FRBNY BLACKBOOK

March 2009

FRBNY Blackbook

RESEARCH AND STATISTICS GROUP

FOMC Background Material

March 2009

CONFIDENTIAL(FR) Class II FOMC

CONTENTS

EXHIBITS

EXHIBIT OVERVIEW

1. Policy Recommendation and Rationale

Our policy recommendation is to significantly expand the Fed's balance sheet while reinforcing the commitment to maintain the current target for the federal funds rate - at between 0 and 0.25% - for an extended period of time.

We recommend that the committee expand the Fed's balance sheet to improve financial market conditions and to boost nominal income. One way to help the Fed communicate the size of the balance sheet expansion going forward would be to announce an intermediate goal for nominal income growth, such as bringing it in line with the trend observed prior to the beginning of the current downturn. Alternatively, the Committee could consider a more explicit goal for the trend level of prices.

Real rates cannot fall to the desired level because inflation and inflation expectations are trending lower. This consideration underlies our recommendation that the interventions in various credit and financial markets need to be discussed not only in terms of correcting specific dysfunctions in those markets, but also in terms of boosting nominal spending. The goal would be to increase inflation expectations and thus reduce the real interest rate.

We recommend expanding the purchases of agency mortgage-backed securities. As for Treasuries, buying these securities might raise concerns about a reduction in the amount of this collateral in the market. Given the size of the fiscal deficit this year, however, we do not feel this should be a binding concern. Consequently, our view is that purchases of both types of securities will reduce interest rates on these instruments and provide support for the economy as the effects of central bank liquidity spill into the rest of the market.

A policy aimed at stimulating nominal income involves risks. The most obvious one concerns the Fed's credibility, given the uncertain lags and effectiveness in the transmission of this type of monetary policy. Indeed, the lack of experience with expanding the balance sheet means the Fed also runs the risk of pursuing an overly simulative policy. We believe, though, that the downward trend in output and prices argues for accepting the risks that may come from acting boldly.

2. Significant Developments

2.1 Economic Developments

Data over the intermeeting period were uniformly poor until the end of the period when somewhat positive retail trade and inventory numbers were released. Notable releases include the downward revisions to Q4 GDP and productivity, declines in employment in January and February, and falling housing starts in January. Releases that were substantially worse than expected include nonresidential construction, home sales, industrial production, and auto sales.

Real activity. *GDP revision*: Q4 output growth was revised down to -6.2% (saar), a much larger decline than the -3.8% initially estimated. There was an unexpectedly large revision to consumer spending on nondurable goods as consumers saved more. The personal saving rate moved up to 3.2%.

Productivity: The downward revision to productivity was larger than expected, with output per hour falling 0.4% (annual rate) compared to the initial estimate of a 3.2% gain. Over the year, productivity was still up a respectable 2.2%, which is a fairly strong reading considering the drop in output.

Production: Manufacturing output fell 2.5% in January, the third consecutive steep decline, with the levels of output for the previous three months revised down. Autos led the drop, falling 23.4% in the month, but there were also significant declines in most industries. Output was down 12.9% over the year.

Orders and Shipments: Orders for manufactured goods fell 1.9% in January. Shipments of nondefense capital goods excluding aircraft fell 6.7%, suggesting very weak capital spending.

Retail Sales: Retail sales were firmer than expected in February, with total sales down 0.1% and a 0.7% gain for sales excluding autos. These figures suggest real consumer spending will be up slightly from Q4. Sales at electronic stores, clothing stores and general merchandisers were particularly strong.

Inventories: Business inventories dropped 1.1% in January, the third straight decline of more than 1.0%. The inventory-sales ratio for retailers dropped from 1.61 months in December to 1.55 months, its lowest reading since September. Ex-autos, the ratio fell from 1.38 to 1.35 months. For overall business, the ratio was unchanged at 1.43 months, making it the first month since June to not see an increase.

Home Sales/Starts: Sales of existing homes fell 5.3% to 4.5 million units (saar) in January, more than erasing the December increase. Inventories remain bloated relative to current sales and estimates put distressed sales at almost half of the total. New single-family sales fell 10.0% in January to 309,000 (saar), the lowest level in the history of this series which dates back to 1963. Sales were down 48% from their year-ago level. Inventories of new homes equaled 13.3 months' supply. The Case-Shiller index for 20 large metropolitan areas fell 2.5% in December. Over the year, the Case-Shiller index was down 18.6%, while the FHFA index was down 8.7%.

Construction Spending: Private construction spending fell a steeper-than-expected 3.7% in January. This was the largest monthly decline in over a decade.

Flow of Funds: Household net worth dropped $5 trillion, or 9%, in Q4. The ratio of household wealth to income dropped to a level not seen since the mid-1990s. The total drop in wealth since its 2007Q2 peak is nearly $13 trillion. Nonfinancial debt continued to expand, increasing 6.3% (annual rate). In Q3, it rose 8.1%. Household debt contracted.

Labor market. *Nonfarm Payrolls*: Nonfarm payrolls dropped 651,000 in February, bringing total job losses in the last four months to 2.6 million. The unemployment rate jumped from 7.6% to 8.1%, with the rate for prime-age male workers up 0.6 percentage point to 7.9%. The earnings data was not as bad as the employment numbers, possibly reflecting the retention of more productive workers by firms. The most recent new claims figures rose to 654,000 with continuing claims over 5.3 million.

Employment Cost Index: The ECI rose just 0.5% from September to December, putting it 2.7% above the year-ago level. The growth in Q4 was the lowest ever reported in this series which dates back to 1982.

Trade. The trade deficit plummeted to $36 billion in January, down from $39.9 billion (revised) in December. Both imports and exports declined significantly, with autos being the notable source of the weakness in trade flows. The drop in the nominal trade deficit was due to lower oil prices. The real deficit actually moved higher as export volumes declined more than import volumes. Given these developments, we expect net exports to make a small negative contribution to GDP in 2009 Q1.

Inflation. *CPI*: The CPI index increased 0.3% in January, in line with expectations. Core CPI increased 0.2%, the largest increase since August and faster than expected. Over the year, core prices were up 1.7%, the same as in December.

PCE Deflator: Following three consecutive monthly declines, the PCE deflator rose 0.2% in January as energy prices rose over the month. Core PCE rose 0.1% in line with expectations based on the CPI data.

Foreign economies. Global data for the beginning of the year are quite alarming. In the euro area, production continued to fall in January, with German orders off 40% from the previous year. Very poor January data for Japan included production down 31%, exports down 39%, housing starts down 19%, and auto sales down 32%. The pattern of falling production and exports is holding throughout emerging Asia, with production off 25% from the previous year in Korea and 35% in Taiwan. China appeared to be holding up well in spite of the global slowdown in trade, but February data had exports collapsing. It now looks like global GDP growth in Q1 will be roughly as bad as it was in Q4.

2.2 Financial Markets

U.S. Markets. The inter-meeting period has seen broad market deterioration, driven by continued weakness in the banking sector, tightening credit conditions, and a sharply weaker global economic outlook. This week, however, renewed optimism about money center banks partly reversed some of the adverse developments.

- Zero-to-five year implied inflation has moved back into negative territory, reflecting renewed deflationary concerns by market participants.
- Equity markets deteriorated considerably over the inter-meeting period, led by continued weakness in the banking sector.
- The volatility of banks' equity rose above security broker-dealers' equity volatility for the first time since mid-October, reflecting increased uncertainty about banks.
- The CDX and corporate bond basis widened sharply, indicating renewed liquidity shortages in credit markets.
- The amount of outstanding primary dealer repos stabilized since the last FOMC, indicating a possible temporary slowdown in the pace of deleveraging. However, repo rates fell sharply, indicating continued strains in this market.
- Financing rates for agency MBS declined modestly; the Federal Reserve started participating in the dollar role.
- The growth of the Federal Reserve's balance sheet slowed down since the last FOMC, reflecting primarily a decline in FX swaps with the euro area and Japan. In addition, PDCF borrowing and net holdings in the CPFF declined.
- The equity valuation is still below the Capital Purchase Program's implied buyback rate for most institutions, with the exception of several regional banks, new bank holding companies (BHCs), and one money center institution.

Foreign Markets. Global funding conditions remained fragile over the inter-meeting period with LIBOR-OIS spreads broadly unchanged at elevated levels. Extensive liquidity support by central banks in Europe and Asia is still seen as necessary and has been broadened. Several European governments had to extend their already substantial financial sector support programs. Financial sector pressures in Eastern Europe persist, with high spillover risks for the Western European banking sector.

- On February 13 the Bank of England started a program to purchase private sector assets of up to GBP50 billion financed by the issuance of Treasury bills.
- The Bank of Japan extended and broadened its commercial paper purchase program, and announced on February 19 that from March onwards it will start purchasing corporate bonds (for up to 1 trillion yen). The Bank also commenced the acquisition of equities from banks.
- The German government committed another 10 billion euro to the real estate lender Hypo Real Estate. The U.K. government's stake in Lloyds Bank increased to 65 percent in return for a government guarantee for GBP260 billion of the bank's toxic assets.
- In emerging markets, sovereign debt spreads rose but they remain below their peak in late October. International capital markets continued to be closed to emerging world corporate borrowers. On February 27, the World Bank, the EBRD and the EIB announced a $30 billion package aimed at restoring financial stability in Eastern Europe.

Worsening growth prospects and financial fragility resulted in equities declining in Europe and Japan since the last FOMC meeting. Growth concerns also led to further declines in global long term interest rates.

- In Europe and Japan, equities were down between 4 and 8 percent, whereas emerging markets equities showed a modest gain. European financials were hit hard – e.g., UBS and Barclays fell, respectively, 34.3 and 32.8 percent.
- Euro area and Japanese 10-year government bond yields were broadly unchanged. U.K. yields fell about 50 basis points in anticipation of bond purchases by the BoE.

The trade-weighted U.S. dollar index rose over the period as the growth outlook abroad worsened. In contrast, as the outlook for the Japanese economy worsened, the equivalent Japanese yen index weakened. The dollar was stable against the Chinese yuan; forward contracts suggest a modest dollar strengthening over the next 12 months.

- The dollar appreciated *vis-à-vis* the euro and yen by, respectively, about 1 and 10 percent.

2.3 Global Economic Policy

Exceptionally poor data affected the economic outlook across the world. As a result, central banks around the world continued to ease their policies over the inter-meeting period. Markets expect further policy easing in the near term with an increasing emphasis on quantitative easing.

- The Bank of England cut its policy rate a total of 100 basis points to 0.5 percent and started to focus on quantitative easing. On March 5 it announced a plan to purchase government bonds, initially for up to GBP75 billion, financed by creating central bank money. The first purchase, worth GBP2 billion, took place on March 11.
- On the same day the ECB lowered its policy rate by 50 basis points to 1.5 percent. A further easing towards a 0.75 percent level is expected over the next 3 months.
- The Swiss central bank cut its target rate on March 12 by 25 basis points to 0.25 percent. The SNB also announced moves to commence quantitative easing: it will start buying corporate bonds and it will conduct unsterilized currency interventions to stem a further appreciation of the Swiss franc.
- In Australia, Canada and Sweden central banks decreased their policy rates between 50 and 100 basis points to, respectively, 3.25, 0.5 and 1 percent.
- Elsewhere, central banks in Brazil, Chile, Mexico, Turkey and Taiwan lowered their respective policy rates between 25 and 250 basis points. The pace of currency reserve losses in Emerging Asia has slowed substantially since the start of 2009.

3. Evolution of Outlook and Risks

3.1 Central Forecast

Conditioning assumptions. Data received over the inter-meeting period have revealed that the decline of economic activity in 2008Q4 was much steeper than initially thought and that activity continued to contract at an alarming rate in 2009Q1. We still anticipate that 2009Q2 will be the trough of this business cycle, but the level of GDP at the trough is now expected to be about 3% below the 2007Q4 NBER peak versus 2% in January.

The recovery begins to take hold in the second half of the year, aided by the preemptive path of monetary policy, various initiatives to foster financial market stability, aggressive fiscal stimulus, and a gradual increase in appetite for risk. Under this deeper profile, GDP declines nearly 2% (Q4/Q4) in 2009 versus January's projected decline of 1.25% and December's decline of 0.25%. As was the case in the previous two business cycles, we expect growth to remain somewhat below potential for the first year of recovery, during which period the unemployment rate continues to rise. At its peak in mid 2010, the unemployment rate is likely to be around 9.75%. This peak unemployment rate is 0.5 percentage point higher than the January forecast and nearly five percentage points above its recent low of 4.5% in mid 2007. By the second half of 2010 growth is expected to increase above the potential rate, bringing the unemployment rate down modestly. However, there is significant slack in the economy over the entire forecast horizon, putting downward pressure on prices and wages. Consistent with the expectation of a higher path for the unemployment rate, we have lowered the path of core inflation, to 0.7% (Q4/Q4) in 2009 (versus 0.9% in January). For all of 2010, real GDP is expected to increase 2.5% (Q4/Q4) versus 3.0% in the January forecast while the core PCE deflator inflation rate rises to 1.4% (versus 1.6%). Overall, the business cycle depicted in the central forecast is slightly deeper than the 1981-1982 recession but not quite as severe as the 1973-1975 recession, based on the NBER peak of 2007Q4. However, GDP grew during the first half of 2008. The decline of GDP from 2008Q2 through 2009Q2 is 4.0% which would be the steepest downturn of the post WWII period. Moreover, we view the risks around this modal forecast to be skewed to the downside.

In addition to the weaker growth prospects for the US, the foreign growth outlook has also been downgraded substantially over the intermeeting period, particularly for the developed economies. We now project that foreign GDP (on a GDP-weighted basis) will contract by 1.4% in 2009 (Q4/Q4), down from essentially zero growth in 2009 in the January Blackbook. As with the US, recovery is expected in 2010, but that recovery is now viewed as likely to be somewhat weaker (2.0% growth in 2010 (Q4/Q4) versus 2.4%).

We have once again lowered the projected path of oil prices assumed in the modal forecast. We expect the price of West Texas Intermediate grade oil to average $42.50 per barrel in 2009Q1, $2.50 lower than in January. Consistent with recent futures quotes, we expect a modest rise in oil prices from current levels through the end of 2010, with the 2009Q4 average price at $50 per barrel and the 2010Q4 average price at $56. These levels are about $10/barrel below the path assumed in January. Our assumed path for oil prices is essentially the same as that of the Greenbook.

With lower oil and other commodity prices, a larger output gap, and a somewhat higher exchange value of the dollar, the path of both total and core inflation in the current modal forecast is somewhat lower than in December. In particular, aggressive pricing in response to bloated inventories will keep downward pressure on prices over the first half of 2009, when we expect the core PCE deflator to rise just 0.5% (annual rate). We expect core inflation to then firm somewhat as recovery begins to take hold, but still anticipate core inflation of just 0.7% for 2009 (Q4/Q4), down from 0.9% in January. For 2010 the core PCE deflator is expected to rise 1.4%, down from 1.6% in January. Of course, in this environment, and particularly given the downside risks to growth, the risk of deflation is quite high.

Given the downgrading of growth prospects and the lower path of core inflation, we have left unchanged our path for the federal funds rate at 0 to 0.25% over the entire forecast horizon. [Exhibit B-2]. Moreover, an explicit underlying assumption of our forecast is that various Fed and Treasury initiatives to improve liquidity and restore confidence in the financial sector will have increasingly beneficial effects over time and thereby ease overall financial conditions.

In this Blackbook, we have incorporated the explicit provisions of the fiscal stimulus bill (The American Recovery and Reinvestment Act of 2009) into our forecast. Relying on Congressional Budget Office and Joint Committee on Taxation scoring of this legislation, we estimate that the increases in outlays and reduction in taxes amount to about 1% of GDP in FY2009 and a little over 2% of GDP in FY2010. In our view this fiscal impulse modestly raises the modal forecast for GDP above what it otherwise would be but has a more pronounced effect on the balance of risks. Moreover, we expect the legislation to have meaningful impacts on the income side. Specifically, increases in transfer payments and decreases in individual income taxes are expected to contribute to an increase of the personal saving rate to around 4.5% by the end of 2009, after which it edges lower to around 3.0% by the end of 2010.

As is our usual practice, our assumptions for equity prices, the real exchange value of the dollar, and home prices are similar to those of the Greenbook. Equity prices are assumed to increase at an annual rate of about 15% over the forecast horizon, although from a significantly lower starting point. The real exchange value of the dollar is assumed to increase somewhat further in the near-term but then gradually decline from mid 2009 through the end of 2010. The projected path of home prices is essentially unchanged. The Board anticipates a further 15% to 16% decline of the Loan Performance home price index by the end of 2010, for a total peak to trough decline of about 32%. This corresponds to our assumption of about a 21% peak to trough decline of the Federal Housing Finance Administration (FHFA, formerly the OFHEO) purchase-only home price index.

We maintain our estimate of potential GDP growth at 2.7%, composed of 1.2% trend hours growth (although we assume this growth will begin to decline in 2009-2010) and 1.5% trend productivity growth (on a GDP basis, which is equivalent to 1.8% on a nonfarm business sector basis). As always, there is substantial uncertainty around our estimate of potential GDP growth. The Board staff has once again lowered their estimate of potential over the forecast horizon, to 2.0% from 2.2% in January.

We expect the lower degree of inflation persistence evident since the early 1990s to continue. This assumption is in contrast to the greater degree of inflation persistence assumed in recent Board staff forecasts. In our central scenario, inflation expectations remain well anchored. This assumption is essential to achieve the gradual rise of core inflation back toward the midpoint of the FOMC's objective for core PCE inflation of 1.5% to 2.0%.

Inflation. In our central scenario, total PCE inflation falls at a 1% annual rate in 2009Q1 following the 5% annual rate decline of 2008Q4. For the first quarter as a whole, energy prices fall another 32% (annual rate) relative to the fourth quarter average, despite the fact that energy prices rise in each month of the quarter. Thereafter total inflation edges upward as energy and food prices move gradually higher. Core inflation remains quite low—around 0.5% annual rate—over the first half of 2009 reflecting the quite abrupt decline in final demand and steep increase in inventories relative to sales. Thereafter, both total and core inflation gradually return to the mandate consistent range as final demand firms within the context of anchored inflation expectations.

Real activity. Within this central projection, consumer spending remains relatively sluggish through 2009 as households respond to the decline in their net worth by boosting saving out of current cash flow. The correction in housing production is expected to be largely completed by mid-2009. At that point the large drag that residential investment has exerted on growth for the past three years will subside. Thereafter, housing is likely to be a modest plus for growth, but the surge of residential investment experienced in the early stages of past recoveries is not anticipated due to the continued high levels of homes entering the market through the foreclosure process.

Business investment in new structures and new equipment and software is expected to decline sharply in 2009 as capacity utilization rates decline and vacancy rates rise and then only gradually recover in 2010. During the first half of 2009 we expect businesses to aggressively pare inventories to bring them into better alignment with sales. In fact, in 2009Q1 the inventory change growth contribution is likely to be about -2.75%. However, by the second half of 2009, as final demand begins to recover, inventory building begins to contribute to overall growth. With the sharp downgrading of foreign growth prospects, exports are expected to decline through mid-2009 with significant growth not returning until 2010. In the near term imports are expected to continue to decline, but the rate of decline is less than that of exports. For all of 2009, the net export contribution to growth is essentially zero. By 2010, with domestic demand in the US recovering, import growth is likely to turn strongly positive while export growth lags behind, at which point the net export growth contribution becomes modestly negative.

Underlying this projected path of growth in private final demand is the expectation that financial market functioning returns to more normal conditions and that consumer and business confidence is gradually restored. A related risk is that, even if financial markets and asset prices behave as assumed, the decline of household net worth embedded in this central projection induces a steeper-than-expected increase in the personal saving rate, keeping consumer spending weaker for longer.

3.2 Alternative Scenarios and Risks

The risk assessment has slightly changed since the last Blackbook, with a modest increase in the probability associated with the *Global Deflation* scenario. If this mild reassessment of risks appears at odds with the dire news on global economic activity and the health of the financial sector, one has to remember that the risk assessment is relative to the *Central Scenario* forecast, which has worsened substantially since the last FOMC. In addition, the outlook associated with some of the scenarios, such as the *Global Deflation* scenario, is worse than in the last Blackbook, even after taking into account the changes in the *Central Scenario* forecast. Finally, our forecast distribution takes into account the fact that ongoing policy actions by the Fed and the Treasuries can be successful in limiting the downside risk to the US economy.

Exhibit C-1 shows that the *Global Credit Crunch* is still the most likely scenario by far, with an associated probability above 40%. While the likelihood of the *Global Deflation* scenario has increased since last FOMC, the scenario itself is still not very likely (the associated probability of ever entering the scenario is less than 10%). Exhibit C-2 displays the Core PCE inflation and real GDP growth paths associated with the various scenarios. These paths have changed since the last Blackbook as a result of both lower core PCE inflation and output forecasts in the *Central Scenario*, and a somewhat direr outlook associated with the more adverse scenarios. For instance, the *Global Deflation* scenario currently foresees a decline in year-to-year Core PCE lasting though the end of 2010, while in the previous Blackbook the decline was over by the beginning of that year.

These changes result in a downward shift in the forecast distribution for both inflation and output [Exhibit C-3]. The 5th and 95th quintiles of the Core PCE and Real GDP forecast distributions have both declined. The "Depth of Deflation" chart shows that the probability of low inflation/deflation (defined as average annual inflation lower than 1.5% during the 2009-2011 period) has increased from 15% to almost 20%. The expected decline in the level of output conditional on being in a low inflation/deflation environment is 12%, indicating that a deflationary environment represents a major risk for the US economy. The "Depth of Recession" chart shows that the likelihood of a "severe" recession, defined as a four-quarter drop in output larger than 3%, has increased from 70% to roughly 85%.

4. Forecast Comparison

4.1 Greenbook Comparison

The path for the FFR is the same for the Greenbook and the Blackbook, with both projecting the FFR to stay in the current target range of between 0 and 0.25% at least until the end of 2010.

Conditioning Assumptions. The Board staff assumes lower potential GDP growth, at 2.0% per year relative to 2.2% in the previous Greenbook. The change reflects the effects of lower expected business investment on capital deepening. In contrast, our outlook for potential growth is unchanged relative to the previous Blackbook (2.7%).

In terms of fiscal policy, the Board staff expects it to be slightly more stimulative in the current year and less stimulative in 2010. In contrast, we made only minor changes to our outlook for fiscal policy relative to the January Blackbook.

As for asset prices and financial market conditions, as usual the assumed paths have been adjusted to account for the new initial conditions in the various markets. House prices are assumed to decline at a similar pace as in the previous Greenbook. Equity prices are assumed to rise at a 15% annual rate for the rest of the projection period.

International. The FRBNY forecast for the net export contribution to 2009 GDP growth is 0.1 percentage points, whereas the Board is forecasting a negative 0.3 contribution. This difference arises from the Board's more pessimistic foreign growth path, which results in a relatively larger decline in their forecast of US exports. The FRBNY forecast for the net export contribution to 2010 GDP growth is very close to the Board's at -0.3 compared with -0.4.

Inflation. Relative to January, we reduced our forecast for core PCE inflation in 2009 from 0.9% to 0.7%, making it somewhat lower than the Greenbook forecast (unchanged at 1.0%). However, the biggest difference remains in the 2010 forecast. Our projection is still considerably higher than the Greenbook projection (1.4% and 0.5%, respectively). The two forecasts for total PCE inflation in 2010 have similar differences.

Real activity. Both the FRBNY and the Board staff significantly revised the forecasts for real activity. The Greenbook forecast for GDP growth in 2009 (Q4/Q4) is now at -2.3%, somewhat lower than our current forecast of -1.9%. This contrasts with the last issues of the Greenbook and Blackbook, when our forecast of -1.3% was more negative than the Board staff's forecast of -0.8%. The forecasts are more similar in the short-run. We forecast growth of -6.3% for 2009 Q1 versus -6.5% in the Greenbook. In contrast, for 2009 Q2 our forecast is lower at -2.4% compared with -2.0% in the Greenbook. The projections for the unemployment rate at the last quarter of both 2009 and 2010 are now much more similar, as the Board staff increased their forecasts significantly more than we did. We now project the 2009 Q4 unemployment rate to be 9.6% (9.2% in the previous Blackbook), and the 2010 Q4 rate to be 9.5%. In contrast, the current Greenbook forecasts an unemployment rate of 9.2% for 2009 Q4 (8.4% previously), and 9.5% for 2010 Q4 (8.1% previously).

Uncertainty around forecasts. The Blackbook implies significantly greater inflation uncertainty in the forecast than the Greenbook, particularly in 2009. In particular, the Blackbook assigns more probability to lower inflation this year than the Greenbook, with the bottom of the forecast probability interval at -0.9% versus +0.5% in the Greenbook. For growth, the Blackbook incorporates substantially more downside risk than the Greenbook. The lower end of our 70% forecast interval is now -6.0% for 2009 and -0.7% for 2010, while the corresponding numbers in the Greenbook are -3.7% and +0.1%. The upper ends of the 70% forecast intervals for GDP growth in the Blackbook and the Greenbook are more similar.

To assess the importance of the differences between our outlook and the Greenbook forecasts, we calculate the percentile of the Greenbook forecasts for core PCE inflation and GDP growth in our forecast distribution. The results are shown in Table 2, with the January values in parentheses. The difference between the core PCE forecasts of the Greenbook and the Blackbook is more pronounced than it was in January. Once again, the largest gaps appear in the forecasts for core PCE inflation.

Table 1: Comparison of 70% Intervals around FRBNY and Board Forecasts

	Core PCE Inflation		Real GDP Growth	
	FRBNY	*Board*	*FRBNY*	*Board*
2009	-0.9, 1.5 (-0.7-1.7)	0.5, 1.5 (0.5-1.5)	-6.0, 0.0 (-5.3-0.5)	-3.7, -0.8 (-2.2-0.7)
2010	0.2, 2.1 (0.5-2.4)	-0.4, 1.3 (-0.1-1.6)	-0.7, 4.1 (-0.3-4.5)	0.1, 3.0 (1.2-4.0)
2011	0.9, 2.5 (0.1-2.9)	n/a (n/a)	2.2, 6.5 (2.2-6.5)	n/a (n/a)

Table 2: Percentile of Greenbook Forecast in FRBNY Forecast Distribution

	Core PCE Inflation	Real GDP Growth
2009	69 (63)	54 (68)
2010	20 (22)	43 (55)
2011	9 (9)	38 (57)

Alternative Greenbook forecasting scenarios. The Greenbook considers six alternative scenarios. Four of them involve different assumptions about the timing of the easing of financial strains and their effects on the economy. The last two scenarios look at alternative assumptions regarding the dynamics of inflation and inflation expectations and are conceptually similar to the ones in the previous Greenbook. Except for two scenarios, the FFR is unchanged at the effective lower bound until 2013. The two exceptions are the *Faster Recovery* and *Anchored Inflation Expectations* scenarios, in which the FFR stays at the lower bound through the end of 2011, but then increases in 2012-2013.

The first scenario, *Delayed Financial Repair*, assumes that risk spreads on various securities remain at their current high levels and that tight credit continues to restrict private spending through the end of 2010. GDP contracts again in 2010, while the unemployment rate increases to 10.25% and inflation falls somewhat relative to the baseline case.

The *Intensifying Financial Strains* scenario entertains the possibility that financial market stresses worsen, rather than ease, as in the baseline scenario. As a result, risk premiums on various assets increase by 50 basis points relative to baseline and remain at elevated levels into 2010. Home prices decline more than in the baseline projection and credit conditions become more restrictive. GDP falls by almost 6% in 2009, and unemployment reaches 11% in mid-2010. Core PCE inflation falls steadily and is close to -1% by the end of the scenario horizon.

In qualitative terms, the third scenario, *Faster Recovery*, is somewhat similar to the one with the same name in the previous Greenbook. Financial market conditions, consumer sentiment and business confidence improve rapidly and the economy quickly moves out of recession. GDP grows by 2.3% in the second half of 2009 as opposed to -0.3% in the baseline. The unemployment rate peaks at 8.8% in 2009 and drops to 4.4% in 2012-13. Core PCE inflation falls slightly below 1% in 2009 H2 and 2010, but reaches 1.7% in 2012-13. This is the only scenario where the FFR departs from the effective lower bound, but only towards the end of the scenario horizon.

The *More Adverse Supply Conditions* scenario entertains the possibility that the dislocations experienced in financial and credit markets might have already had – and may continue to have – an adverse effect on trend productivity and on the equilibrium unemployment rate. As a result, there should be less slack in goods and labor markets, and higher trend unit labor costs. This produces less downward pressure on prices, but has a permanent adverse impact on the level of GDP.

Similarly to the previous Greenbook, the *Anchored Inflation Expectations* scenario incorporates moored long-run inflation expectations. Instead of declining to 1.25% as in baseline, these expectations remain around 2.0%. As a result, core PCE inflation falls less than in the baseline case. The outlook for real activity is somewhat better than in baseline. As result, the FFR departs from the lower bound, but not before 2012-13.

Finally, the *Deflation* scenario considers the possibility that the baseline case has understated the extent of deflationary pressures currently in the economy. Core PCE inflation declines to -0.3% in 2010, and to -0.9% in 2012-13. With the FFR at its lower bound, real interest rates and the burden of nominal debt obligations increase. Inflation is substantially lower than in baseline, but somewhat surprisingly, the differences in terms of real activity are relatively small.

4.2 Comparison with Private Forecasters[1]

The most recent release of the Survey of Professional Forecasters is from mid-February. Subject to this caveat, the FRBNY forecast predicts the largest contraction in GDP in 2009Q1 when compared to the median SPF, PSI model, Blue Chip, and Macro Advisers forecasts. There is much less dispersion in forecasts for 2009 (Q4/Q4) growth, but our forecast remains the most pessimistic at -1.9%. In terms of inflation, the forecasts for 2009Q1 are much less dispersed than those in the January Blackbook. For 2009 (Q4/Q4) inflation, our forecasts for core and headline CPI, as well as for core PCE inflation, are now either near or at the top of the range of private forecasts. All forecasts are reported in Exhibit B-8 as quarterly percent changes at an annual rate.

Real GDP Growth. The FRBNY has the lowest forecast for real GDP growth for 2009 Q1, at -6.3%. The corresponding PSI model, Blue Chip, median SPF and Macro Advisers forecasts are -4.4%, -5.3%, -5.2%, and -5%, respectively.
Relative to the January Blackbook, there were larger changes to the private sector's forecasts for 2009 (Q4/Q4) GDP growth compared to ours, but we still have the lowest forecast. We project 2009 (Q4/Q4) growth of -1.9%, compared to -1.3%, -1.1% and -0.9% for Blue Chip, median SPF and Macro Advisers, respectively. The dispersion in

[1] Release dates of the private forecasts discussed in this section are in parentheses: Blue Chip consensus (03/10), SPF (02/13), Macro Advisers (03/12), and the PSI Model (03/10).

forecasts for 2010 is now lower than in the previous Blackbook, and we currently forecast the lowest rate of growth.

Core PCE Inflation. Compared to the January Blackbook, our projection for core PCE inflation for 2009 Q1 has increased while the median SPF and Macro Advisers forecasts have decreased. We now forecast 0.6% (0.2% in previous Blackbook), compared to the median SPF's 0.7% (1.6%) and Macro Advisers' 0.7% (1.0%) forecasts. For 2009 (Q4/Q4), our forecast of 0.7% continues to fall between the median SPF's 1.1% and Macro Advisers' 0.5% forecasts. This also holds for 2010 (Q4/Q4), but the range of forecasts is much greater: Macro Advisers now forecasts zero core PCE inflation, compared to the median SPF forecast of 1.5% and our forecast of 1.4%.

CPI Inflation. With the exception of Macro Advisers, all forecasts for 2009 Q1 CPI inflation were revised down relative to those presented in the previous Blackbook. For 2009 Q2 and 2009 (Q4/Q4), our forecast is somewhat higher than those of Blue Chip, median SPF and Macro Advisers. There is a noticeable discrepancy in the forecasts for 2010 (Q4/Q4), with our forecast of 1.9% CPI inflation being identical to the Blue Chip forecast and the median SPF forecast, while Macro Advisers continue to forecast very low inflation, at 0.3%.

Core CPI Inflation. The picture for core CPI inflation is somewhat similar to that of headline inflation. With the exception of 2009 Q1, Macro Advisers maintain significantly lower forecasts, while our forecasts are somewhat similar to the median SPF's. The large discrepancy is again most apparent for 2010 (Q4/Q4). Our forecast of 1.7% core CPI inflation is essentially identical to the median SPF (1.6%), while Macro Advisers forecast zero core inflation.

5. Robustness of Policy Recommendation

5.1 Sensitivity to Alternative Scenarios and Policy Rules

Our current policy recommendation is to keep the target federal funds rate in the 0-0.25% range through 2010. This recommendation is consistent with *all* of our policy rules under almost *all* scenarios (the only exception being the *Loss of Credibility* scenario when combined with the *Baseline* rule) [Exhibit D-1]. This was the case for the last Blackbook.

This section provides information about the *shadow* real rates, that is, the real FFR rates implied by the *Baseline* rule under the various scenarios *ignoring* the zero bound. Exhibit D-1 shows that, under the different scenarios, this "shadow" real rate ranges from -3% to -4% in the current quarter, and from -3% to -7% in 2009Q4. Given that the nominal FFR is constrained at zero, these figures can be interpreted as indicating the desired level of expected inflation under each scenario. For example, under the *Global Deflation* scenario, the policy maker would ideally generate an expected inflation rate of about 7% in 2009Q4 in order to bring the real rate to the desired level.

The prescription from the alternative policy rules, namely the *Asymmetric Price Targeting*, *Dove*, and *Outcome-based* rules are broadly similar to those from the *Baseline* rule [Exhibit D-3]. The main differences is that these alternative rules tend to be either more reactive to output (i.e. the *Dove* and *Outcome-based* rules) or more averse to disinflation (i.e. the *Asymmetric Price Targeting* rule), and therefore imply a lower desired real rate. For instance, *Asymmetric Price Targeting* rule implies a real FFR rate of about -5% under the *Central* scenario in the current quarter, versus the -3% real FFR implied by the *Baseline* rule. For the *Outcome-based* rule, we show the nominal FFR ignoring the zero bound. This rule therefore has the nominal FFR reaching -7% under the *Central Scenario* and -14% under the *Global Disinflation* scenario by 2010.

We also use the DSGE-VAR to assess the current stance of monetary policy. When we run the counterfactual forecasts eliminating past policy shocks, we find that the DSGE-VAR predicts a FFR of 1% in 2009Q1 because of the gradualism implicit in the estimated policy rule. Even under the relatively "mild" *Central Scenario* the counterfactual FFR turns negative starting in 2009Q3.

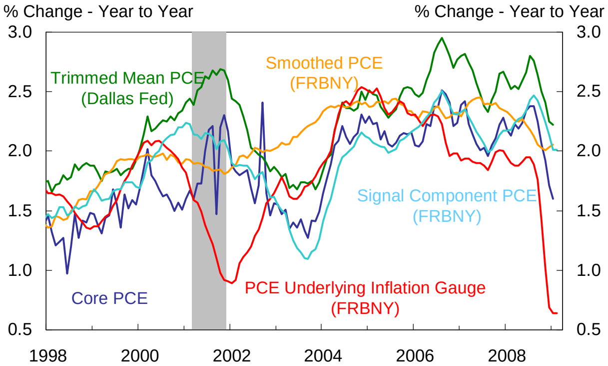
5.2 Comparison to Market Expectations

Over the short-term, our policy recommendation coincides with the path currently priced into markets and with the forecast of the primary dealers. The market-implied FFR suggests a very gradual renormalization starting at the end of 2009, while primary dealers expect the FOMC to start raising rates in the second half of 2010. Our recommendation is to begin raising rates in 2011. The FFR trajectory implied by primary dealers is lower relative to last FOMC, and therefore more in line with our policy recommendation.

A. Significant Developments

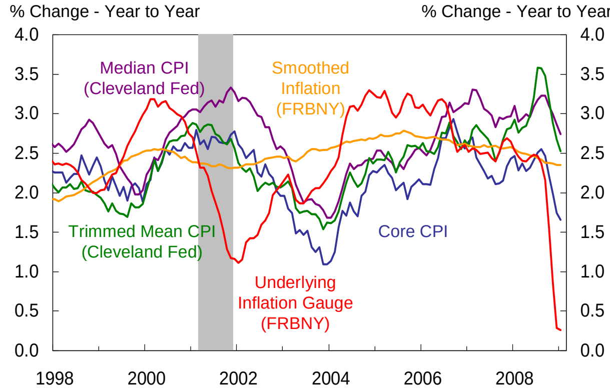
Exhibit A-1:
Measures of Trend Inflation

Alternative Measures of PCE Inflation



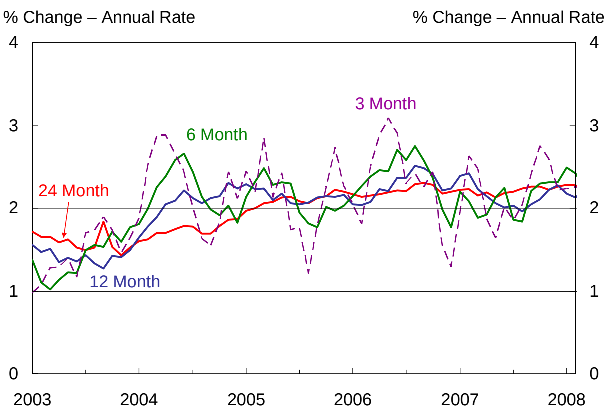
Source: Bureau of Economic Analysis, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Alternative Measures of CPI Inflation



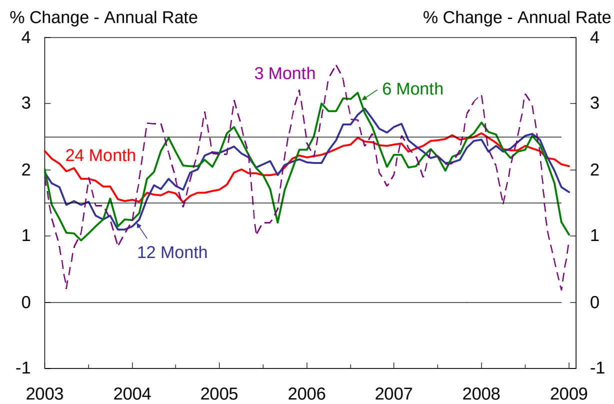
Source: Bureau of Labor Statistics, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Core PCE over Various Horizons



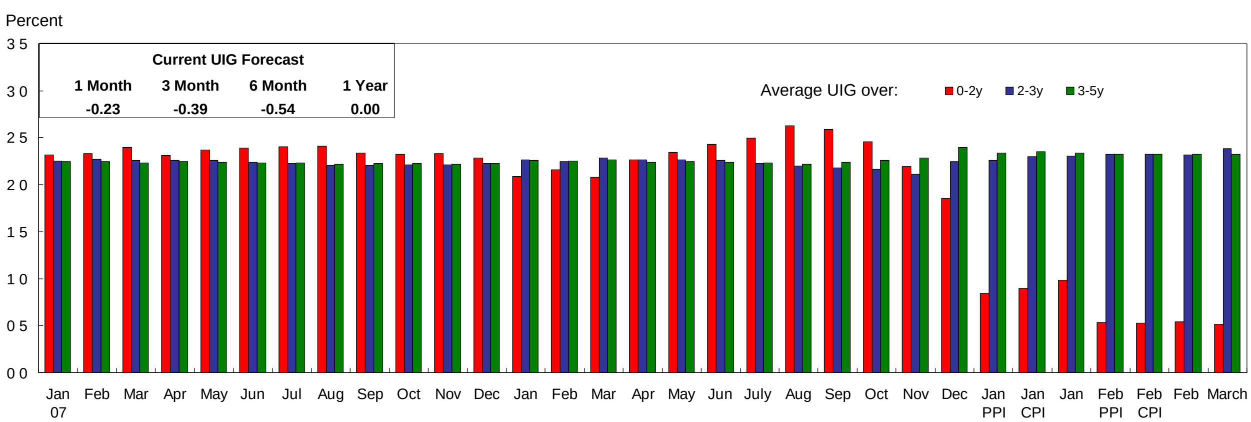
Source: Bureau of Economic Analysis

Core CPI Inflation over Various Horizons



Source: Bureau of Labor Statistics

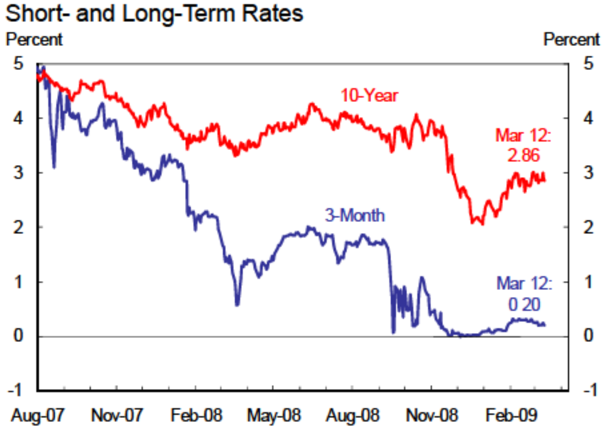
Exhibit A-2:
Underlying Inflation Gauge (UIG)



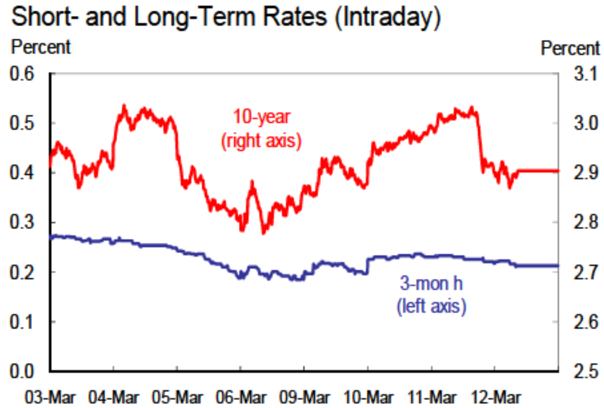
Source: MMS Function (FRBNY), Federal Reserve Board, and Swiss National Bank

A. Significant Developments

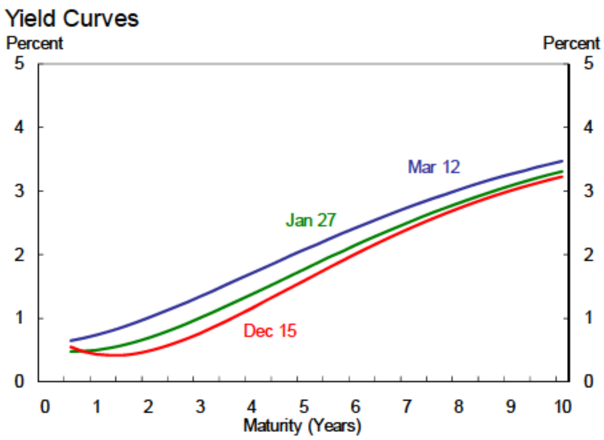
Exhibit A-3:
Treasury Yields



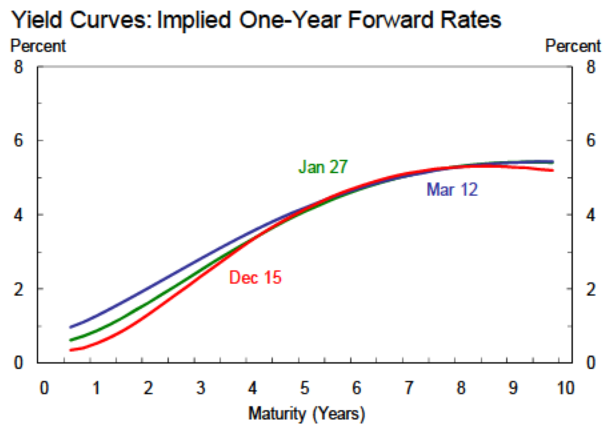
Source: Bloomberg Note: Yields of on-the-run securities



Source: Bloomberg Note: On-the-run securi ies, 8:00 am to 4:00 pm.



Source: Federal Reserve Board

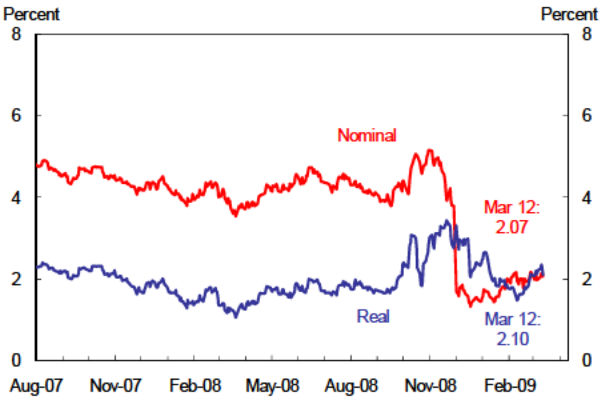


Source: Federal Reserve Board

A. Significant Developments

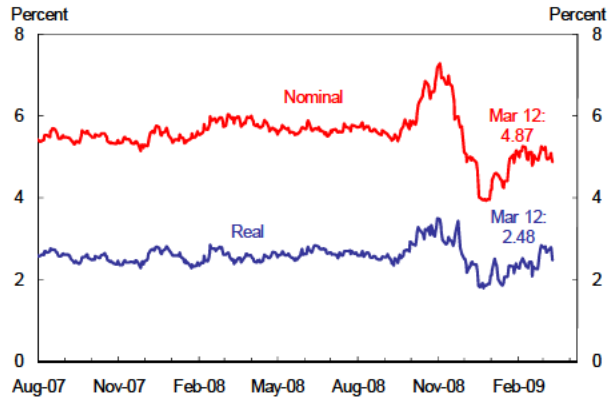
Exhibit A-4:
Real Yields and Implied Inflation

5 Year Spot Rate



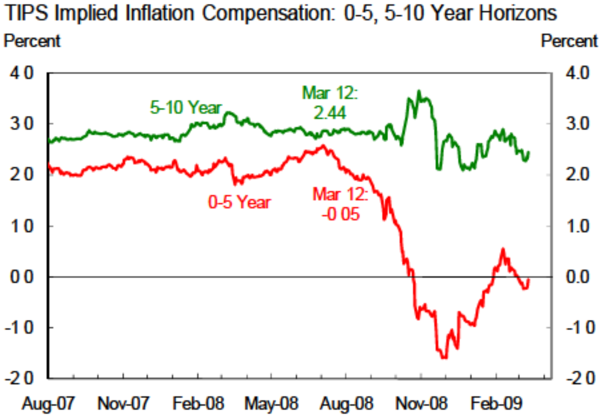
Source: Federal Reserve Board

5-10 Year Forward Rates



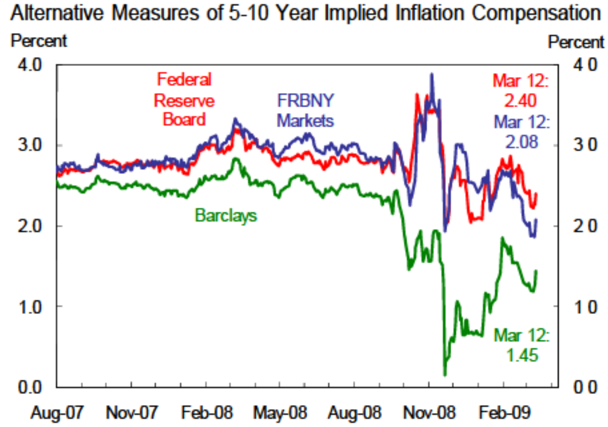
Source: Federal Reserve Board

TIPS Implied Inflation Compensation: 0-5, 5-10 Year Horizons



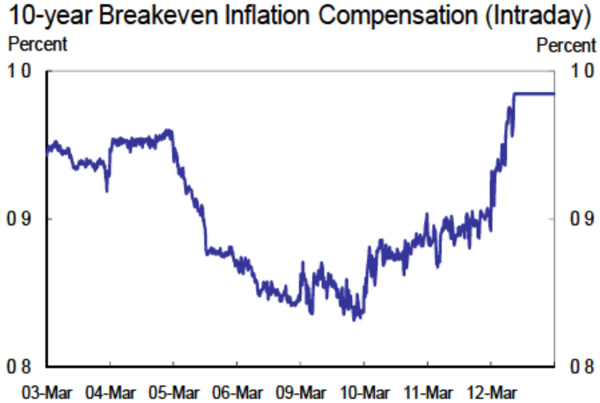
Source: Federal Reserve Board Note: Carry-adjusted

Alternative Measures of 5-10 Year Implied Inflation Compensation



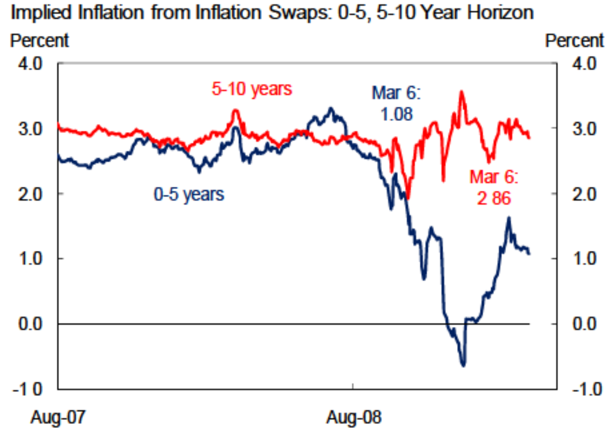
Source: Federal Reserve Board, Barclays, and FRBNY calculations

10-year Breakeven Inflation Compensation (Intraday)



Source: Bloomberg Note: On-the-run securities, 8:00 am to 4 00 pm.

Implied Inflation from Inflation Swaps: 0-5, 5-10 Year Horizon

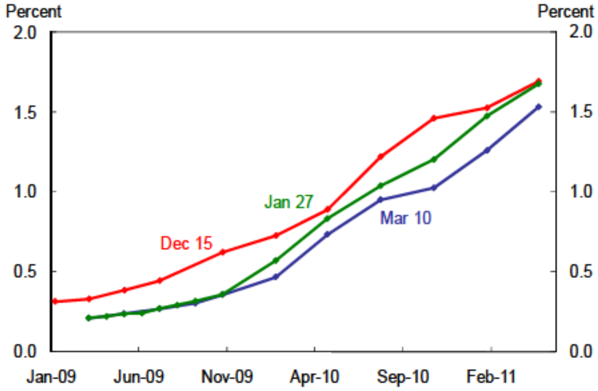


Source: Barclays

A. Significant Developments

Exhibit A-5:
Policy Expectations

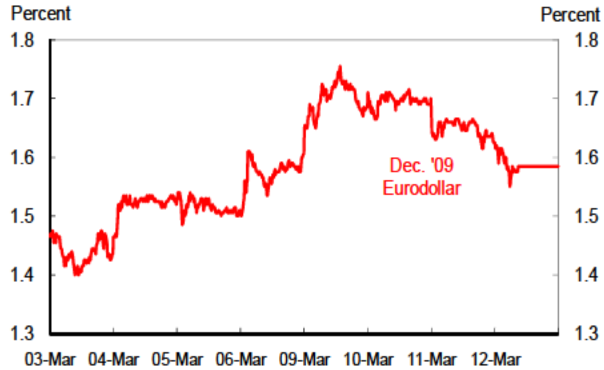
Expected Fed Funds



Note: Estimated using fed funds and Eurodollar futures.

Source: Federal Reserve Board

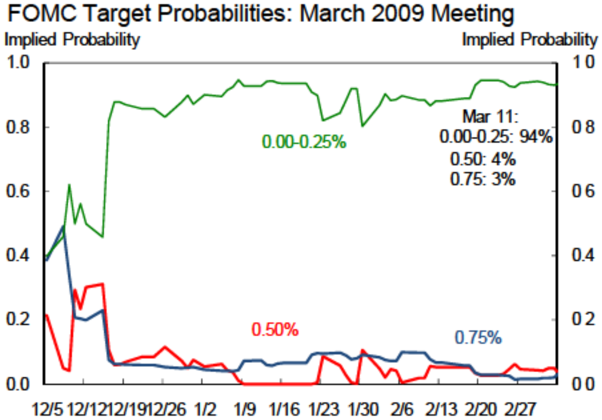
Implied Eurodollar Rates (Intraday)



Source: Bloomberg

Note: 8:00 am to 4:00 pm.

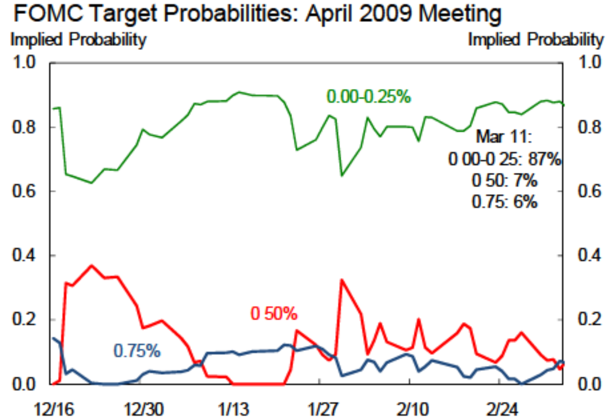
FOMC Target Probabilities: March 2009 Meeting



Source: Cleveland FRB

Note: Estimated using options on fed funds futures.

FOMC Target Probabilities: April 2009 Meeting



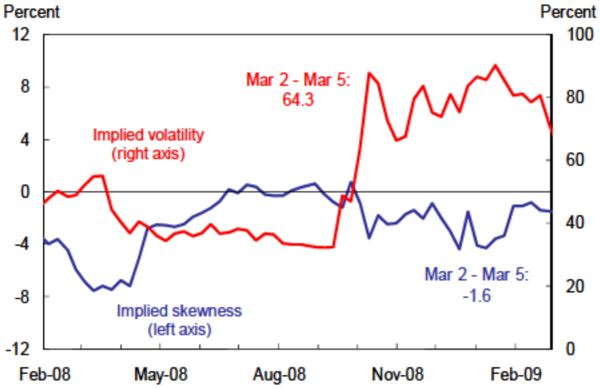
Source: Cleveland FRB

Note: Estimated using options on fed funds futures.

A. Significant Developments

Exhibit A-6:
Implied Volatility

Implied Skewness and Volatility

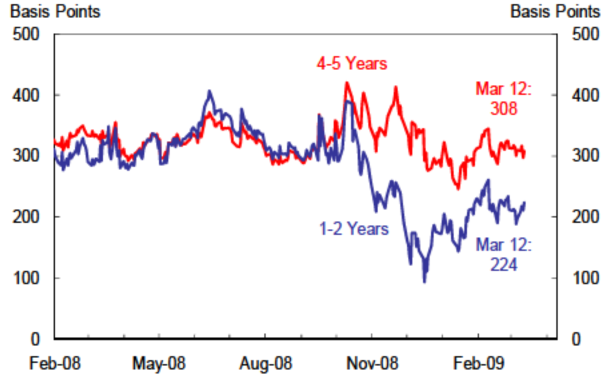


Source: CME and FRBNY calculations

Note: Weekly averages based on 3-9 month implied volatilities from Eurodollar futures options.

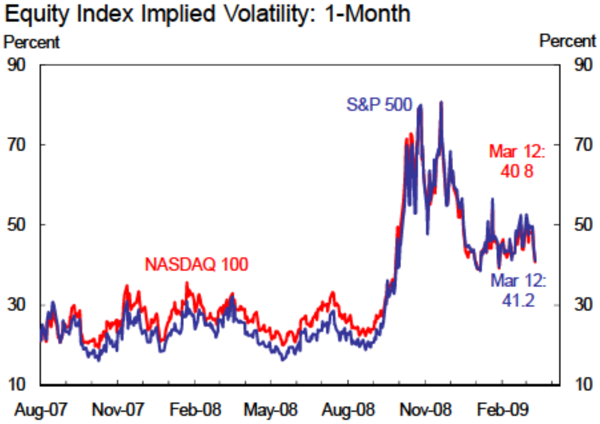
Long-Term Interest Rate Expectations

Width of 90% Confidence Interval Implied by Swaptions



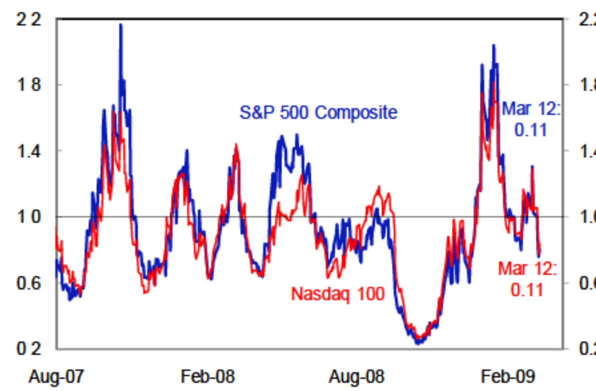
Source: Datastream, FRBNY calculations

Equity Index Implied Volatility: 1-Month



Source: Datastream

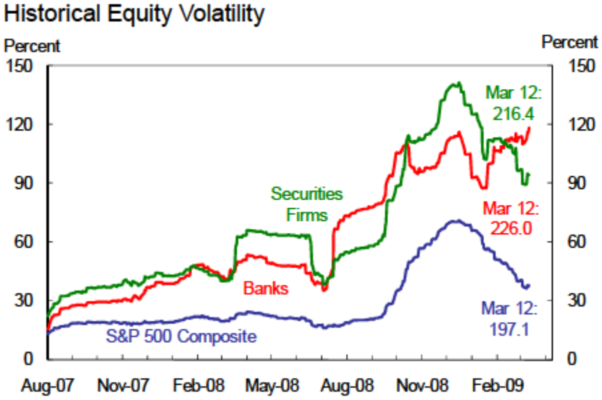
Ratio of Implied to Realized Volatility



Source: Datastream

Note: Realized volatility is annualized 1-month rolling standard deviation of daily returns (360 day year) for S&P 500 and Nasdaq 100.

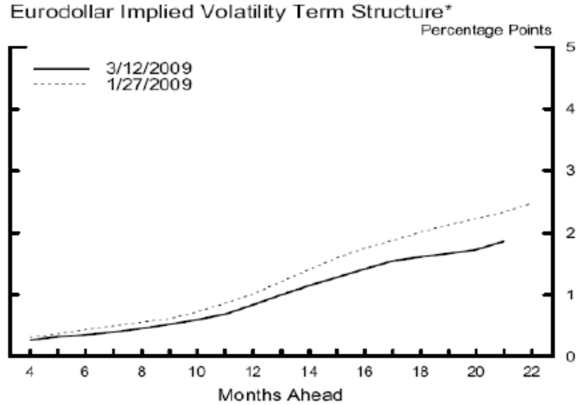
Historical Equity Volatility



Note: Annualized rolling 3-month standard deviation of daily returns. Banks series is S&P 500 Banks index. Securities Firms series is S&P 500 Investment Banks and Brokerages index.

Source: Datastream

Eurodollar Implied Volatility Term Structure*

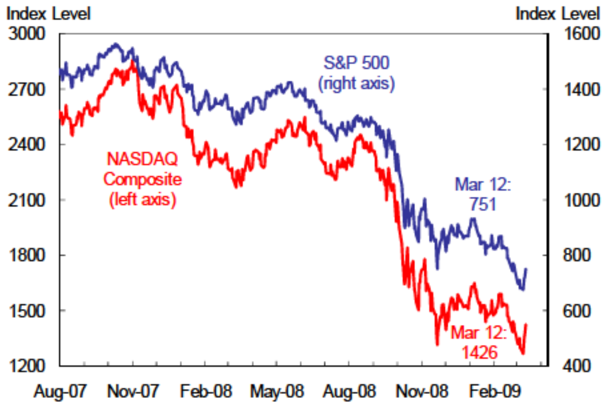


*Width of a 90 percent confidence interval computed from the term structures for the expected federal funds rate and implied volatility.

A. Significant Developments

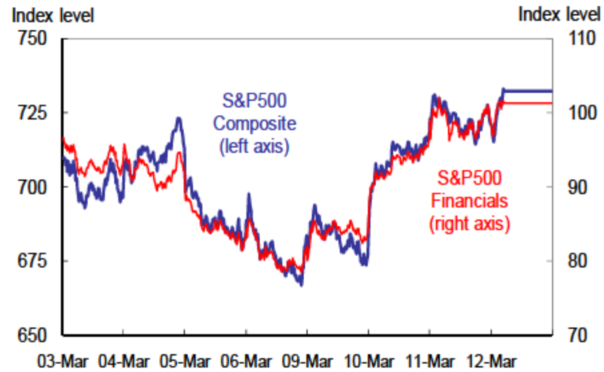
Exhibit A-7:
Equity and Credit

Equity Index Levels



Source: Datastream

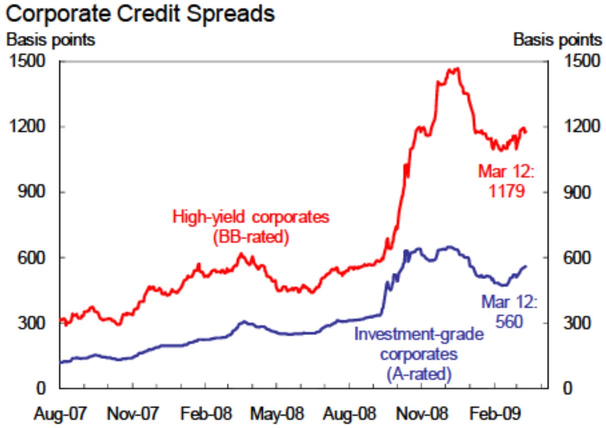
S&P 500 Indices (Intraday)



Source: Bloomberg

Note: 9:30 am to 4:00 pm.

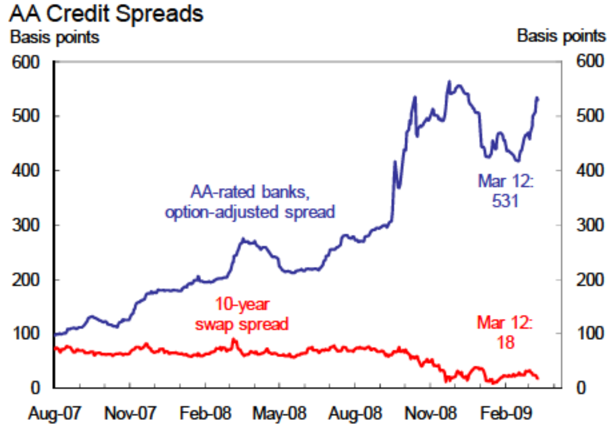
Corporate Credit Spreads



Source: Merrill Lynch

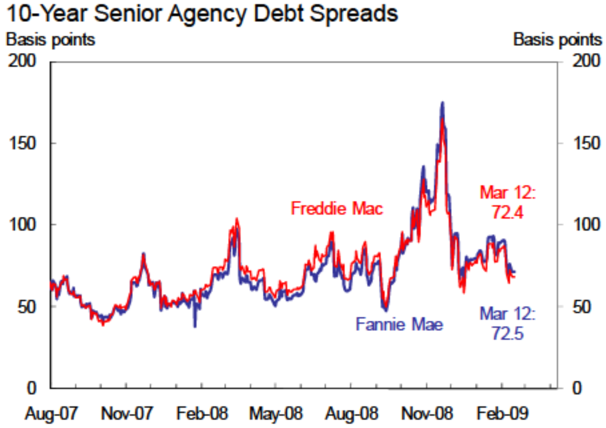
Note: Option-adjusted spreads.

AA Credit Spreads



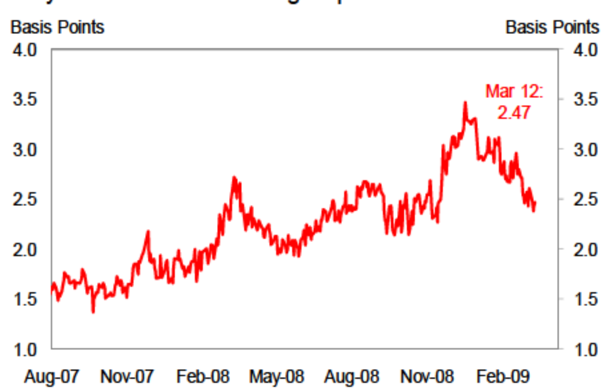
Source: Bloomberg and Merrill Lynch

10-Year Senior Agency Debt Spreads



Source: Bloomberg

30-year Fixed Rate Mortage Spread



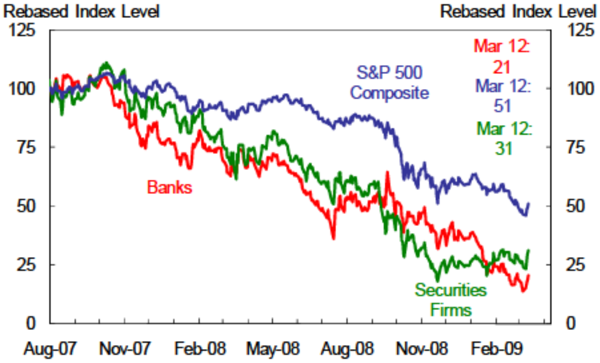
Source: Federal Reserve Board, Haver Analytics

Note: Spread is to 10-year Treasury Note

A. Significant Developments

Exhibit A-8:
Financial Intermediaries

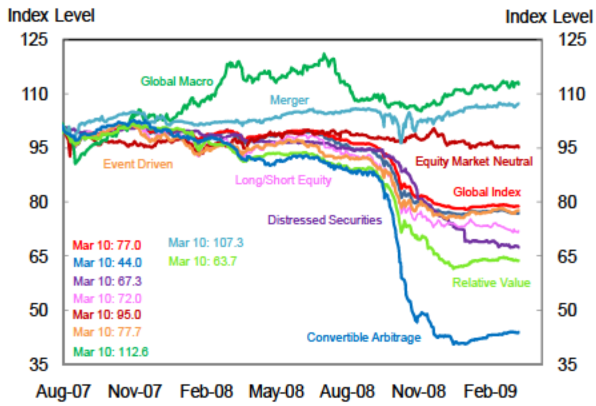
Equity Performance



Note: Rebased to equal 100 on August 1, 2007. Banks series is S&P 500 Banks index. Securities Firms series is S&P 500 Investment Banks and Brokerages index.

Source: Datastream

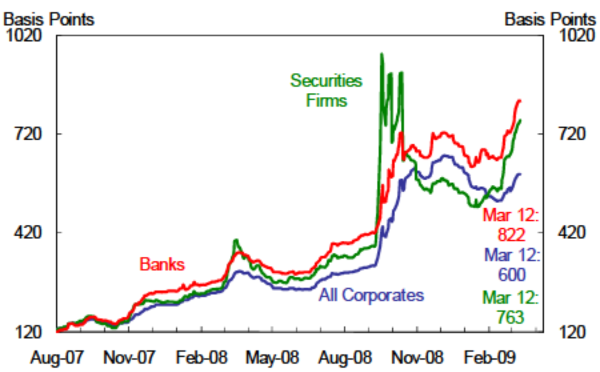
HFRX Hedge Fund Indices



Source: HFR

Note: Rebased to equal 100 on August 1, 2007.

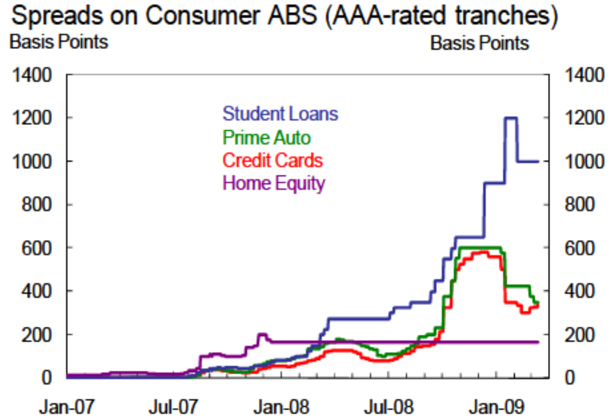
Credit Spreads



Note: Option-adjusted spreads. Banks series is Merrill Lynch Corporates, Banks bond index. Securities Firms series is Merrill Lynch Corporates, Brokerages bond index.

Source: Merrill Lynch

Spreads on Consumer ABS (AAA-rated tranches)

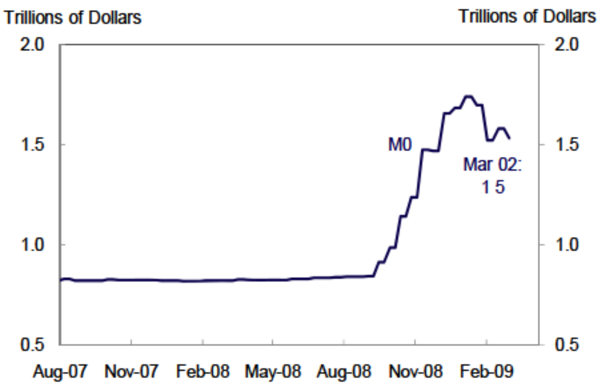


Source: JPMorgan

A. Significant Developments

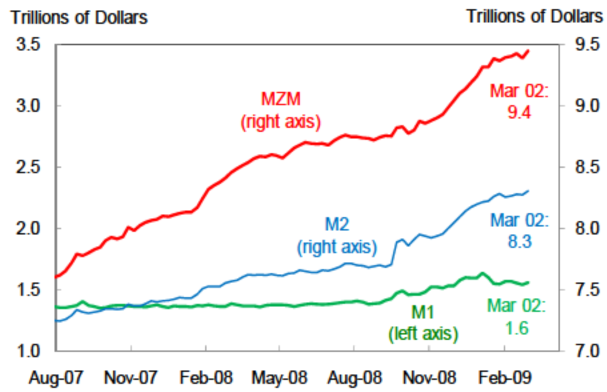
Exhibit A-9:
Money and Banking

Measures of Money Supply: M0



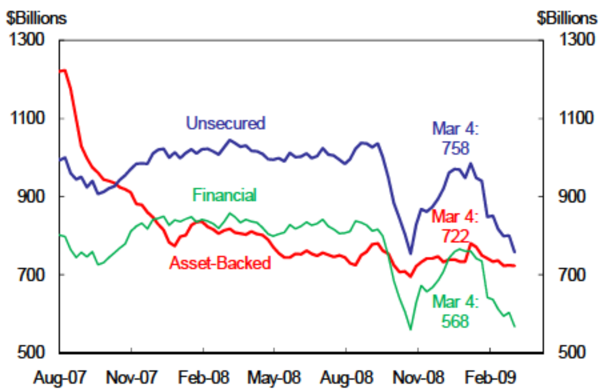
Source: Federal Reserve Board and Haver Analytics

Measures of Money Supply: M1, M2, MZM



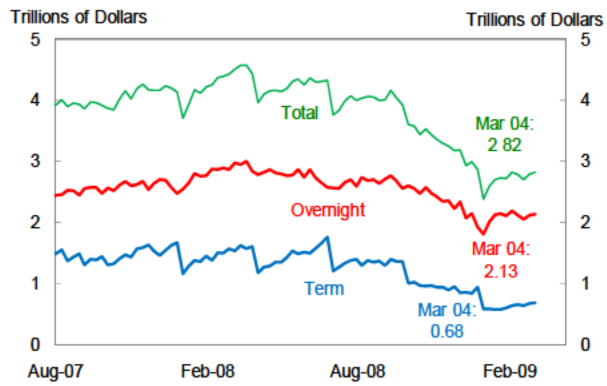
Source: Federal Reserve Board and Haver Analytics

Commercial Paper Outstanding



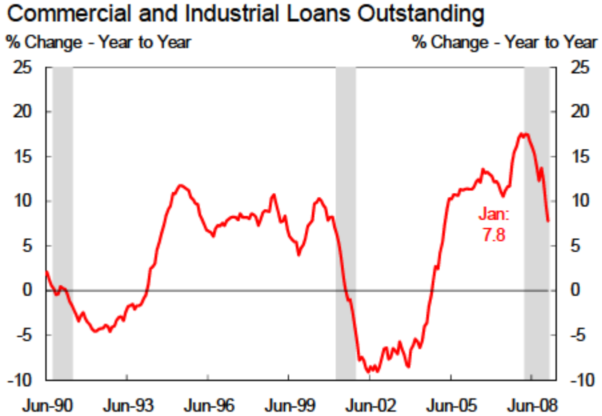
Source: Federal Reserve Board

Primary Dealer Repurchase Agreements



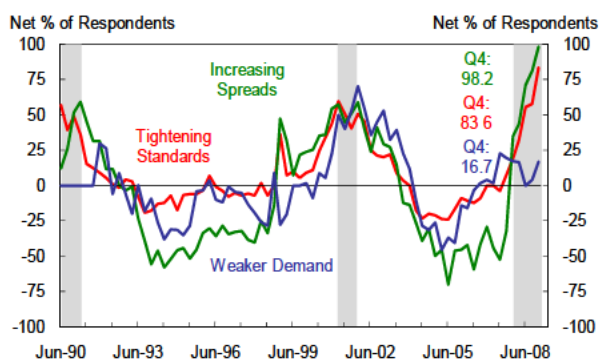
Source: Federal Reserve Board

Commercial and Industrial Loans Outstanding



Source: Federal Reserve Board

Bank Lending Practices



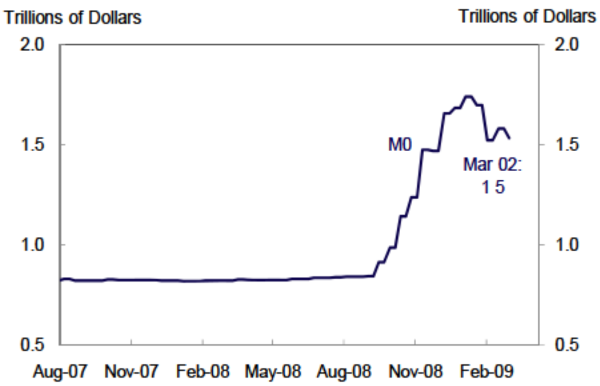
Source: Federal Reserve Board

Note: Data cover C&I loans to large- and medium-sized firms

A. Significant Developments

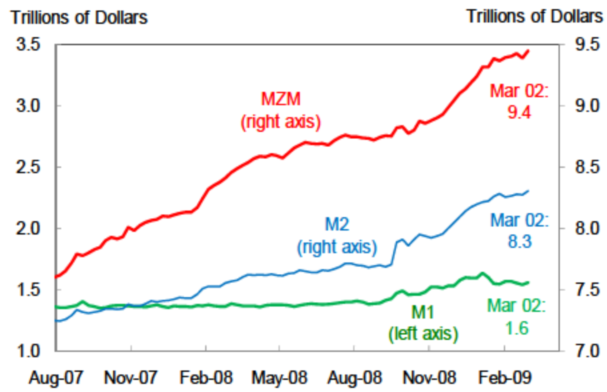
Exhibit A-10:
Liquidity Facilities

Measures of Money Supply: M0



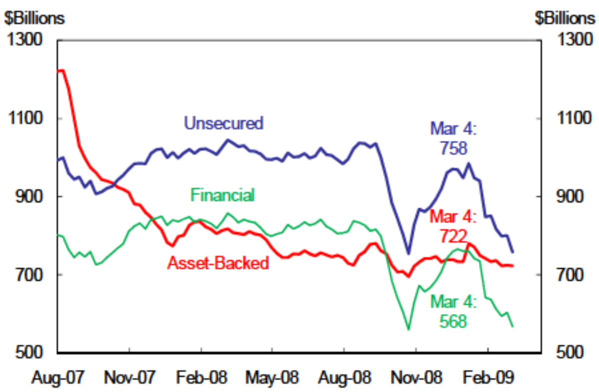
Source: Federal Reserve Board and Haver Analytics

Measures of Money Supply: M1, M2, MZM



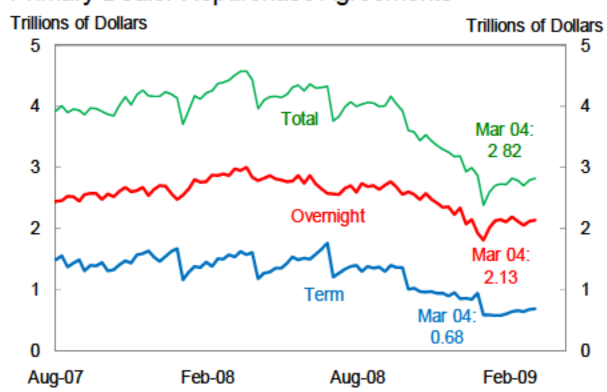
Source: Federal Reserve Board and Haver Analytics

Commercial Paper Outstanding



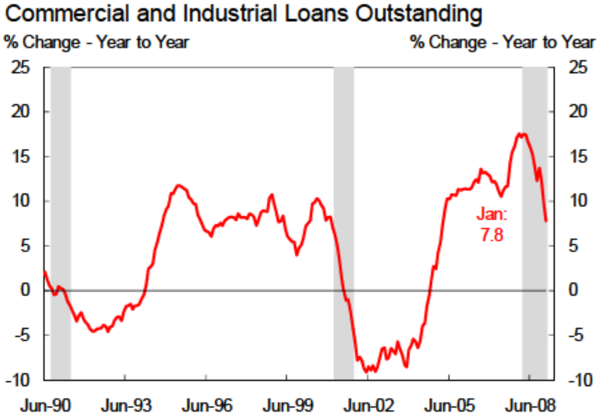
Source: Federal Reserve Board

Primary Dealer Repurchase Agreements



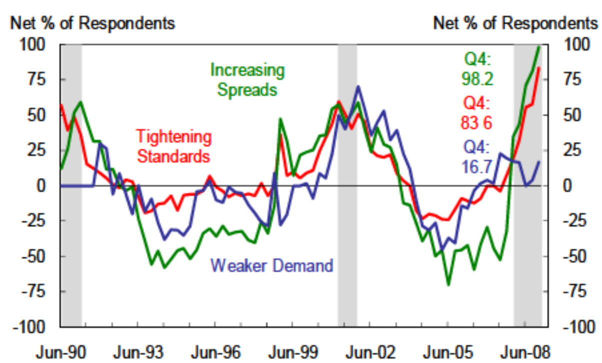
Source: Federal Reserve Board

Commercial and Industrial Loans Outstanding



Source: Federal Reserve Board

Bank Lending Practices



Source: Federal Reserve Board

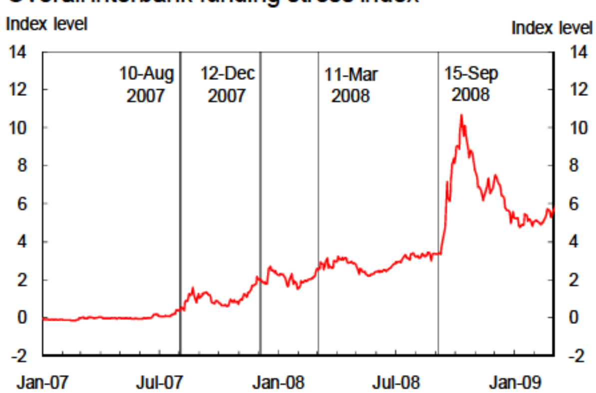
Note: Data cover C&I loans to large- and medium-sized firms

A. Significant Developments

Exhibit A-11:
Interbank Funding Stress Index

	Current level (Mar 12)	Change since last FOMC (Jan 27)	Change since Dec FOMC (Dec 15)	1-year low	1-year high
Interbank funding stress index					
Overall index	**5.80**	**0.85**	**-0.52**	**2.19**	**10.67**
Banking sector credit risk	11.37	2.66	2.08	2.55	12.22
Fed lending facilities use	3.87	-0.42	-1.63	1.28	8.80
Cost of funds in the interbank market	2.16	0.18	-2.01	1.01	12.75

Overall interbank funding stress index

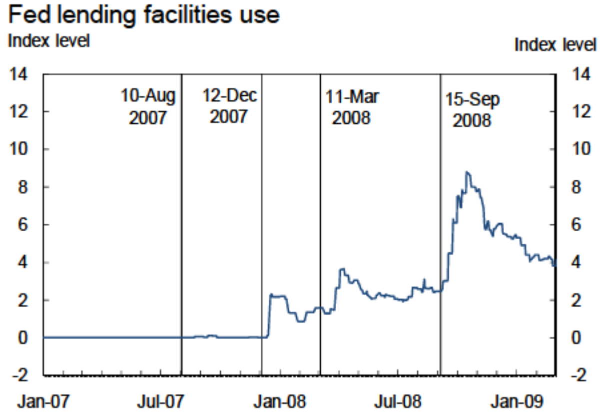


Source: New York Fed calculations

Banking sector credit risk

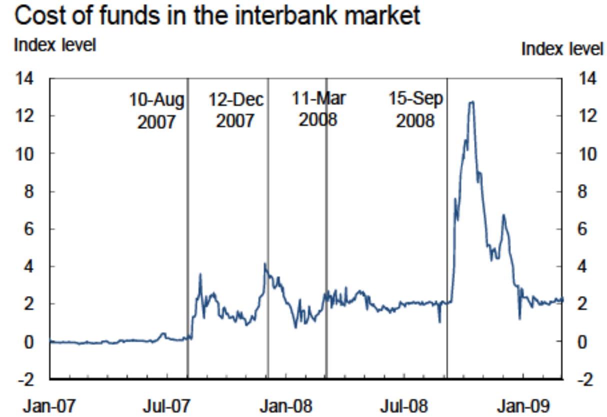
Source: New York Fed calculations

Fed lending facilities use



Source: New York Fed calculations

Cost of funds in the interbank market

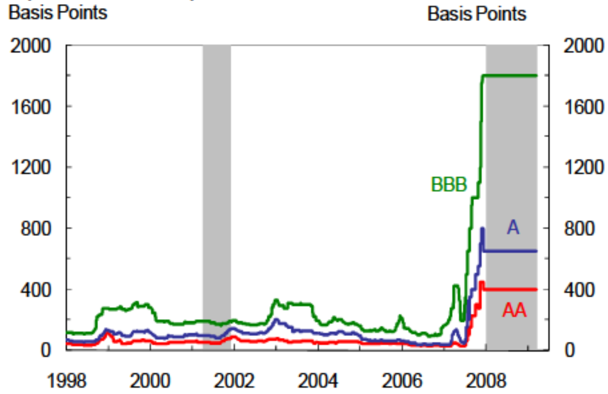


Source: New York Fed calculations

A. Significant Developments

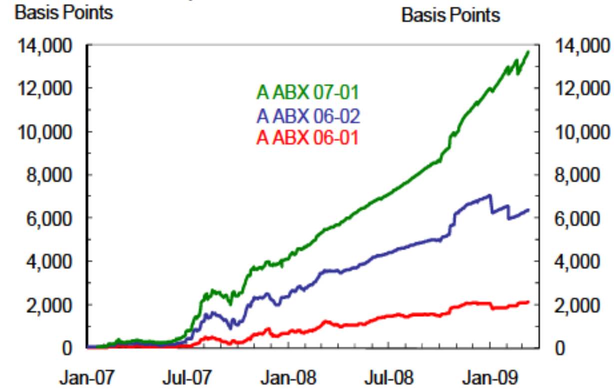
Exhibit A-12:
Subprime Spillovers

Spreads on Subprime MBS Tranches



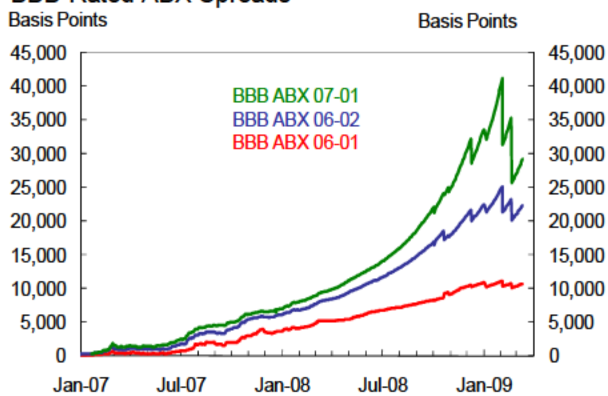
Source: JPMorgan

A-Rated ABX Spreads



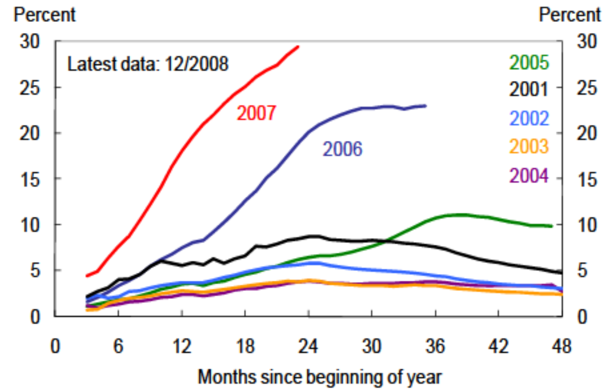
Source: JPMorgan

BBB-Rated ABX Spreads



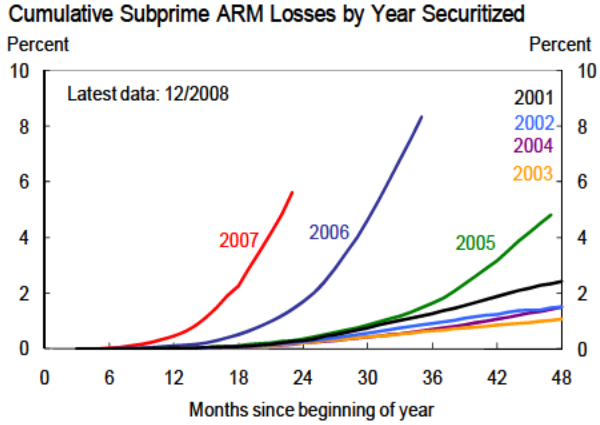
Source: JPMorgan

60+ Day Subprime ARM Delinquencies by Year Securitized



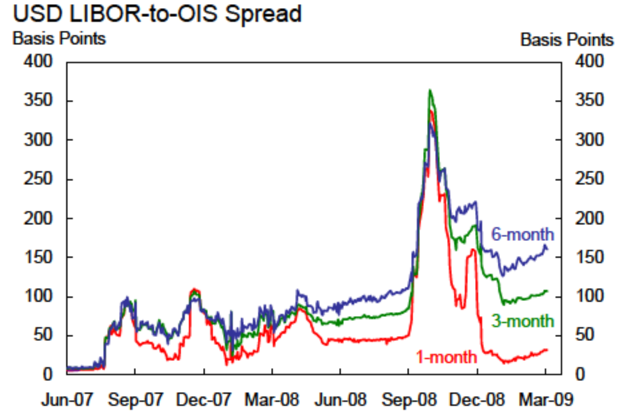
Note: Percent of original balance.

Cumulative Subprime ARM Losses by Year Securitized



Source: Moody's Investors Service Note: Percent of original balance.

USD LIBOR-to-OIS Spread

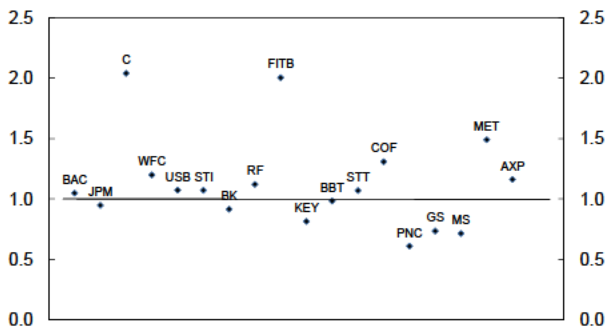


Source: Bloomberg

A. Significant Developments

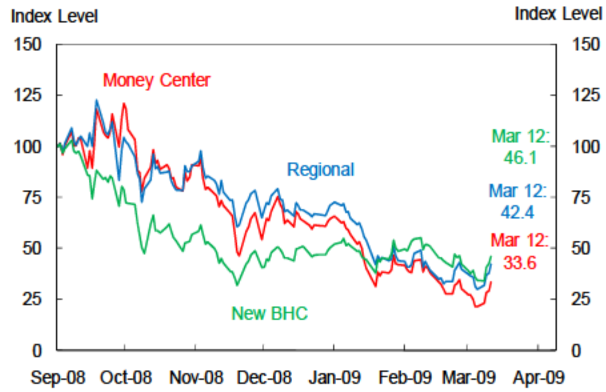
Exhibit A-13:
CAP Analysis

Conversion Price to Common Equity



Source: Bloomberg

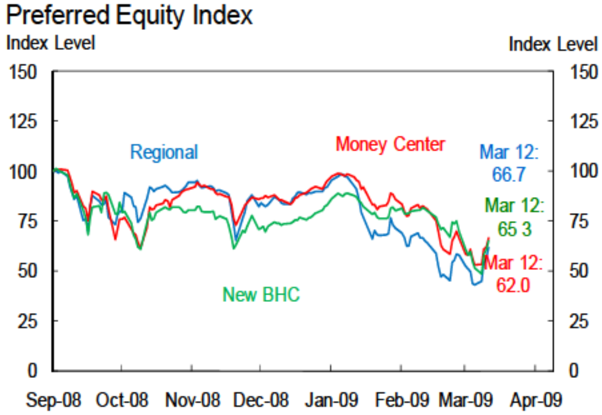
Common Equity Index



Source: Bloomberg

Index changes are with respect to September 2, 2008

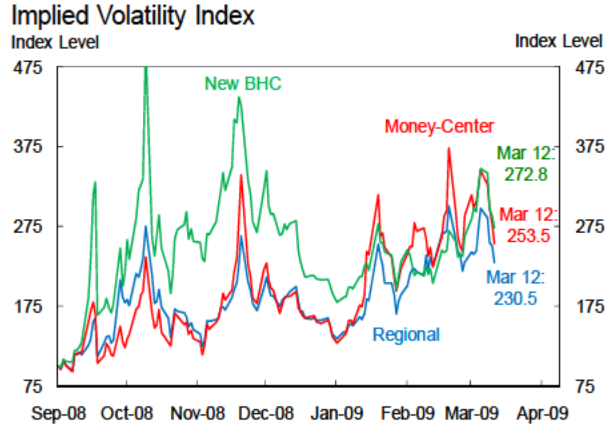
Preferred Equity Index



Source: Bloomberg

Index changes are with respect to September 2, 2008

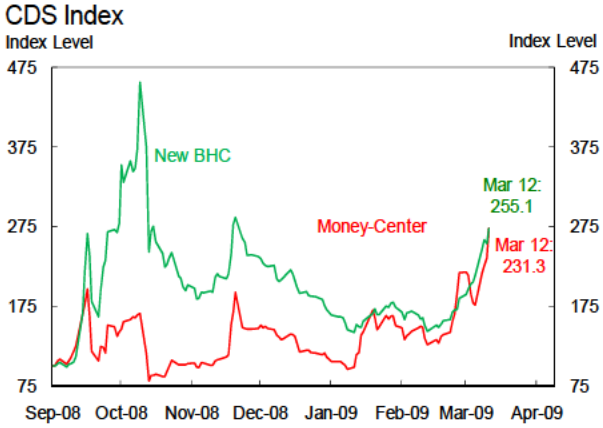
Implied Volatility Index



Source: Bloomberg

Index changes are with respect to September 2, 2008

CDS Index



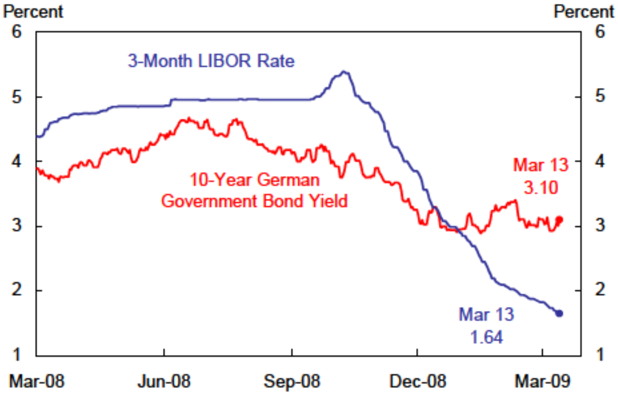
Source: Datastream

Index changes are with respect to September 2, 2008

A. Significant Developments

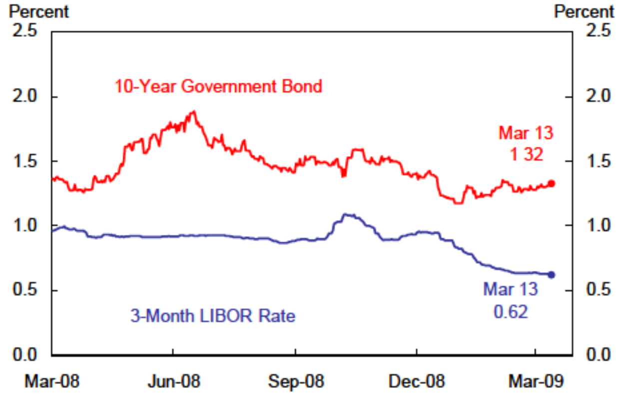
Exhibit A-14:
Global Interest Rates and Equity Markets

Euro Area Short- and Long-Term Interest Rates



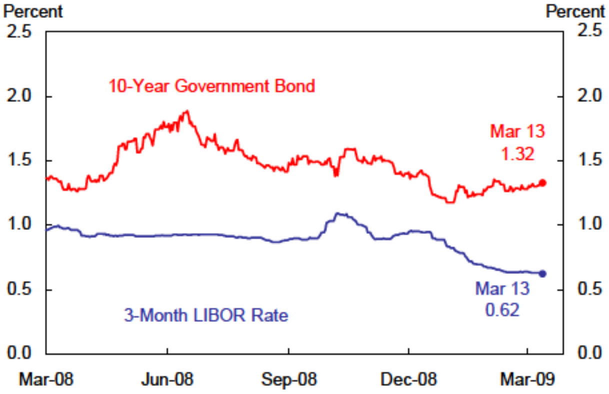
Source: Bloomberg

Japan Short- and Long-Term Interest Rates



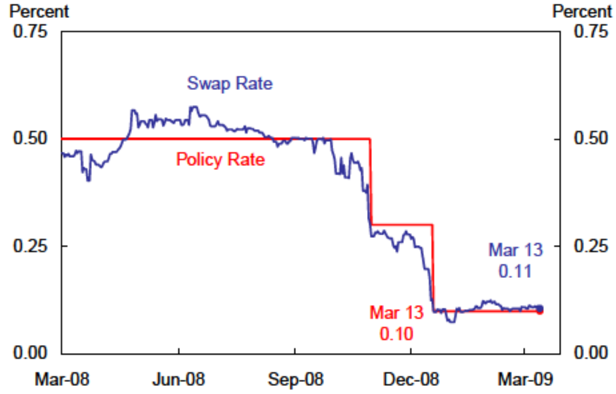
Source: Bloomberg

Japan Short- and Long-Term Interest Rates



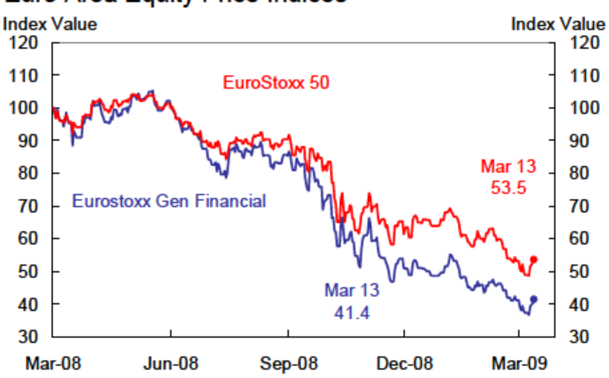
Source: Bloomberg

Japan: OIS Rate (Six Months)



Source: Bloomberg

Euro Area Equity Price Indices



Source: Bloomberg

Indices are normalized to 3/1/2008=100

Japan Equity Price Indices

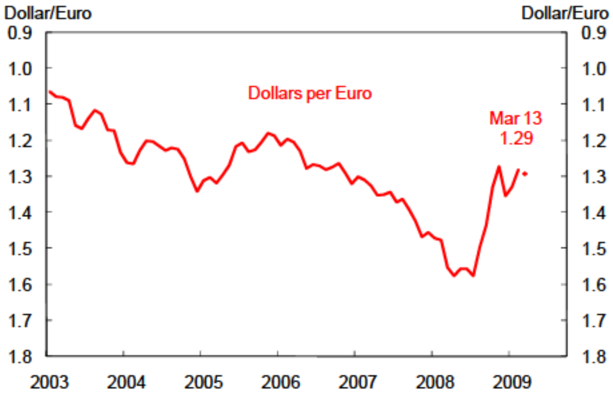
Source: Bloomberg

Indices are normalized to 3/1/2008=100

A. Significant Developments

Exhibit A-15:
Exchange Rates

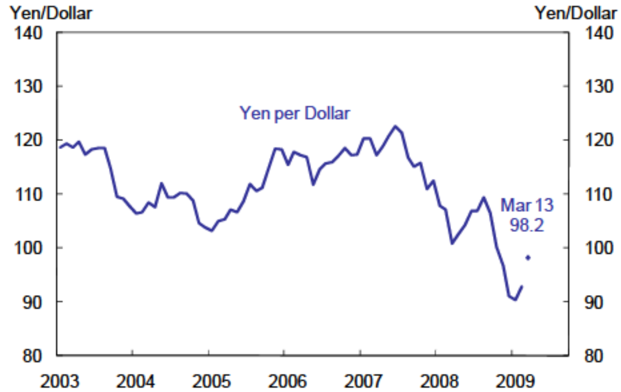
Dollar-Euro Exchange Rate



Source: Bloomberg

Note: Data are monthly averages. Exchange rate scale is inverted.

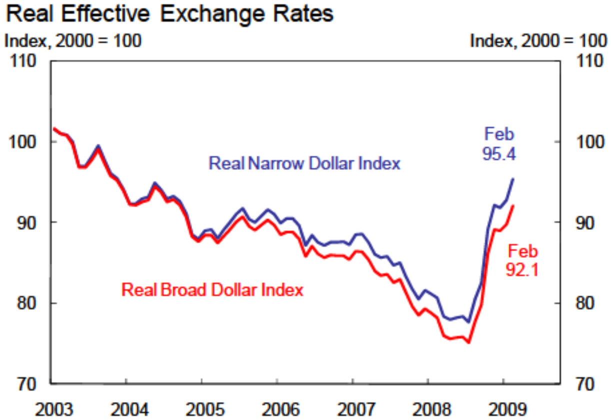
Yen-Dollar Exchange Rate



Source: Bloomberg

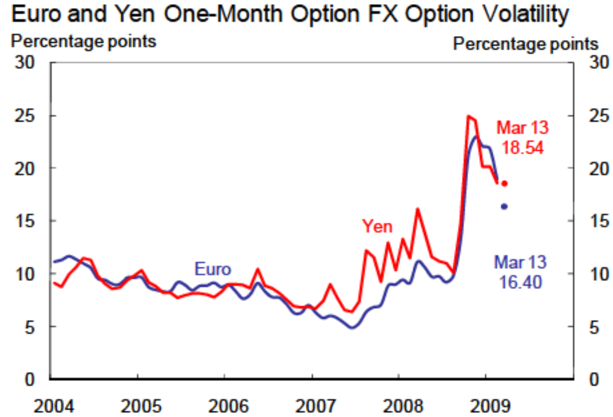
Note: Data are monthly averages.

Real Effective Exchange Rates



Source: Bloomberg and JPMorgan

Euro and Yen One-Month Option FX Option Volatility



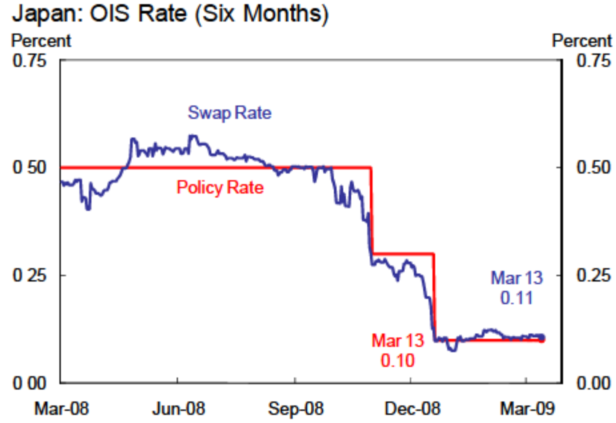
Source: Bloomberg

Note: Data are monthly averages

Japan Short- and Long-Term Interest Rates

Source: Bloomberg

Japan: OIS Rate (Six Months)



Source: Bloomberg

B. FRBNY Forecast Details

Exhibit B-1: Quarterly and Annual Projections of Key Variables

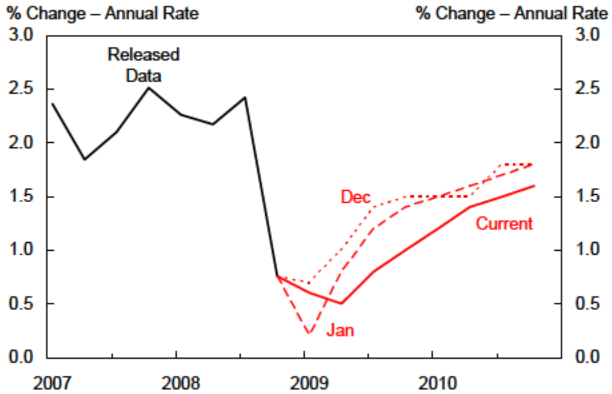
	Core PCE Inflation			Real GDP Growth			Unemployment Rate*			Fed Funds Rate**		
	Oct	Dec	Jan	Oct	Dec	Jan	Oct	Dec	Jan	Oct	Dec	Jan
2008												
Q1	*2.2*	*2.2*	*2.2*	*0.9*	*0.9*	*0.9*	*4.9*	*4.9*	*4.9*	*2.3*	*2.3*	*2.3*
Q2	*2.1*	*2.1*	*2.1*	*2.8*	*2.8*	*2.8*	*5.3*	*5.3*	*5.4*	*2.0*	*2.0*	*2.0*
Q3	3.0	2.6	*2.4*	-0.3	*-0.5*	*-0.5*	*6.0*	*6.0*	*6.1*	*2.0*	*2.0*	*2.0*
Q4	1.9	1.0	0.5	-2.8	-4.0	-4.5	6.6	6.7	*6.9*	1.0	0.3	*0-0.25*
2009												
Q1	1.8	0.7	0.2	-1.5	-3.2	-5.1	7.2	7.1	7.5	1.0	0.3	*0-0.25*
Q2	1.7	1.0	0.8	2.2	-0.9	-2.0	7.6	7.8	8.1	1.0	0.3	*0-0.25*
Q3	1.6	1.4	1.2	1.5	1.2	0.5	7.9	8.3	8.7	1.0	0.3	*0-0.25*
Q4	1.5	1.5	1.4	1.8	2.0	1.3	8.0	9.0	9.2	1.3	0.3	*0-0.25*
2010												
Q1	1.5	1.5	1.5	2.3	2.3	2.1	7.9	9.0	9.3	1.5	0.3	*0-0.25*
Q2	1.5	1.5	1.6	3.1	2.8	2.9	7.8	9.1	9.3	2.0	0.5	*0-0.25*
Q3	1.5	1.8	1.7	3.3	3.3	3.4	7.7	9.1	9.2	2.5	0.8	*0-0.25*
Q4	1.5	1.8	1.8	3.2	3.5	3.8	7.5	9.1	9.2	3.0	1.0	*0-0.25*
Q4/Q4												
2007	*2.2*	*2.2*	*2.2*	*2.3*	*2.3*	*2.3*	*0.4*	*0.4*	*0.4*	*-1.0*	*-1.0*	*-1.0*
2008	2.3	2.0	1.8	0.1	-0.2	-0.4	1.8	1.9	2.1	-3.3	-4.0	-4.0
2009	1.6	1.1	0.9	1.0	-0.3	-1.3	1.4	2.3	2.3	0.3	0.0	0.0
2010	1.5	1.6	1.6	3.0	3.0	3.0	-0.5	0.1	0.0	1.8	0.8	0.0

Note: Columns reflect the forecast dates. Numbers in gray are from previous Blackbooks, and numbers in italics are released data.
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.
**Quarterly values are the end-of-quarter value. Yearly values are the difference between the end-of-year value in the previous year and the end-of-year value in the listed year.

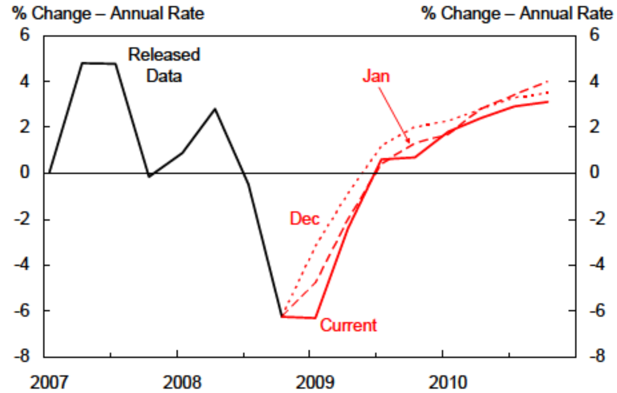
B. FRBNY Forecast Details

Exhibit B-2: Evolution of Projected Quarterly Paths of Key Indicators and Forecast Assumptions

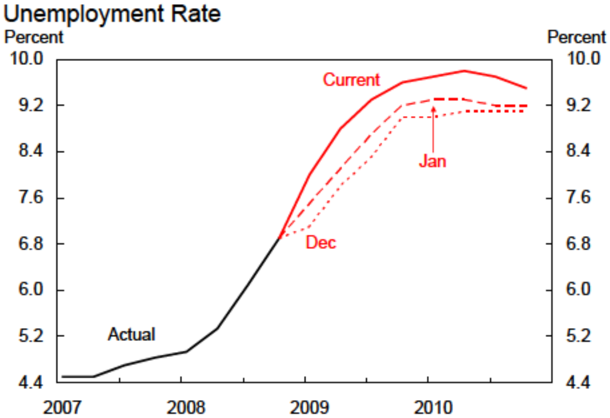
Core PCE Inflation



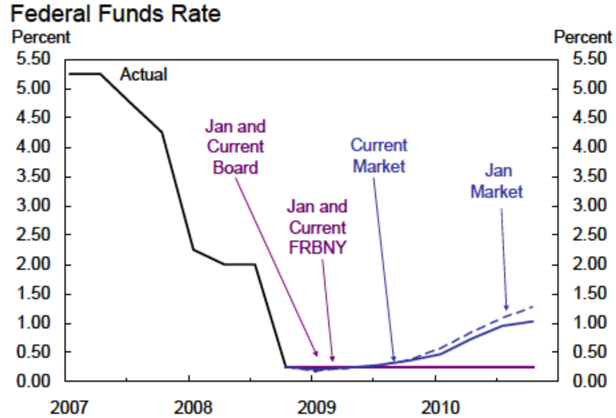
Real GDP Growth



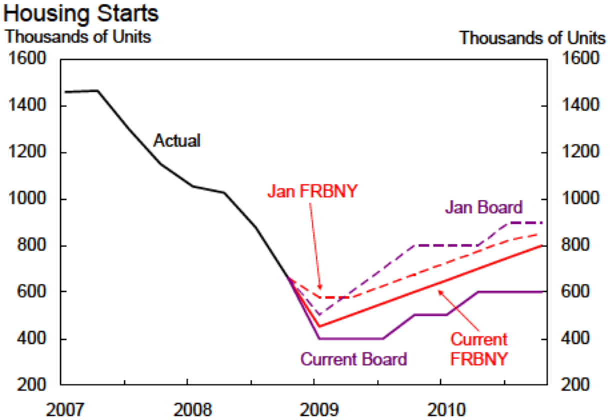
Unemployment Rate



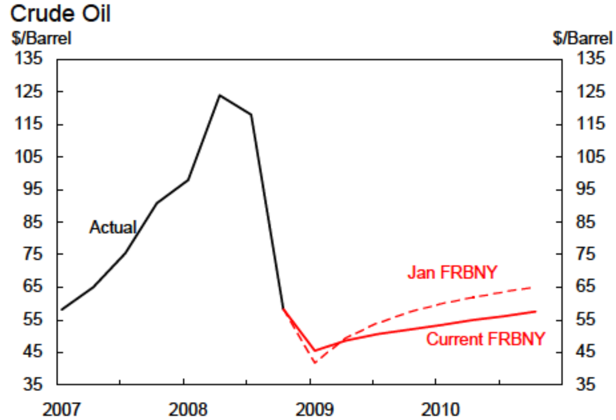
Federal Funds Rate



Housing Starts



Crude Oil



Source: MMS and IR Functions (FRBNY) and Federal Reserve Board

B. FRBNY Forecast Details

Exhibit B-3: Near-Term Projections

	Quarterly Growth Rates (AR)		Quarterly Growth Contributions (AR)	
	2009Q1	2009Q2	2009Q1	2009Q2
OUTPUT				
Real GDP	-6.3	-2.4	-6.3	-2.4
	(-5.1)	(-2.0)	(-5.1)	(-2.0)
Final Sales to Domestic Purchasers	-3.1	-2.9	-3.3	-3.0
	(-4.2)	(-2.6)	(-4.4)	(-2.7)
Consumption	1.0	1.0	0.7	0.7
	(-1.0)	(0.2)	(-0.7)	(0.2)
BFI: Equipment and Software	-25.0	-30.0	-1.8	-2.1
	(-25.0)	(-20.0)	(-1.8)	(-1.4)
BFI: Nonresidential Structures	-15.0	-20.0	-0.6	-0.9
	(-8.0)	(-15.0)	(-0.3)	(-0.6)
Residential Investment	-40.0	-30.0	-1.5	-0.9
	(-42.5)	(-32.3)	(-1.6)	(-1.0)
Government: Federal	2.0	1.5	0.2	0.1
	(1.0)	(1.5)	(0.1)	(0.1)
Government: State and Local	-1.7	0.5	-0.2	0.1
	(0.0)	(0.5)	(0.0)	(0.1)
Inventory Investment	--	--	-2.7	0.2
	--	--	(-1.6)	(-0.5)
Net Exports	--	--	-0.4	0.3
	--	--	(0.8)	(1.2)
INFLATION				
Total PCE Deflator	-1.0	0.8		
	(-0.7)	(1.1)		
Core PCE Deflator	0.6	0.5		
	(0.2)	(0.8)		
PRODUCTIVITY AND LABOR COSTS*				
Output per Hour	0.5	-1.0		
	(0.0)	(0.5)		
Compensation per Hour	3.0	2.8		
	(3.0)	(2.8)		
Unit Labor Costs	2.5	3.8		
	(3.0)	(2.3)		

Note: Numbers in parentheses are from the previous Blackbook.
*Nonfarm business sector.

B. FRBNY Forecast Details

Exhibit B-4: Real GDP and Inflation Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2008	2009	2010	2008	2009	2010
OUTPUT						
Real GDP	-0.8	-1.9	2.6	-0.8	-1.9	2.6
	(-0.4)	(-1.3)	(3.0)	(-0.4)	(-1.3)	(3.0)
Final Sales to Domestic Purchasers	-1.7	-2.0	2.6	-1.7	-2.0	2.7
	(-1.2)	(-2.0)	(2.8)	(-1.3)	(-2.1)	(2.9)
Consumption	-1.5	1.0	2.7	-1.1	0.7	2.0
	(-1.5)	(0.3)	(2.7)	(-1.1)	(0.2)	(1.9)
BFI: Equipment and Software	-11.2	-22.7	-2.7	-0.8	-1.5	-0.1
	(-7.9)	(-17.7)	(2.3)	(-0.6)	(-1.2)	(0.1)
BFI: Nonresidential Structures	7.3	-14.6	2.6	0.3	-0.6	0.1
	(10.3)	(-10.3)	(2.6)	(0.4)	(-0.4)	(0.1)
Residential Investment	-19.3	-28.1	8.7	-0.8	-0.9	0.2
	(-18.7)	(-28.3)	(8.7)	(-0.7)	(-0.9)	(0.2)
Government: Federal	8.2	1.6	1.5	0.6	0.1	0.1
	(9.3)	(1.4)	(1.5)	(0.7)	(0.1)	(0.1)
Government: State and Local	0.5	0.4	3.2	0.1	0.1	0.4
	(0.6)	(0.9)	(3.2)	(0.1)	(0.1)	(0.4)
Inventory Investment	--	--	--	-0.1	0.1	0.1
	--	--	--	(-0.4)	(0.1)	(0.2)
Net Exports	--	--	--	1.0	0.1	-0.3
	--	--	--	(1.2)	(0.6)	(-0.0)
INFLATION						
Total PCE Deflator	1.9	0.5	1.6			
	(1.7)	(0.8)	(1.7)			
Core PCE Deflator	1.9	0.7	1.4			
	(1.8)	(0.9)	(1.6)			
Total CPI Inflation	1.5	0.6	1.9			
	(2.5)	(0.9)	(2.0)			
Core CPI Inflation	2.0	1.2	1.7			
	(2.0)	(1.2)	(1.9)			
GDP Deflator	2.0	1.0	1.3			
	(2.6)	(0.7)	(1.6)			

Note: Numbers in parentheses are from the previous Blackbook.

B. FRBNY Forecast Details

Exhibit B-5: Projections of Other Key Economic Variables

	Q4/Q4 Growth Rates		
	2008	2009	2010
INTEREST RATE ASSUMPTIONS			
Federal Funds Rate (End-of-Year)	0-0.25	0-0.25	0-0.25
	(0-0.25)	(0-0.25)	(0-0.25)
10-Year Treasury Yield (Avg. Q4 Level)	3.3	2.6	3.0
	(3.3)	(2.6)	(3.0)
PRODUCTIVITY AND LABOR COSTS*			
Output	-1.8	-3.0	2.9
	(-1.2)	(-2.3)	(3.5)
Hours	-4.0	-3.1	1.9
	(-3.6)	(-3.0)	(2.0)
Output per Hour	2.2	0.1	0.9
	(2.5)	(0.7)	(1.5)
Compensation per Hour	4.1	2.6	1.7
	(2.9)	(2.6)	(1.7)
Unit Labor Costs	1.8	2.5	0.8
	(0.4)	(1.9)	(0.2)
LABOR MARKET			
Unemployment Rate (Avg. Q4 Level)	6.9	9.6	9.5
	(6.9)	(9.2)	(9.2)
Participation Rate (Avg. Q4 Level)	65.8	65.4	65.6
	(65.8)	(65.4)	(65.5)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	-189	-332	135
	(-166)	(-280)	(111)
INCOME			
Personal Income	2.3	0.8	2.8
	(2.5)	(-1.7)	(4.2)
Real Disposable Personal Income	1.0	2.3	0.6
	(1.3)	(-1.9)	(3.7)
Corporate Profits Before Taxes	-18.2	-12.7	2.5
	(-7.7)	(-4.9)	(3.2)

Note: Numbers in parentheses are from the previous Blackbook.
*Nonfarm business sector.

B. FRBNY Forecast Details

Exhibit B-6: FRBNY and Greenbook Forecast Comparison

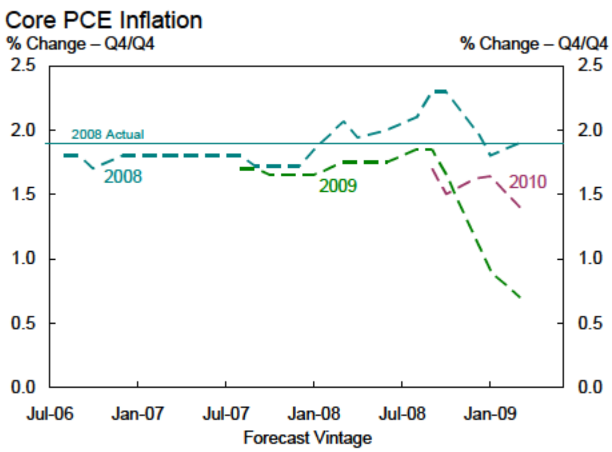
	FRBNY			Board		
	2008	2009	2010	2008	2009	2010
OUTPUT						
Real GDP	-0.8	-1.9	2.6	-0.9	-2.3	1.5
	(-0.4)	(-1.3)	(3.0)	(-0.5)	(-0.8)	(2.6)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	-1.7	-2.0	2.7	-1.9	-2.2	1.9
	(-1.3)	(-2.1)	(2.9)	(-1.4)	(-1.3)	(3.1)
Consumption	-1.1	0.7	2.0	-1.1	0.3	1.4
	(-1.1)	(0.2)	(1.9)	(-1.0)	(0.4)	(2.0)
BFI	-0.6	-2.1	0.0	-0.6	-2.4	-0.1
	(-0.2)	(-1.6)	(0.2)	(-0.3)	(-1.8)	(0.3)
Residential Investment	-0.8	-0.9	0.2	-0.8	-0.8	0.2
	(-0.7)	(-0.9)	(0.2)	(-0.8)	(-0.4)	(0.3)
Government	0.6	0.2	0.6	0.6	0.7	0.4
	(0.7)	(0.2)	(0.6)	(0.7)	(0.5)	(0.5)
Inventory Investment	-0.1	0.1	0.1	-0.2	0.2	0.1
	(-0.4)	(0.1)	(0.2)	(-0.3)	(0.6)	(0.0)
Net Exports	1.0	0.1	-0.3	1.0	-0.3	-0.4
	(1.2)	(0.6)	(-0.0)	(1.1)	(-0.1)	(-0.5)
INFLATION						
Total PCE Deflator	1.9	0.5	1.6	1.9	0.4	0.8
	(1.7)	(0.8)	(1.7)	(1.7)	(0.6)	(1.1)
Core PCE Deflator	1.9	0.7	1.4	1.9	1.0	0.5
	(1.8)	(0.9)	(1.6)	(1.9)	(1.0)	(0.8)
INTREST RATE ASSUMPTION						
Fed Funds Rate (End-of-Year)	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
	(0-0.25)	(0-0.25)	(0-0.25)	(0-0.25)	(0-0.25)	(0-0.25)
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	2.2	0.1	0.9	2.1	0.9	2.0
	(2.5)	(0.7)	(1.5)	(2.4)	(1.1)	(2.0)
Compensation per Hour	4.1	2.6	1.7	4.1	2.2	1.1
	(2.9)	(2.6)	(1.7)	(3.4)	(2.1)	(1.5)
Unit Labor Costs	1.8	2.5	0.8	1.9	1.3	-0.8
	(0.4)	(1.9)	(0.2)	(1.0)	(1.0)	(-0.5)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	6.9	9.6	9.5	6.9	9.2	9.5
	(6.9)	(9.2)	(9.2)	(6.9)	(8.4)	(8.1)
Participation Rate (Avg. Q4 Level)	65.8	65.4	65.6	65.9	65.3	65.1
	(65.8)	(65.4)	(65.5)	(65.9)	(65.5)	(65.3)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	-189	-332	135	-192	-342	0
	(-166)	(-280)	(111)	(-167)	(-192)	(117)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	661	600	800	700	500	600
	(656)	(675)	(850)	(700)	(800)	(900)

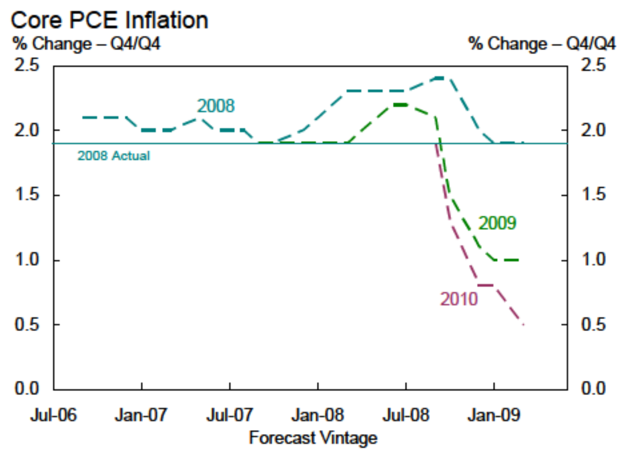
Note: All values are Q4/Q4 percent change, unless indicated otherwise. Numbers in parentheses are from the previous Blackbook or Greenbook.
*Nonfarm business sector

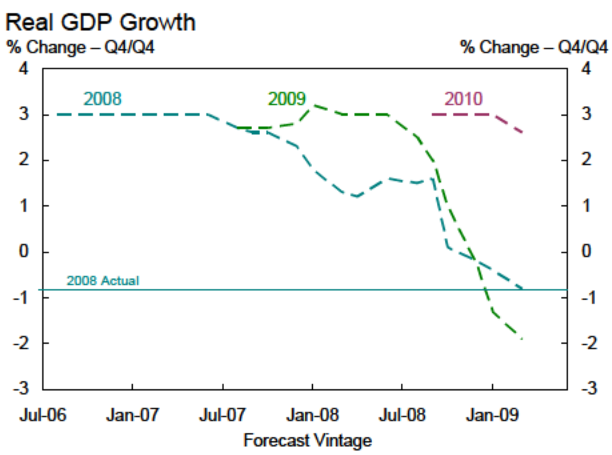
B. FRBNY Forecast Details

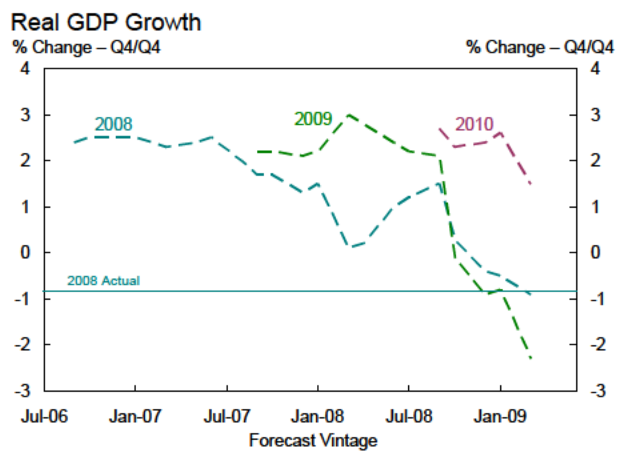
Exhibit B-7: Evolution of FRBNY and Board Forecasts since Mid-2006

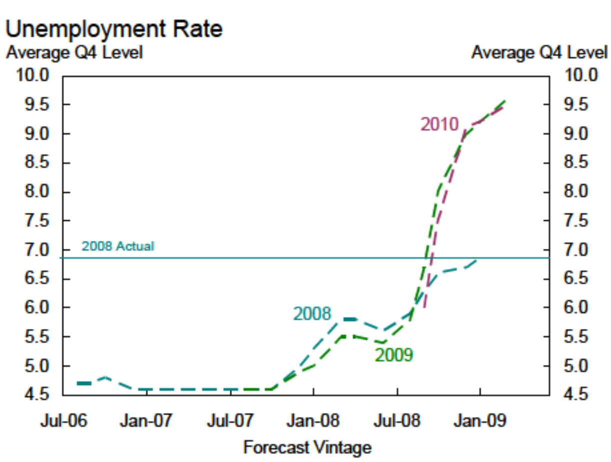
FRBNY | **Board**

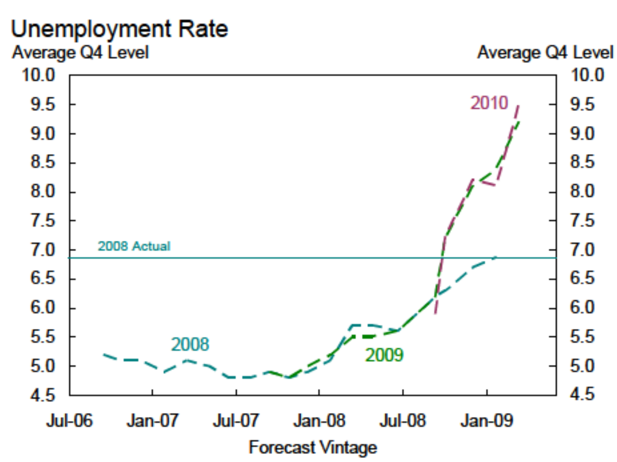












Note: Forecast vintage is the date the forecast was produced.

B. FRBNY Forecast Details

Exhibit B-8: Alternative GDP and Inflation Forecasts

Real GDP Growth

	Release Date	2009Q1	2009Q2	2009 Q4/Q4	2010 Q4/Q4
FRBNY	3/13/2009	-6.3	-2.4	-1.9	2.6
		(-5.1)	(-2.0)	(-1.3)	(3.0)
PSI Model	3/10/2009	-4.4	-2.1	--	--
		(-3.7)	--	--	--
Blue Chip	3/10/2009	-5.3	-2.0	-1.3	2.8
		(-3.3)	(-0.8)	(-0.2)	(3.0)
Median SPF	2/13/2009	-5.2	-1.8	-1.1	--
		(-1.1)	(0.8)	--	--
Macro Advisers	3/13/2009	-5.0	-0.5	-0.9	3.5
		(-4.2)	(1.0)	(0.4)	(5.2)

Core PCE Inflation

	Release Date	2009Q1	2009Q2	2009 Q4/Q4	2010 Q4/Q4
FRBNY	3/13/2009	0.6	0.5	0.7	1.4
		(0.2)	(0.8)	(0.9)	(1.6)
Median SPF	2/13/2009	0.7	1.1	1.1	1.5
		(1.6)	(1.8)	(1.7)	(1.8)
Macro Advisers	3/10/2009	0.7	0.4	0.5	0.0
		(1.0)	(0.7)	(0.8)	(0.4)

CPI Inflation

	Release Date	2009Q1	2009Q2	2009 Q4/Q4	2010 Q4/Q4
FRBNY	3/13/2009	-2.1	1.4	0.6	1.9
		(-1.3)	(1.6)	(0.9)	(2.0)
Blue Chip	3/10/2009	-2.3	0.3	0.2	1.9
		(-2.1)	(1.1)	(0.7)	(2.1)
Median SPF	2/13/2009	-2.7	0.8	0.2	1.9
		(0.8)	(1.8)	(1.7)	(2.3)
Macro Advisers	3/10/2009	-2.3	0.5	-0.1	0.3
		(-3.2)	(1.2)	(0.1)	(0.7)

Core CPI Inflation

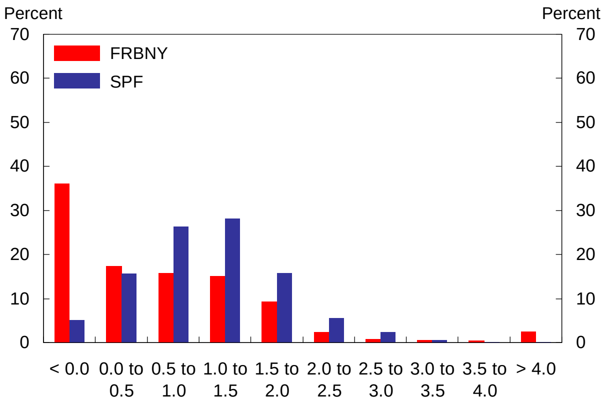
	Release Date	2009Q1	2009Q2	2009 Q4/Q4	2010 Q4/Q4
FRBNY	3/13/2009	1.1	1.0	1.2	1.7
		(0.4)	(1.3)	(1.2)	(1.9)
Median SPF	2/13/2009	0.6	1.2	1.2	1.6
		(2.0)	(2.0)	(2.0)	(2.0)
Macro Advisers	3/10/2009	1.1	0.8	0.7	0.0
		(1.3)	(0.8)	(0.9)	(0.5)

Note: Numbers in parentheses are from November release for SPF and January release for all other forecasts. All values are quarterly percent changes at an annual rate.

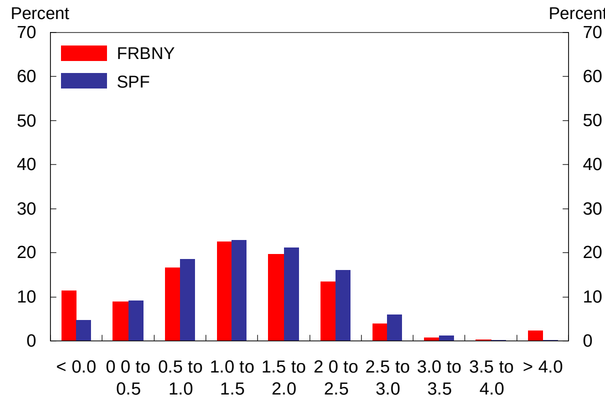
B. FRBNY Forecast Details

Exhibit B-9: FRBNY, SPF, and Board Forecast Comparison

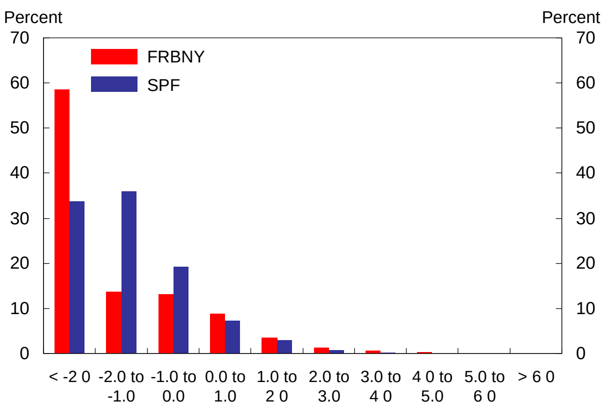
2009Q4/Q4 Core PCE Inflation Probabilities



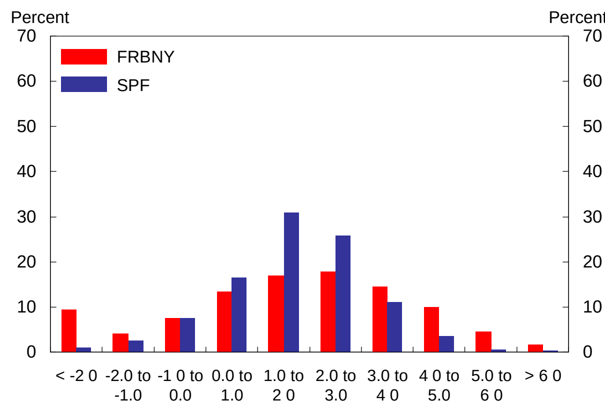
2010Q4/Q4 Core PCE Inflation Probabilities



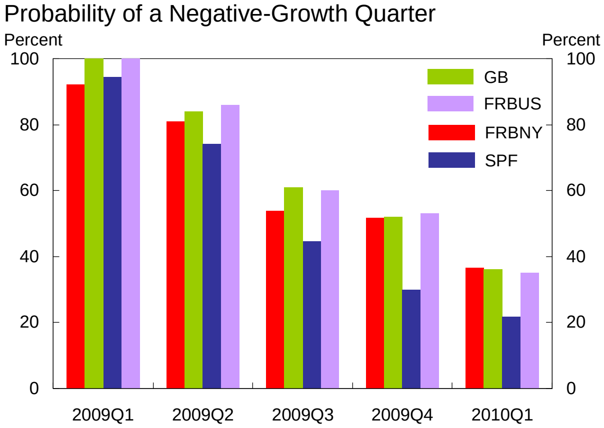
2009/2008 Real GDP Growth Probabilities



2010/2009 Real GDP Growth Probabilities



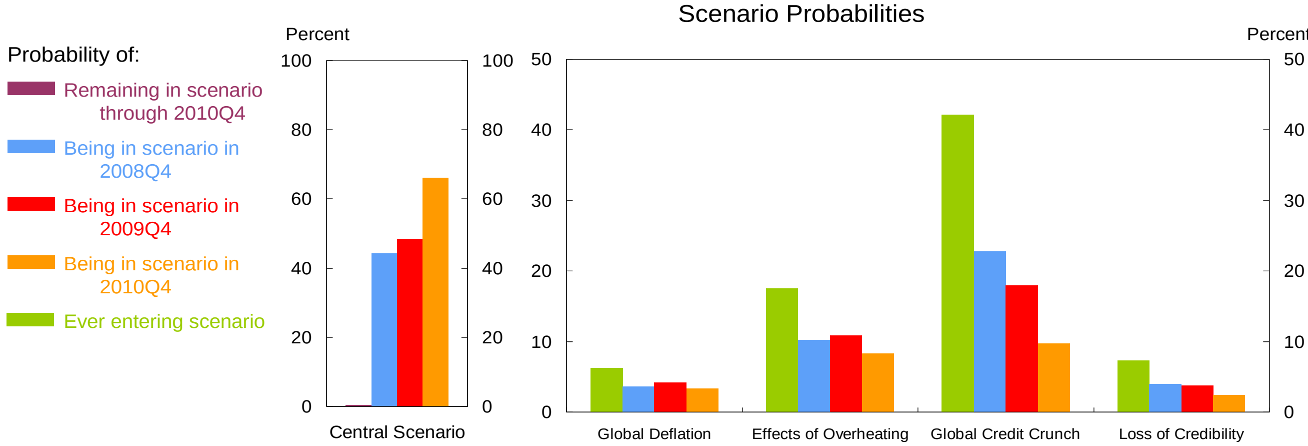
Probability of a Negative-Growth Quarter



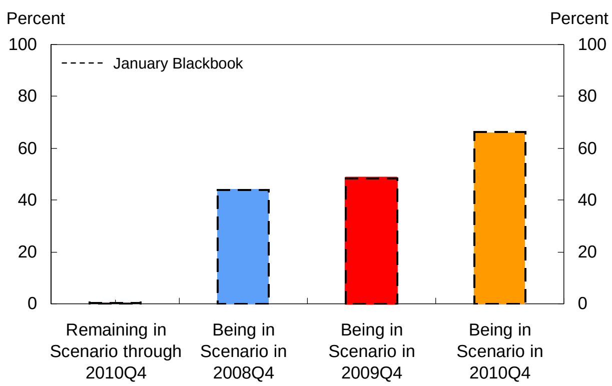
C. FRBNY Forecast Distributions

Exhibit C-1:
Risks

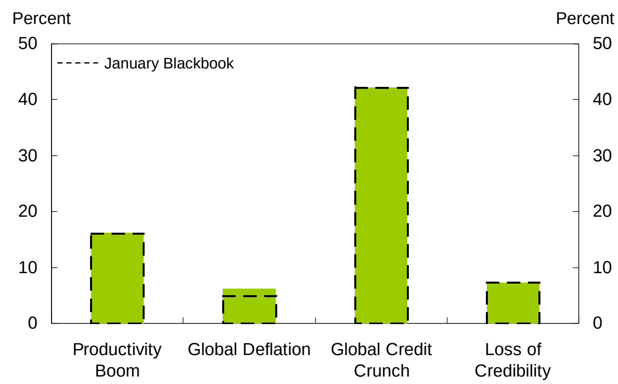
Scenario Probabilities



Change in Central Scenario Probabilities



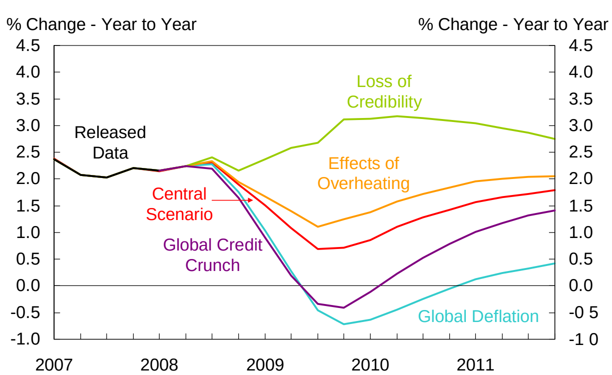
Change in Alternative Scenario Probabilities*



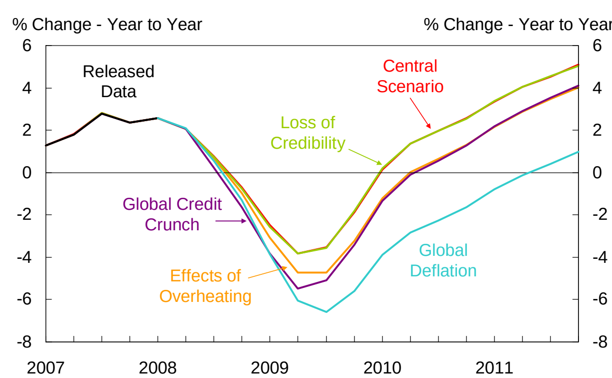
*Probability of ever reaching scenario

Exhibit C-2: Projections under Alternative Scenarios

Core PCE Inflation under Alternative Scenarios



Real GDP Growth under Alternative Scenarios

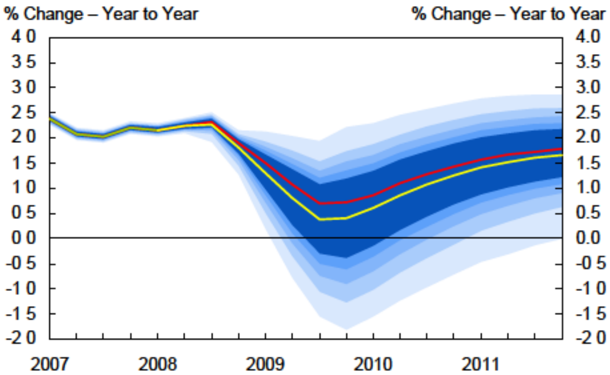


Source: MMS Function (FRBNY)

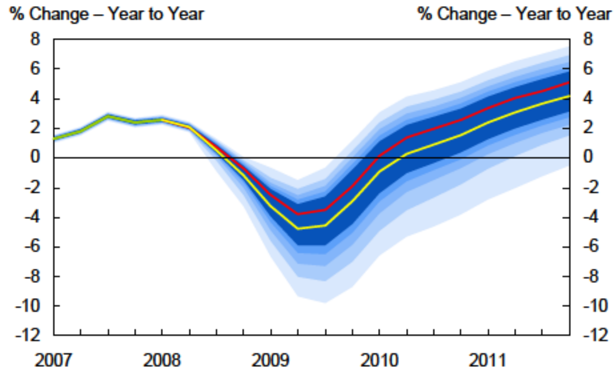
C. FRBNY Forecast Distributions

Exhibit C-3: Inflation and Output Forecast Distributions

Core PCE Inflation Forecast Distribution

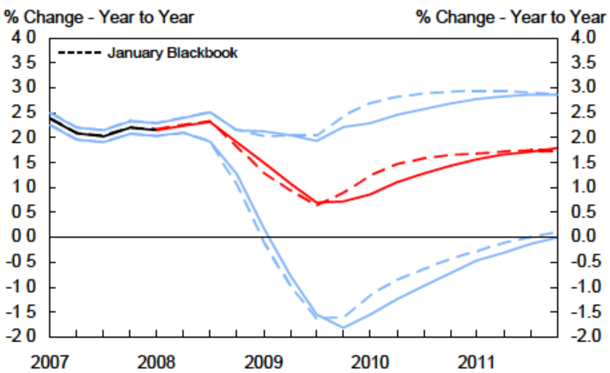


Real GDP Growth Forecast Distribution

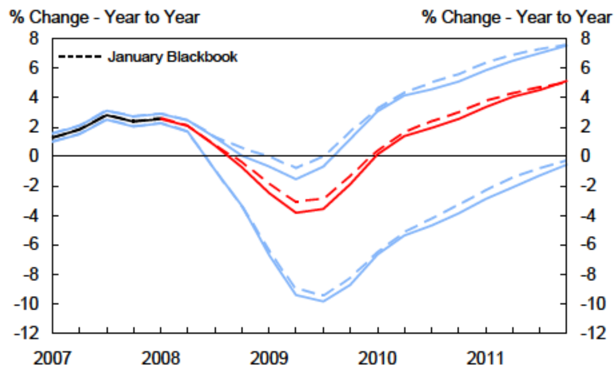


The yellow line is the expected value of the forecast distribution, the red line is the central scenario projection, and the green line is released data. The shading represents the 50, 60, 70, 80, and 90 percent chance that the four-quarter change will be within the respective range.

Change in Core PCE Inflation Forecast Distribution

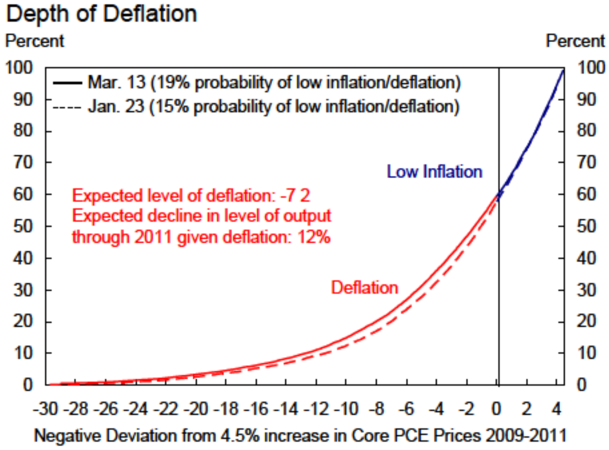


Change in Real GDP Growth Forecast Distribution

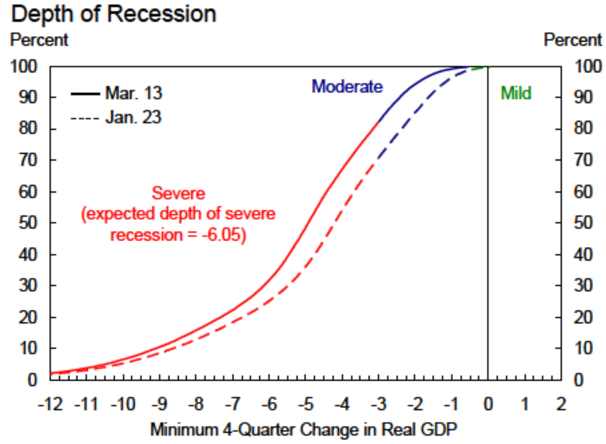


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from previous Blackbook.

Depth of Deflation



Depth of Recession

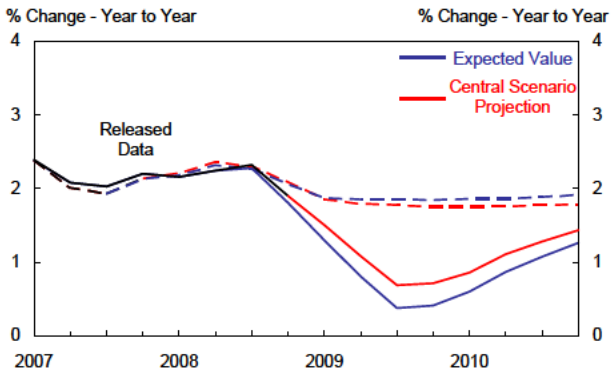


Source: MMS Function (FRBNY)

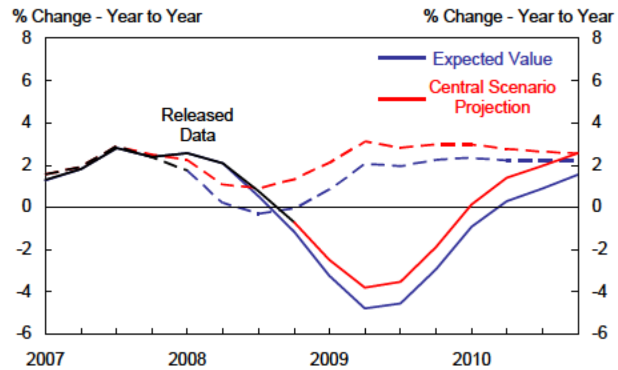
C. FRBNY Forecast Distributions

Exhibit C-4: Evolution and Performance of Inflation and Output Forecast Distributions

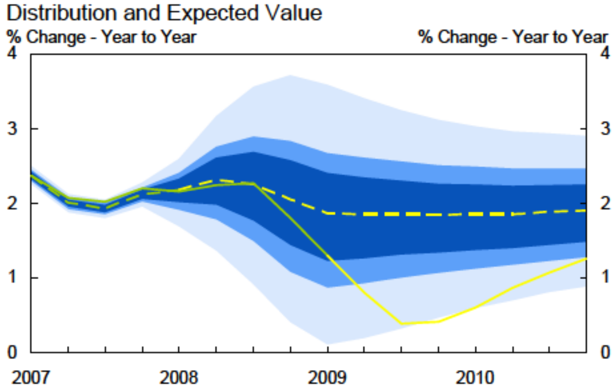
One-Year Comparison of Core PCE Inflation Forecast



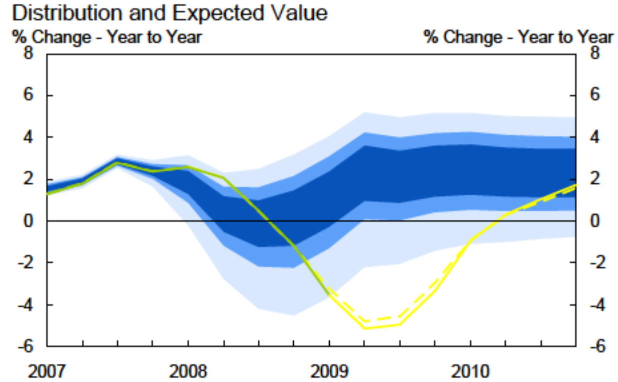
One-Year Comparison of Real GDP Growth Forecast



One-Year Comparison of Core PCE Inflation Forecast Distribution and Expected Value



One-Year Comparison of Real GDP Growth Forecast Distribution and Expected Value



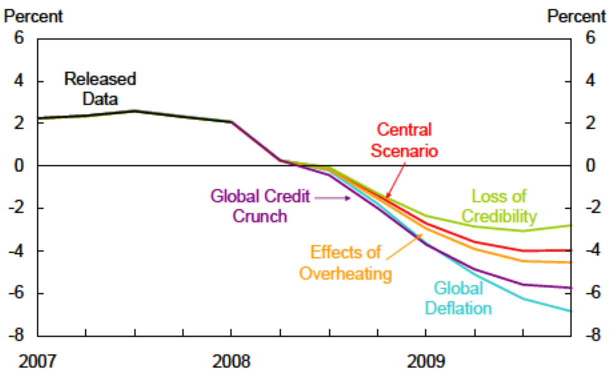
The solid yellow line is the **current** expected value of the forecast distribution, while the dashed yellow line is the **March 2008** expected value. The shading represents the 50, 70 and 90 percent probability intervals from the **March 2008** forecast. The green lines are released data.

Source: MMS Function (FRBNY)

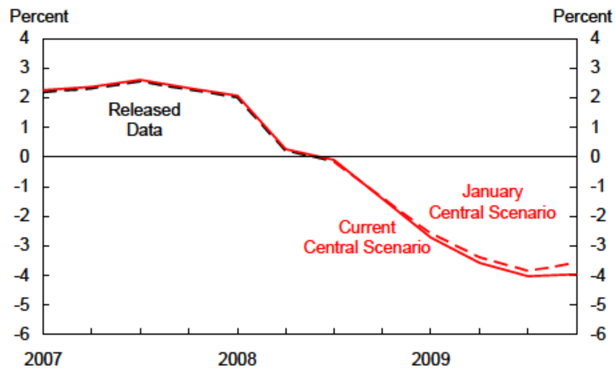
D. FRBNY Fed Funds Rate Projections

Exhibit D-1: *Baseline*
Policy Rule Analysis

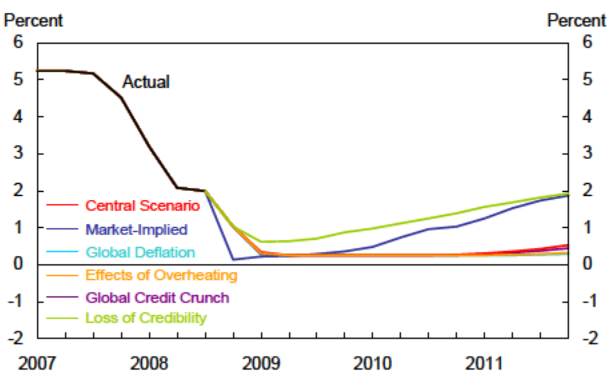
Real FFR under Alternative Scenarios



Change in Central Scenario Real FFR



Nominal FFR under Alternative Scenarios



Change in Central Scenario and Market-Implied Nominal FFR

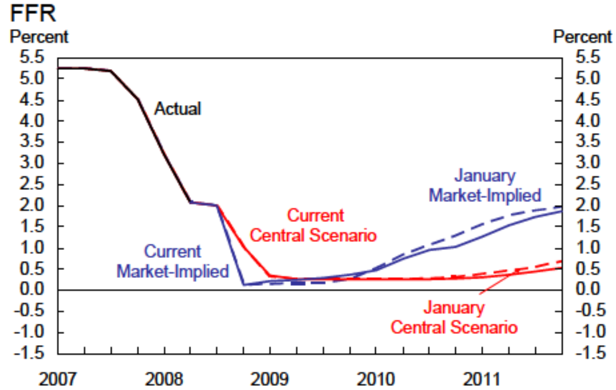
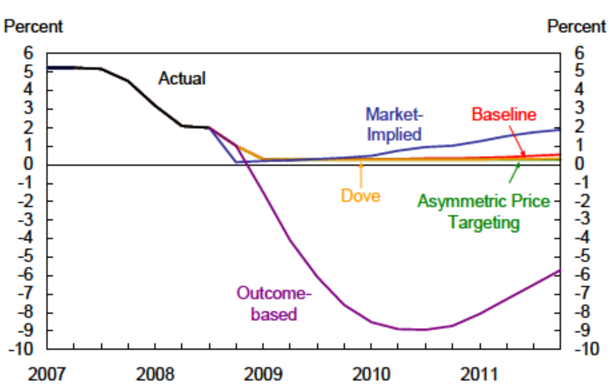


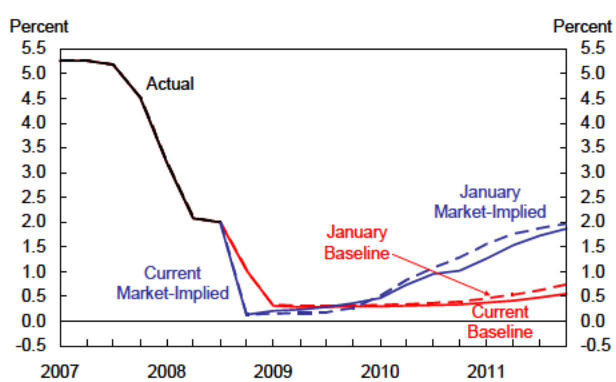
Exhibit D-2: Alternative Policy Rules under
Expected Value of Forecast Distribution

Nominal FFR using Alternative Policy Rules*



*Evaluated using yellow line from C-3

Change in *Baseline** and Market-Implied Nominal FFR



*Evaluated using yellow line from C-3

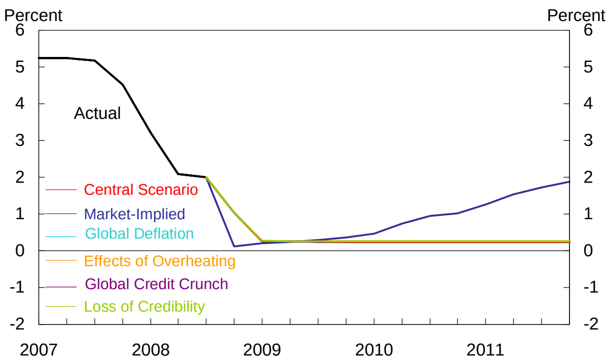
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

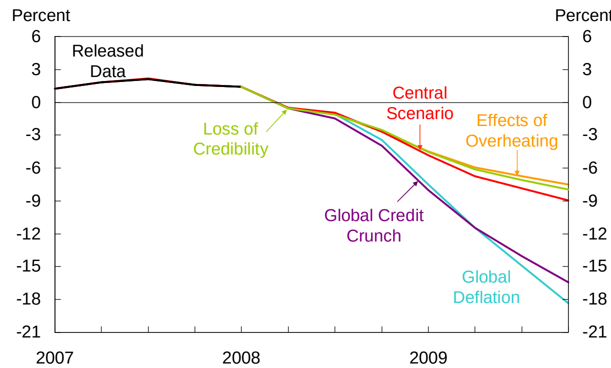
Exhibit D-3: Alternative Policy Rule Analysis

Policy Rule: *Asymmetric Price Targeting*

Nominal FFR under Alternative Scenarios

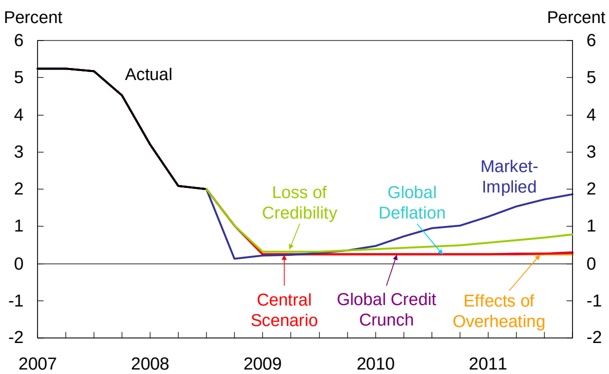


Real FFR under Alternative Scenarios

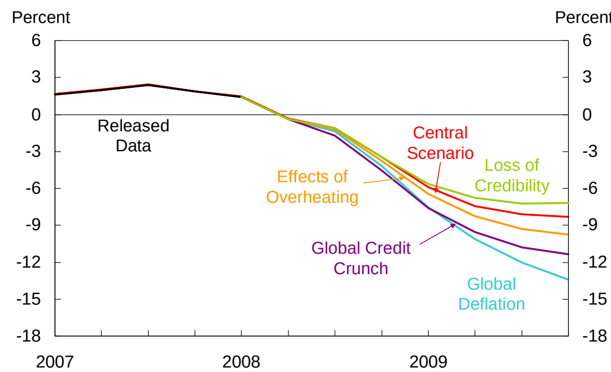


Policy Rule: *Dove*

Nominal FFR under Alternative Scenarios

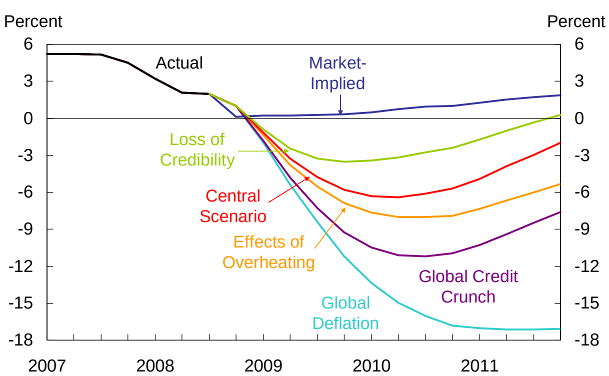


Real FFR under Alternative Scenarios

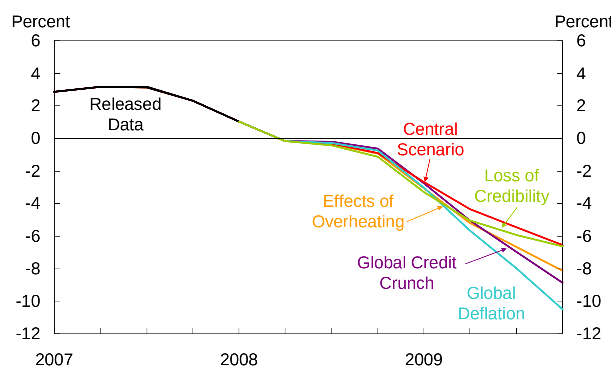


Policy Rule: *Outcome-based*

Nominal FFR under Alternative Scenarios



Real FFR under Alternative Scenarios



Source: MMS Function (FRBNY)

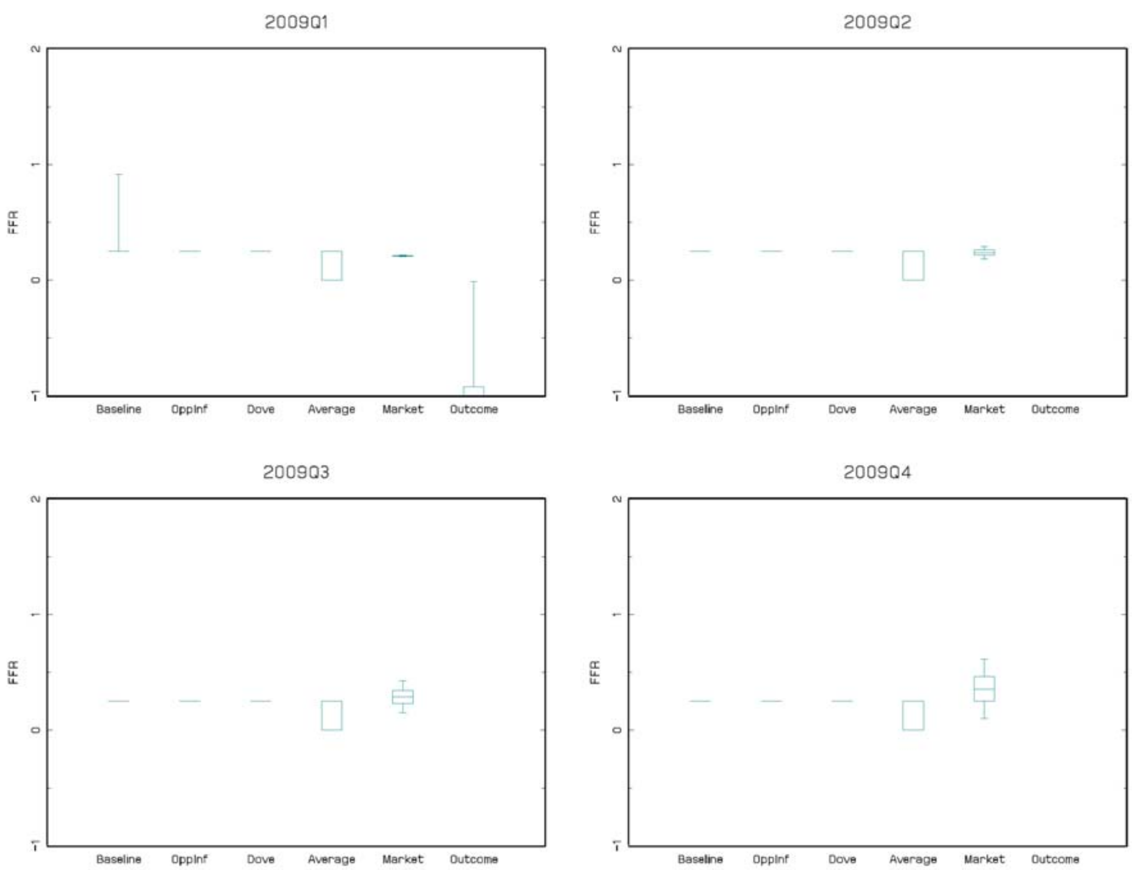
D. FRBNY Fed Funds Rate Projections

Exhibit D-4: Comparison between Market and Policy Rule FFR Expectations: 2009Q1

"Average" Weights:

Rule	Current	Jan Blackbook
Baseline	0.32	0.32
Opportunistic Disinflation	0.02	0.02
Dove	0.66	0.66

Exhibit D-5: FFR Distributions



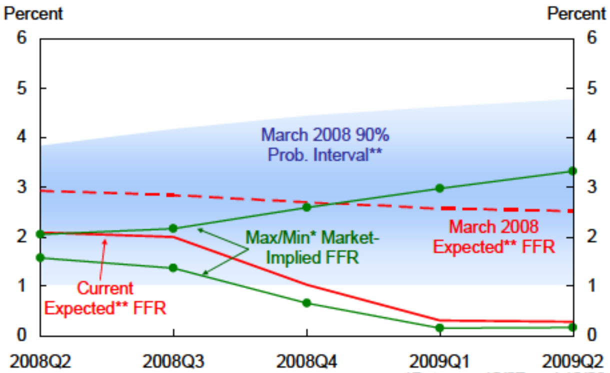
Note: The box represents the 50% probability interval, the line in the box the median, and the tails the 90% probability interval.

Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

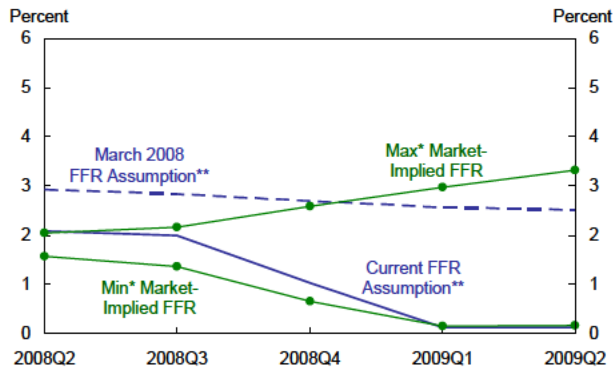
Exhibit D-6: Evolution of FFR Expectations and Assumption

FFR Forecast Distribution and Market-Implied FFR



*Between 12/07 and 12/08
**Using Baseline rule

FFR Conditioning Assumption and Market-Implied FFR



*Between 12/07 and 12/08
**Conditioning assumption for FRBNY central forecast

Source: MMS Function (FRBNY)

Alternative Scenario Descriptions

In this abbreviated version of the Exhibit C documentation, we include brief descriptions of the alternative scenarios used in this Blackbook. Full documentation, including a description of the methodology, is included in the Appendix.

Our first two alternative scenarios consider the impact of above- and below-trend productivity growth, respectively. In the post-war era, the United States has experienced three productivity epochs (pre-1973, High I; 1973 to mid-1990s, Low I; and mid-1990s to 2004, High II). The NIPA revisions in July 2006 and 2007 prompted us to reduce our estimate of potential output growth; thus our current central projection for medium- and long-term productivity growth is somewhat lower than that of the pre-1973 epoch.

Alternative 1: *Productivity Boom*

After a lull from 2004 through early 2007, productivity growth since has been robust and above our current estimate of trend productivity growth. Our projections for 2008Q2 productivity indicate that this pattern should continue. These patterns raise the possibility that the lull in productivity growth in mid-decade was a cyclical development and that medium- and long-term productivity growth will be closer to that of the High II epoch, with some mixture of IT-driven production and applications leading the way. Support for this view comes from Moore’s law on the doubling of computing power every 18 months. As such, we could see persistent productivity growth above our assumed trend, implying a higher potential growth rate and thus expected real growth that is higher than our current estimate (as well as a possible development of a larger output gap in 2008). Strong productivity growth would also limit labor cost pressures and thereby help to subdue inflation.

Alternative 2: *Productivity Slump*

The recent surge in productivity growth may reflect a new cyclical pattern whereby firms protective of their profit margins reduce labor input in anticipation of slower profit growth. Furthermore, it is possible that the longer-term upswing in productivity that began in the mid-1990s has ended as the IT-driven surge has run it course. If so, there could be an extended period of productivity growth below the trend in our central forecast. In addition, the increase in the level and volatility of energy and commodity prices could continue and lead to lower productivity growth, as occurred in the 1970s. Below-trend growth would not only imply a lower estimate of potential growth, but would also push inflation above the level projected in our central forecast.

We also consider four additional scenarios. Three are related to the impact of monetary policy on the economy and financial markets as well as possible FOMC misperceptions of its past and current policy stances. The other is related to the impact of developments in the global economy.

Alternative 3: *Effects of Overheating*

Motivated principally by concerns over the prospect of deflation, the FOMC adopted a deliberately accommodative policy stance in the aftermath of the global slowdown of 2000-2003. It is possible the FOMC markedly underestimated the equilibrium real interest rate (i.e. overestimated the degree of slack in the real resources) during this period. In this case, their accommodative policy would have stimulated aggregate demand growth in excess of potential and, ultimately, triggered inflation. The above-potential output growth from 2004 through mid-2006 and the persistent above-target inflation are consistent with such a scenario, as is the abrupt slowdown in real output growth that began in mid-2006. If this overheating episode occurred, it has likely passed already in the U.S.; however, there is a risk its effects will linger in the form of slightly above-forecast inflation and slightly below-forecast output growth.

Developments in the global economy during this period may have contributed to the economic conditions that motivated the initial policy and may also have made it more difficult for the FOMC to identify the overheating in real time. For example, one likely factor contributing to the deflation scare in the early part of this decade was the downward pressure on global goods prices triggered largely by growth in emerging economies' labor forces. Another critical factor may have been the exchange rate policies that a number of emerging market central banks adopted over this period. These polices and the associated dollar reserve accumulation, which were aimed at maintaining the dollar strong relative to their domestic currency, may have put significant downward pressure on long-term interest rates both in the U.S. and around the world, and in doing so, may have made it more difficult to correctly assess the equilibrium real interest rate during this period.

Alternative 4: *Global Credit Crunch*

The financial turmoil that started in the summer of 2007 has continued to put a significant strain on the availability of credit. In the U.S., financial conditions have tightened significantly and financial market stress has reached record high levels in recent months. 30-year fixed rate mortgage rates remain near their one-year high. In addition, global data for 2003Q3 have been largely negative. The intensification of the financial crisis together with global slowing of economic growth has lead to significant wealth losses and increased volatility in equity markets. Policy-makers worldwide have enacted measured to address the freezing of interbank markets and implemented a coordinated cut in policy rates. This combination of factors suggests the neutral rate is lower than before the financial turmoil began (we estimate it to be between 3.00% and 3.75% over the near-term). Even though the current FFR is below our lower estimate of the neutral rate, tighter credit conditions and continued stresses in global financial markets, along with increased risk of a further deterioration in global economic conditions, create a risk that output growth will slow significantly below the level projected in the central forecast; this would likely be accompanied by inflation below the level in the central forecast.

Alternative 5: *Loss of Credibility*

One interpretation of recent higher inflation, higher financial market inflation compensation, higher commodity prices, and dollar depreciation is that inflation expectations have risen despite the FOMC continuing to state its price stability mandate, raising concern that the FOMC has started to lose its credibility on inflation. Although some FOMC communications have placed more emphasis on the upside inflation risks, the FOMC also has communicated continued concern about growth risks, thus providing signals that the FFR may remain low that have further fueled such concerns. It is possible that these statements and actions of the FOMC may lead to further increases in inflation and inflation expectations, such that firms and households begin to see the FOMC as not credible in regard to inflation. Such developments are likely to cause further rises in inflation and inflation expectations above forecast.

Alternative 6: *Global Deflation*

Recent price level indicators point to slowing or decreasing inflation in many regions of the world. Domestic measures of implied inflation have fallen sharply, suggesting that inflation expectations are also declining. These signals, coupled with falling global output as a result of financial market turmoil, suggest that there is an increased risk of global deflation going forward. This possibility is further exacerbated as central banks around the world cut interests rates and target rates approach their lower bounds. The *Global Deflation* scenario reflects the possibility that the U.S. and the rest of the world may get mired in a liquidity trap for a prolonged period of time. These factors would result in both inflation and output growth far below the levels projected in the central forecast. Although the onset of this slowdown would be later compared to other scenarios, global factors would cause these conditions to be more persistent.

The implications for inflation and output of the various scenarios can be summarized as follows:

1. *Productivity Boom*: inflation below central forecast, output above central forecast.
2. *Productivity Slump*: inflation above central forecast, output below central forecast.
3. *Effects of Overheating*: inflation slightly above central forecast, output slightly below central forecast.
4. *Global Credit Crunch*: inflation below central forecast, output significantly below central forecast.
5. *Loss of Credibility*: inflation far above central forecast, output slightly below central forecast.
6. *Global Deflation*: inflation far below central forecast, output far below central forecast.

Policy Rule Descriptions

In this abbreviated version of the Exhibit D documentation, we include a description of policy rules used in this Blackbook. Full documentation, including the methodology description, is included in the Appendix.

In both our *Baseline* and alternative policy rule specifications, the policy rate responds to deviations of inflation from target and of output from potential, while incorporating some degree of inertia. For each of the FFR paths and each of the policy rules, we determine these deviations using the corresponding inflation and output paths.

Policy Rule – Baseline Specification:

$$i_t = \rho i_{t-1} + (1-\rho)\left[i^* + \varphi_\pi\left(\pi_t - \pi^*\right) + \varphi_x x_t\right]$$

$\rho = 0.8$ (interest rate smoothing parameter)
$i^* = 2.00 - 3.00$ in short - term, moving to 4.25 (neutral FFR)
$\pi^* = 1.75$ (core PCE inflation target)
$\varphi_\pi = 1.5$ (weight on inflation deviations)
$\varphi_x = 0.5$ (weight on output gap)
π_t : core PCE, 4 - quarter average
x_t : output gap, using 2.7% potential growth rate, moving to 2.6%
i_{t-1} : interest rate in previous quarter

The two variants of the *Baseline* rule that we use are the *Asymmetric Price Targeting* and *Dove* rules. The *Asymmetric Price Targeting* rule is designed to combat deflation by instituting price-level targeting. This rule reacts more slowly than the *Baseline* rule to initial increases in inflation, maintaining a lower policy rate for a longer period of time.[2] In each quarter over the forecast horizon, the rule reacts to the cumulative gap between a 1.5% price level path and the actual path on the downside; the rule is asymmetric because

[2] All of the policy rules are subject to an effective lower bound of 0.25%.

price-level targeting is only implemented on the downside. When the cumulative gap in inflation is greater than 1.5% per year, the policy rule reverts to targeting the gap between four-quarter changes in inflation and the inflation objective, just as in the *Baseline* rule.

The Dove rule reacts more strongly than the Baseline rule to a negative output gap. When the output gap is negative, the Dove rule increases the weight on deviations of output from potential (φ_x = 1 instead of 0.5). When the output gap is positive, however, the Dove rule offers the same prescription as the Baseline rule (φ_x = 0.5, as usual).

In addition to the Baseline rule and the two variants, we also consider the FFR paths generated by the Board staff's Outcome-based rule. The most significant difference between the three FRBNY rules and the Outcome-based rule is that the FRBNY rules offer a prescription for future behavior based on policymaker preferences and views of the economy, whereas the Outcome-based rule is a statistical description of the average of past FOMC behavior. Specifically, the Outcome-based rule calculates an FFR for a given quarter as a function of the FFR in the previous two quarters, the current quarter's four-quarter core PCE inflation, and the output gap for the current and the previous quarter using parameters estimated from real-time historical data (1988-2006)[3].

We also want to compare the policy paths and distributions calculated using these rules with the market-implied path and distribution. In these charts, we use the standard path of market policy expectations derived from fed funds and Eurodollar futures contracts that is pictured in Exhibit A-5. For Exhibits D-4 and D-5, we construct a distribution for the market-implied path by assuming it has a normal distribution centered at the standard, market-implied path, with a standard deviation derived from options markets (pictured in Exhibit A-6).

[3] *Outcome-based* rule: $i_t = 1.20*i_{t-1} - 0.39*i_{t-2} + 0.19*(1.17 + 1.73*\pi_t + 3.66*x_t - 2.72*x_{t-1})$