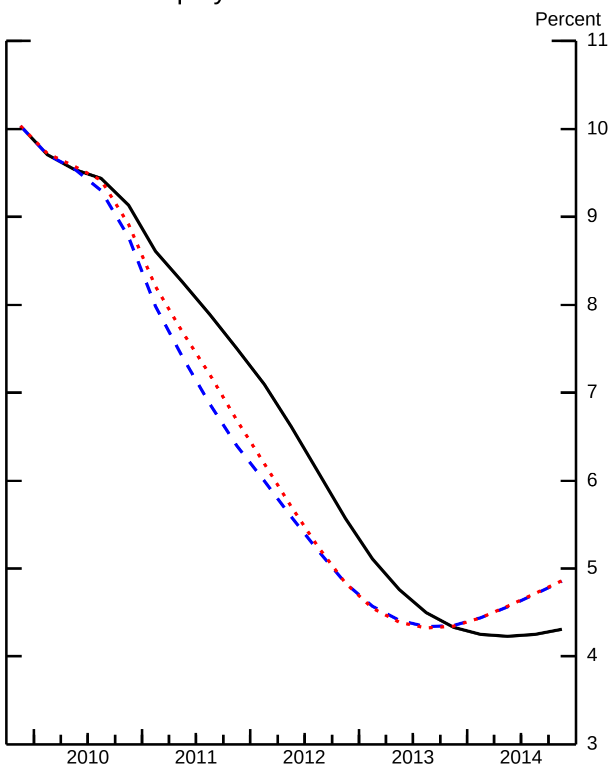
Nominal Federal Funds Rate



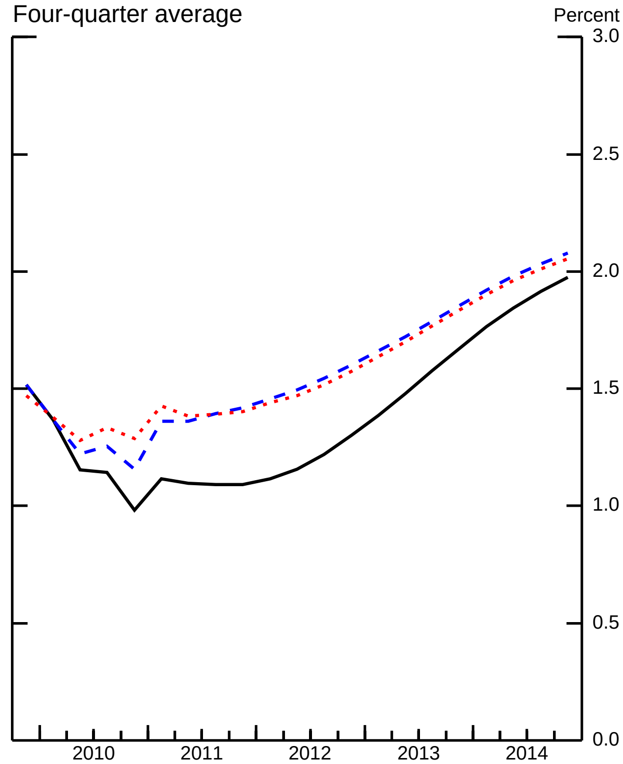
Real Federal Funds Rate



Civilian Unemployment Rate



Core PCE Inflation
Four-quarter average



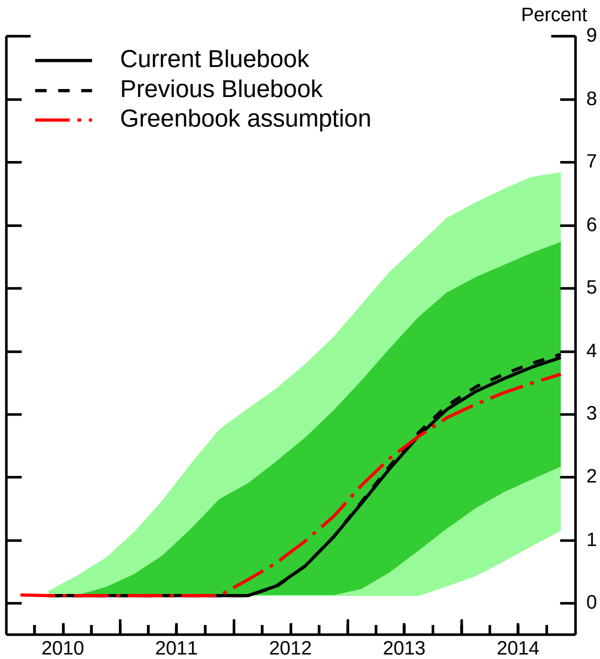
would stay appreciably below 2 percent through late 2014. The chart also displays the optimal-control results obtained if the nominal funds rate were not constrained by the effective lower bound (blue dashed lines). Absent the constraint, the nominal funds rate would move down to about -3¾ percent early next year; this more accommodative policy would bring the unemployment rate back to the NAIRU more quickly and move the inflation trajectory closer to the assumed 2 percent goal. The unconstrained path for the funds rate is slightly lower than in the last Bluebook, as the effects on the optimal policy path of the staff's somewhat lower outlook for inflation later this year and in early 2011 outweigh the effects of slightly lower unemployment.

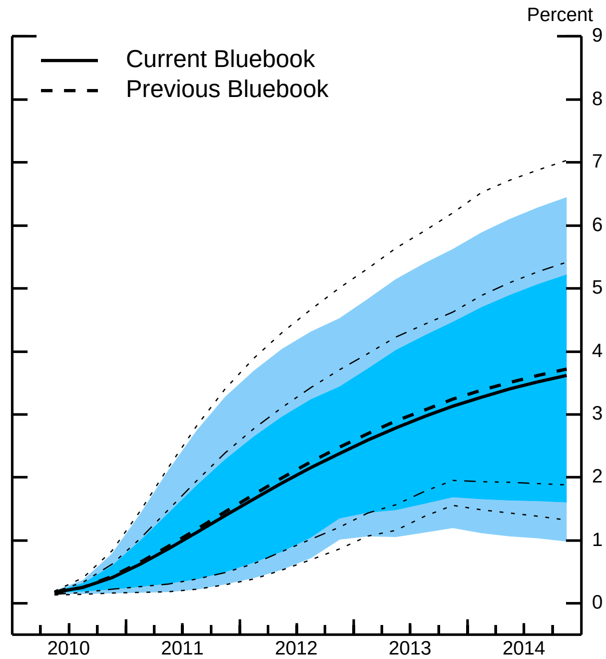
As shown in Chart 8, the outcome-based policy rule prescribes a trajectory for the federal funds rate virtually identical to the one in the previous Bluebook (upper-left panel). The nominal funds rate starts rising above the effective lower bound in 2012Q2, the same quarter as shown in the March Bluebook. According to money-market futures quotes, market participants' expectations regarding the path of the funds rate also were little changed over the intermeeting period (upper-right panel).[5] The lower panel of Chart 8 provides near-term prescriptions from simple policy rules, all of which are nearly identical to their counterparts in the March Bluebook. 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. In contrast, the first-difference rule is more responsive to the projected pace of economic recovery rather than the current level of resource slack and hence prescribes a rising funds rate.

[5] The staff has made a technical adjustment in its methods for constructing the policy expectations and confidence intervals shown in the upper-right panel of Chart 8. To facilitate comparability, those methods have also been applied to the financial market data available at the time of the March Bluebook, and hence the line labeled "Previous Bluebook" differs slightly from the one that was published in March.

Chart 8

The Policy Outlook in an Uncertain Environment





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**	**-0.78**	**-0.71**
Previous Bluebook	*0.13*	*0.13*	*-0.77*	*-0.68*
Taylor (1999) rule	**0.13**	**0.13**	**-4.23**	**-4.01**
Previous Bluebook	*0.13*	*0.13*	*-4.29*	*-4.06*
Estimated outcome-based rule	**0.13**	**0.13**	**-0.47**	**-1.13**
Previous Bluebook	*0.13*	*0.13*	*-0.48*	*-1.15*
Estimated forecast-based rule	**0.13**	**0.13**	**-0.46**	**-1.04**
Previous Bluebook	*0.13*	*0.13*	*-0.45*	*-1.04*
First-difference rule	**0.25**	**0.43**	**0.25**	**0.43**
Previous Bluebook	*0.27*	*0.46*	*0.27*	*0.46*

Memo

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

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 policy alternatives—labeled A, B, and C—for the Committee's consideration. The alternatives vary somewhat in their characterization of current conditions and the outlook; they also provide different forward guidance about the federal funds rate. The drafts offer paragraphs on reinvestment strategy—and in Alternative C, on asset sales—that the FOMC may wish to consider including in its statement. Table 1 shows key elements of the alternatives. Draft statements follow the table. Subsequent pages summarize the arguments for each alternative.

Each of the draft statements begins by noting that economic activity has continued to strengthen, that the labor market shows some improvement, and that growth in household spending has picked up. The wording of Alternative A is more tentative than that of Alternative B. Alternative C offers the most upbeat summary of current conditions by omitting the list of factors that are restraining household spending, a list that Alternatives A and B carry over from the March statement. All three alternatives provide a somewhat more positive characterization of economic conditions than did the Committee's March statement, which said the labor market was stabilizing and household spending was increasing at a moderate rate.

The alternatives differ more substantially in their characterization of recent and prospective inflation. Alternative B repeats the words of the March statement: "With substantial resource slack continuing to restrain cost pressures and longer-term inflation expectations stable, inflation is likely to be subdued for some time." Alternative C highlights recent increases in energy prices but notes that inflation has remained subdued. It then states that "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." Alternative A observes that longer-term inflation expectations have been stable but also notes that recent data suggest inflation has been trending down in response to substantial resource slack; moreover, Alternative A indicates that the Committee expects inflation to remain "quite subdued."

Each alternative would maintain the 0 to ¼ percent target range for the federal funds rate during the upcoming intermeeting period. In light of the Committee's implicit judgment at its recent meetings that the costs of purchasing additional longer-term assets would outweigh the benefits—except perhaps if the economy were to weaken—none of the alternatives includes such purchases. Instead, the alternatives provide markedly different forward guidance. Alternative B says, as in recent FOMC statements, that the Committee anticipates that economic conditions "are likely to warrant exceptionally low levels of the federal funds rate for an extended period." Alternative C modifies the final words to "for some time," signaling an earlier increase in the funds rate. Alternative A sharpens the conditionality in the extended period language and suggests that an increase in the federal funds rate is likely to come later than markets now expect. After observing that inflation has been trending down in response to substantial slack, Alternative A says: "To promote a more robust economic recovery in a context of price stability, the Committee anticipates maintaining the target range for the federal funds rate at 0 to ¼ percent for an extended period—until economic conditions such as appreciably higher rates of resource utilization, increasing inflation pressures, or rising inflation expectations warrant a less accommodative monetary policy."

The Desk, at the Committee's direction, has been pursuing an interim approach of rolling over the proceeds of maturing Treasury securities while not reinvesting the proceeds of agency debt and MBS that mature or prepay. That practice will, if continued, gradually shrink the SOMA portfolio and move it back toward a more normal "Treasuries-only" composition. The fourth paragraph of Alternative A (in brackets) illustrates language that the Committee might add to its statement if it wished to announce a more permanent adoption of that approach. The fourth paragraph of Alternative B (also in brackets) offers a choice between continuing to roll over maturing Treasuries or stopping. Policymakers might view a decision to maintain the current reinvestment policy as a matter to be noted in the minutes rather than in the statement, but they may see a decision to stop reinvesting the proceeds of maturing Treasury securities as a change in policy that warrants mention in the statement. Or they might prefer to indicate such a decision in the directive. The fourth paragraph of Alternative C (not in brackets) offers language that the Committee could use to announce that it will no longer roll over maturing Treasuries and that—to further reduce the size of the balance sheet and return it to a more normal composition—the Committee anticipates that it will soon begin gradual sales of agency debt and MBS. If the statement for this meeting were to include a new fourth paragraph on reinvestments and perhaps sales, it would seem natural to move the final sentence of the third paragraph ("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") to the end of that new paragraph.

All three draft statements conclude by noting that the TALF, the one remaining special liquidity facility, is scheduled to close on June 30 for loans backed by new-issue CMBS and that it closed on March 31 for loans backed by all other types of collateral.

Table 1: Overview of Alternatives for the April 28 FOMC Statement

	March Statement	April Alternatives A	B	C
Economic Activity				
Recent Developments	has continued to strengthen	has continued to strengthen	has continued to strengthen	has continued to strengthen
Labor Market	is stabilizing; high unemployment; employers remain reluctant to add to payrolls	is showing signs of improving; high unemployment; employers remain reluctant to add to payrolls	is beginning to improve; high unemployment; employers remain reluctant to add to payrolls	is improving
Outlook	recovery likely to be moderate for a time; gradual return to higher levels of resource utilization	---	recovery likely to be moderate for a time; gradual return to higher levels of resource utilization	recovery under way; gradual return to higher levels of resource utilization
Inflation				
Recent Developments	substantial slack is restraining cost pressures; stable inflation expectations	stable inflation expectations but recent data suggest inflation is trending down in response to slack	substantial slack is restraining cost pressures; stable inflation expectations	energy prices have risen on balance in recent months but inflation remains subdued
Outlook	likely to be subdued for some time	likely to be quite subdued for some time	likely to be subdued for some time	policy adjustments will ensure inflation outcomes consistent with price stability
Federal Funds Rate Target				
Intermeeting Period	0 to ¼ percent	0 to ¼ percent	0 to ¼ percent	0 to ¼ percent
Forward Guidance	economic conditions are likely to warrant exceptionally low levels for an extended period	anticipate maintaining the 0 to ¼ percent target range for an extended period—until economic conditions such as . . . warrant a less accommodative policy	economic conditions are likely to warrant exceptionally low levels for an extended period	economic conditions are likely to warrant exceptionally low levels for some time
Reinvestment and Sales of SOMA Assets				
Approach		[do not reinvest proceeds of agency debt and MBS but continue to roll over maturing Treasuries]	[do not reinvest proceeds of agency debt and MBS but continue to roll over maturing Treasuries] **OR** [no reinvestment]	no reinvestment; "Committee anticipates that it will soon begin gradual sales of agency debt and MBS"

March FOMC Statement

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, housing starts have been flat at a depressed level, and employers remain reluctant to add to payrolls. 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.

3. The Committee will maintain the target range for the federal funds rate at 0 to 1/4 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.

April FOMC Statement—Alternative A

1. Information received since the Federal Open Market Committee met in **March** suggests that economic activity has continued to strengthen and that the labor market is **showing signs of improving**. **Although growth in** household spending **has picked up recently, it is likely to** remain 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 employers remain reluctant to add to payrolls. Housing starts have **edged up but remain** at a depressed level. While bank lending continues to contract, financial market conditions remain supportive of economic growth.

2. **Although** longer-term inflation expectations **have remained** stable, **recent data suggest** inflation **has been trending down in response to** substantial resource slack. **The Committee anticipates that** inflation is likely to be **quite** subdued for some time.

3. **To promote a more robust economic recovery in a context of price stability,** the Committee **anticipates maintaining** the target range for the federal funds rate at 0 to ¼ percent for an extended period**—until** economic conditions **such as appreciably higher** rates of resource utilization, **increasing** inflation **pressures**, **or rising** inflation expectations warrant **a less accommodative monetary policy**. 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. **[To gradually reduce the size of the Federal Reserve's balance sheet and return it to a more normal composition over time, the Committee will maintain its approach of not reinvesting the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account. The Committee is continuing to roll over maturing Treasury securities.]**

5. In light of improved functioning of financial markets, the Federal Reserve has **closed all but one of** 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**; it closed** on March 31 for loans backed by all other types of collateral.

April FOMC Statement—Alternative B

1. Information received since the Federal Open Market Committee met in **March** suggests that economic activity has continued to strengthen and that the labor market is **beginning to improve**. **Growth in** household spending **has picked up recently** 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 employers remain reluctant to add to payrolls. Housing starts have **edged up but remain** 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.

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. 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. **[To gradually reduce the size of the Federal Reserve's balance sheet and return it to a more normal composition over time, the Committee will maintain its approach of not reinvesting the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account. The Committee is continuing to roll over maturing Treasury securities.**

   OR

   To gradually reduce the size of the Federal Reserve's balance sheet over time, the Committee will maintain its approach of not reinvesting the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account. In addition, on May 3 the Committee will stop reinvesting the proceeds of maturing Treasury securities.]

5. In light of improved functioning of financial markets, the Federal Reserve has **closed all but one of** 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**; it closed** on March 31 for loans backed by all other types of collateral.

April FOMC Statement—Alternative C

1. Information received since the Federal Open Market Committee met in **March indicates** that economic activity has continued to strengthen and that the labor market is **improving**. **Though** investment in nonresidential structures is declining, housing starts have **edged up, growth in** household spending **has increased, and** business spending on equipment and software has risen significantly. While bank lending continues to contract, financial market conditions **have become more** supportive of economic growth. **With** economic recovery **under way,** the Committee anticipates a gradual return to higher levels of resource utilization.

2. **Although energy prices have risen on balance in recent months,** inflation **has remained** subdued. **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 1/4 percent and **now** anticipates 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**.

4. **The Committee will maintain its approach of not reinvesting the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account. In addition, on May 3 the Committee will stop reinvesting the proceeds of maturing Treasury securities. To further reduce the size of the Federal Reserve's balance sheet, and to return the balance sheet to a more normal composition, the Committee anticipates that it will soon begin gradual sales of agency debt and mortgage-backed securities. The timing and pace of such sales will depend on evolving economic and financial conditions.** 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.

5. In light of improved functioning of financial markets, the Federal Reserve has **closed all but one of** 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**; it closed** 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, as they did at the time of the Committee's March meeting, and if they still judge that the potential benefits of further purchases of longer-term assets would not outweigh the costs, then they might choose to maintain the current target range for the federal funds rate and reiterate that economic conditions are likely to warrant exceptionally low levels of the federal funds rate for an extended period, as in Alternative B.

FOMC participants may see economic and financial developments during the intermeeting period as broadly consistent with their assessments of the outlook at the time of the March meeting; they, like the staff, may have made only modest revisions to their forecasts for economic activity and inflation. Nonetheless, recent data on nonfarm payrolls and consumer spending, in combination with indications that some banks have begun to reverse the extraordinary tightening of lending standards implemented during the past three years, may have given policymakers somewhat greater assurance that the recovery will be sustained and that private demand will grow at a rate sufficient to generate a gradual decline in unemployment going forward. Policymakers may, however, continue to anticipate that elevated unemployment, tight credit conditions for small businesses and many households, and waning fiscal stimulus will weigh on growth of aggregate demand over coming quarters. In line with such an outlook, both of the Greenbook-consistent measures of short-run r^* shown in Chart 6 indicate that a real federal funds rate at least as low as the current level of -1.2 percent would be required to close the output gap in three years.

Recent readings on inflation and inflation expectations may have strengthened participants' confidence that inflation will remain subdued for some time and reduced their concerns that expected inflation might rise appreciably. Core PCE inflation has trended lower in recent months, and growth in both hourly compensation and the employment cost index slowed substantially during 2009, consistent with the view that substantial resource slack is continuing to reduce cost pressures. The median of the Reuters/Michigan survey of longer-term inflation expectations is noticeably lower than its level at any time from the spring of 2005 through the fall of 2008 and remains close to the lower ends of its historical range.

Reflecting subdued inflation as well as sizable resource slack, the two versions of the Taylor rule shown in Chart 8, along with the outcome-based rule and the forecast-based rule, prescribe a substantially negative nominal federal funds rate for the current quarter and next quarter, with the constrained prescriptions of these rules remaining at the effective lower bound. Participants may see retaining the extended period language as consistent with these prescriptions.

Even if some policymakers remain worried that inflation expectations could rise in response to continued highly accommodative monetary conditions, they may see risk management considerations as supporting a reiteration of the extended period forward guidance. The effective lower bound on the funds rate could bind severely if a move toward tighter policy proved premature and led to a substantial deterioration in the economic outlook. In contrast, with considerable economic slack prevailing, and with inflation below levels deemed appropriate over the longer run, participants might be reasonably confident that in the event of a surprisingly rapid economic recovery or a surge in inflation expectations, they could firm policy sufficiently quickly to avoid a significant runup in actual inflation.

Some participants may see the outlook for moderate growth, a gradual decline in unemployment, and subdued inflation as arguing not only for keeping the federal funds rate at exceptionally low levels but also for caution in shrinking the Federal

Reserve's balance sheet and the supply of reserve balances. If so, they may judge it appropriate to continue rolling over maturing Treasury securities, at least for the time being, while allowing redemptions and prepayments on agency debt and MBS to gradually reduce the share of such securities in the SOMA portfolio. Other participants may judge that greater confidence about the economic outlook offers an opportunity to shrink the balance sheet and the supply of reserve balances somewhat more rapidly, by not reinvesting the proceeds of maturing Treasuries, even if they expect that economic conditions will warrant an exceptionally low federal funds rate for an extended period. Also, they may see some benefit from allowing the quantity of Treasury coupon securities in the SOMA portfolio to decline in coming years because doing so could facilitate a subsequent shift toward short-term Treasuries once the portfolio shrinks enough that Treasury purchases resume. Alternative B offers a choice between the two approaches. As noted earlier, the Committee might conclude that the statement should contain neither version of the fourth paragraph of alternative B; policymakers may judge it better to communicate reinvestment policy in the minutes or in the directive.

Language along the lines of that proposed in Alternative B—if it did not include an announcement that the Committee will stop reinvesting the proceeds of maturing Treasury securities—probably would result in little change in bond yields, equity prices, or the foreign exchange value of the dollar. The Desk's recent survey of primary dealers indicates that they do not anticipate changes in the federal funds rate target or in the Committee's forward policy guidance at this meeting, though half expect a more positive characterization of current economic conditions. The dealers see a near-zero probability that the Committee will increase its target for the federal funds rate this quarter; they see substantial probabilities (ranging from 15 to 25 percent) that the first increase in the funds rate will occur during each of the next four quarters. Market quotes are broadly consistent with the Desk's survey: Money market futures indicate that the expected federal funds rate remains below 25 basis points until the fourth quarter of this year and rises to 50 basis points during the first quarter of next year; interest rate caps suggest that investors place high odds on the first increase in the funds rate occurring during the fourth quarter of 2010 or first quarter of 2011.

The size of the market reaction to an announcement that the Federal Reserve will no longer roll over maturing Treasuries is difficult to judge. That move would come as a surprise: On average, dealers see a probability of roughly one-third that the Committee will, by the middle of this year, stop reinvesting the proceeds of some or all maturing Treasury securities, and a probability of one-half that the Federal Reserve will stop reinvesting the proceeds of at least some maturing Treasuries by mid-2011. The direct effect on yields of a decision to stop rolling over maturing Treasury securities could be modest because the resulting increase in the amount of long-term debt held by the public, though sizable, would not be all that large relative to the projected stock. Moreover, the increase would be fairly gradual.[6] However, the increase in yields resulting from this step could be considerably greater if investors inferred that the FOMC had embarked on a path leading to an earlier-than-expected onset of policy firming or to asset sales, or if investors became more uncertain about the likelihood of future asset sales; either outcome could result in larger term premiums. In addition, allowing maturing Treasuries to roll off would reduce the SOMA's holdings of on-the-run securities and thereby limit the ability of the Desk's securities-lending program to address market pressures.

[6] Figures provided by the Desk show that allowing all maturing Treasury securities to roll off beginning in May 2010 would reduce the Federal Reserve's holdings by $60 billion in 2010, another $70 billion in 2011, and a total of $435 billion through 2015—an average decline of $6.4 billion per month.

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—or significant risks that financial imbalances could emerge—in the absence of prompt monetary policy adjustments, then they might choose to issue a statement such as that proposed in Alternative C. In particular, if participants anticipate that it might well be appropriate to begin removing policy accommodation this summer, they may prefer to modify the forward guidance now to indicate that exceptionally low levels of the funds rate are likely to be warranted "for some time" rather than "for an extended period." This change would suggest that the Committee will begin moving to a less accommodative stance of monetary policy sooner than markets now appear to expect. In addition, policymakers may judge it important to indicate that the Federal Reserve will shrink its balance sheet not only by allowing maturing assets to run off but also by gradually selling agency debt and MBS.

Policymakers may expect the pace of recovery over coming quarters—in the housing sector and in the economy more broadly—to be determined largely by the speed of structural adjustments and see a substantial risk that attempting to accelerate the economic recovery by keeping the real funds rate well below zero for much longer would result primarily in higher expected and hence actual inflation. To the extent that policymakers see inflation outcomes as linked mainly to expected inflation rather than to resource slack, they may view the level of forward inflation compensation, which remains near 3 percent, and the continuing dispersion in professional forecasters' longer-run inflation projections, as worrisome indicators that inflation expectations may not be firmly anchored. If so, participants might see prompt policy firming, and an announcement that the Federal Reserve will shrink its balance sheet by selling assets, as necessary to reduce the risk of outcomes in which inflation expectations become unhinged. Such steps could be seen by the public as reinforcing the Federal Reserve's commitment to low and stable inflation, and thus could help keep inflation expectations well anchored. Moreover, policymakers may judge that the Federal Reserve's support for housing finance is no longer necessary or warranted and see gradual sales of MBS as likely to reduce distortions in that market.

In addition, in light of the extraordinarily high level of excess reserves held by the banking system and indications that banks might be starting to ease credit standards, participants may have become more concerned about the possibility of a brisk turnaround in lending and resulting rapid growth in broad monetary aggregates that could put significant upward pressure on inflation. Furthermore, some may judge that the current very accommodative stance of policy risks allowing financial imbalances to build, potentially leading to another boom-bust credit cycle. Even if the probabilities of such outcomes are judged to be low, the possible adverse consequences might be seen as sufficiently severe to warrant a tightening of financial conditions. For these reasons, policymakers may want to signal an earlier increase in the federal funds rate than investors currently anticipate and ensure a noticeable reduction in the supply of reserve balances over coming quarters. To increase the rate at which the supply of reserve balances will decline, policymakers might consider it appropriate to immediately stop reinvesting the proceeds of maturing Treasury securities held by the SOMA and to begin selling agency debt and MBS in the near future. If so, they may choose to announce those decisions—and the reasons for the decisions—by issuing a statement like that in Alternative C.

The adoption of Alternative C would surprise financial market participants, who appear to expect only small changes in the statement at this meeting, in part because the minutes of the FOMC's March meeting emphasized the conditionality and flexibility of the existing language and noted that it would not limit the Committee's ability to commence monetary policy tightening promptly if necessary. Investors likely would read the shift to "for some time" as a signal that the FOMC intends to begin firming policy considerably sooner than markets currently expect.

An announcement that the Committee will no longer roll over maturing Treasury securities, and soon will begin to sell agency debt and MBS, also would surprise most of the primary dealers and likely the markets as well. As noted earlier, dealers see a probability of roughly one-third that the Committee will stop reinvesting the proceeds of some or all maturing Treasury securities by the middle of 2010, and a probability of one-half that it will do so by mid-2011. The dealer survey also asked respondents to report their perceptions of the probability that the Federal Reserve would conduct asset sales during the next two years and the next five years. The median reported probability of sales during the next two years is about 20 percent. But the median probability of sales at some time during the next five years is 50 percent for agency debt and 75 percent for MBS.

Thus the adoption of Alternative C would surprise investors on several fronts. Investors likely would read the statement of Alternative C as signaling earlier policy firming than they had previously anticipated and hence short-term interest rates would increase. Intermediate- and longer-term yields would rise as well, perhaps substantially. Indeed, in response to another question in the Desk's survey, dealers indicated their expectation that, abstracting from any signal that sales would convey about future monetary policy, Federal Reserve sales of MBS at a pace of $150 billion per year would push up the current coupon yield on MBS by about 40 basis points and would raise the yield on 10-year Treasury notes by about 25 basis points. Forward measures of inflation compensation might decline if investors became less concerned about risks to the longer-term inflation outlook. Equity prices likely would fall, and the dollar appreciate.

THE CASE FOR ALTERNATIVE A

Policymakers' primary concern may be that, for the next several years, unemployment will remain well above, and inflation well below, the levels they see as most consistent with their dual mandate. Accordingly, they may judge that not only is the federal funds rate likely to remain exceptionally low for an extended period, but that, as in the staff forecast, economic conditions are likely to make it appropriate to keep the funds rate at or close to its current level for an appreciably longer period than markets currently appear to expect. If so, policymakers may want to issue a statement like that in Alternative A in an effort to bring market expectations for the federal funds rate into closer alignment with their own.

Participants may see the simulations of constrained and unconstrained optimal monetary policy depicted in Chart 7 of the Bluebook as supporting the conclusion that increased monetary stimulus would be desirable and that, in the absence of additional stimulus, the funds rate will need to remain at its effective lower bound longer than markets currently appear to anticipate. Moreover, recent progress in developing tools for draining reserve balances may have given participants greater confidence that the Committee would be able to reduce the supply of reserve balances quickly and by a substantial amount if doing so were to become necessary.

Policymakers might perceive an even stronger case for keeping the funds rate at its effective lower bound longer than markets now think likely if their assessment of the outlook is substantially weaker than that of the staff or if they judge the risks to economic activity or inflation to be tilted predominantly to the downside. They may note, for example, that the Greenbook forecast for output growth is on the high side of private forecasts. Participants may be concerned that the recovery of the labor market will be less rapid than projected in the Greenbook, and that slower job growth would contribute to tepid growth in household spending, perhaps along the lines of the "Jobless Recovery" alternative scenario in the Greenbook. Moreover, low and declining readings on core inflation in recent months may have underscored participants' concerns about downside risks to price stability. While the staff assumes that inflation expectations will remain steady, and thus projects that core inflation will be essentially constant at a rate just below 1 percent over the next two years, 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 expected inflation and labor compensation and hence generates stronger downward pressure on prices. If policymakers see a significant risk of such outcomes, they may judge it appropriate to signal, as in Alternative A, that monetary policy will remain unusually accommodative until measures of resource utilization increase appreciably or inflation pressures rise.

To reinforce that signal, policymakers might decide to announce that they plan to continue on a more permanent basis the practice of reinvesting the proceeds of maturing Treasury securities even as they allow the System's holdings of agency debt and MBS to run off over time. If so, they could include paragraph 4 of Alternative A in the statement.

A statement like Alternative A—with or without paragraph 4—would come as a surprise to financial market participants, who appear to anticipate only minor updating of the language. Short- and intermediate-term interest rates would fall as investors lengthened the horizon over which they expect the federal funds rate to remain at exceptionally low levels. However, any potential decline in longer-term yields might be offset by an increase in inflation compensation if the Committee's statement undermined investors' confidence in a timely exit from the period of exceptionally accommodative monetary policy. Equity prices would probably rise, while the foreign exchange value of the dollar would likely fall.

DEBT, BANK CREDIT, AND MONEY FORECASTS

The staff projects that domestic nonfinancial sector debt will expand at an annual rate of about 6¾ percent in the second quarter of 2010, reflecting rapid growth in government debt and a modest expansion in private-sector debt. Over 2010 and 2011, domestic nonfinancial sector debt is expected to grow at an average annual rate of about 5½ percent; federal government debt is projected to increase at a substantial pace over this period—though more slowly than in the current quarter—but household and business borrowing is expected to be modest. Household debt is projected to edge up in the second quarter of 2010 and expand only slowly thereafter, with house prices remaining about flat and households deleveraging. Standards on bank lending are projected to ease only gradually, and loan charge-off rates, which subtract directly from reported loan growth, are likely to remain elevated for some time. The debt of nonfinancial businesses is expected to grow modestly in the current quarter and throughout the forecast period, despite a projected increase in investment outlays, as large cash balances and solid profits limit firms' needs for external funds. Although federal government debt is projected to expand rapidly through 2010 and 2011, state and local government debt is expected to increase only moderately, with fiscal pressures limiting spending on new capital projects.

Commercial bank credit is expected to contract at an annual rate of about 3 percent in the second quarter of 2010, and to decline 1 percent over the year as a whole. Declines in most categories of lending for 2010 are expected to be only partially offset by increases in securities holdings. C&I loans are projected to contract through the third quarter of 2010, reflecting tight lending standards that have only begun to ease slightly and subdued demand for bank loans from nonfinancial firms. Real estate loans are expected to decline throughout 2010 due to weak fundamentals, tight lending standards, and rising delinquency and charge-off rates for commercial real estate loans, as well as continued strains in residential housing markets. Consumer loans are projected to run off through the second quarter, but then rise over the remainder of the forecast period, buoyed by robust spending on consumer durables. Total bank loans are expected to resume growth by the fourth quarter of this year, and commercial bank credit is projected to expand at about a 4½ percent annual rate in 2011.

The staff anticipates that M2 growth will gradually rise from near zero in the current quarter to roughly 4¼ percent at an annual rate by 2011. Throughout the forecast period, M2 is projected to expand at a slower pace than nominal GDP as the safe-haven flows generated by the financial crisis unwind, and as the opportunity cost of holding M2 assets rises along with short term interest rates in 2011. Liquid deposits are expected to expand rapidly in both 2010 and 2011. However, some of this increase will likely reflect a reallocation from other M2 assets, including small time deposits and retail money market mutual funds. Both of these components of M2 are expected to continue to decline through 2011, though the pace of that decline should moderate. Currency is also predicted to slow from its robust 2009 pace as precautionary holdings continue to unwind.

The staff projects that the monetary base will expand, on net, into the third quarter of this year as the last of the LSAP purchases settle. Over that period, however, monthly growth rates of the base are expected to be volatile due to the effects on reserve balances of swings in the Treasury's account at the Federal Reserve. The monetary base is projected to contract over the remainder of the forecast period, as securities in the SOMA portfolio mature or are prepaid. The contraction in reserve balances over the projection period swamps the moderate increase expected for currency.

Growth Rates for M2 and Monetary Base
(percent, annual rate)

	M2 Growth*	Monetary Base Growth**
Monthly Growth Rates		
Oct. 09	4.6	90.4
Nov. 09	4.9	51.0
Dec. 09	3.0	-0.7
Jan. 10	-8.2	-18.4
Feb. 10	7.8	74.0
Mar. 10	-4.0	-19.3
Apr. 10	-2.6	-13.2
May 10	3.0	34.0
Jun. 10	3.0	-0.8
Quarterly Growth Rates		
2009 Q4	3.9	62.1
2010 Q1	-0.2	13.3
2010 Q2	0.1	6.6
2010 Q3	3.7	4.5
2010 Q4	4.7	1.4
Annual Growth Rates		
2008	8.5	70.3
2009	5.1	41.6
2010	2.1	6.6
2011	4.2	-5.0

*Seasonally adjusted. Forecasts are consistent with nominal GDP and interest rates in the Greenbook forecast.

**Seasonally adjusted, break adjusted. Forecasts are consistent with Greenbook baseline scenario in which the Federal Reserve reduces the size of its balance sheet only gradually over time by not investing the proceeds of maturing securities or prepayments on agency mortgage-backed securities.

DIRECTIVE

Draft language for an April directive corresponding to each of the alternatives follows the March directive shown on the next page. In each case, the April directive drops the sentence that instructs the Desk to complete the execution of purchases of agency debt and MBS but retains the authorization to engage in dollar roll transactions to facilitate the settlement of transactions. The directive for Alternative A directs the Desk to not reinvest the proceeds of maturing agency debt and payments on agency MBS. With no instruction to the contrary, the Desk would continue the standing practice of rolling over maturing Treasury securities. The directive for Alternative C directs the Desk to not reinvest the proceeds of maturing Treasury and agency debt as well as payments on MBS. Alternative C does not direct the Desk to begin asset sales during the intermeeting period, so the directive for Alternative C does not mention asset sales. The directive for Alterative B offers the option of directing the Desk to not reinvest the proceeds of agency debt and MBS, or to not reinvest the proceeds of Treasury as well as agency securities.

MARCH 2010 FOMC DIRECTIVE

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.

APRIL 2010 FOMC DIRECTIVE — 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 engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. **[To gradually reduce the size of the Federal Reserve's balance sheet and return it to a more normal composition over time, the Committee directs the Desk to not reinvest the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account.]** 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.

APRIL 2010 FOMC DIRECTIVE — ALTERNATIVE B

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 engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. **[To gradually reduce the size of the Federal Reserve's balance sheet and return it to a more normal composition over time, the Committee directs the Desk to not reinvest the proceeds of maturing agency debt and payments on mortgage-backed securities held by the System Open Market Account. OR To gradually reduce the size of the Federal Reserve's balance sheet over time, the Committee directs the Desk to not reinvest the proceeds of maturing Treasury and agency debt and payments on mortgage-backed securities held by the System Open Market Account.]** 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.

APRIL 2010 FOMC DIRECTIVE — 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 engage in dollar roll transactions as necessary to facilitate settlement of the Federal Reserve's agency MBS transactions. **To gradually reduce the size of the Federal Reserve's balance sheet over time, the Committee directs the Desk to not reinvest the proceeds of maturing Treasury and agency debt and payments on mortgage-backed securities held by the System Open Market Account.** 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	-1.4	-0.5
Lagged headline inflation	-1.8	-1.7	-0.8
Projected headline inflation	-1.1	-1.6	-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	$i_t = 1.18 i_{t-1} - 0.38 i_{t-2} + 0.20[0.98 + 1.72\pi_{t+2\mid t} + 2.29(y_{t+1\mid t} - y_{t+1\mid t}^*) - 1.37(y_{t-1} - y_{t-1}^*)]$
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	$i_t = i_{t-1} + 0.5(\pi_{t+3\mid t} - \pi^*) + 0.5(\Delta^4 y_{t+3\mid t} - \Delta^4 y_{t+3\mid t}^*)$

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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