FRBNY BLACKBOOK

RESEARCH AND STATISTICS GROUP

FOMC Background Material

April 2011

FRBNY BLACKBOOK

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CONTENTS

EXHIBITS

EXHIBIT OVERVIEW

1. Policy Recommendation and Rationale

Changes in the outlook and risks for U.S. growth and inflation have not been sufficient to warrant a change in our policy recommendation. Consequently, we continue to recommend maintaining the federal funds rate target range at 0-0.25% through 2012Q2, somewhat later than the lift-off date associated with the market-implied path. We also support the maintenance of the policy to reinvest principal payments from securities holdings and to reaffirm the intention to purchase $600 billion of long-term Treasuries by the end of the current quarter.

Rationale—Outlook. Although we have raised our projection for core PCE inflation in 2011H1 from that in the March Blackbook, we do not see this increase as the start of a persistent rise. Assuming that the commodity price rise does not persist and inflation expectations remain anchored, we do not expect much further increase in core inflation for 2011H2 and 2012. We also see the slower growth in 2011Q1 suggested by the expenditure data as a temporary pause rather than a harbinger of more persistent weakness. The production and survey data have remained fairly robust and financial and labor market conditions continue to improve. Therefore, we have made only small changes to the medium-term real growth forecast.

Rationale—Risks. The developments during the intermeeting period led to a number of small changes in our risk assessment. With commodity prices and longer-term TIPS inflation compensation relatively high and continued strength in emerging market economies, deflationary risks have subsided. At the same time, there is a greater risk of supply shocks associated with oil prices and Japanese earthquake-related supply chain disruptions. Finally, there appears to be greater momentum to address fiscal issues, in part supported by the recent S&P placement of U.S. debt on negative outlook, which could lead to more fiscal consolidation than expected. On net, inflation risks are now roughly balanced, compared to skewed to the downside in the March Blackbook, while the real activity risks remain skewed modestly to the downside.

Exit Strategy. Even though we have not changed our policy recommendation, the "exit strategy" from the current accommodation has become more relevant for upcoming policy decisions because of the approach of the end of the second round of LSAPs, recent increases in underlying inflation measures, and the gradual improvement of financial and real economic conditions. Most pertinent at this time is the timing of the initial moves toward exit. Given our recommended timing of the initial increase in the FFR target, we believe that the "extended period" language can be maintained at least until near the end of the year. Because the market-implied path is above our recommendation and expectations (based on responses to the primary dealer survey) about the interval between the removal of the language and the first FFR increase is about 2-4 FOMC meetings, a premature removal of the language could lead to an unwarranted tightening of policy. Still, economic and financial conditions will influence the timing of the initial moves; in particular significant movements in inflation expectations, financial conditions, and "early warning" economic indicators (such as business and consumer surveys) should lead to changes in the timing of exit.

Because of the extraordinary accommodation in this cycle, the renormalization of policy will comprise of a number of steps involving language, the balance sheet, and policy rates. Of note about this process, we still see the FFR as the principal means of communicating the policy stance, but expect that much of the changes in the FFR will take place through changes in the IOER during renormalization. Also, because we expect the IOER to be effective in influencing the FFR and the policy stance, we believe that asset sales can be deferred until later in the renormalization process.

Eventually, the FOMC will need to address the policy implementation framework—including the choice between a corridor or floor system to control the policy rate and the amount of reserves in a changed structural and regulatory environment. Although the FOMC should begin to examine these issues, it is important to note that policy can be largely renormalized without making final decisions on the framework. In fact, the renormalization process will provide useful information for the policy framework decision such as the impact of structural and regulatory changes on reserve supply and demand as well as on interest rates (e.g., the IOER-FFR spread) and the behavior of short-term rates in a floor system under a range of reserve balances. Finally, we recommend that the FOMC puts in place a communication strategy to minimize the risk to the Federal Reserve's credibility from possible financial losses; in particular, markets and the public should understand that the possibility of such losses will not impair the Fed's ability to manage a successful exit or its commitment to price stability.

2. Evolution of Outlook and Risks

2.1 Central Forecast

The US economy ended 2010 on a relatively strong note, with real GDP growing at a 3.1% annual rate in 2010Q4 and real final sales rising at a 6.7% annual rate, the fastest quarterly growth rate since the fourth quarter of 1998. While this represented the sixth consecutive quarter of positive GDP growth, the amount of slack in the economy remained substantial. Accordingly, the rate of growth of the core PCE deflator slowed to just 0.4% (annual rate), the lowest rate in the history of the series dating back to 1957.

Several indicators released over the past three months have suggested that the recovery gained further momentum during the first quarter of 2011. The ISM manufacturing index averaged 61.1 for 2011Q1, the highest since the early 1980s. Its nonmanufacturing counterpart also rose significantly in the first quarter and is at a relatively high level. In addition, gains in private payroll employment averaged 235,000 in February and March, and aggregate hours worked increased around 2% (annual rate) in the first quarter, slightly faster than in the fourth quarter.

However, our estimate of 2011Q1 growth of real GDP based upon the summing up of estimated expenditures has been revised down substantially over the intermeeting period to around 2% (annual rate) from 3¼% in the last Blackbook. The rate of growth of real PCE is now expected to be around 2¼%, well below our expectations earlier in the year when the 2 percentage point reduction of the payroll tax was introduced into the forecast. In nominal terms, growth of consumer spending is well maintained. In fact, it looks like it grew between 6% and 6½% (annual rate) in the first quarter, up from an average of around 4½% (annual rate) over the second half of 2010. However, the total PCE deflator is expected to have increased at a 4% annual rate in the first quarter of 2011, led by a 40% (annual rate) increase in energy prices and a nearly 5% (annual rate) increase in food prices.

Based on information available at this time, several other categories of final expenditures were weaker than expected in the first quarter. Real business investment in nonresidential structures appears to have declined at a double digit rate in 2011Q1 following a nearly 8% increase in 2010Q4, with the weakness quite broad based. Real residential investment is also likely to have declined following a modest increase in the previous quarter. At the federal level, real defense spending appears to have declined for the second consecutive quarter, something that has not happened over the past decade. At the state and local level the decline in expenditures looks to have been particularly steep, reflecting the largest percentage decline in employment in two years and a sharp contraction in construction spending. Finally, while still quite strong, the projected growth of real exports in the first quarter has been scaled back following weaker than expected data for February.

Some forecasters have lowered their 2011Q1 projected growth rate of real GDP to around 1½% (annual rate). We have not done so on the grounds that the production data look stronger than that, and so this output must eventually show up in some category of expenditures. At the moment we are assuming a full one percentage point growth contribution from inventory investment.

In contrast to the expenditure data, data on inflation for 2011Q1 has tended to come in stronger than expected. As mentioned above, the total PCE deflator likely increased about 4% (annual rate) in the first quarter, boosting the four-quarter change to 1.6% from 1.1% in 2010Q4. Even if energy prices stabilize at current levels, the four-quarter change of the total PCE deflator will likely approach 3% by the third quarter of 2011. Measures of core inflation have also moved significantly higher over the first quarter. The core PCE deflator likely increased at a 1.5% annual rate in 2011Q1, up from 0.4%

in 2010Q4. Even if the monthly changes in the core PCE deflator begin to slow in the period from April through June, an increase of 1 ½% to 1 ¾% for the second quarter seems quite likely. Nonetheless, the four-quarter change would still be only 1% at that point.

Conditioning assumptions. We continue to assume that potential GDP growth is around 2½%. This is composed of 1% trend hours growth and trend productivity growth of around 1½% (on a GDP basis, which is equivalent to about 1¾% on a nonfarm business sector basis). The Board staff has reduced modestly its estimate of potential GDP growth in 2010-12, primarily reflecting lower estimates of the contribution of capital deepening (as they incorporated new data on multifactor productivity, capital services, and the capital stock from the BLS and BEA). The Tealbook estimates of potential growth for 2010, 2011, and 2012 are 2.0%, 2.3%, and 2.5% respectively. However, because the Tealbook GDP growth projections have been lowered more than potential growth, the output gap at the end of 2012 is -3.5%, one-half percentage point wider than in the March Tealbook.

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 central to our projection of a gradual rise of core inflation back toward the midpoint of the FOMC's objective for core PCE inflation of 1.5% to 2.0%.

The FRBNY outlook for foreign real GDP growth in 2011 has been increased modestly to 3.4% (Q4/Q4 on a GDP-weighted basis) from 3.3% in March, reflecting some modest upgrades of growth projections in both the developed and emerging economies. Projected foreign real GDP growth for 2012 is unchanged at 3.2%. The Board staff projection for foreign real GDP growth in 2011 is unchanged at 2.9% (although the mix changed with a significant reduction in Japan and increases in a number of other countries) and for 2012 is modestly higher at 3.4% versus 3.3% in March (when the

Board staff expects growth in Japan to rebound).

The projected path of oil prices over the forecast horizon has been raised modestly. Based on recent futures quotes, we expect an average price of WTI of $111 per barrel for 2011Q4, $0.50 per barrel higher than in the March Blackbook. We then expect the price to ease slightly to $108 per barrel for 2012Q4 ($2 above the March assumption). The Board staff assumes about $108 per barrel for 2011Q4 and about $106 per barrel for 2012Q4; the projected path is about $1.50 above that in the March Tealbook. (Note that while the Brent price quote have been significantly higher than the WTI quote over the past few months, these projections assume that those quotes will converge to their long run relationship over the forecast horizon.)

As is our usual practice, our assumptions regarding federal fiscal policy are the same as those of the Tealbook, which are little changed from March. In particular, even though the advertised discretionary spending reductions in the recently enacted budget agreement were larger than assumed in the last forecast, the Board staff expects only a small portion of the additional reductions to affect spending in the projection period. The Board staff's fiscal impulse measure continues to indicate that fiscal policy will be neutral in 2011 and is anticipated to subtract 1.1 percentage points from GDP growth in 2012 as the payroll tax reduction expires, the emergency unemployment benefits are phased out, the grants to state and local governments included in the 2009 stimulus bill are exhausted, and the expensing provisions for business investment are reduced.

The assumed path of equity prices in the Tealbook, which we also adopt, is modestly lower because the current level is somewhat below that assumed in the March Tealbook. From this lower base, equity prices increase at a 9% annual rate through the end of 2012. The equity premium, which remains above its longer-run levels, is expected to fall gradually to more normal levels.

Reflecting the greater-than-anticipated depreciation of the dollar over the intermeeting period, the Board's assumed near-term path of the nominal exchange value of the dollar is lower, with a decline of 4.1% in 2011 versus a decline of 3.5% in the March Tealbook. The assumed decline in the nominal exchange rate for 2012 is 2.0%, somewhat less than the 2.3% assumed in March Tealbook, leaving the real exchange rate at the end of 2012 little changed from the March assumption. Our assumed path of the nominal exchange rate is essentially the same.

Finally, following some firming over the first half of 2010, all widely-followed national home price indices have come under renewed downward pressure. The Core Logic repeat sales home price index (formerly known as the Loan Performance Home Price Index) declined 1½% (based on the Board staff seasonal) in February, a more severe decline than anticipated. Consequently, the Board staff has lowered the projected path of home prices over the forecast horizon, with prices expected to decline 4½% in 2011 (one percentage point more than in the March Tealbook) and then stabilizing in 2012.

The Outlook.

While the rate of growth of real GDP in the first quarter of 2011 looks to have been quite a bit lower than we expected in March and the rate of increase of the core PCE deflator quite a bit higher, the broad contours of the forecast over the remainder of the forecast are essentially unchanged. As has been the case for several FOMC cycles, we believe that fiscal and monetary stimulus, in combination with the fact that the economy's natural healing process is far along, have created conditions for a stepping up of growth to a rate that is above potential. Numerous developments support this position. Financial conditions have improved over the last six months, including a substantial increase in equity values and narrowing of credit spreads. While still tight, lending conditions have begun to ease. We are now seeing steady increases in nonmortgage consumer debt as well as C&I loans on banks' balance sheets. Based on historical relationships, the current level of the personal saving rate appears to be about where it should be given current levels of household net worth. Moreover, household financial obligations relative to disposable personal income had declined to levels that prevailed in the mid 1990s as households have paid down debt, refinanced debt at lower interest rates, and had debt charged off by lenders. Continued favorable growth prospects among our major trading partners along with a lower exchange rate of the dollar are expected to produce sustained strong growth of exports. Improving foreign and domestic demand is likely to induce stronger growth of business investment. While quite low at the moment, housing market activity is likely to begin to improve in the months ahead as the labor market improves and housing affordability remains high. Indeed, over the past several weeks there has been a notable movement upward in purchase mortgage applications, albeit from a very depressed level. Inventory-sales ratios throughout the manufacturing and trade sectors are quite low by standards of recent history. With incomes and spending rising, the 2010Q4 level of state and local government tax receipts was roughly equal to the previous peak level in 2008Q2, indicating that the fiscal position of those governments is healing. Lastly, the passage of the fiscal agreement in late 2010 added additional fiscal stimulus for 2010.

While underlying fundamentals continue to gradually improve, the economy clearly faces some new headwinds that were not present at the beginning of the year, in particular a considerable higher level of energy prices. Our assumed path of oil prices in this forecast is about $4 per barrel higher than in March, bringing the total increase since December in the assumed price for 2011Q1 to $24 per barrel. We have shaved another tenth from our projected growth of real GDP in 2011, lowering it to 3.7% (Q4/Q4). This brings the total downward adjustment in the wake of the run-up of energy prices to 0.3 percentage points. With the national average retail gasoline price now just shy of $4 per gallon, up $1 from early December, the risks to the growth outlook are skewed to the downside.

The further increase in energy prices over the intermeeting period, combined with larger than expected increases in the energy component of the CPI over the first quarter, has led to a further increase in the expected change of the total PCE deflator to 3% (Q4/Q4) for 2011. The 12-month changes of the total PCE deflator are now likely to top out in the 3% to 3¼% range in 2011Q3. The projected path of core inflation is also higher in this forecast, with both core goods and core service prices moving up more than expected. Within the core goods category, price of new vehicles rose at a 2½% annual rate in 2011Q1 after falling at a 0.5% annual rate in 2010Q4. Within the core services category, prices of transportation services rose at a 22% annual rate in the first quarter, likely reflecting a second-round effect of higher energy prices. The core PCE deflator is likely to increase at a 1 ½% annual rate in the first quarter, and rise at a similar rate in the second quarter even if monthly changes begin to slow as we expect. For 2011 as a whole, the core PCE deflator is expected to increase 1.4% (Q4/Q4), up from 1.1% in the March forecast. The path of the unemployment rate for 2011 has been nudged a little lower, falling to slightly above 8% by 2011Q4, compared to about 8¼% in the March Blackbook. The projected growth of employment is essentially unchanged, but the path of the labor force participation rate is somewhat lower due to its further decline to an average of 64.2% in 2011Q1 from 64.4% in 2010Q4. We continue to believe that the decline of the participation rate has been greater than would have been the case if the trends of the past decade had continued over the past few years. Therefore, we expect the participation rate to increase as the economy continues to recover.

The underlying fundamentals of the economy are expected to continue to improve in 2012, with stronger employment growth, a sustained decline of the unemployment rate, a better-established recovery of the housing sector, and a modest recovery of business investment in nonresidential structures. In addition, oil prices are expected to be somewhat lower than in 2011, which provides a modest boost to growth and pushes down the rate of increase of the PCE deflator. However, the federal fiscal impulse will turn negative as the payroll tax rate and depreciation schedules return to previous levels, as well as already enacted reductions of budget authority begin to have an effect on outlays. Overall, we expect growth of real GDP in 2012 of around 4%, with the unemployment rate falling slightly above 7% by the end of that year and core inflation returning to the mandate consistent range of 1 ½% to 2%.

2.2 Alternative Scenarios and Risks

Over the intermeeting period the risk assessment became roughly balanced in terms of the inflation outlook, while it was slightly tilted to the downside in March. We retained downside risk for output. The change in the risk assessment for inflation reflected a number of factors, including the historically high level of TIPS breakeven rates, the rebound in commodity prices following the events in Japan, and the continued strength of emerging markets economies. These factors suggest that the risk of deflation, while it has not completely disappeared, is substantially lower than it was in the past. In terms of output, the possibility of additional oil price shocks, supply disruptions in Japan, and especially greater fiscal restraint in the US suggests that downside risks are still prevalent.

The balancing of inflation risks was achieved by reducing the likelihood associated with deflationary scenarios, such as the *Global Deflation*, the *Global Credit Crunch*, and the *Productivity Boom*, and increasing the likelihood of inflationary scenarios [Exhibit C-1]. In particular, the probability associated with the *Fiscal Consolidation* was increased to almost 35%, making it the most likely scenario. The *Productivity Boom* scenario follows with a likelihood of about 30%. The *Faster Growth*, *Global Credit Crunch*, and *Loss of Credibility* scenarios are all far behind, with an associated probability of about 10%. The paths for core PCE inflation and GDP growth associated with the previously existing scenarios have changed only as a result of changes in the *Central* scenario, as all alternative scenarios are defined relative to our modal forecast [Exhibit C-2].

The changes in our risk assessment result in an upward shift in the 5th percentile of the forecast distribution for core PCE inflation, consistent with a reduction in downside inflation risks [Exhibit C-3]. The mass associated with negative values for 12-month core PCE inflation is now fairly negligible. The 95th percentile of the forecast distribution for core PCE inflation has also moved upward towards the end of the forecast horizon, but only modestly. Forecast uncertainty for real activity has not changed much over the intermeeting period. The “Low Inflation/Deflation Probability and Distribution” chart shows that the likelihood of having average inflation less than 1.5% between 2010 and 2012 decreased over the intermeeting period from 15 to 9%. The “Scale of Recovery Through End of 2011” chart shows that the likelihood of a robust rebound from the recession, such as the one seen after the 1981-2 episode, is now negligible.

Exhibit C-3 also shows, for comparison, the mean forecasts from the FRBNY DSGE model. The forecasts for inflation are more subdued than in the *Central Scenario*, especially in the short run. The forecasts for output are close to the *Central Scenario* in the short run, but the DSGE model does not foresee growth significantly above trend at any time over the forecast horizon.

3. Forecast Comparison

3.1 Comparison with Private Forecasters[1]

The FRBNY forecasts for GDP growth lie within the range of private forecasts for 2011Q1 and at the top of the range for 2011Q2. Over the medium term, the FRBNY 2011 (Q4/Q4) and 2012 (Q4/Q4) real GDP growth forecasts are above most private forecasts. FRBNY core inflation projections for 2011Q1, 2011Q2, 2011 (Q4/Q4), and 2012 (Q4/Q4) are somewhat above most of the private forecasts.

Real GDP Growth. Since the last FOMC meeting, private forecasts for 2011Q1 and Q2 generally have been revised down, reflecting the weak expenditure data that have been received during the intermeeting period. The FRBNY forecast for 2011Q1 is 2.1%, down from 3.3% in the March Blackbook, which is between the Blue Chip consensus (2.6%) and Macro Advisers (1.4%). In contrast to private forecasts, the FRBNY forecast for 2011Q2 has been raised modestly from 3.2% to 3.6%, which is equal to Macro Advisers and above Blue Chip (3.2%). A common assumption across the FRBNY forecasts and private forecasts is that the weaker growth in 2011Q1 will not persist, and thus medium term forecasts have changed relatively little. The FRBNY forecast for 2011 (Q4/Q4) has been lowered a slight 0.1 percentage point to 3.7%, which is above the projections of Macro Advisers (3.3%) and Blue Chip (3.2%). Our forecast for 2012 (Q4/Q4) also has been reduced 0.1 percentage point to 3.9%, which is equal to Macro Advisers (whose forecast has been raised) and above Blue Chip (3.2%).

[1] The details of the forecast comparison are in Exhibit B-8. Release dates of the private forecasts discussed in this section are in parentheses: Blue Chip consensus (4/10), SPF (2/11), and Macro Advisers (4/19). Quarterly numbers are SAAR.

Inflation. The FRBNY projection for core PCE inflation in 2011Q1 has been raised from 1.1% in the March Blackbook to 1.5%, which is somewhat above the Macro Advisers forecast (1.3%). Our 2011 (Q4/Q4) and 2012 (Q4/Q4) forecasts for core PCE inflation (1.4% and 1.5%, respectively) are above those of Macro Advisers (1.2% in each year). Our forecast for headline CPI inflation for 2011 (Q4/Q4) is 3.5%, up from 2.6% in the previous Blackbook, and above private forecasts, which may reflect that the FRBNY forecast has incorporated the impact of the latest energy price increases. For 2012 (Q4/Q4), our forecast is unchanged from the previous Blackbook at 2.1%: it is about the same as Blue Chip (2.2%), but above that of Macro Advisers (1.4%). The FRBNY projection for core CPI in 2011 (Q4/Q4) is 1.7%, up from 1.5% in the March Blackbook, and close to Macro Advisers (1.6%). For 2012 (Q4/Q4), our forecast is unchanged at 1.8%, which is above that of Macro Advisers (1.5%).

4. Robustness of Policy Recommendation

4.1 Sensitivity to Alternative Scenarios and Policy Rules

Our current policy recommendation is to maintain the target range for the federal funds rate at 0–0.25% through 2012Q2 – as in recent Blackbooks. Our recommendation is consistent with the *Baseline* policy rule under the *Central*, *Global Deflation*, *Fiscal Consolidation*, and *Productivity Boom* scenarios [Exhibit D-1]. Under the *Loss of Credibility* and *Faster Recovery* scenarios, however, the *Baseline* policy rule implies a lift-off in 2011Q4 instead.

Exhibit D-2 shows the prescription of various policy rules using as input the expected value of the forecast distribution. With the expected path for output and inflation, the *Baseline* policy rule prescribes a lift-off in 2012Q1, in line with current market expectations. However, the pace of the lift-off under the *Baseline* policy is somewhat slower than that currently embedded in market expectations. The *Nutter* rule prescribes a first rate hike in 2011Q3. Conversely, under the *Asymmetric Price Targeting* rule the FFR would remain close to zero until the end of the forecast horizon. Exhibit D-2 also shows the implied nominal FFR ignoring the zero bound for the *Outcome-based* rule. Under the expected value of the forecast distribution, the unconstrained nominal FFR cuts -2% by 2012Q3 and reaches zero again only at the end of the forecast horizon.

Exhibit D-3 shows the prescriptions from alternative policy rules under the various scenarios. The *Nutter* rule¸ which places no weight on the output gap, prescribes a lift-off before the end of 2011 for all scenarios. FFR paths under the *Asymmetric Price Targeting* rule are at the lower bound (.25%) throughout the forecast horizon while those for the *Outcome-based* rule are at or below zero through mid-2012 under all scenarios except for the new *Faster Recovery* scenario, under which the renormalization would occur in 2011.

Exhibit D-1 shows the real FFR rates implied by the *Baseline* rule under the various scenarios, ignoring the zero bound constraint. Under the *Central* scenario this rule implies a slow renormalization of the real rate, increasing from about -4% in the current quarter to zero by 2013. Exhibit D-3 shows the real rate (under alternative scenarios) for *Asymmetric Price Targeting*, the *Nutter*, and the *Outcome-based* rules. We also use the DSGE model to assess the current stance of monetary policy by performing a counterfactual exercise that eliminates current and past policy shocks. We find that the DSGE model predicts a counterfactual FFR for the current quarter roughly in line with the policy rate.

4.2 Comparison to Market Expectations

The start of the renormalization process implied by FFR futures is 2012Q1, as was the case for the past two Blackbooks. The implied renormalization process is also not very different from that in January, with rates above 1 and 2% by 2012Q4 and 2013Q4, respectively. Primary dealers' expectation for the path of the fed funds target rate was also little changed, with the median dealer expectation for the timing of the first tightening shifting from mid-August to late June 2012 (hence, Q2 2012). On average, respondents assign more probability than in March to the lift-off occurring in either 2012Q4 or 2012Q2, while the probability assigned to either earlier or later dates has declined. All respondents now expect the total cumulative size of the asset purchase program to be between $600 and $900 billion. The median expectation for the size of the year-end SOMA portfolio is roughly \$2.7, \$2.25, and \$2 trillion for 2011, 2012, and 2013, respectively. Finally, in terms of exit strategy, the median respondent expects that the removal of the "extended period" language from the FOMC statement will occur three meetings before the actual increase in the IOER, and will coincide with the end of reinvestments for maturing Agency and MBS securities. The median respondent also expects that asset sales will begin roughly four meetings after the first IOER rate increase.

5. Significant Developments

5.1 Economic Developments

Real Activity. *GDP*: Real GDP grew 3.1% in 2010Q4, an upward revision from the second estimate of 2.8%. Most of the revision was due to higher estimates of business fixed investment and less of a drag from inventories. Corporate profits rose due to higher profits in the financial sector. Profits in the nonfinancial sector were down modestly. The personal saving rate was 5.6%, down from 6.0% in Q3.

Production: Manufacturing production increased 0.7% in March after rising 0.6% and 0.8% in the previous two months. The 12-month change was 6.6%. Motor vehicle production had its third consecutive strong monthly increase while the solid increase in production by high-tech industries was below the large increases registered in the previous three months.

Construction: Spending on construction decreased 1.4% in February, and there were sizable downward revisions to the prior two months. Private residential and public construction fell while nonresidential construction staged a modest rebound after a sharp drop in January.

Orders and Shipments: Growth in manufacturing shipments slowed to 0.3% in February after three months of robust increases. Data on nondefense capital goods were disappointing with the average of January and February slightly below the Q4 average. New orders for capital goods excluding aircraft were down 0.7% after dropping 5.9% in

January. Nonetheless, new orders remain modestly above shipments suggesting the amount of unfilled orders for capital goods continued to expand.

ISM: The manufacturing index edged up to 61.2 in March. The index has been stable in Q1 after climbing steadily during the last few months of 2010. It is near its highest levels since 2004. The nonmanufacturing index declined to 57.3, erasing most of the gains in the previous two months. It still is above any level in 2010 and is close to levels prevailing in the mid-2000s.

PCE: Nominal PCE rose 0.7% in February while real PCE rose a more moderate 0.3%. The increase in real PCE was led by sales of durable goods, clothing, food services and accommodation. Spending on medical care was weak while spending on gas and electricity was down sharply from December.

Retail Sales: Total retail sales rose 0.4% in March with strength in furniture, building materials, electronics and gasoline offsetting weakness in auto sales. Retail sales excluding autos were up 0.8%.

Inventories: Growth of total business inventories slowed in February to 0.5%, following gains of 1.0% in January and 1.1% in December. Manufacturing inventories rose 0.8% and wholesale inventories rose 1.0% but retail inventories fell 0.4%. The drop in retail inventories is due to a steep drop at auto dealers. The total business inventory sales ratio was unchanged at the relatively low level of 1.24. The ratios for manufacturing and wholesale sectors rose slightly but remain at very low levels. The retail ratio fell from 1.33 to 1.31, setting a new low for the history of this series dating back to 1967.

Home sales/starts: Existing home sales increased 3.7% in March. The overall inventory of existing homes listed for sale represents an 8.4 months supply, an improvement from 8.6 months in February. This inventory-sales ratio is elevated compared to more typical levels of 5-6 months but is below the double-digit levels seen last fall. Concerns about future price declines and tight mortgage credit conditions still appear to restrain sales.

Total housing starts rose 7.2% in March to an annual rate of 550,000 units. The increase did not make up for the 18.5% decline in February, with housing construction essentially stuck at very depressed levels.

Labor: Nonfarm payroll employment increased 216,000 in March while private payroll employment went up 230,000. The unemployment rate declined from 8.9% to 8.8% with no change in the participation rate. Household employment was up 291,000 after increasing 250,000 in February and the employment-to-population ratio increased slightly to 58.5%. This is almost 5 percentage points below the recent peak of 63.4% set in Dec 2006. The percentage of unemployed workers that have been unemployed 27 weeks or more increased from 43.9% to 45.5%

Prices and Income. *CPI*: The overall CPI increased 0.5% in March, as it did in February. On a 12-month basis, the index climbed 2.7%, up from 2.2% in the previous month. The inflation rate matched its most recent peak in December 2009. The jump in the CPI was led by energy prices (up 15.5% over the year). Core CPI inflation (0.1% in the month and 1.2% over the year) appears to have moderated somewhat relative to the previous two months.

PCE deflator: Total PCE deflator increased 0.4% in February, led by a 3.5% increase in energy prices. Core PCE rose 0.2% and its 12-month change was 0.9%. The market-based core measure was also up 0.9% over the year.

Personal income: Nominal personal income increased 0.3% following the 1.2% gain in January. The first two months of data suggest an 8% annualized rate increase in Q1, due largely to the decline in the payroll tax. Wage and salary income is set to rise 3.0%. Real disposable income appears to have increased 2.5% as higher energy prices offset the payroll tax reduction.

Home Prices: CoreLogic home price index fell 1.9% in February, the ninth consecutive decline. The index is down 8.4% since May 2010. The index excluding distressed sales rose 1.0%, increasing the divergence with the total index. The series excluding distressed sales is likely a better indicator since distressed properties tend to decline in value due to lack of maintenance, which makes them difficult to include in an constant-quality price index. The FHFA price index fell 0.3% in January and was down 3.9% over the year. The index level is roughly equal to that of May 2004.

Trade. The trade deficit narrowed from a revised $47.0 billion in January to $45.8 billion in February. Both export and import volumes decreased over the previous month. Export volumes fell 3.7 percent in February, almost offsetting all of the increase in the last two months. This fall was larger than our forecast. Over the 12 months ending in February, real exports were up 8.0 percent. Nonoil import volumes were down 1.9 percent, taking back nearly half of the increase in the previous month, resulting in a 12.9 percent increase over the year. Oil volumes also declined this month, following large upswings in the previous three months. These data suggest the net export contribution to GDP growth will add 0.2 percentage points in Q1 2011.

Foreign Data Releases. The quarterly pattern of foreign growth for 2011 has been altered modestly as the earthquake lowered Japan's outlook in the first half of the year and raised it in the second half. Data for the other major economies were in line with expectations.

Euro area: Euro area manufacturing grew 14 percent (saar) in February while exports rebounded in January and February following weather-related weakness in December. Stable business and consumer confidence measures are consistent with strong growth in Q1, with the economic sentiment index 7 percent above its long-run average. The unemployment rate fell slightly to 9.9 percent in February, staying close to where it has been since fall 2009. CPI inflation breached the ECB's 2.0 percent limit for the fourth consecutive month. Oil prices at current levels will keep inflation above 2.0 percent throughout 2011. Core inflation also picked up but was still low at 1.3 percent in March. Wage growth is weak.

U.K.: The services PMI survey showed an unexpectedly strong increase in March, while manufacturing output was flat in February. Pay growth remains subdued. CPI inflation fell to 4.0 percent in March from 4.4 percent in February, mainly due to lower food prices. Core inflation saw a smaller decline to 3.2 percent.

Japan: The economy was picking up speed before the natural disaster. Production moved higher in January and February to significantly above Q4 levels and real exports rose sharply in February. PMI measures were solid through February and the Tankan survey results in March were stable, although 75 percent of the responses were received before the earthquake. The earthquake/tsunami event is estimated to have destroyed physical capital equal to 4 percent of GDP, double the cost of the Kobe earthquake. The natural disaster disrupted manufacturing in the last two weeks of Q1 with a Bloomberg survey finding roughly 150 plants were closed down in the first week. The number dropped to 50 plants by the end of March. The PMI for manufacturing fell from 53 to 46 in March.

EM Asia: China's GDP growth slowed to 8.8 percent (saar) in Q1 from 10.0 percent in Q4 2010. Strong March retail sales and production data eased concerns that a sharper slowdown was underway. Export growth was robust while import growth was even greater due in part to higher commodity prices. Inflation pressures remain significant. CPI inflation picked up to 5.4 percent in March—the highest figure since mid-2008. Data for trade and production were strong across the rest of Asia with a big upside surprise from the advance Q1 GDP report for Singapore.

Latin America: Brazil's production picked up slightly in Q1, but consumption growth decelerated as inflation cut into real income. Consumer demand in Mexico is firming while investment growth remains subdued. Manufacturing activity, which faded in H2 2010, continued to rebound in Q1, led by vehicle production.

5.2 Financial Markets

Domestic Financial Markets. Treasury yields and equity markets declined in mid March in the aftermath of the Tohoku earthquake that hit Japan on March 11. Following the March 15 FOMC meeting, however, Treasury and equity markets appeared to bounce back on improved investor risk sentiment despite relatively weak incoming economic data and, by early April, both had retraced most of the initial decline. In early April, renewed concerns about the US fiscal outlook, the impact of commodity prices on growth, and the potential of a restructuring of peripheral European debt led to a decline in Treasury yields and near term market based inflation expectations. On net, Treasury yields and the market implied expected path of policy rates are only slightly up from the March FOMC.

Nominal Interest Rates: 10 year Treasury yields rose to 3.59% on April 8 before retreating towards the mid of April. As of April 19, the 10 year yield of 3.37% was up 2 bps since the last FOMC meeting. The yield on the 2-year note also reached a temporary high of 83 bps on April 6, but has since partially retraced and the 2 year yield is currently up a modest 5 bps over the intermeeting period, closing at 0.65% on April 19. (Exhibit A-3: Treasury Yields)

Expected Policy Rate Path: The expected path of the fed funds rate inferred from futures markets shifted up significantly between the last FOMC meeting and early April but has since retraced much of the initial upward move (Exhibit A-5: Policy Expectations). Market prices are currently consistent with a target federal funds rate of 0.0-0.25% through the end of 2011. Professional forecasters have revised upward their expected policy paths over the medium term to levels closer to those implied by market prices. The median expectation from the Blue Chip Financial Forecasts Survey for the first quarter of 2012 was 0.39% in April, down from 0.5% in March. (Exhibit A-5: Policy Expectations)

Inflation Compensation: Market-based measures of expected inflation over the next five years decreased since the last FOMC meeting, whereas expected inflation 5 to 10 years out was up slightly. The 0-5 year inflation compensation rose 6 basis points to 2.26% on April 19 and is now near the average of the 2-2.75% range observed in the years before the crisis. Meanwhile, 5-10 year inflation compensation was up slightly over the intermeeting period, at 3.11% on April 19. The 5-10 year measure remains well within the range observed in recent years, suggesting that inflation expectations remain well-anchored. (Exhibit A-4: Real Yields and Implied Inflation)

Equity Markets: Equity markets rose modestly over the intermeeting period with the S&P 500 up about 1%. The S&P 500 has now risen roughly 28% from its summer 2010 lows and is at its highest level since September 2008. Implied equity volatility as measured by the VIX temporarily spiked to 30% in mid March in the aftermath of the Tohoku earthquake but has since dropped sharply and is now at about 16%, close to pre-crisis lows. (Exhibit A-6: Equity)

Credit Spreads: Credit spreads declined slightly over the intermeeting period. Spreads on A-rated corporates, for example, narrowed 2 basis points to 133 basis points. Spreads on financials also narrowed moderately, with A-rated and BBB-rated spreads coming in 8 and 20 basis points, to 177 basis points and 288 basis points, respectively. (Exhibit A-7: Credit)

Money Markets: Most measures of money market stress were little changed over the intermeeting period. The FX basis implied by euro/dollar swap spreads, which may be indicative of stresses on overseas borrowers of U.S. dollars, has continued to tick down in recent months after peaking in late December 2010. (Exhibit A-9: Money Markets). The new FDIC premium assessment scheme that took effect on April 1 led to a significant drop in key over-night funding rates, including the GC repo rate and the effective Fed Funds rate. Libor-OIS spreads, however, were little changed.

Foreign Financial Markets. *Euro Area*: Greek yields were significantly higher and CDS spreads wider largely due to rumors of a sovereign restructuring in the near term as well as fiscal slippage and increased opposition to additional austerity measures.

Portuguese yields also rose as a result of political instability, uncertainty over the country's request for aid, heavy upcoming debt service obligations, and fiscal underperformance. In mid-April, Portugal made a formal request for sovereign support. Spain and Italy continued to perform notably better than the three smaller peripheries as they have for most of the year. Market participants attribute this divergence to the agreement to expand the lendable capacity of the EFSF and to a series of Spanish fiscal policy steps that are seen as supporting consolidation. The euro appreciated 4 percent against the U.S. dollar over the intermeeting period with expectations of ECB rate hikes in the near term. Euro area equity indices increased 3 to 5 percent.

Japan: Uncertainty regarding the economic impact of the earthquake and the status of the damaged nuclear plant pushed the yen higher against the dollar and prompted concerted intervention activity from the G7 on March 18—the first such action since 2000. Following the intervention, the yen depreciated on expectations of quicker U.S. policy tightening, weaker Japanese exports and improving risk sentiment. It has since retraced some of these losses as exporters returned to the market and key Federal Reserve officials reaffirmed their views in speeches. Trading in other asset markets has been driven by earthquake-related news and monetary policy expectations, with the Nikkei falling as much as 17 percent. It is currently 8 percent below its March 10 close. Ten-year JGB yields declined 10 basis points but have recovered to pre-earthquake levels.

Emerging Asia: EM Asian currencies strengthened by 2 percent on average against the dollar, led by a 5 percent appreciation of the Korean won. The Chinese yuan gained 0.7 percent against the dollar, with 12-month appreciation implied by NDFs increasing from 1.8 percent to 2.7 percent. EM Asian shares advanced a significant 9 percent, reflecting broad-based gains. Local yields retreated notably, likely reflecting in part an abatement of inflation concerns.

Latin America: Latin American currencies appreciated 4 percent against the dollar. Of note, the Brazilian real appreciated by almost 6 percent, breaking through its tight year-to-date trading range. Latin American equities significantly underperformed the broader EM index, shedding 1 percent on average.

5.3 Global Economic Policy

Euro Area: As expected, the ECB raised its policy rate to 1.25 percent at its April meeting, citing upside risks to inflation. The ECB left the interest rate corridor around the main refinancing rate unchanged. At the press conference President Trichet described the current stance of monetary policy as "accommodative," and said the ECB would continue to "monitor very closely" any upside risks to price stability. Both median analyst and OIS-derived expectations are for two further 25-basis point rate hikes this year with the next move expected in July, though several market participants suggest it could come in June. The ECB's refinancing operations will continue to be conducted with full allotment at least until mid-July 2011. The recent policy of only modest purchases of peripheral government securities continues. In particular, despite Portugal's difficulties, the ECB did not purchase peripheral debt in the first two weeks of April. As of April 11 the ECB held €77 billion debt purchased under the securities markets program.

Japan: The Bank of Japan is keeping its policy rate in a range of 0.0-0.10 percent and will continue to do so until its official projections suggest price stabilization in the near-to-medium term. Following its meeting on March 14, the Bank of Japan announced it would double the size of its asset purchase program to ¥10 trillion with a focus on riskier assets and made a commitment to provide ample liquidity to ensure financial market stability. The Bank offered ¥40 trillion in overnight emergency funding in the days following the quake with the market taking down about half of the offered amount. At the April 7 meeting, the Bank announced a ¥1 trillion loan facility for financial institutions in the disaster area. Details are to be announced on April 28. As expected, the Bank left its overnight call rate unchanged at "around 0.0 to 0.1 percent."

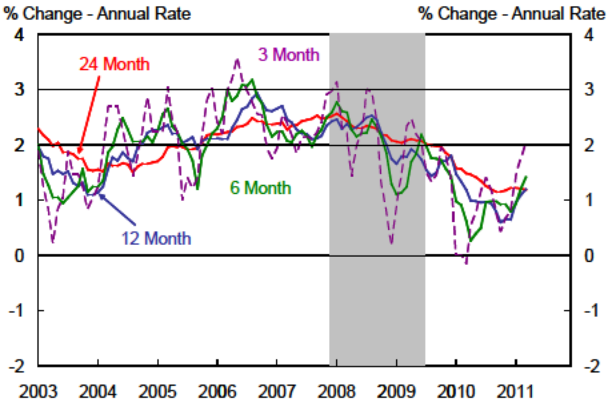
EM Asia: China has raised bank reserve requirements three times over the intermeeting period, each time by 50 basis points, and raised benchmark interest rates once by 25 basis points, the fourth interest rate hike of the current tightening cycle. India, Malaysia, the Philippines (the first of the current cycle) and Thailand also hiked their policy rates. Currency intervention outside China has been light, possibly indicating a shift toward greater tolerance for appreciation. Intervention in China remains heavy pointing to strong capital inflows given a near-zero trade deficit in Q1.

Latin America: In Mexico, analysts expect the central bank to hold rates steady until Q4 2011 or early 2012. Brazil's central bank raised its policy rate by 25 basis points in April to 12 percent, bringing the cumulative tightening in 2011 to 125 basis points. In late March, authorities imposed a tax on short-term external borrowing and doubled a tax on consumer lending.

A. Significant Developments

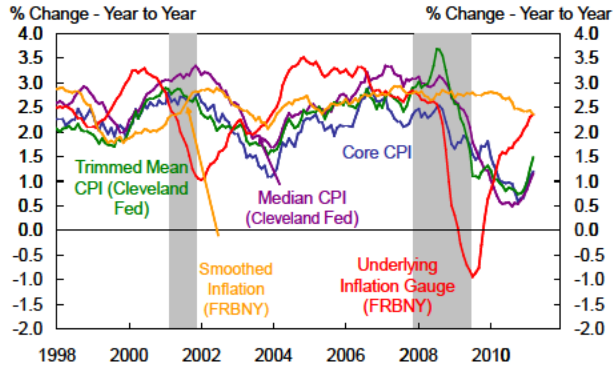
Exhibit A-1:
Measures of Trend Inflation

Core CPI Inflation over Various Horizons



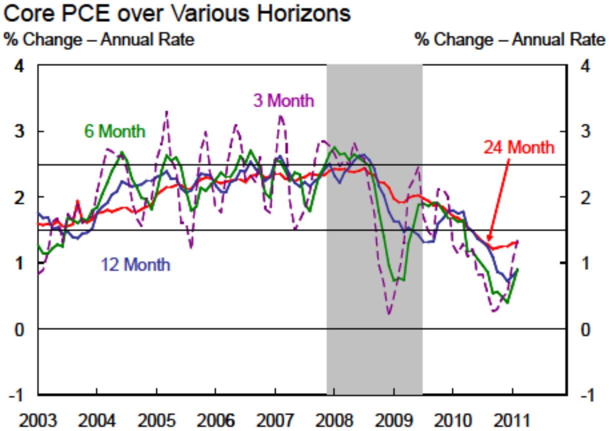
Source: Bureau of Labor Statistics

Alternative Measures of CPI Inflation



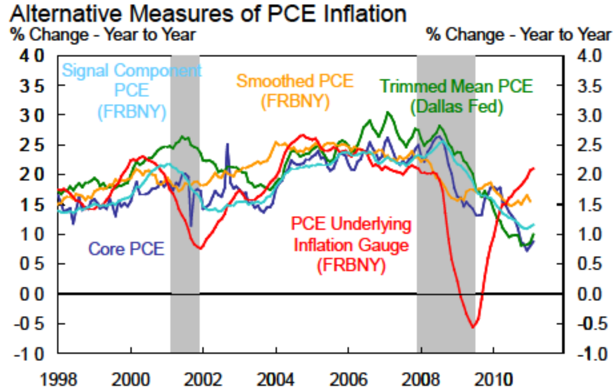
Source: Bureau of Labor Statistics, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Core PCE over Various Horizons



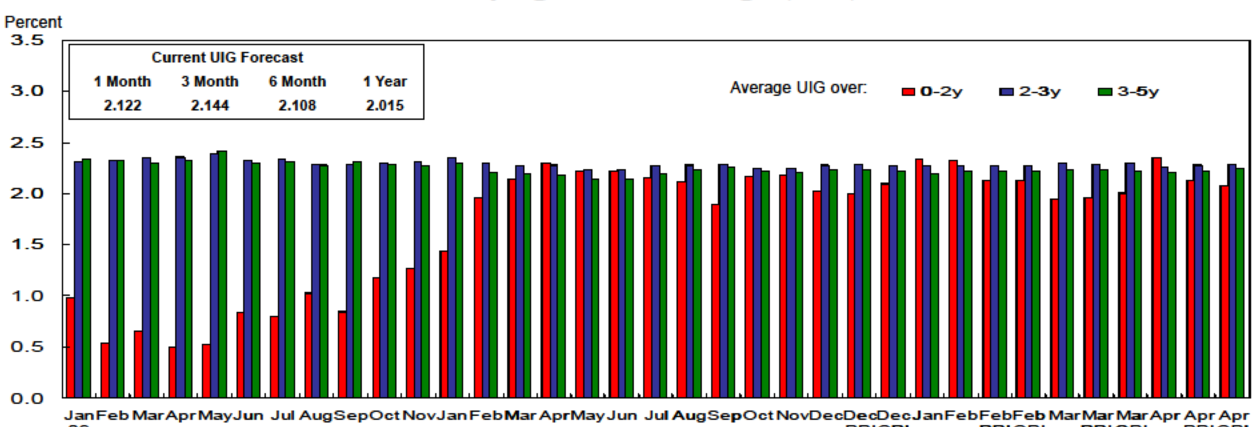
Source: Bureau of Economic Analysis

Alternative Measures of PCE Inflation



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

Exhibit A-2:
Underlying Inflation Gauge (UIG)

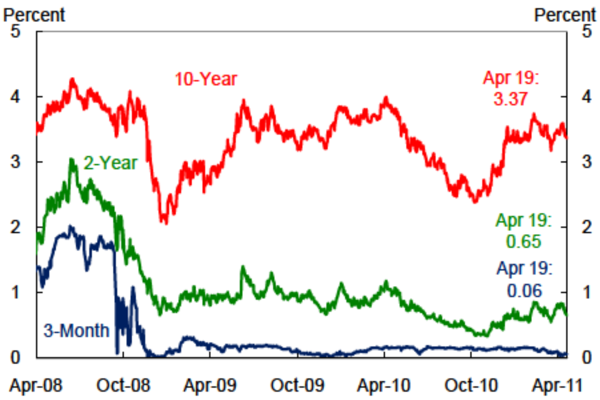


Source: MMS Function (FRBNY) and Swiss National Bank

A. Significant Developments

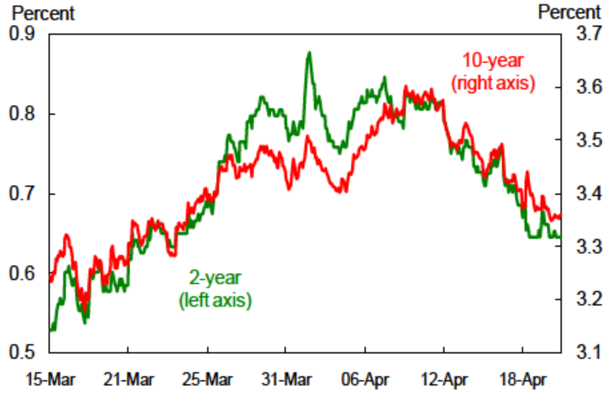
Exhibit A-3:
Treasury Yields

Short- and Long-Term Rates



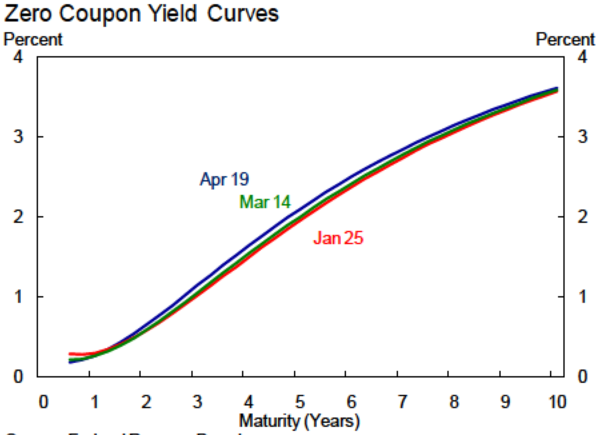
Source: Bloomberg Note: Yields of on-the-run securities.

Short- and Long-Term Rates (Intraday)



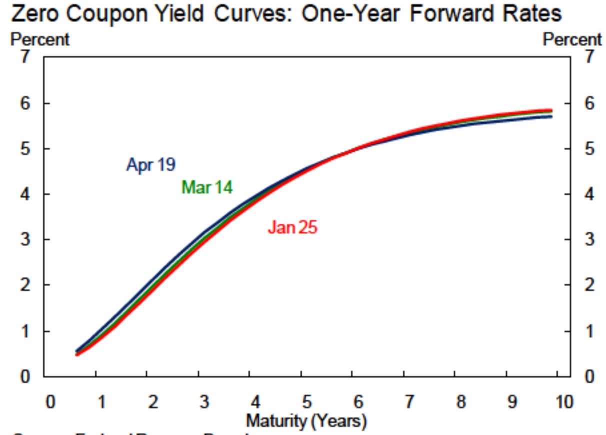
Source: Bloomberg Note: On-the-run securities, 8:00 am to 4:00 pm.

Zero Coupon Yield Curves



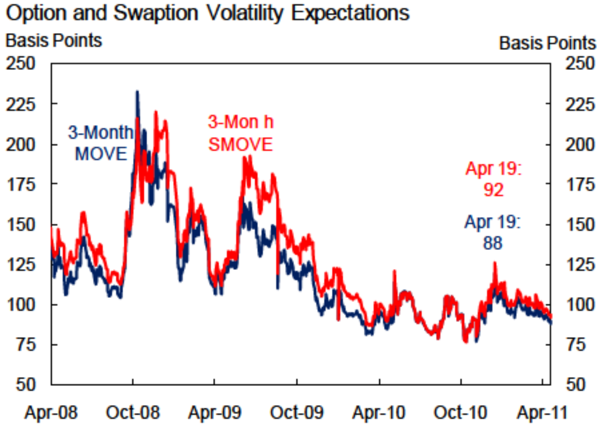
Source: Federal Reserve Board

Zero Coupon Yield Curves: One-Year Forward Rates



Source: Federal Reserve Board

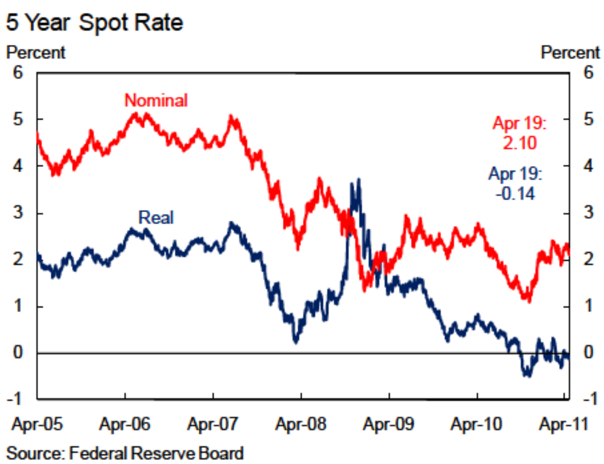
Option and Swaption Volatility Expectations

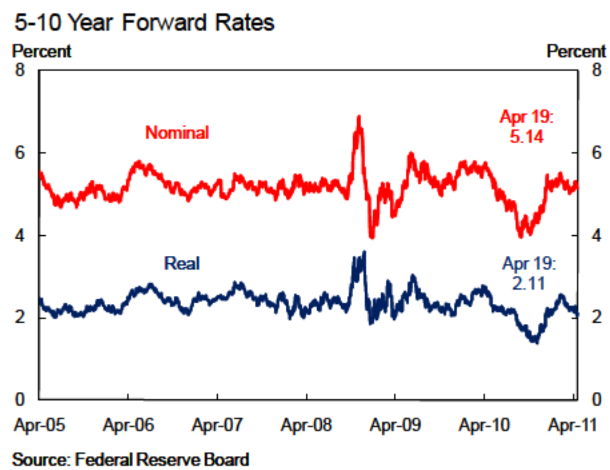


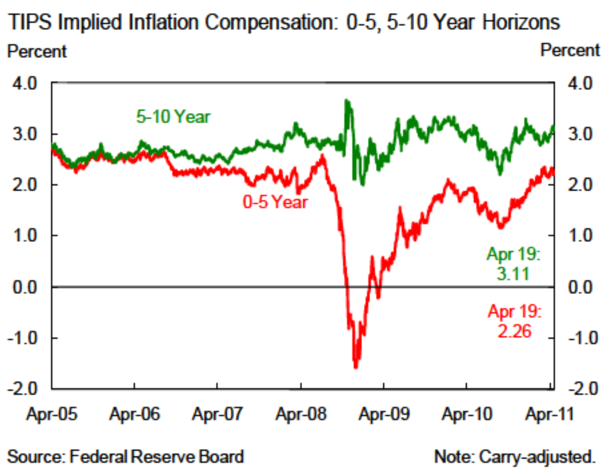
Source: Federal Reserve Board, Barclays, and FRBNY

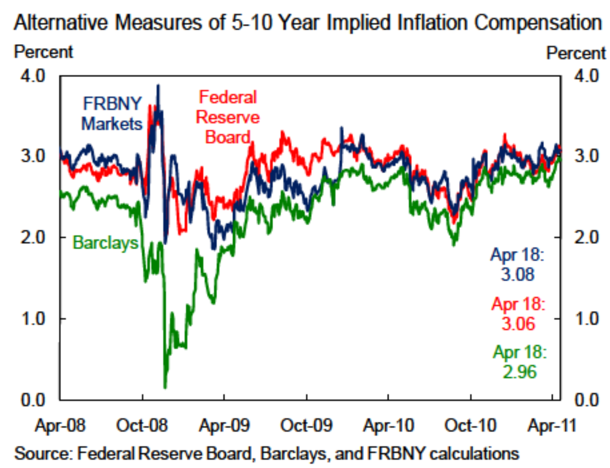
A. Significant Developments

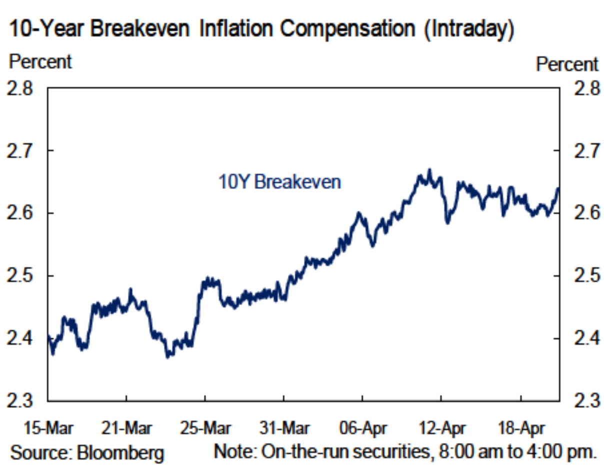
Exhibit A-4:
Real Yields and Implied Inflation

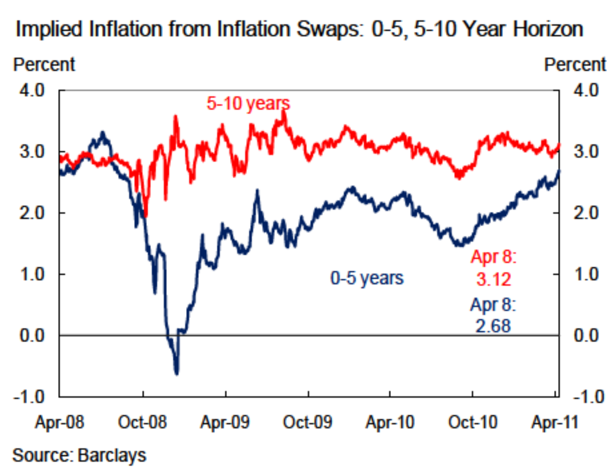








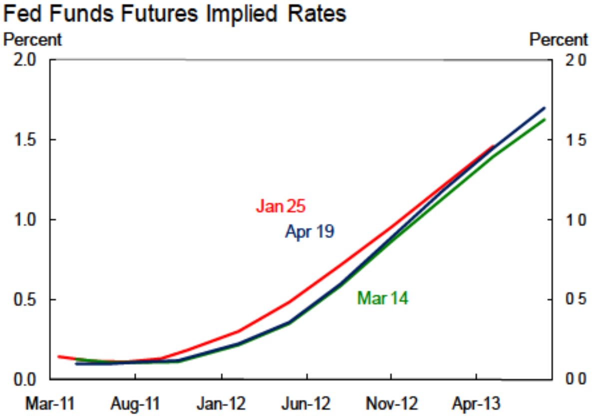




A. Significant Developments

Exhibit A-5:
Policy Expectations

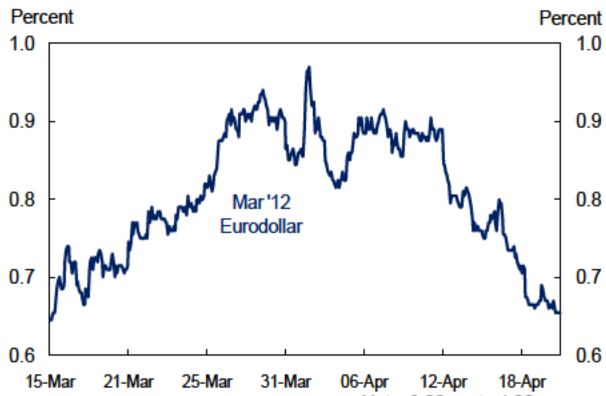
Fed Funds Futures Implied Rates



Source: Federal Reserve Board

Note: Estimated using fed funds and Eurodollar futures.

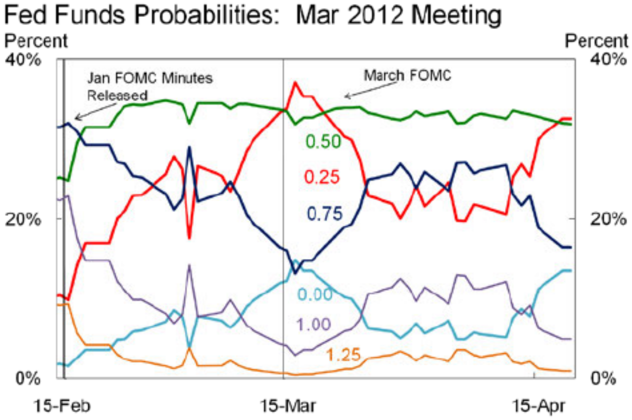
Implied Eurodollar Rates (Intraday)



Source: Bloomberg

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

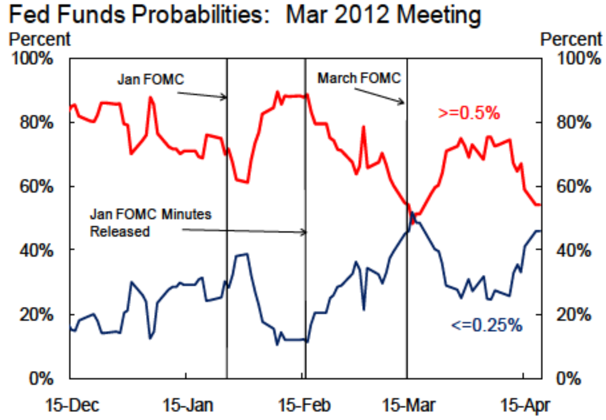
Fed Funds Probabilities: Mar 2012 Meeting



Source: Bloomberg

Note: Estimated from Fed Funds Futures

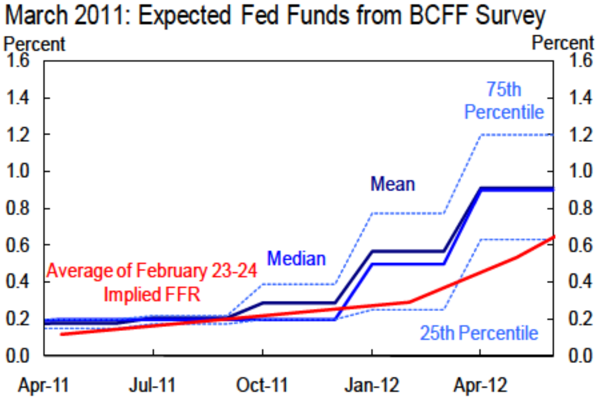
Fed Funds Probabilities: Mar 2012 Meeting



Source: Bloomberg

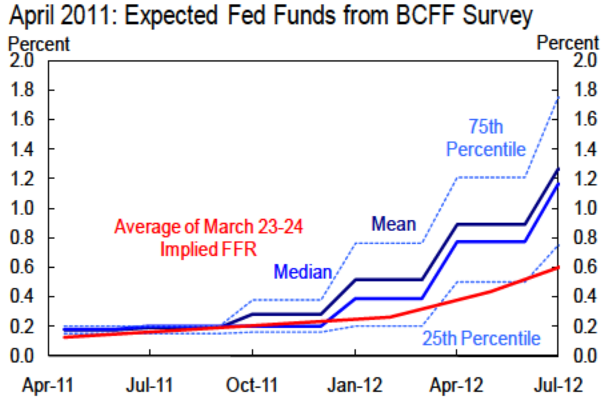
Note: Estimated from Fed Funds Futures

March 2011: Expected Fed Funds from BCFF Survey



Note: Implied FFR are from Fed Funds and Eurodollar futures. The BCFF survey was conducted on February 23-24.

April 2011: Expected Fed Funds from BCFF Survey

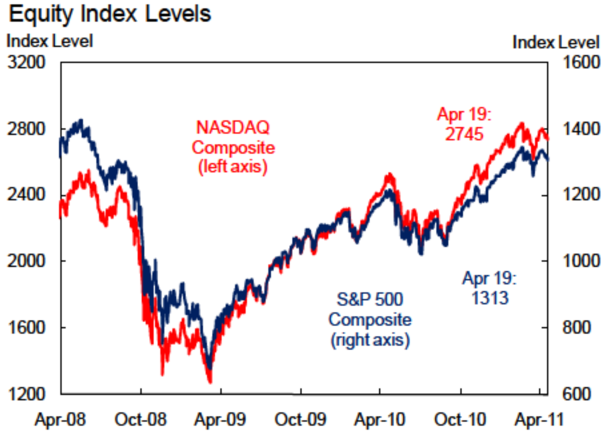


Note: Implied FFR are from Fed Funds and Eurodollar futures. The BCFF survey was conducted on March 23-24.

A. Significant Developments

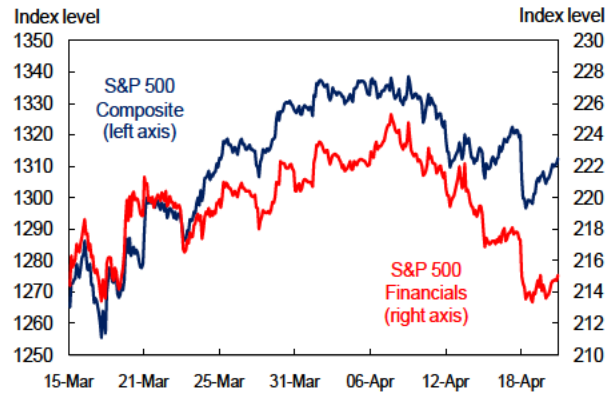
Exhibit A-6:
Equity

Equity Index Levels



Source: Datastream

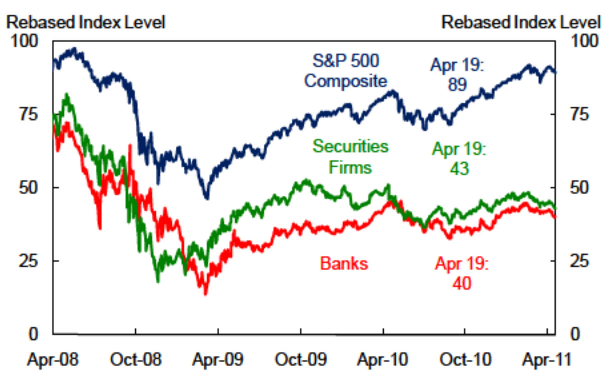
S&P 500 Indices (Intraday)



Source: Bloomberg

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

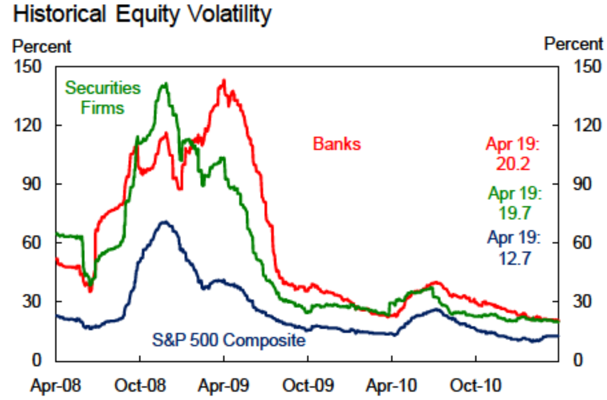
Equity Performance



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

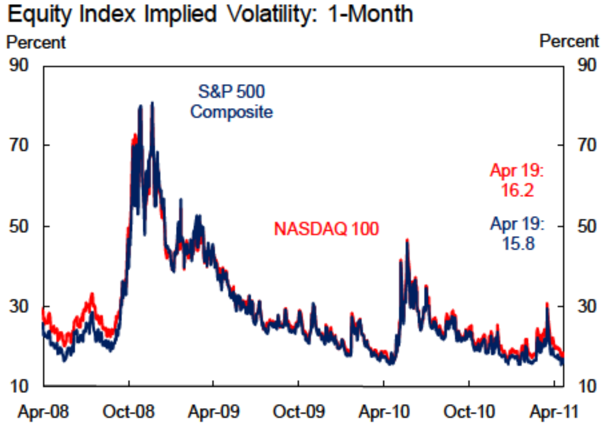
Historical Equity Volatility



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.

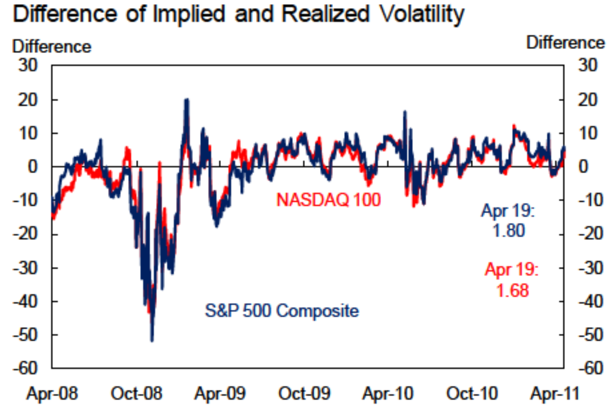
Source: Datastream

Equity Index Implied Volatility: 1-Month



Source: Datastream

Difference of Implied and Realized Volatility



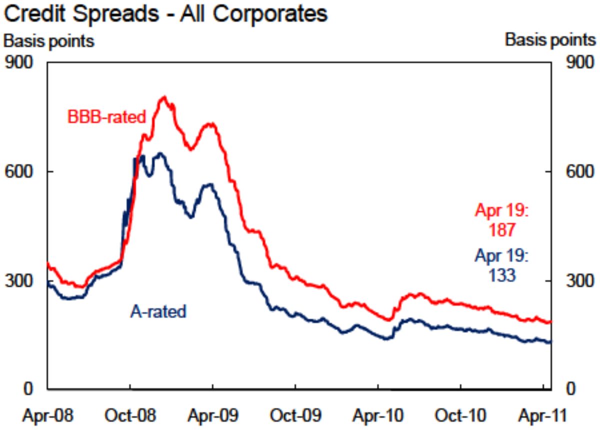
Source: Datastream

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

A. Significant Developments

Exhibit A-7:
Credit

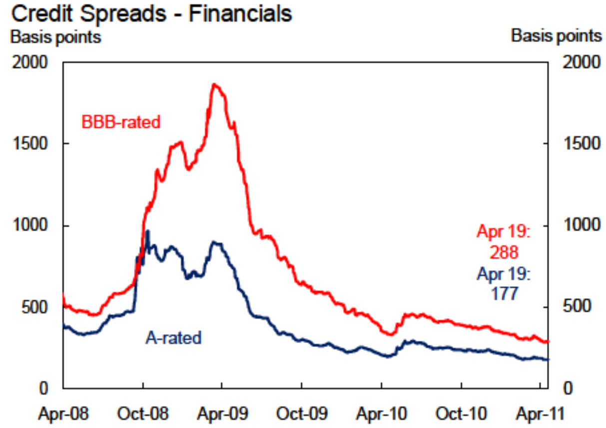
Credit Spreads - All Corporates



Source: Merrill Lynch

Note: Option-adjusted spreads.

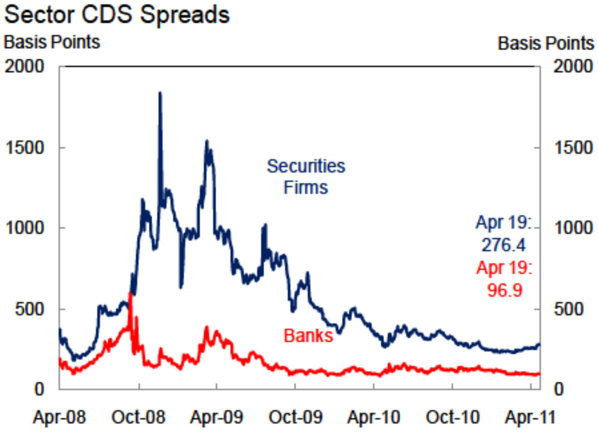
Credit Spreads - Financials



Source: Merrill Lynch

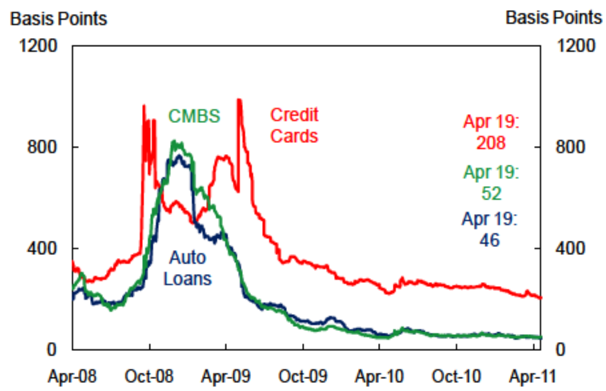
Note: Option-adjusted spreads.

Sector CDS Spreads



Source: CMA

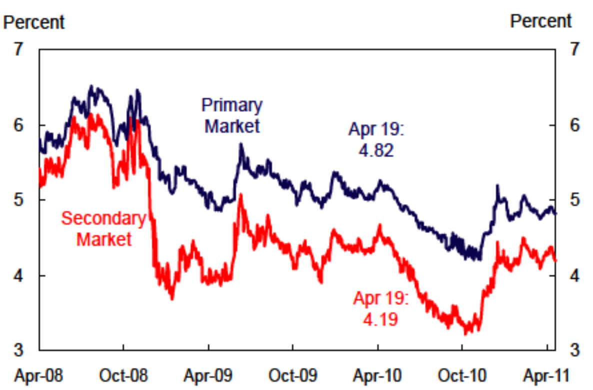
AAA-Rated ABS/CMBS Spreads



Source: Merrill Lynch

Note: Option-adjusted spreads.

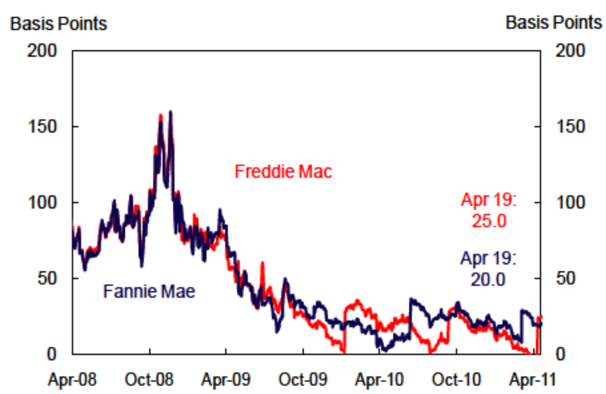
Mortgage Market Rates



Source: Bloomberg

Note: 30-year fixed mortgage rate and Fannie Mae current coupon yield.

5-Year Agency Debt Spreads

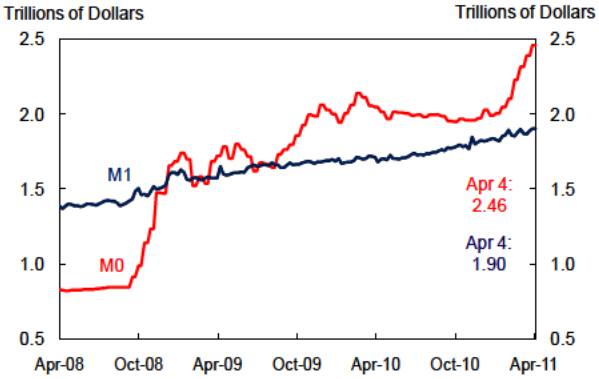


Source: Bloomberg

A. Significant Developments

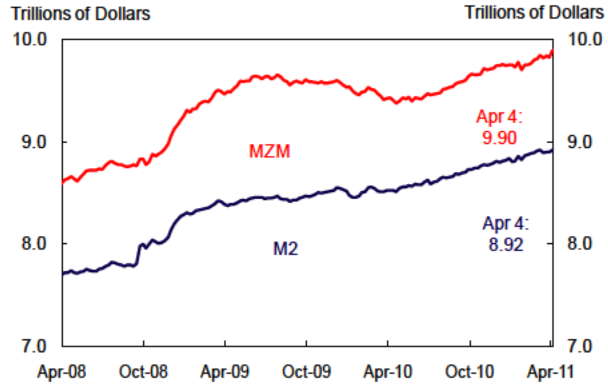
Exhibit A-8:
Money and Banking

Measures of Money Supply: M0, M1



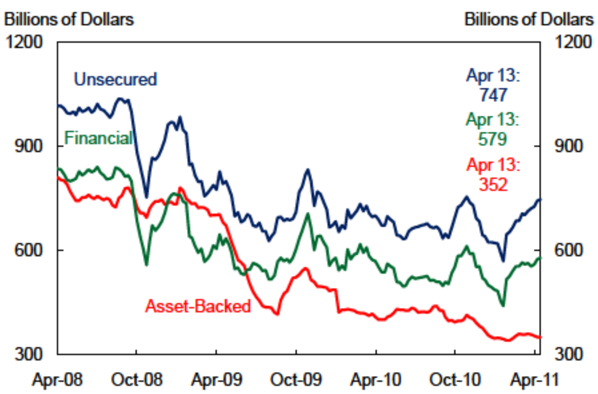
Source: Federal Reserve Board, Haver

Measures of Money Supply: M2, MZM



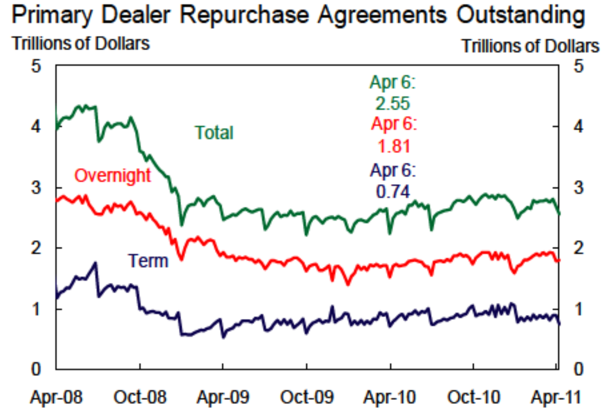
Source: Federal Reserve Board, Haver

Commercial Paper Outstanding



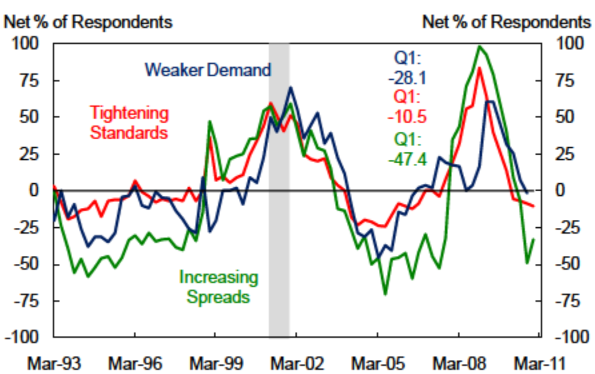
Source: Federal Reserve Board

Primary Dealer Repurchase Agreements Outstanding



Source: Federal Reserve Board

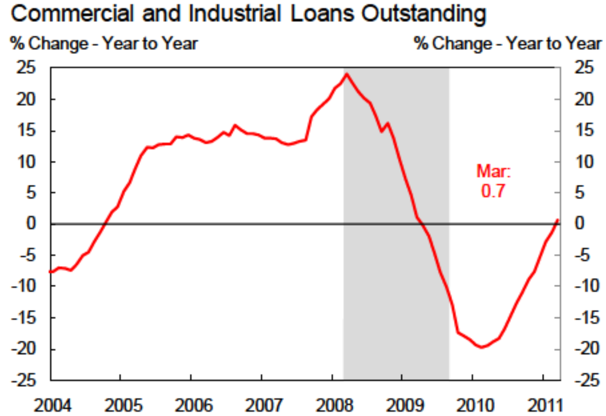
Bank Lending Practices



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

Source: Federal Reserve Board

Commercial and Industrial Loans Outstanding

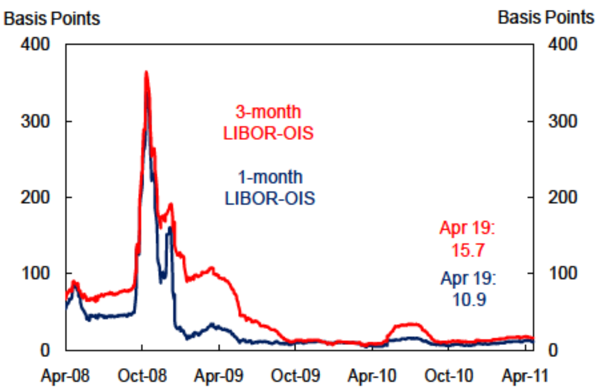


Source: Federal Reserve Board

A. Significant Developments

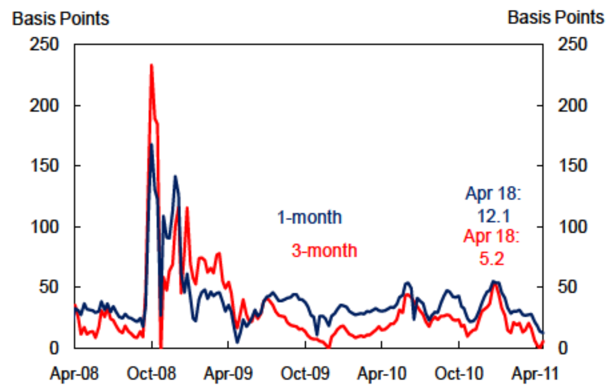
Exhibit A-9:
Money Markets

Libor to OIS



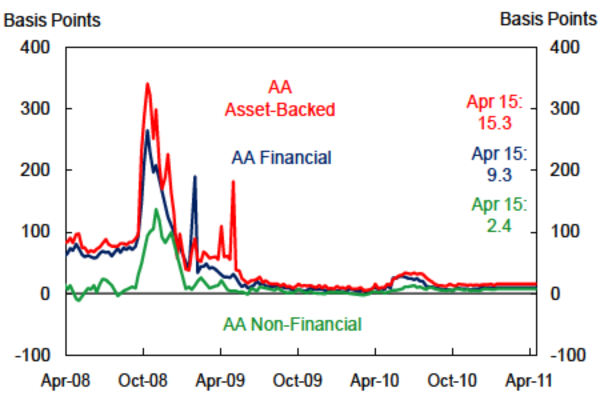
Source: Federal Reserve Board, Bloomberg

Euro-Dollar Swap Implied Basis Spreads



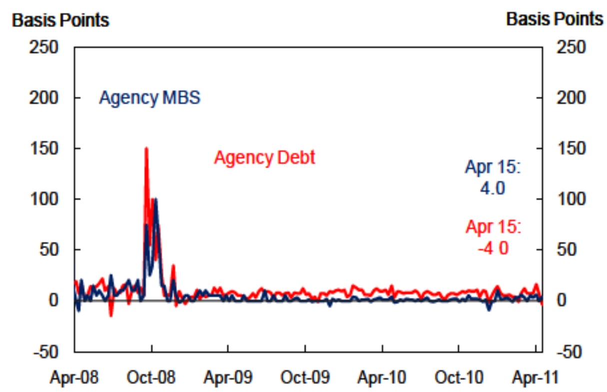
Source: Reuters, Tullett

3-Month CP Rates over OIS



Source: Federal Reserve Board, Haver, Bloomberg

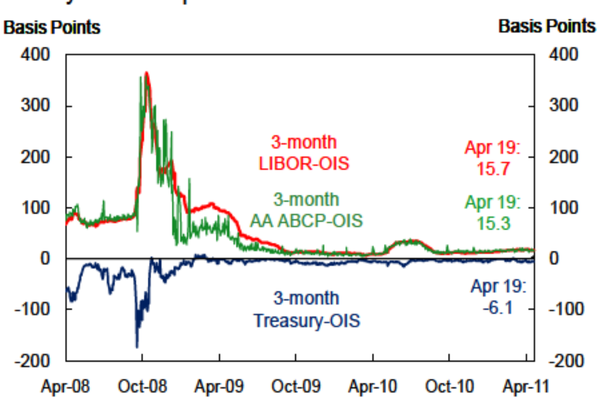
Overnight Financing Spreads



Source: Bloomberg

Note: Spreads are between overnight agency debt and MBS and Treasury general collateral repo rates.

Money Market Spreads

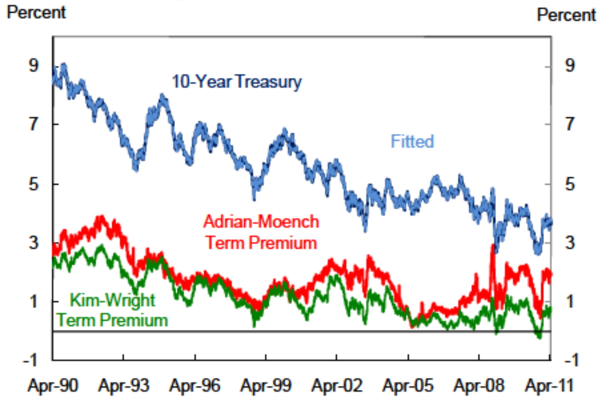


Source: Federal Reserve Board, Bloomberg

A. Significant Developments

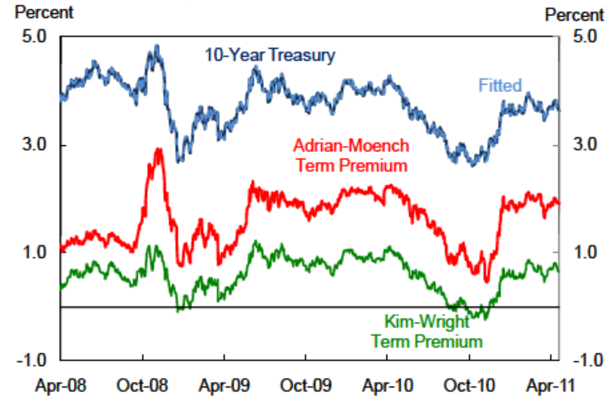
Exhibit A-10:
Estimates of Term Premia in Treasury Yields

10-Year Treasury and Term Premia



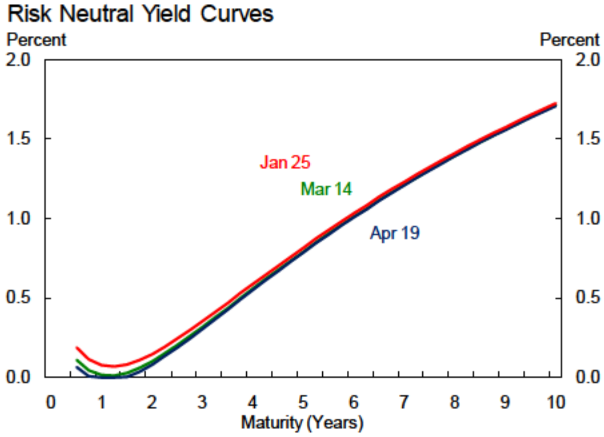
Source: FRBNY calculations, Federal Reserve Board

10-Year Treasury and Term Premia



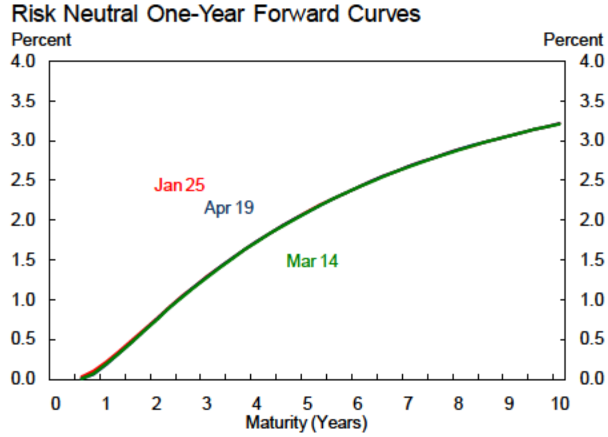
Source: FRBNY calculations, Federal Reserve Board

Risk Neutral Yield Curves



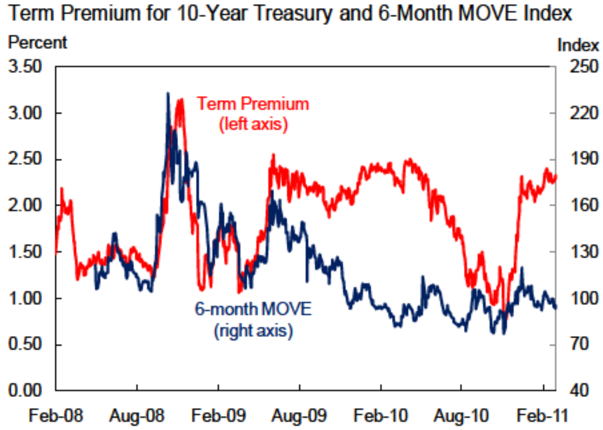
Source: FRBNY calculations (Adrian-Moench)

Risk Neutral One-Year Forward Curves



Source: FRBNY calculations (Adrian-Moench)

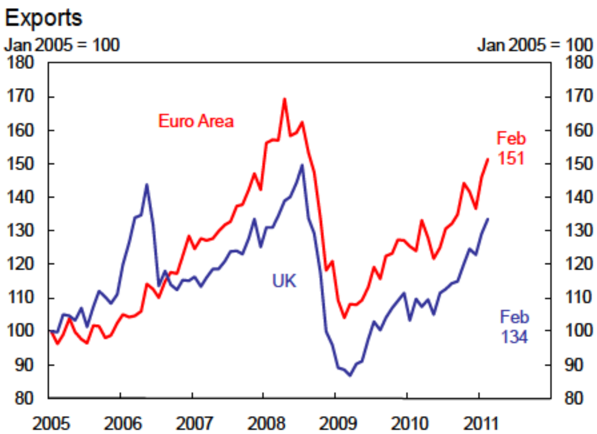
Term Premium for 10-Year Treasury and 6-Month MOVE Index



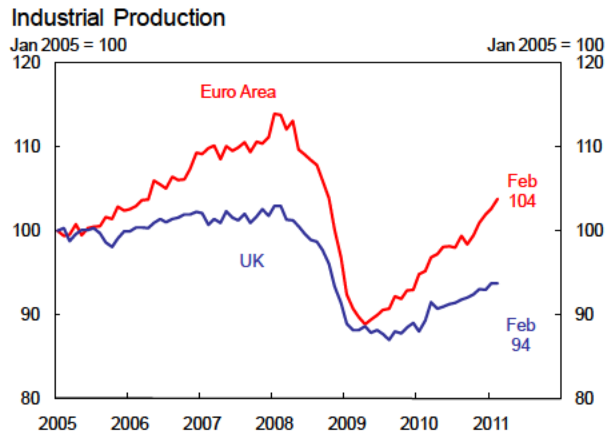
Source: FRBNY calculations, Haver, Merrill Lynch

A. Significant Developments

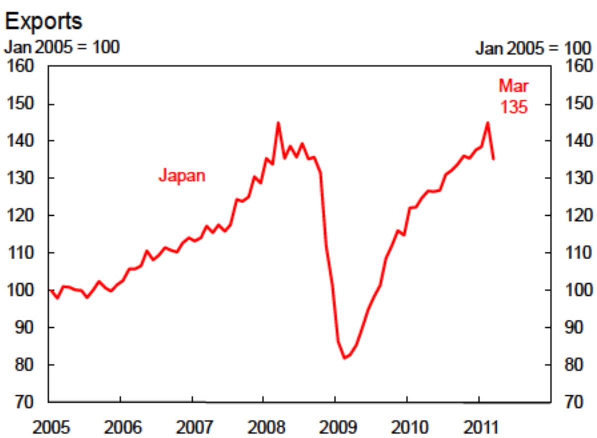
Exhibit A-11: Exports and Industrial Production



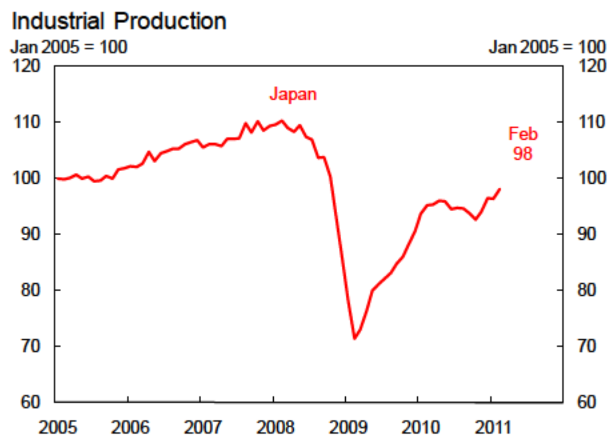
Source: Haver | Note: In Dollar Terms



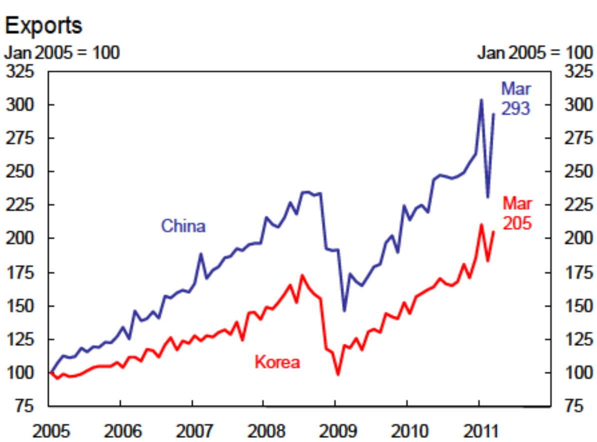
Source: Haver



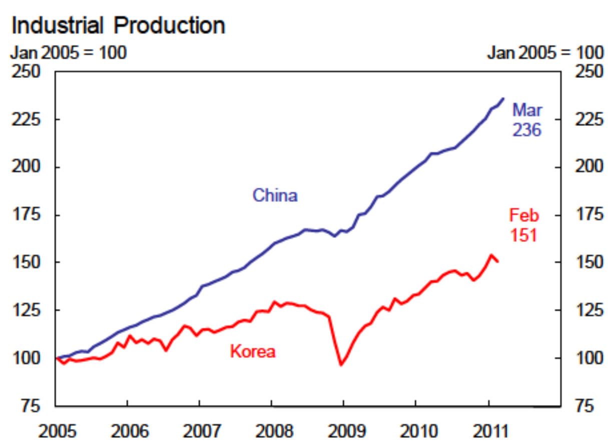
Source: Haver | Note: In Dollar Terms



Source: Haver



Source: Haver | Note: In Dollar Terms

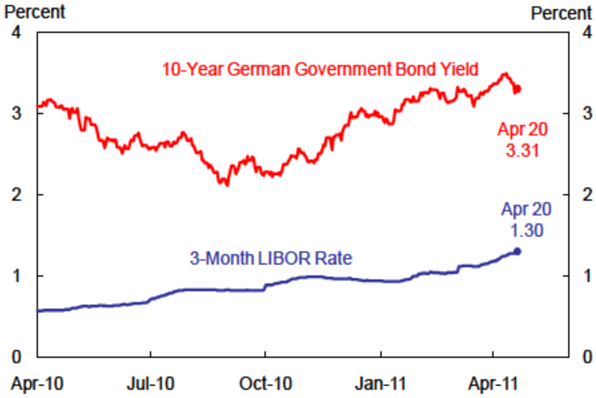


Source: Haver

A. Significant Developments

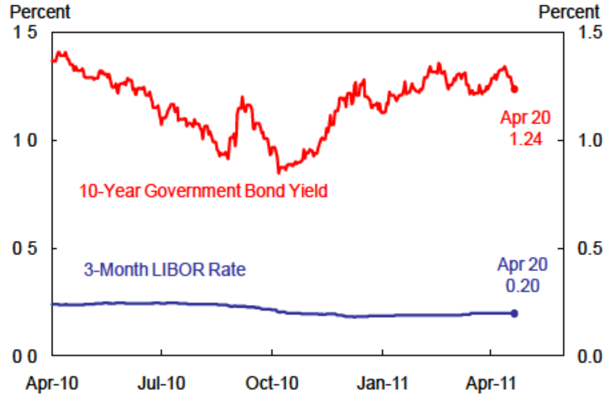
Exhibit A-12:
Global Interest Rates and Equity Markets

Euro Area Short- and Long-Term Interest Rates



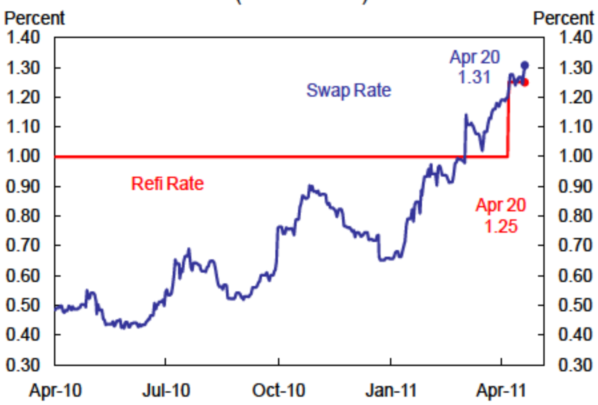
Source: Bloomberg

Japan Short- and Long-Term Interest Rates



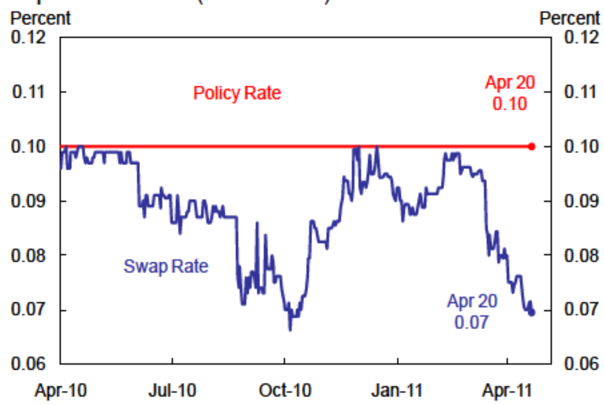
Source: Bloomberg

Euro Area: OIS Rate (Six Months)



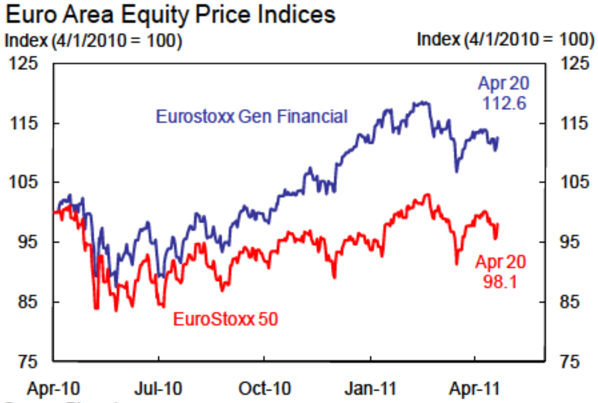
Source: Bloomberg

Japan: OIS Rate (Six Months)



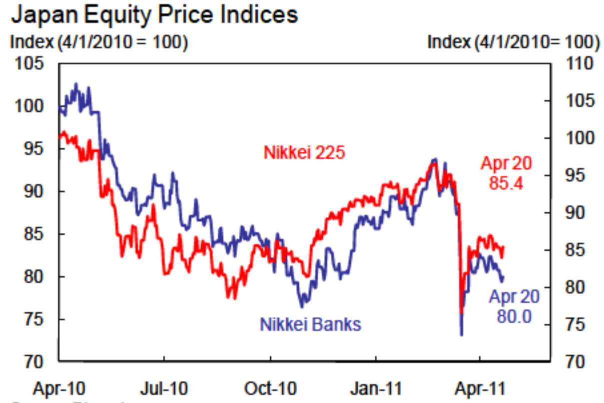
Source: Bloomberg

Euro Area Equity Price Indices



Source: Bloomberg

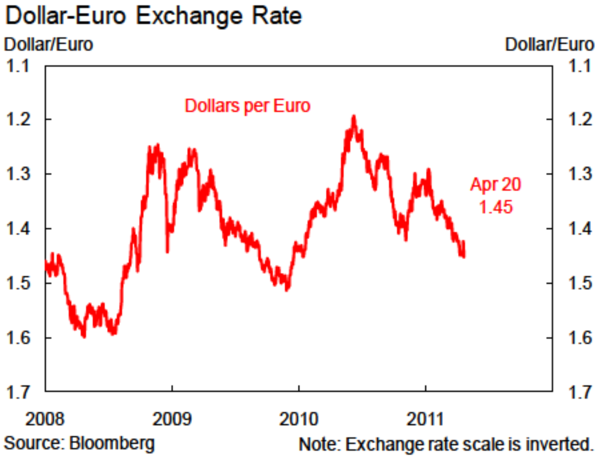
Japan Equity Price Indices

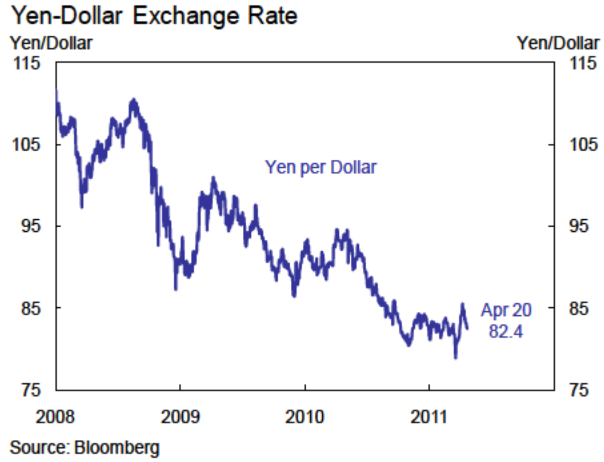


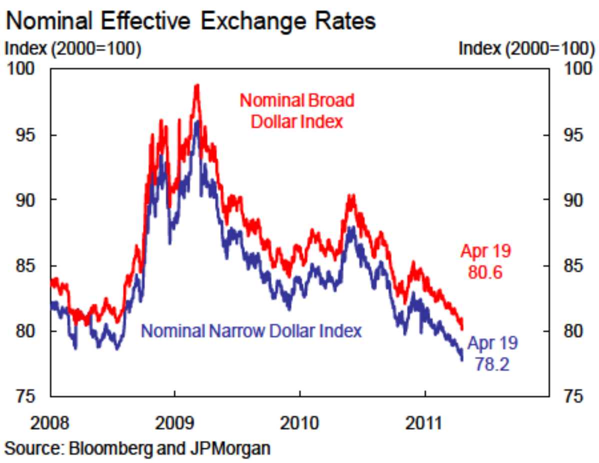
Source: Bloomberg

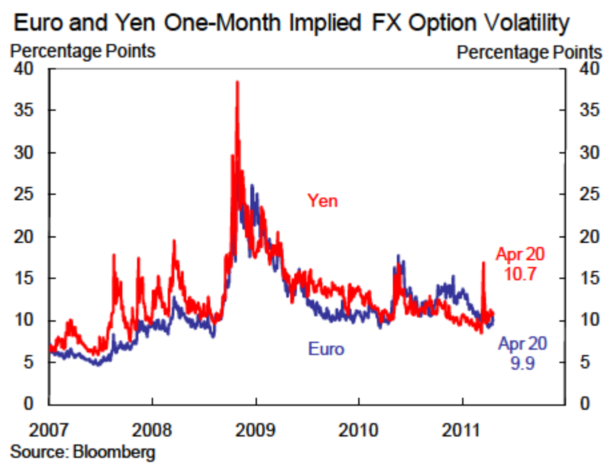
A. Significant Developments

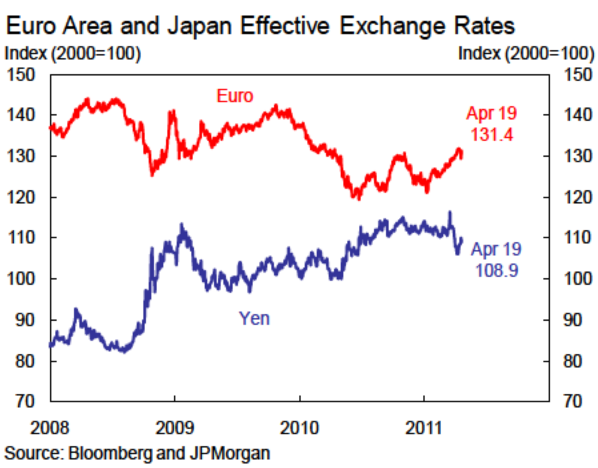
Exhibit A-13:
Exchange Rates

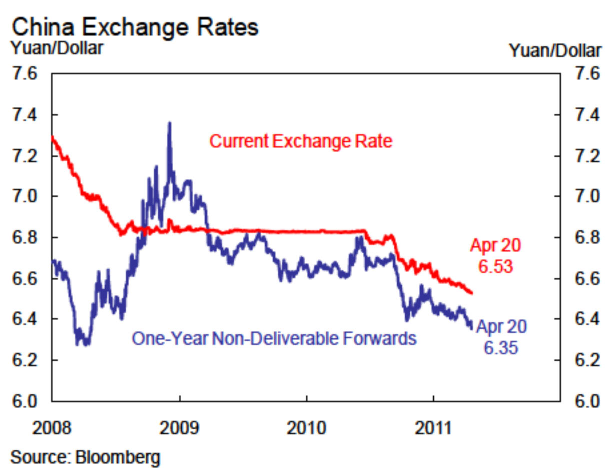












B. FRBNY Forecast Details

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

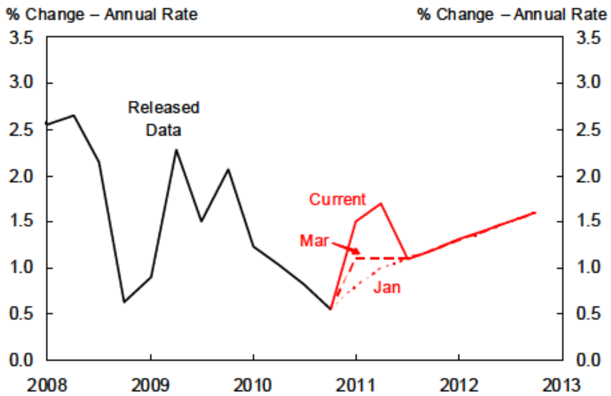
	Core PCE Inflation			Real GDP Growth			Unemployment Rate*			Fed Funds Rate**		
	Jan	Mar	Apr	Jan	Mar	Apr	Jan	Mar	Apr	Jan	Mar	Apr
2010												
Q1	*1.2*	*1.2*	*1.2*	*3.7*	*3.7*	*3.7*	*9.7*	*9.7*	*9.7*	*0-0.25*	*0-0.25*	*0-0.25*
Q2	1.0	*1.0*	*1.0*	1.7	*1.7*	*1.7*	9.6	*9.6*	*9.6*	*0-0.25*	*0-0.25*	*0-0.25*
Q3	0.5	*0.5*	*0.5*	2.6	*2.6*	*2.6*	9.6	*9.6*	*9.6*	*0-0.25*	*0-0.25*	*0-0.25*
Q4	0.3	0.5	*0.4*	4.0	2.8	*3.1*	9.6	*9.6*	*9.6*	0-0.25	0-0.25	*0-0.25*
2011												
Q1	0.8	1.1	1.5	3.6	3.3	2.1	9.3	9.0	*8.9*	0-0.25	0-0.25	0-0.25
Q2	1.0	1.1	1.7	3.6	3.2	3.6	9.1	8.7	8.7	0-0.25	0-0.25	0-0.25
Q3	1.1	1.1	1.1	3.1	2.3	3.6	8.9	8.5	8.5	0-0.25	0-0.25	0-0.25
Q4	1.2	1.2	1.2	5.9	6.6	5.4	8.6	8.3	8.1	0-0.25	0-0.25	0-0.25
2012												
Q1	1.3	1.3	1.3	4.1	3.7	3.6	8.3	8.0	7.8	0-0.25	0-0.25	0-0.25
Q2	1.4	1.4	1.4	3.5	3.4	4.1	8.1	7.8	7.6	0-0.25	0-0.25	0-0.25
Q3	1.5	1.5	1.5	3.0	2.8	3.9	7.7	7.6	7.4	0.25	0.25	0.25
Q4	1.6	1.6	1.6	5.6	6.0	4.1	7.4	7.3	7.1	0.5	0.5	0.5
Q4/Q4												
2009	*1.7*	*1.7*	*1.7*	*0.2*	*0.2*	*0.2*	*3.1*	*3.1*	*3.1*	*0.0*	*0.0*	*0.0*
2010	0.8	0.8	*0.8*	3.0	2.7	*2.8*	-0.3	-0.3	*-0.3*	0.0	0.0	*0.0*
2011	1.0	1.1	1.4	4.0	3.8	3.7	-1.0	-1.3	-1.8	0.0	0.0	0.0
2012	1.5	1.5	1.5	4.1	4.0	3.9	-1.2	-1.0	-1.3	0.5	0.5	0.5

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.

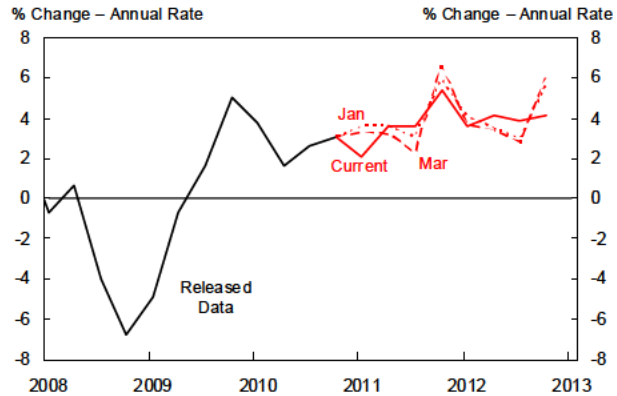
B. FRBNY Forecast Details

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

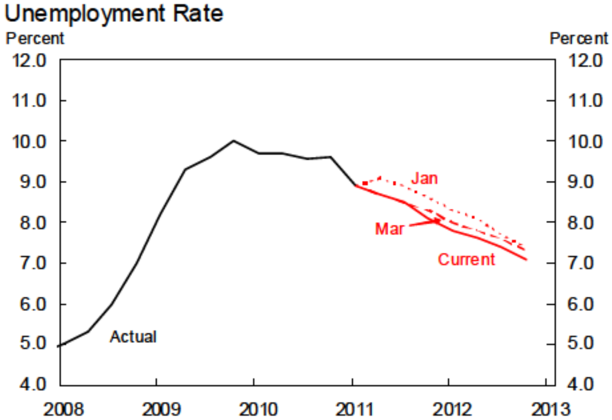
Core PCE Inflation



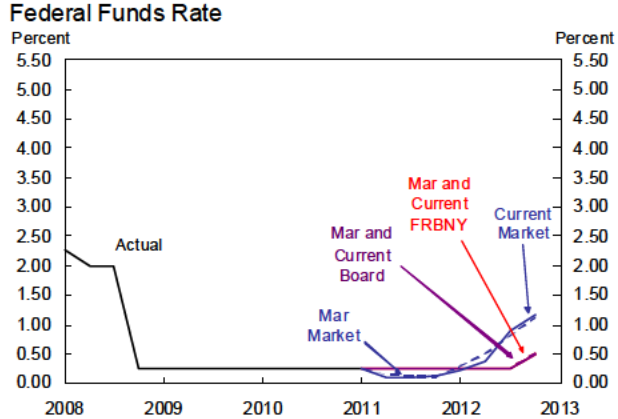
Real GDP Growth



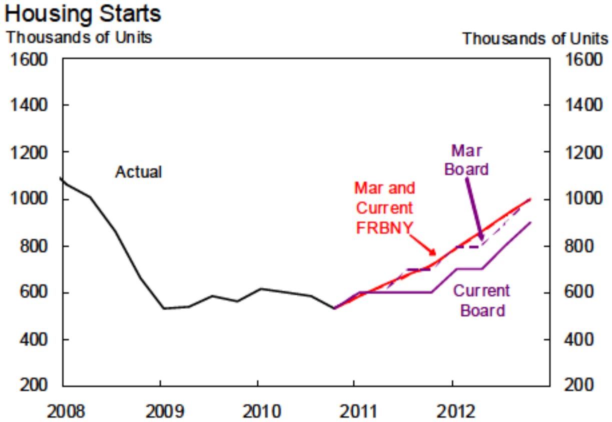
Unemployment Rate



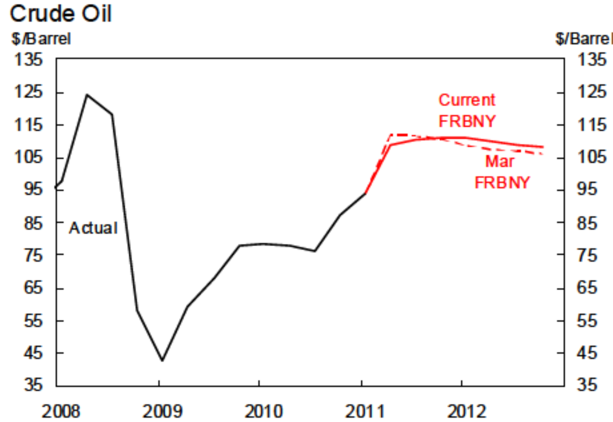
Federal Funds Rate



Housing Starts



Crude Oil



Source: MMS and IR Functions (FRBNY) and Federal Reserve Board
Note: Jan Oil Forecast is for WTI; Current Oil Forecast is for Brent

B. FRBNY Forecast Details

Exhibit B-3: Near-Term Projections

	Quarterly Growth Rates (AR)		Quarterly Growth Contributions (AR)	
	2011Q1	2011Q2	2011Q1	2011Q2
OUTPUT				
Real GDP	2.1	3.6	2.1	3.6
	(3.3)	(3.2)	(3.3)	(3.2)
Final Sales to Domestic Purchasers	0.9	3.1	0.9	3.1
	(1.8)	(3.1)	(1.8)	(3.1)
Consumption	2.2	3.2	1.6	2.2
	(2.7)	(3.2)	(1.9)	(2.2)
BFI: Equipment and Software	8.0	8.0	0.6	0.6
	(8.0)	(8.0)	(0.6)	(0.6)
BFI: Nonresidential Structures	-12.0	2.0	-0.3	0.1
	(-8.0)	(2.0)	(-0.2)	(0.1)
Residential Investment	-1.9	5.1	0.0	0.1
	(8.0)	(5.0)	(0.2)	(0.1)
Government: Federal	-3.7	3.2	-0.3	0.3
	(-3.7)	(3.2)	(-0.3)	(0.3)
Government: State and Local	-4.0	-0.6	-0.5	-0.1
	(-2.2)	(-0.6)	(-0.3)	(-0.1)
Inventory Investment	--	--	1.0	0.2
	--	--	(0.9)	(0.2)
Net Exports	--	--	0.2	0.2
	--	--	(0.5)	(-0.2)
INFLATION				
Total PCE Deflator	3.9	4.4		
	(3.0)	(2.5)		
Core PCE Deflator	1.5	1.7		
	(1.1)	(1.1)		
PRODUCTIVITY AND LABOR COSTS*				
Output per Hour	0.8	2.1		
	(4.0)	(2.0)		
Compensation per Hour	1.8	2.7		
	(2.0)	(2.2)		
Unit Labor Costs	1.0	0.6		
	(-2.0)	(0.2)		

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		
	2010	2011	2012	2010	2011	2012
OUTPUT						
Real GDP	2.8	3.7	3.9	2.8	3.7	3.9
	(2.7)	(3.8)	(4.0)	(2.7)	(3.8)	(4.0)
Final Sales to Domestic Purchasers	2.9	2.6	3.2	3.0	2.7	3.3
	(2.8)	(2.8)	(3.2)	(2.9)	(2.9)	(3.3)
Consumption	2.6	2.8	3.1	1.9	2.0	2.2
	(2.6)	(2.9)	(3.1)	(1.9)	(2.0)	(2.2)
BFI: Equipment and Software	16.9	10.2	8.0	1.1	0.7	0.6
	(16.3)	(10.2)	(8.0)	(1.1)	(0.7)	(0.6)
BFI: Nonresidential Structures	-4.0	-0.3	8.0	-0.1	0.0	0.2
	(-4.7)	(0.9)	(8.0)	(-0.1)	(0.0)	(0.2)
Residential Investment	-4.6	6.3	13.7	-0.1	0.1	0.3
	(-4.7)	(6.5)	(13.7)	(-0.1)	(0.1)	(0.3)
Government: Federal	4.8	0.4	-0.7	0.4	0.0	-0.1
	(4.8)	(0.4)	(-0.7)	(0.4)	(0.0)	(-0.1)
Government: State and Local	-1.3	-1.1	0.9	-0.2	-0.1	0.1
	(-1.2)	(-0.6)	(0.9)	(-0.2)	(-0.1)	(0.1)
Inventory Investment	--	--	--	0.4	0.5	0.0
	--	--	--	(0.3)	(0.6)	(0.1)
Net Exports	--	--	--	-0.6	0.5	0.6
	--	--	--	(-0.5)	(0.4)	(0.6)
INFLATION						
Total PCE Deflator	1.1	3.1	1.6			
	(1.2)	(2.3)	(1.5)			
Core PCE Deflator	0.8	1.4	1.5			
	(0.8)	(1.1)	(1.5)			
Total CPI Inflation	1.2	3.5	2.1			
	(1.2)	(2.6)	(2.1)			
Core CPI Inflation	0.6	1.7	1.8			
	(0.6)	(1.5)	(1.8)			
GDP Deflator	1.3	2.4	1.6			
	(1.4)	(1.9)	(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		
	2010	2011	2012
INTEREST RATE ASSUMPTIONS			
Federal Funds Rate (End-of-Year)	0-0.25	0-0.25	0.5
	0-0.25	0-0.25	(0.5)
10-Year Treasury Yield (Avg. Q4 Level)	2.9	3.9	4.5
	(2.9)	(3.9)	(4.5)
PRODUCTIVITY AND LABOR COSTS*			
Output	3.6	4.8	5.2
	(3.6)	(5.0)	(5.3)
Hours	1.6	3.1	3.5
	(1.6)	(2.6)	(3.5)
Output per Hour	1.9	1.8	1.7
	(1.9)	(2.4)	(1.7)
Compensation per Hour	1.8	2.7	3.7
	(1.8)	(2.2)	(2.7)
Unit Labor Costs	-0.2	0.9	1.9
	(-0.1)	(-0.1)	(1.0)
LABOR MARKET			
Unemployment Rate (Avg. Q4 Level)	9.6	8.1	7.1
	(9.6)	(8.3)	(7.3)
Participation Rate (Avg. Q4 Level)	64.4	64.3	64.9
	(64.4)	(64.7)	(65.2)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	59	254	337
	(58)	(277)	(328)
INCOME			
Personal Income	4.0	6.9	4.4
	(3.9)	(6.4)	(4.9)
Real Disposable Personal Income	2.4	3.1	2.4
	(2.3)	(3.4)	(3.0)
Personal Saving Rate	5.6	6.1	5.5
	(5.4)	(6.1)	(6.1)
Corporate Profits Before Taxes	18.3	3.4	4.6
	(7.0)	(4.8)	(4.8)

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

B. FRBNY Forecast Details

Exhibit B-6: FRBNY and Tealbook Forecast Comparison

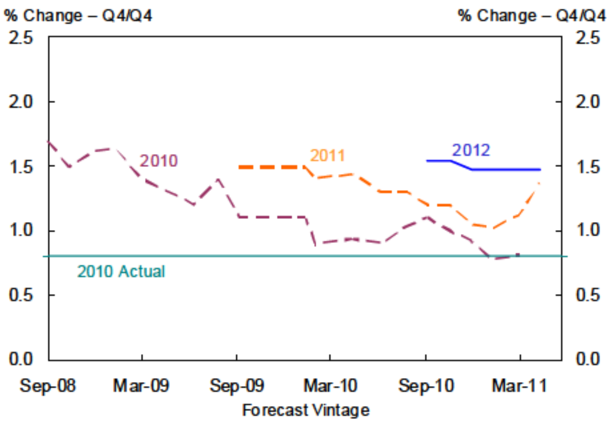
	FRBNY (Q4/Q4)			Board (Q4/Q4)		
	2010	2011	2012	2010	2011	2012
OUTPUT						
Real GDP	2.8	3.7	3.9	2.8	3.2	4.2
	(2.7)	(3.8)	(4.0)	(2.8)	(3.7)	(4.4)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	3.0	2.7	3.3	3.0	2.6	3.5
	(2.9)	(2.9)	(3.3)	(3.0)	(3.3)	(3.8)
Consumption	1.9	2.0	2.2	1.9	2.1	2.6
	(1.9)	(2.0)	(2.2)	(1.9)	(2.3)	(2.8)
BFI	1.0	0.7	0.8	1.0	0.7	0.7
	(0.9)	(0.8)	(0.8)	(1.0)	(0.9)	(0.7)
Residential Investment	-0.1	0.1	0.3	-0.1	0.0	0.2
	(-0.1)	(0.1)	(0.3)	(-0.1)	(0.2)	(0.3)
Government	0.2	-0.1	0.0	0.2	-0.2	0.0
	(0.2)	(-0.0)	(0.0)	(0.2)	(-0.1)	(0.0)
Inventory Investment	0.4	0.5	0.0	0.4	0.2	0.3
	(0.3)	(0.6)	(0.1)	(0.4)	(0.2)	(0.3)
Net Exports	-0.6	0.5	0.6	-0.6	0.3	0.4
	(-0.5)	(0.4)	(0.6)	(-0.5)	(0.3)	(0.3)
INFLATION						
Total PCE Deflator	1.1	3.1	1.6	1.2	2.2	1.2
	(1.2)	(2.3)	(1.5)	(1.2)	(1.9)	(1.1)
Core PCE Deflator	0.8	1.4	1.5	0.8	1.4	1.4
	(0.8)	(1.1)	(1.5)	(0.8)	(1.2)	(1.2)
INTREST RATE ASSUMPTION						
Fed Funds Rate (End-of-Year)	0-0.25	0-0.25	0.5	0-0.25	0-0.25	0.5
	0-0.25	0-0.25	(0.5)	0-0.25	0-0.25	(0.5)
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	1.9	1.8	1.7	2.0	1.1	1.8
	(1.9)	(2.4)	(1.7)	(2.0)	(1.4)	(1.7)
Compensation per Hour	1.8	2.7	3.7	1.9	2.2	2.7
	(1.8)	(2.2)	(2.7)	(1.8)	(2.1)	(2.5)
Unit Labor Costs	-0.2	0.9	1.9	-0.2	1.1	0.9
	(-0.1)	(-0.1)	(1.0)	(-0.2)	(0.6)	(0.7)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	9.6	8.1	7.1	9.6	8.7	7.7
	(9.6)	(8.3)	(7.3)	(9.6)	(8.6)	(7.5)
Participation Rate (Avg. Q4 Level)	64.4	64.3	64.9	64.5	64.3	64.4
	(64.4)	(64.7)	(65.2)	(64.5)	(64.3)	(64.4)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	59	254	337	58	200	267
	(58)	(277)	(328)	(58)	(208)	(300.0)
SAVING						
Personal Saving Rate (Avg. Q4 Level)	5.6	6.1	5.5	5.6	5.9	5.5
	(5.4)	(6.1)	(6.1)	(5.4)	(5.8)	(5.2)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	534	720	1000	600	600	800
	(534)	(720)	(1000)	(500)	(700)	(1000)

B. FRBNY Forecast Details

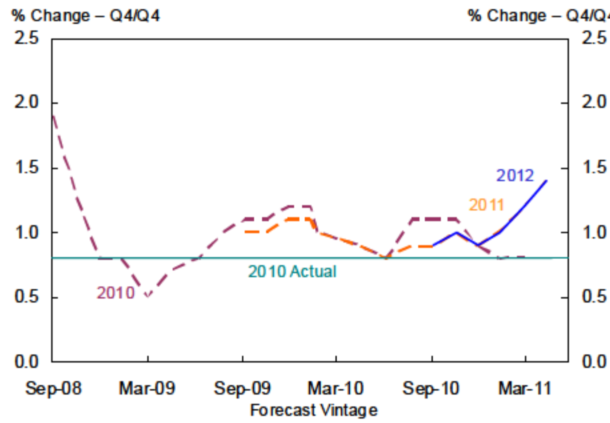
Exhibit B-7: Evolution of FRBNY and Board Forecasts since Mid-2007

FRBNY | **Board**

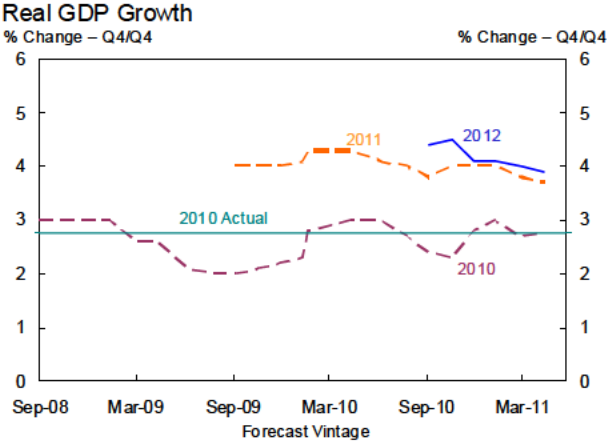
Core PCE Inflation



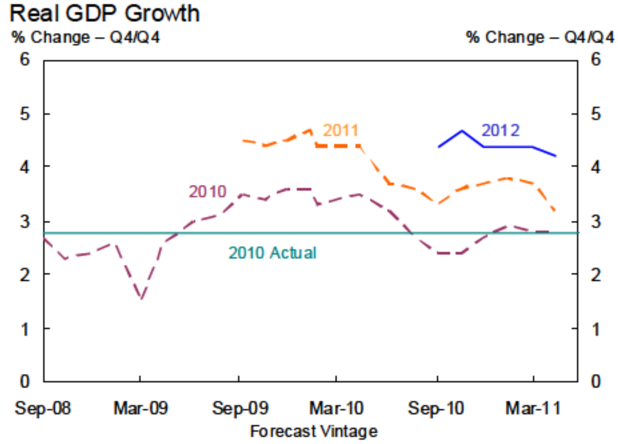
Core PCE Inflation



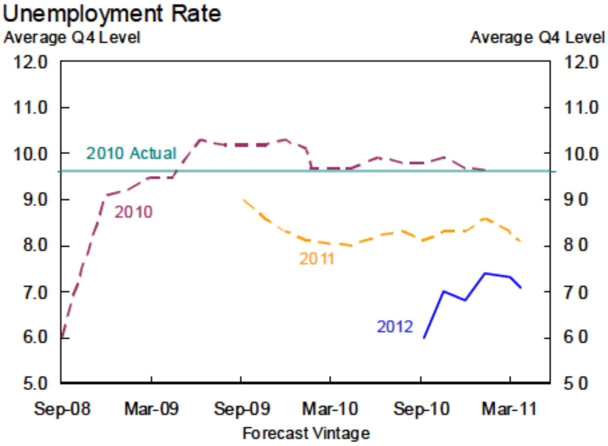
Real GDP Growth



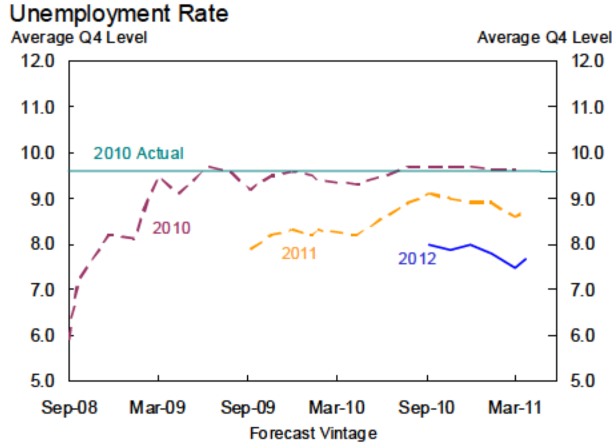
Real GDP Growth



Unemployment Rate



Unemployment Rate



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	2011Q1	2011Q2	2011 Q4/Q4	2012 Q4/Q4
FRBNY	4/20/2011	2.1	3.6	3.7	3.9
		(3.3)	(3.2)	(3.8)	(4.0)
Blue Chip	4/10/2011	2.6	3.2	3.2	3.2
		(3.4)	(3.4)	(3.4)	(3.2)
Median SPF	2/11/2011	3.6	3.5	3.4	--
		(2.4)	(2.7)	(2.8)	--
Macro Advisers	4/19/2011	1.4	3.6	3.3	3.9
		(2.8)	(3.9)	(3.7)	(3.4)

Core PCE Inflation

	Release Date	2011Q1	2011Q2	2011 Q4/Q4	2012 Q4/Q4
FRBNY	4/20/2011	1.5	1.7	1.4	1.5
		(1.1)	(1.1)	(1.1)	(1.5)
Median SPF	2/11/2011	1.0	1.3	1.3	1.6
		(1.1)	(1.1)	(1.2)	(1.6)
Macro Advisers	4/13/2011	1.3	1.2	1.2	1.2
		(1.0)	(1.0)	(1.0)	(1.1)

CPI Inflation

	Release Date	2011Q1	2011Q2	2011 Q4/Q4	2012 Q4/Q4
FRBNY	4/20/2011	5.3	5.1	3.5	2.1
		(4.1)	(2.8)	(2.6)	(2.1)
Blue Chip	4/10/2011	4.7	2.7	2.9	2.2
		(3.4)	(2.0)	(2.4)	(2.2)
Median SPF	2/11/2011	2.5	1.3	1.7	2.0
		(1.6)	(1.3)	(1.6)	(1.9)
Macro Advisers	4/13/2011	5.0	3.7	2.8	1.4
		(4.2)	(2.7)	(2.3)	(1.3)

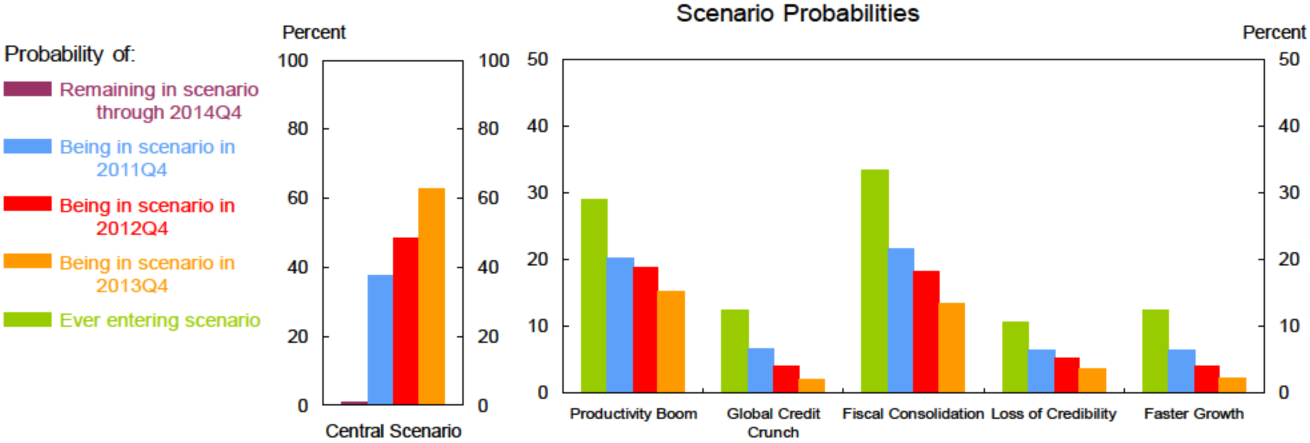
Core CPI Inflation

	Release Date	2011Q1	2011Q2	2011 Q4/Q4	2012 Q4/Q4
FRBNY	4/20/2011	1.7	2.0	1.7	1.8
		(1.4)	(1.4)	(1.5)	(1.8)
Median SPF	2/11/2011	1.0	1.2	1.3	1.7
		(1.1)	(1.3)	(1.3)	(1.7)
Macro Advisers	4/13/2011	1.7	1.8	1.6	1.5
		(1.6)	(1.6)	(1.4)	(1.3)

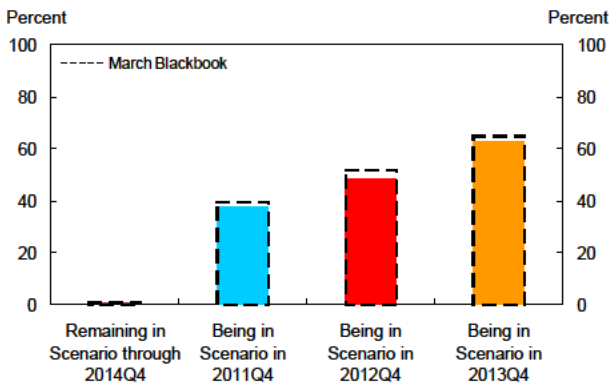
C. FRBNY Forecast Distributions

Exhibit C-1:
Risks

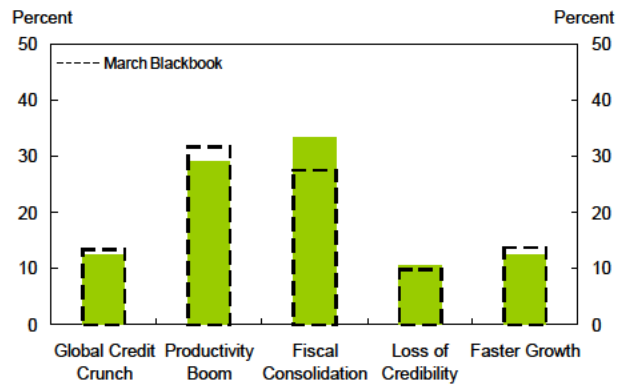
Scenario Probabilities



Change in Central Scenario Probabilities



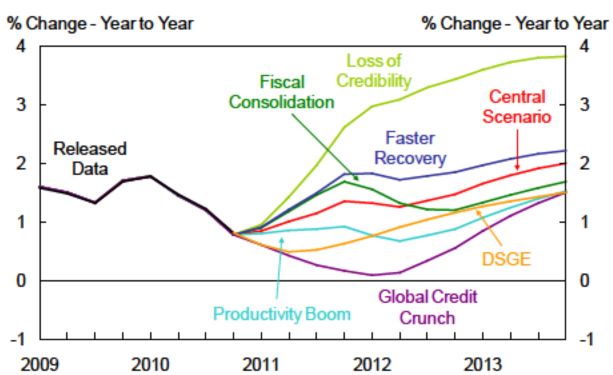
Change in Alternative Scenario Probabilities*



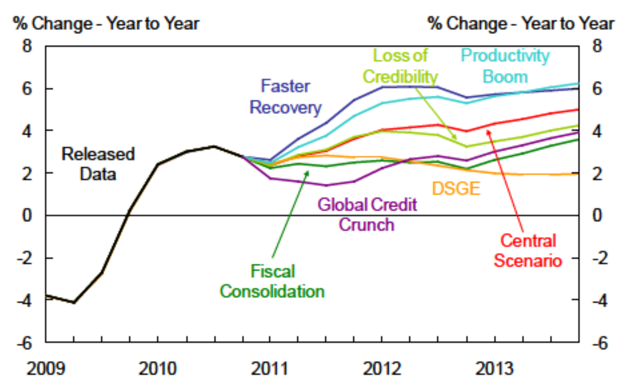
*Probability of ever reaching scenario

Exhibit C-2: Projections under Alternative Scenarios

Core PCE Inflation under Alternative Scenarios



Real GDP Growth under Alternative Scenarios

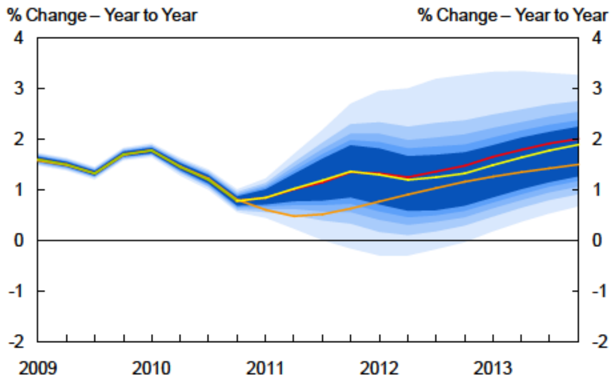


Source: MMS Function (FRBNY)

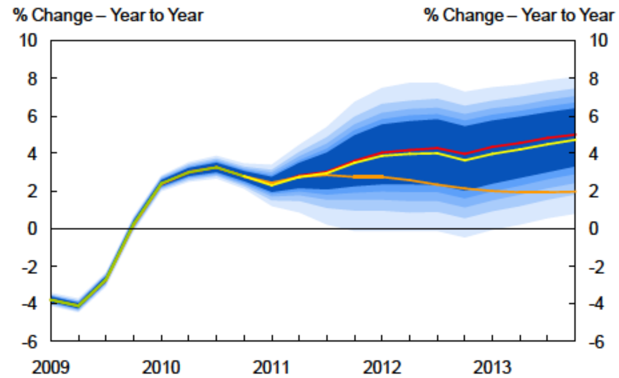
C. FRBNY Forecast Distributions

Exhibit C-3: Inflation and Output Forecast Distributions

Core PCE Inflation Forecast Distribution

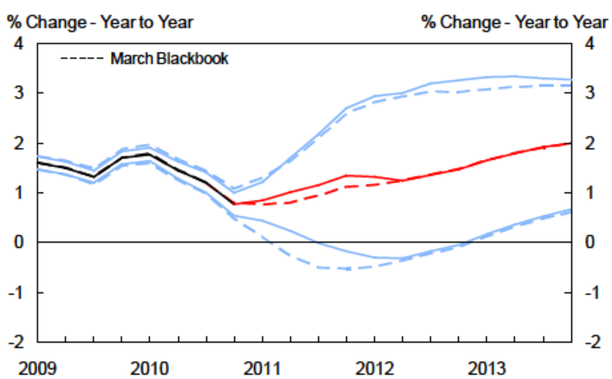


Real GDP Growth Forecast Distribution

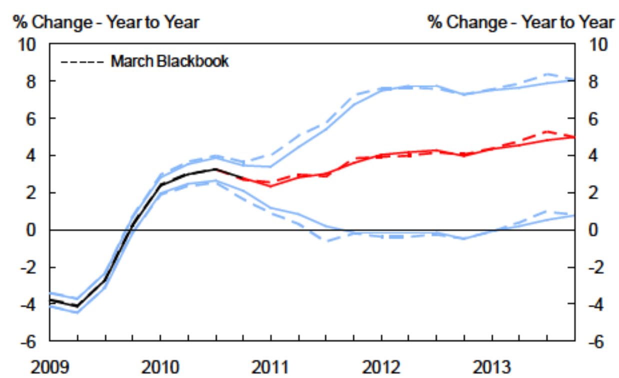


The yellow line represents the expected value of the forecast distribution, the red line represents the FRBNY central projection, the orange line represents the DSGE forecast, and the green line represents released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter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

Change in Core PCE Inflation Forecast Distribution

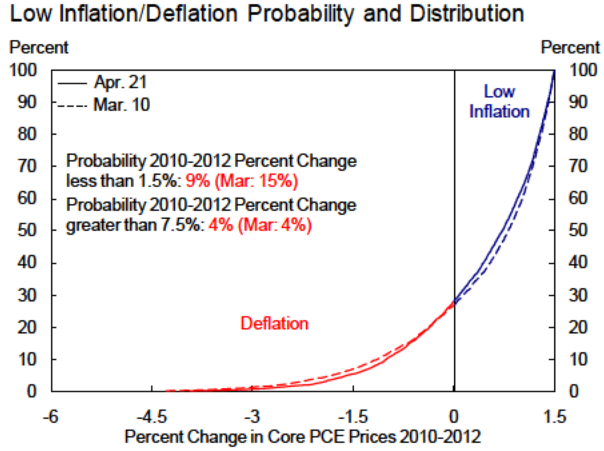


Change in Real GDP Growth Forecast Distribution

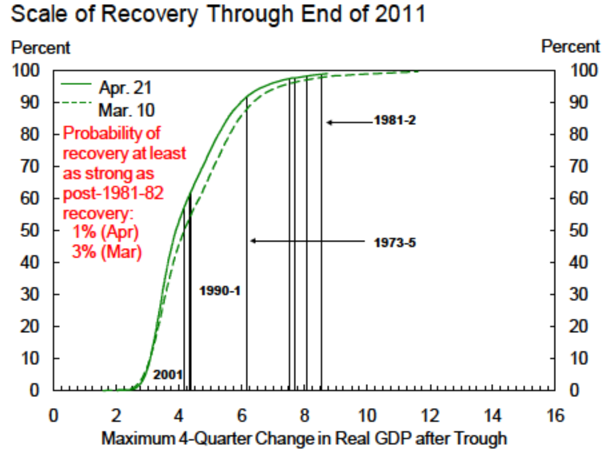


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from the previous Blackbook.

Low Inflation/Deflation Probability and Distribution



Scale of Recovery Through End of 2011

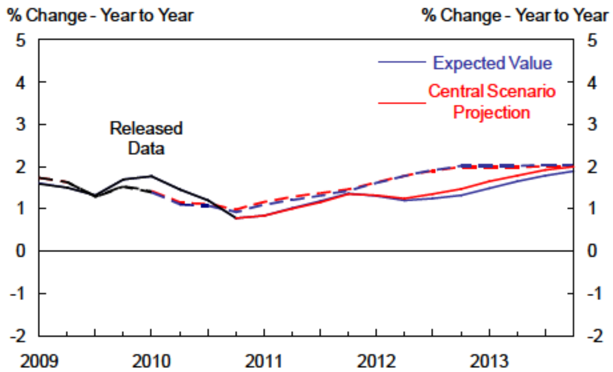


Source: MMS Function (FRBNY)

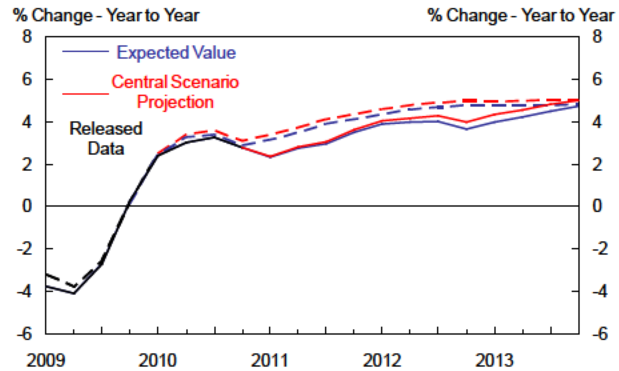
C. FRBNY Forecast Distributions

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

One-Year Comparison of Core PCE Inflation Forecast

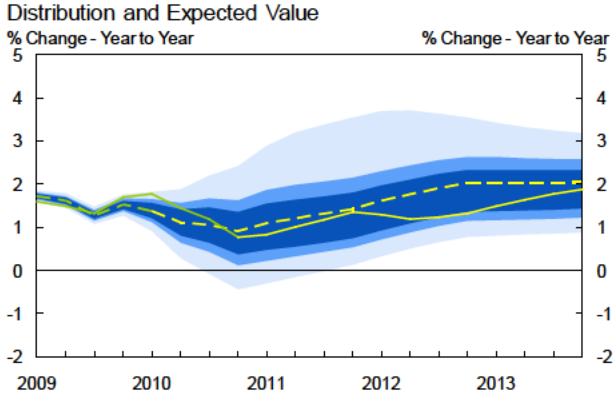


One-Year Comparison of Real GDP Growth Forecast

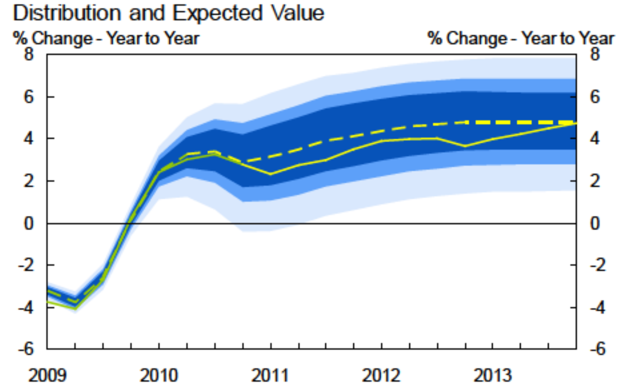


The solid lines represent the current central scenario projection and expected value, while the dashed lines represent those from the year-ago Blackbook.

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



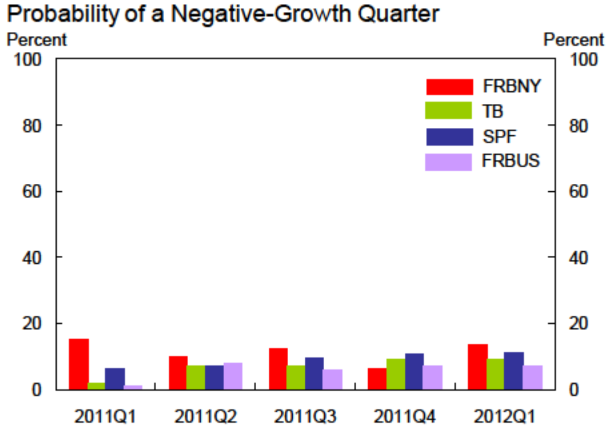
One-Year Comparison of Real GDP Growth Forecast Distribution and Expected Value



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

Exhibit C-5: Probability of a Negative Growth Quarter

Probability of a Negative-Growth Quarter

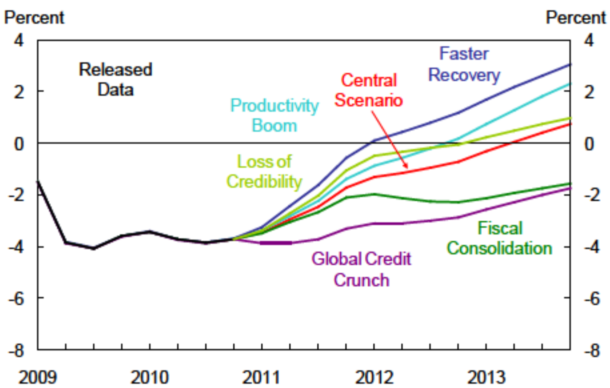


Source: MMS Function (FRBNY)

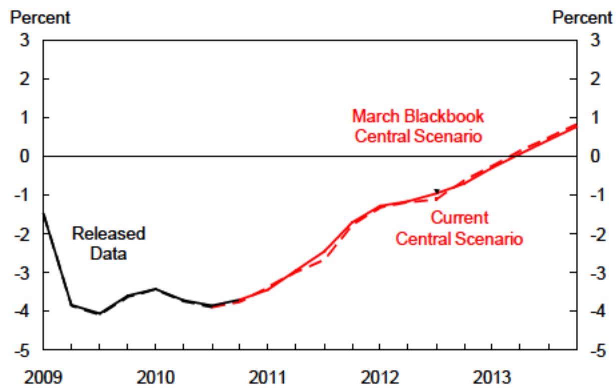
D. FRBNY Fed Funds Rate Projections

Exhibit D-1: *Baseline*
Policy Rule Analysis

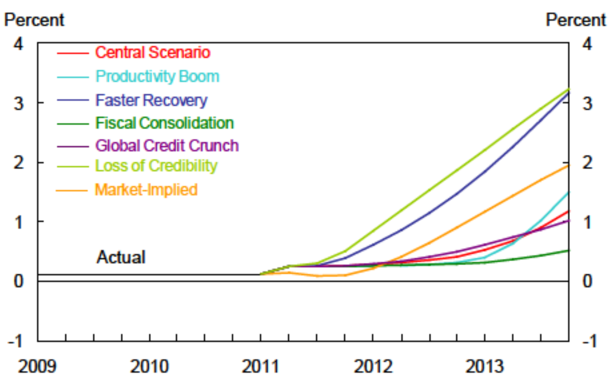
Real FFR under Alternative Scenarios



Change in Central Scenario Real FFR



Nominal FFR under Alternative Scenarios



Change in Central Scenario and Market-Implied Nominal FFR

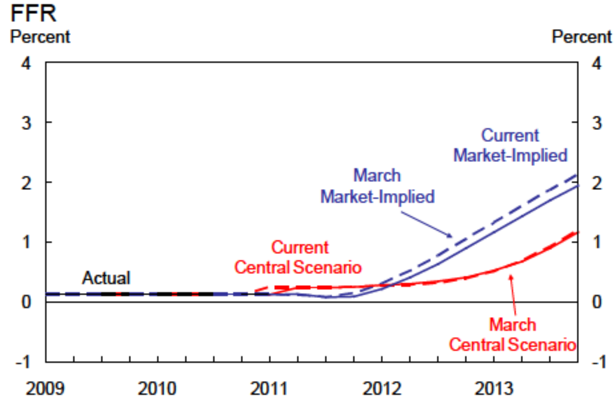
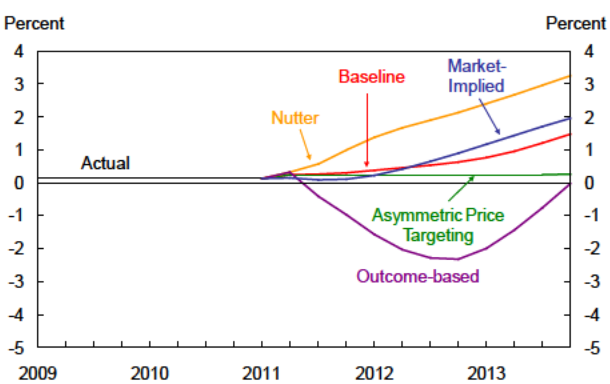


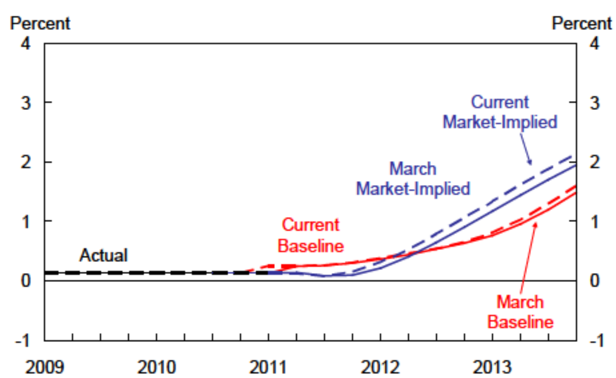
Exhibit D-2: Alternative Policy Rules under
Expected Value of Forecast Distribution

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

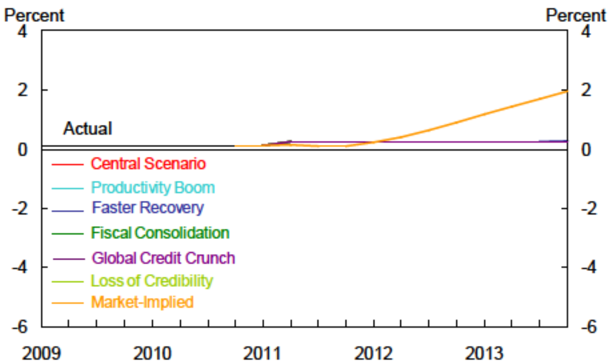
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

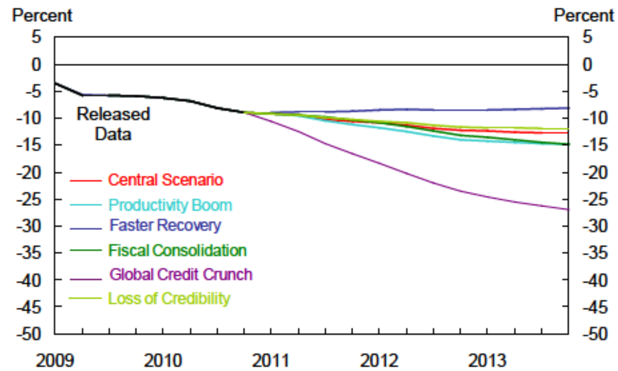
Exhibit D-3: Alternative Policy Rule Analysis

Policy Rule: *Asymmetric Price Targeting*

Nominal FFR under Alternative Scenarios

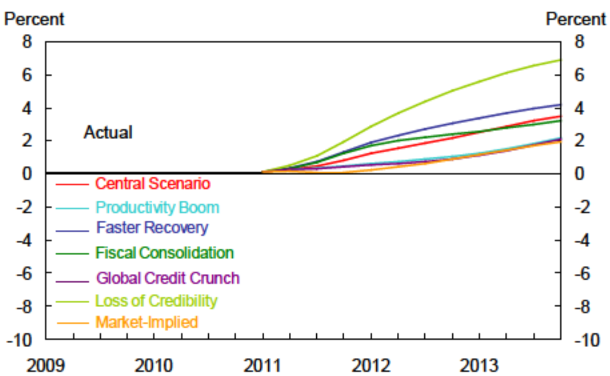


Real FFR under Alternative Scenarios

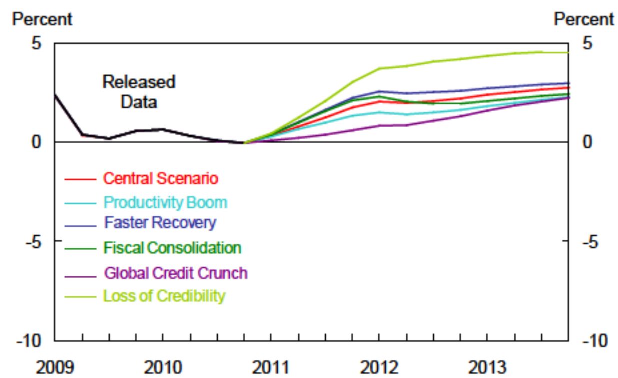


Policy Rule: *Nutter*

Nominal FFR under Alternative Scenarios

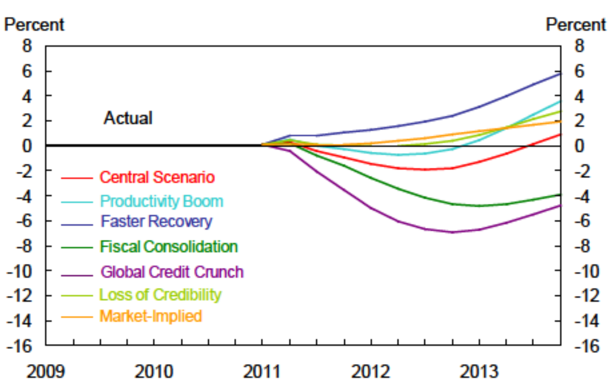


Real FFR under Alternative Scenarios

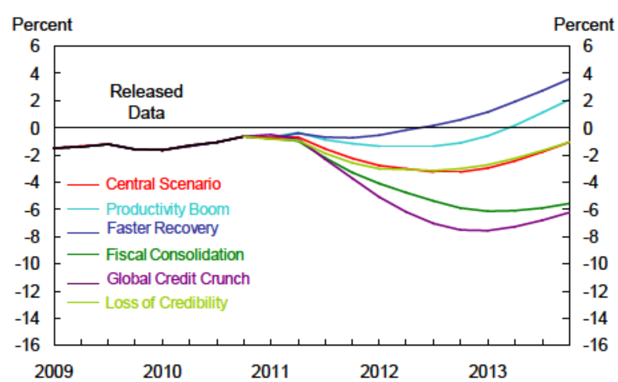


Policy Rule: *Outcome-based*

Nominal FFR under Alternative Scenarios



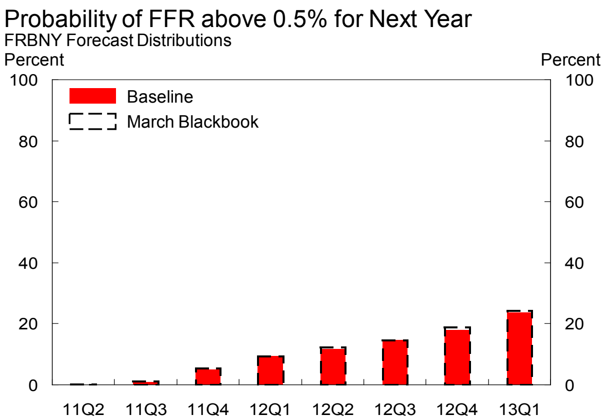
Real FFR under Alternative Scenarios

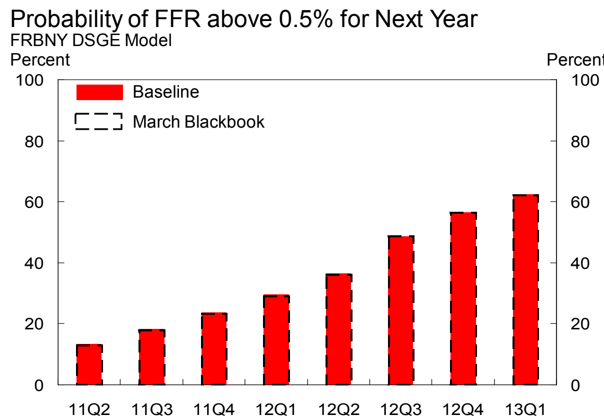


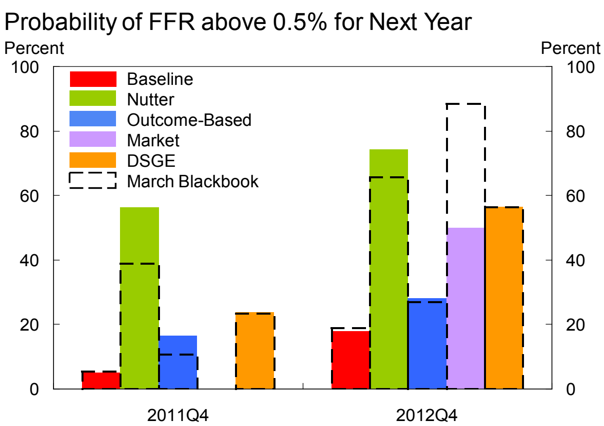
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

Exhibit D-4: FFR Probabilities







Note: Probability displayed is probability of FFR being above 0.5% in quarter noted and remaining above 0.5% in subsequent four quarters. DSGE results are shown for model including zero bound restriction.

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 alternative scenario considers the impact of above-trend productivity growth. Our current assumption of trend productivity growth is around 1.75% on a nonfarm business sector basis. Sustained productivity growth above this assumption would have important consequences for the economy. Typically, because below-trend productivity growth also has important consequences, we have included an alternative scenario that incorporates that assumption (*Productivity Slump)*. However, because the near-term consequences of that scenario and the *Fiscal Consolidation* scenario are similar, we have combined those two scenarios into a single revamped *Fiscal Consolidation* scenario, which allows us to add a new scenario (*Faster Growth/Recovery*). We also currently consider four additional scenarios. In one (*Faster Growth/Recovery*), the recent "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), the recent stresses in global financial and economic conditions continue to have an impact on U.S. economic conditions; the differences between the two mainly reflect differing assessments of how protracted the negative effects could be.

Alternative 1: *Productivity Boom*

After a lull in the mid-2000s, productivity growth has been robust and above our current estimate of trend productivity growth. This rapid growth raises 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 previous post-WWII periods of high productivity growth (pre-1973 and the mid-1990s through the mid-2000s). As such, we could see persistent productivity growth above our assumed trend, implying a higher potential growth rate for output and thus expected real output growth that is higher than our current estimate. (A higher potential growth rate may also imply that the output gap that opened during the 2007-2009 recession is larger than we currently estimate). Strong productivity growth would also limit labor cost pressures and thereby help to subdue inflation.

Alternative 2: *Fiscal Consolidation*

Events in Europe in 2010 and so far in 2011 concerning the fiscal position of several euro zone countries raise issues about the possible economic consequences if similar concerns were to develop about the sustainability of the U.S. government's fiscal position. The *Fiscal Consolidation* scenario envisions a situation in which concerns on the part of investors about the fiscal sustainability of the United States leads to an increase in long term interest rates and term premia that contribute to a decline in output growth below that of the central forecast. As the U.S. government responds to those concerns by reducing government spending and/or raising taxes, the consequent decline in aggregate demand would imply that growth of real activity continues to be weak. In this scenario inflation temporarily rises above the central forecast, in part due to a likely depreciation of the dollar and possible increases in inflation expectations[2]. [As stated earlier, the near-term implications of this scenario are similar to those of a supply shock or productivity slump, which is one reason we have folded in the weight of the old *Productivity Slump* scenario into this scenario.] However, after several quarters, with the government embarking on a credible fiscal consolidation, inflation declines below the central forecast as a consequence of the drop in aggregate demand and output growth.

Alternative 3: *Faster Growth/Recovery*

The recovery from the 2007-09 recession has been quite weak, especially given the severe drop in real activity during the recession. Factors behind the slow pace of recovery include the continued stress faced by financial markets and institutions as they slowly mend from the financial crisis and a slow process of repairing household balance sheets damaged in the financial crisis and recession. However, the relative strength in

[2] Some economic models imply that if the public and investors see the fiscal situation as unsustainable, they could raise inflation expectations because of the possibility that part of the long-term fiscal budget gap is closed through higher inflation.

recent real PCE and other aggregate demand indicators raise the possibility that the process of mending may be beginning to reach an end. The *Faster Growth/Recovery* scenario envisions a situation where these factors that have inhibited growth subside more quickly than anticipated by policymakers. In particular, the diminution of these factors would lead to a stronger impact from accommodative monetary policy and from the fiscal stimulus associated with the fiscal agreement passed in December 2010, leading to faster growth in aggregate demand. In that case, real GDP growth could be higher than anticipated, and inflation pressures could materialize more quickly.

Alternative 4: *Loss of Credibility*

In the wake of the monetary and fiscal stimulus used to combat the 2007-2009 recession, some commentary has focused on the possibility that these policies could lead to higher inflation expectations and eventually to higher inflation. The continued elevated levels of some commodity prices are consistent with such commentary. Even though the FOMC has made its commitment to low rates contingent on "subdued inflation trends" and "stable inflation expectations," it is possible that market participants may begin to believe that the FOMC is not credibly committed to keeping inflation around the presumed implicit target level, especially if the unemployment rate remains high. In addition, concerns about the possible influence of continued high fiscal deficits on monetary policy could lead investors and the public to question FOMC credibility on inflation: FRBNY survey evidence suggests that, for at least some market participants, increases in government debt lead to higher inflation expectations, regardless of the reason for the increased debt. If the concerns about credibility were to become widespread, they would likely cause a rise in inflation and inflation expectations above forecast.

Alternative 5: *Global Credit Crunch*

Although financial markets are generally notably healthier than they were during the most extreme periods of the financial crisis, continued impairments in some markets as well as general economic uncertainty may be keeping credit availability very tight. In addition, consumers suffered wealth losses during the crisis, of which only a small part has been recovered, and volatility in equity markets is still elevated. Most central banks are maintaining what would appear to be very accommodative policy stances. This combination of factors suggests that the neutral rate is still lower than it was 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 well below our lower estimate of the neutral rate, tight credit conditions, continued stresses in global financial markets, and a still-significant chance of a further deterioration in global economic conditions create a risk that output growth will fall significantly below the level projected in the central forecast; this development would likely be accompanied by inflation below the level in the central forecast. Nevertheless, under this scenario we assume that financial markets will begin to function more normally and that, as they do, the economy will exit the *Global Credit Crunch* scenario and begin growing faster than its potential growth rate. The strong output growth experienced when the economy leaves the scenario should result in a closing of the output gap over time.

Alternative 6: *Global Deflation*

Recent price level indicators point to low inflation in many regions of the world. With inflation at such levels, sluggish growth in some parts of the world, concerns about the future of the euro zone, and continued financial market uncertainty suggest that there is some risk of global deflation going forward. This possibility is further exacerbated as many central banks around the world have their policy rates at or very near 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, resulting in both inflation and output growth far below the levels projected in the central forecast. Because of the difficulty of exiting such a situation, we see the *Global Deflation* scenario as quite persistent. Unlike the *Global Credit Crunch* scenario, the economy does not generally "bounce back" from *Global Deflation* to close the output gap. Instead, the U.S. is much more likely to experience a prolonged period of essentially no growth, and in many simulations in which the economy enters the *Global Deflation* scenario the level of output in 2013 does not surpass the 2009Q2 peak.

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. *Fiscal Consolidation*: inflation initially above and then below central forecast, output below central forecast.
3. *Faster Growth/Recovery*: inflation above central forecast, output above central forecast.
4. *Loss of Credibility*: inflation far above central forecast, output slightly below central forecast.
5. *Global Credit Crunch*: inflation below central forecast, output significantly 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 (except for the *Nutter* rule, which ignores output deviations), while incorporating some degree of inertia. For each of the FFR paths and each of the policy rules, we determine these deviations using the inflation and output paths generated in Exhibit C.

Baseline Policy Rule Specification:

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

$$\begin{aligned}
&\rho = 0.8 \quad \text{(interest rate smoothing parameter)}\\
&i^* = 3.75 \text{ in short-term, moving to } 4.25 \text{ (neutral FFR)}\\
&\pi^* = 1.75 \quad \text{(core PCE inflation target)}\\
&\varphi_\pi = 1.5 \quad \text{(weight on inflation deviations)}\\
&\varphi_x = 0.5 \quad \text{(weight on output gap)}\\
&\pi_t : \text{ core PCE, 4-quarter average}\\
&x_t : \text{ output gap, using } 2.7\% \text{ potential growth rate, moving to } 2.6\%\\
&i_{t-1} : \text{ interest rate in previous quarter}
\end{aligned}$$

The two variants of the *Baseline* rule that we use are the *Asymmetric Price Targeting* and *Nutter* 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.[3] 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 price-level targeting is only implemented on the downside. When the cumulative gap in

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

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 *Nutter* rule reacts more strongly than the Baseline rule to changes in inflation. Specifically, the *Nutter* rule increases the weight on deviations of core PCE inflation from the target (φ_π = 2 instead of 1.5). The *Nutter* rule does not react to changes in the output gap.

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)[4].

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 Exhibit D-4, 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).

Using a weighting scheme, it is possible to combine the *Baseline* and the two variants into an *Average* rule that may better reflect market beliefs about FOMC preferences and views of the structure of the economy than does any individual rule. (That is, we can think of the market-implied path as reflecting an amalgam of different perceived FOMC

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

preferences, etc.) Each cycle we construct the *Average* rule by taking the weighted average of the *Baseline* rule and the two FRBNY-derived variants that matches the market-implied path as closely as possible. (We do not currently display the *Average* rule or the weights used to calculate the *Average* rule in the Blackbook). Examining the change in the weights used to construct the *Average* rule from one cycle to the next can provide insight into the reasons behind shifts in the market path not explained by changes in the outlook.