FRBNY BLACKBOOK

RESEARCH AND STATISTICS GROUP

FOMC Background Material

January 2012

CONFIDENTIAL (FR) Class II FOMC

FRBNY BLACKBOOK

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EXHIBITS

EXHIBIT OVERVIEW

1. Policy Recommendation and Rationale

Economic and financial market developments since the December Blackbook have led us to make only relatively small changes to our forecasts of real activity and inflation as well as our risk assessment. We thus recommend maintaining the FFR target range at 0-0.25% until late 2014 and providing more explicit forward guidance through a *state-contingent* commitment that specifies policy under alternative scenarios. We also recommend the FOMC provide additional accommodation through an expansion of the Federal Reserve's balance sheet, implemented at least in part through purchases of MBS.

At this time, the economic expansion remains fragile. There are some signs of improvement in indicators for housing and construction as well as consumer confidence. In contrast, there are signs of sluggishness in investment in equipment and software as well as consumer spending. Additionally, contraction in state and local government spending is expected to continue over the near term. Although recent data releases — including a reduction in the unemployment rate to 8.5% — suggest some improvement in the labor market, the unemployment gap remains wide. The recent data suggest that core inflation may be back to the levels prevailing before the commodity price-driven surge. The expectations that monetary policy will remain accommodative have probably been a major contributor to the improvement in real activity. We believe that, given the still-fragile expansion, a premature removal of policy accommodation may jeopardize this recovery.

Financial conditions in the US show some signs of improvement, with some increase in equity prices and reduced volatility. Long-term nominal and real treasury yields remain at very low levels and longer-term inflation expectations remain contained. Although some indicators show signs of improvement in the European sovereign debt situation, much of this improvement is likely to reflect the impact of recent official support measures, and it remains unclear whether this support has yet set the stage for sustainable recovery. In light of the continued risks to the financial system, we recommend that the FOMC reinforce its commitment to provide liquidity to US financial institutions if there is a deterioration of conditions in domestic funding markets.

Given these mixed developments, our real GDP and core PCE forecasts are little changed from those in the previous Blackbook. Our forecasts for real GDP growth are 2.6 and 3.0 percent (Q4/Q4) for 2012 and 2013, respectively, implying only slow progress in reducing the slack in resource utilization. Our forecasts for core PCE inflation are 1.3 and 1.5 percent (Q4/Q4) for 2012 and 2013, respectively. While the modest signs of improvement have led us to make a modest upward shift in the risks, the balance of risks to both real activity and inflation remain significantly to the downside. In part, this balance reflects the continued risks associated with the European debt crisis along with the constraints to policy associated with the zero lower bound.

Under the central forecast, inflation is projected to be below our view of the longer-run value consistent with the Federal Reserve's mandate while unemployment is forecasted to remain above estimates of its long-run equilibrium value for at least two more years. The downside balance of risks for inflation and real activity raises the probability that these situations could persist even longer. Therefore, we believe that further policy accommodation is needed. Such accommodation can be accomplished with two complementary tools.

First, the FOMC could clarify and make more explicit its state-contingent commitment to keep the policy rate at exceptionally low levels for longer than markets currently expect. One way to communicate such a commitment would be to use the SEP projections for the interest rate. However, such communication could be more effective if the FOMC reaction function was further clarified. One option to do so would be to present paths under an alternative scenario; for example, under a European crisis scenario.

Second, the FOMC could provide additional accommodation through an expansion of the Federal Reserve's balance sheet, implemented at least in part through purchases of MBS. To this end the FOMC could consider a specific SOMA level target to be achieved over the course of a few months, much like the previous large scale asset purchase programs. Alternatively, the FOMC may consider announcing a flow target, with a commitment to purchase a given amount of assets every month, without a time limit, while explicitly stating that it would do so until economic conditions are judged to no longer warrant additional purchases. We believe that providing some state contingency to any sort of asset purchase program would likely help reinforce the state-contingent commitment for the policy rate.

2. Evolution of Outlook and Risks

2.1 Central Forecast

Available data suggest that the US economy ended 2011 on a reasonably strong note, with real GDP rising at around a 3% to 3 1/2% annual rate, the best performance since the first half of 2010. However, much of this improvement is due to a very large swing in the growth contribution from inventory investment — to around +0.8 percentage points in 2011Q4 from an average of -0.8 percentage points in the second and third quarters. The rate of growth of final sales in 2011Q4, which is expected to be around 2 ¼% (annual rate), is actually slightly less than the average of the second and third quarters.

Within final sales, the growth of real consumer spending did firm in the fourth quarter. At this time we believe that real PCE increased at a 2 1/2% annual rate, up from a 1.2% annual rate over the preceding two quarters. Much of this strengthening is accounted for by faster growth of spending on durable goods, particularly motor vehicles. Sales of light weight motor vehicles averaged 13.5 million (annual rate) in 2011Q4, the highest quarterly average sales pace since the first half of 2008. The increase in vehicle sales is a very encouraging sign as it suggests that credit to finance purchases of motor vehicles is becoming more readily available. However, the increase is likely due in part to temporary factors. Vehicle sales in the second and third quarters of 2011 — which averaged just 12.3 million (annual rate) — were depressed due to supply chain disruptions stemming from the tragic earthquake and tsunami in Japan. In contrast to spending on durable goods, growth of real consumer spending on nondurable goods and services remains sluggish. Recognizing that consumer spending on new durable goods can really be thought of as a form of saving, the picture that emerges is of a consumer that continues to be cautious.

The rate of growth of residential investment also appears to have strengthened in the fourth quarter, led by a rebound in spending on additions and alterations and what appears to be a strengthening uptrend in multifamily housing starts. Single-family housing starts edged up a bit in the fourth quarter, and the homebuilders' sentiment index registered a notable increase in January. Nonetheless, the absolute level of single-family starts remains at quite depressed levels.

In contrast, the rate of growth of business investment in both equipment and software and in nonresidential structures slowed sharply in the fourth quarter after double-digit growth in the third quarter. It is not clear whether this is just inherent volatility or a genuine slowdown. At the moment the evidence is leaning toward the volatility explanation. New orders for nondefense capital goods are continuing to grow at a healthy pace and their level is well above that of shipments. In addition, the architecture billings index has climbed back to 52 in November from an average of 47½ for the second and third quarters.

Based on data through November, real exports of goods and services appear to be on track to grow at a 6% annual rate in 2011Q4, notably above the growth rates of the second and third quarters. However, the growth contribution from net exports is likely to be just 0.2 percentage points in the fourth quarter, a bit lower than the 0.3 percentage point average of the preceding two quarters, as the rate of growth of imports of goods and services also increased in the fourth quarter following quite sluggish growth in the second and third quarters. The increase in imports has been strongest in categories such as nonauto capital goods, food, feeds, and beverages, and industrial supplies and materials, including petroleum. The US trade deficit is down to around 3% of GDP from 6% of GDP in 2006.

Total government consumption and gross investment continued to decline in the fourth quarter, with spending at the state and local level down at a rate roughly comparable to the 1.5% annual rate decline of the third quarter. The pace of decline of employment at the state and local level increased in the fourth quarter of 2011, to 18,000 per month versus 5,000 per month in the third quarter. At this point we expect a modest increase of real consumption and gross investment at the federal level in the fourth quarter, although it will be down for the year as a whole due to a very steep decline in the first quarter of the year.

Manufacturing related indicators also firmed over the past several months. For example, the widely-followed ISM manufacturing composite index rose to near 54 in December from around 51 in October. There were more significant improvements in the new orders and production subcomponents of that composite index. Manufacturing output rose at a robust 11% annual rate in December. The increase was relatively broad based, including the first increase in high-tech equipment production in four months. There is growing discussion of the possibility that the improvement in the US manufacturing sector has a secular element to it, based on the increased competitiveness of the US. Employment in the manufacturing sector is up at a 2% annual rate over the past two years, the first 24 month increase since the mid 1990s.

With the firming of growth we have also seen some improvement in labor market conditions. Aggregate hours worked by all private sector employees rose at a 3% annual rate in 2011Q4, up from an increase of just 0.1% (annual rate) in the third quarter. Average hourly earnings rose at a 1.8% annual rate, suggesting an increase in private sector wage and salary income approaching a respectable 5% (annual rate). This improvement in the labor market corresponds to a significant rebound of most measures of consumer confidence over the past few months, up from 2011Q3 levels that were, in many cases, lower than at the depths of the Great Recession.

It should be noted that while hours worked grew at a healthy pace in the fourth quarter, the average monthly gain of nonfarm payroll employment was just 140,000, which was actually somewhat less than in the third quarter. Despite this rather tepid increase in payroll employment, the unemployment rate fell a cumulative 0.5 percentage points from September to December. This apparent discrepancy is due to the fact that the average monthly increase in employment as measured by the household survey was around

230,000 while the labor force declined an average of around 40,000 per month. The decline in labor force participation was most pronounced among those between the ages of 25 to 54.

Despite this welcome improvement in labor market conditions, the economy continues to have an unacceptably large amount of slack. The employment-to-population ratio is just 58.5%, about where it was at the end of 2009 and well below the 63% level reached in 2006 and 2007. Once again, this large amount of slack is showing through in the trend inflation data. As you will recall, in the fourth quarter of 2010 the annualized change of the core PCE deflator was just 0.7%. It then increased to 2.5% during the second quarter of 2011, reflecting some pass through of higher commodity prices, rapidly rising import prices, and temporarily large increases of motor vehicle prices associated with the supply disruptions mentioned above. However, over the second half of 2011 the impact of those forces abated, and for the fourth quarter of 2011 we estimate that the core PCE deflator rose at just a 0.9% annual rate.

Conditioning assumptions. Our estimate of potential GDP growth is around 2¼%, having been lowered from around 2½% based on the revised NIPA data that was released at the end of July. The Board staff estimates of potential for 2011, 2012, and 2013 are 1.7%, 2.0%, and 2.1%, respectively, all unchanged from December.

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%.

In both the Tealbook and Blackbook forecasts, projected foreign growth over the forecast horizon is essentially unchanged from December, when in both cases there were significant downward revisions reflecting the ongoing sovereign debt crisis in the Euro

Area. From 2.3% in 2011 (Q4/Q4 on a GDP-weighted basis), we expect foreign growth of 2.5% in 2012 and 2.9% in 2013. In our projections the Euro Area undergoes a relatively mild recession, with Q4/Q4 growth of real GDP in 2012 of around 1/2%. The Board staff foresees a longer and deeper recession in the Euro Area, with real GDP falling by 1¼% in 2012. The Tealbook outlook for overall foreign real GDP growth in 2012 is 1.8%, rising to 2.6% in 2013.

Also reflecting intermeeting developments, the Board's assumed path of the nominal exchange value of the dollar has been changed to 0.1% in 2011 versus -1.0% in October. The assumed decline in 2012 is 0.6% versus 2.3%. For 2013 a decline of 1.8% is anticipated versus 1.2% in the October Tealbook. Our assumed path of the nominal exchange rate is a decline of 1.0% in 2011, versus 2.2% in the last Blackbook, and 1.5% in 2012 versus 1.8% in October. For 2013 we assume a decline of 1.5% versus 1.8% in October.

Our projected path of WTI oil prices, based on recent futures quotes, has been raised by $4.50 per barrel for the end of 2012 (to $101 per barrel) and by $5 per barrel by the end of 2013 (to $98). In contrast, the Board assumes $103 per barrel for 2012Q4, $4 per barrel higher than in December, and $101 per barrel for 2013Q4, $6 per barrel higher than in December. The Board's projected path has moved closer to recent futures quotes due to the fact that the consensus forecast for global GDP growth has moved closer to that of the Tealbook. Note also that over the intermeeting period the Brent price of crude oil has remained around $10 per barrel higher than the WTI price, which is well below the peak spread of over $27 reached last September.

As is our standard practice, we adopt the same fiscal assumptions as in the Tealbook. For 2012, the Tealbook expects federal fiscal drag of 0.4 percentage points, based on its Fiscal Impetus measure. The payroll tax cut and extended unemployment benefits are assumed to be extended for all of 2012. The bulk of the fiscal drag reflects reduction of discretionary spending called for in the Budget Control Act last August as well as some waning effects of the stimulus bill passed in early 2009. For 2013 the fiscal impulse measure moves to -1.1 percentage points. The Board staff does not specify what policy actions will generate this much drag but notes that it is less than would occur under current law.

We continue to adopt the Tealbook assumptions regarding equity and home prices. Equity prices are currently about 3 percent higher than assumed in the December Tealbook. Equity prices are assumed to be relatively flat through mid 2012, reflecting investor concerns about the Euro Area. But then, as confidence grows that the crisis will be resolved and the Euro Area economy will rebound, equity values are expected to begin rising rapidly, reaching a level in 2013Q4 that is roughly 17% above the current level. This increase in equity values is driven by a return of the equity risk premium to more normal levels. Finally, the CoreLogic national home price index is assumed to decline by 1% in 2012 and then be flat in 2013, the same as in December. However, reflecting the fact that recent readings of that index have come in below expectations, the level of that path is somewhat lower.

The Outlook. The performance of the US economy has improved on many fronts over the past few months, with the risk of slipping back into recession much less than was the case back in July and August. Loans and leases on bank balance sheets are now expanding, equity prices and consumer confidence have rebounded, and there are even glimmers of a turnaround of sentiment in the housing market. Nonetheless, we believe it is unlikely that the pace of growth experienced in the fourth quarter of 2011 will be sustained in the first half of 2012. As noted above, much of the faster pace of growth in the fourth quarter was due to a sharp swing in the growth contribution of inventory investment which is unlikely to be repeated in the next few quarters. Moreover, the pronounced increase in light weight motor vehicle sales in 2011Q4 was likely due in part to a rebound following the supply disruption of the second and third quarters and, possibly, to the expiration of full expensing of qualified business investment.

In addition to these temporary boosts, we believe that the economy continues to face significant impediments to a robust recovery. We view both the consumer and business sectors as being in a very cautious mode. Plans regarding spending, investment, and hiring are subject to change at the first sign of trouble. In addition, the Euro area, which has important trade and financial linkages to the US, appears to have entered a recession of uncertain depth and duration. Closer to home, employment and spending at the state and local government level continues to decline, and despite the fact that the payroll tax cut and emergency unemployment benefits will most likely be extended for all of 2012, the stance of fiscal policy at the federal level has become contractionary. Our modal forecast envisions growth of real GDP of about 2¼% (annual rate) over the first half of 2012, slightly less than over the second half of 2011. Then, as the year progresses and the impediments to growth gradually recede, growth is expected to rise to around 3% over the second half of 2012. With growth of 3% significantly above our estimate of the economy's potential growth rate, we should see a more pronounced decline of the unemployment rate, which we project will average 8% in 2012Q4. The four-quarter percent change of the core PCE deflator should bottom out around 1% in mid 2012 and then begin edging higher, reaching around 1¼% by 2012Q4.

As the economy enters 2013 we expect the US economy will have reached a more self-sustaining growth phase. Foreign GDP growth will be picking up as the fiscal crisis in the Euro Area reaches a more permanent resolution. In addition, domestic credit supply conditions will have significantly improved, helping to promote stronger growth of consumer spending and residential investment. These developments should combine to promote firmer growth of business fixed investment. Combined, these forces could be expected to generate well above potential growth given the large amount of slack that will likely continue to persist at that time. However, the outlook for 2013 is clouded by the fact that, while it is very likely that fiscal policy will exert a substantial drag on growth, the amount and composition of that drag is unknown at this time. Under current law the amount of drag would be substantial. In addition to the cuts to discretionary spending outlined by the Budget Control Act of 2011, under current law the early 2000s tax cuts will all expire. In addition, given our assumption that the payroll tax cut and extended unemployment benefits will be renewed for the remainder of 2012, they also will expire as we enter 2013. It seems unlikely that such an unusually large amount of fiscal drag will in fact be enacted. We assume fiscal drag in the order of about 1 percent of GDP. Under this assumption, GDP is expected to grow around 3% (Q4/Q4), with the unemployment rate falling to around 7½% by the end of the year while core PCE inflation edges up to 1½%.

2.2 Alternative Scenarios and Risks

Upside risks to real activity increased slightly over the intermeeting period, while the risks to inflation were roughly unchanged. The recent spate of positive data releases led us to raise the probability associated with the most optimistic scenario, namely the *Faster Growth* scenario. We decreased the likelihood of the *Global Credit Crunch* scenario to reflect recent signs of stabilization of the European sovereign debt situation. We also decreased the probability of the *Fiscal Consolidation* scenario, consistent with expectations of gradualism in fiscal consolidation.

The *Fiscal Consolidation* scenario, which reflects the risks from fiscal retrenchment, remains the most likely alternative scenario, with an associated probability of about 30% [Exhibit C-1]. This probability decreased since December, mostly to make room for increases in the likelihood of the *Faster Growth* scenario. *Faster Growth* is the second most likely scenario, with a probability of about 20%. This increase in probability since December is consistent with signs of improvement in housing and construction, labor market, and consumer confidence. The probability of the *Global Credit Crunch* scenario declined modestly over the intermeeting period, reflecting the slight improvement in the European sovereign debt situation. This is just above the likelihood of the *Productivity Boom* scenario, whose associated probability remained unchanged relative to December.

Given that the *Central* scenario forecasts are quite similar to what they were in the last Blackbook, so are the paths for core PCE inflation and real GDP growth associated with the various scenarios [Exhibit C-2]. In fact, the paths associated with the various scenarios differ from the previous Blackbook only to the extent that the *Central* scenario forecasts have changed, since the risks are defined relative to the *Central* scenario.

The forecast distribution for core PCE inflation is virtually unchanged since December while there is a modest narrowing of the forecast distribution for real GDP growth [Exhibit C-3]. As a consequence, the probability of a recession through the end of 2012 is 51%, down from 56% in the previous Blackbook. The "Depth of Recession" chart shows that, should a recession occur, it would most likely be relatively mild, similar to that in 2001.

Exhibit C-3 also shows mean forecasts from the FRBNY DSGE model. The inflation forecasts are close to the expected value of the FRBNY forecast distribution, which is below the *Central Scenario*. The forecasts for real GDP growth are closer to the *Central Scenario* through mid-2012 but more pessimistic thereafter.

3. Forecast Comparison

3.1 Comparison with Private Forecasters[1]

Real GDP Growth. The FRBNY forecast for real GDP growth in 2012Q1 significantly improved relative to the previous Blackbook and is now in line with private forecasters. On a year-over-year basis, the FRBNY forecast is somewhat above the projections of private forecasters for 2012 and inside the range of private forecasts for 2013.

Inflation. The FRBNY headline CPI inflation forecast for 2012 and 2013 decreased compared to the December Blackbook, while inflation projections for core PCE and core CPI remain unchanged. Our projections for 2012Q1 are below those of private forecasters, especially for core PCE and headline CPI. On a year-over-year basis, our forecast for 2012 is either below or at the lower end of the projections of private forecasters, depending on the measure considered. Notably, as in December, none of the forecasters expect inflation — either core or headline — above 2% in 2012. For 2013 our forecast is in line with private forecasters for core PCE and headline CPI, while it is slightly above the private forecasts for core CPI inflation.

[1] The details of the forecast comparison are in Exhibit B-8. Quarterly numbers are SAAR.

4. Robustness of Policy Recommendation

4.1 Sensitivity to Alternative Scenarios and Policy Rules

As in the last Blackbook, our policy recommendation is to maintain the target range for the federal funds rate at 0–0.25% until late in 2014. Our recommended policy accommodation is justified by the current forecast and risk assessment for real activity and inflation. This accommodation goes beyond what is implied by the *Baseline* policy rule under all scenarios, except for the *Global Deflation* scenario [Exhibit D-1]. This reflects our assessment that under the zero lower bound, standard Taylor-type rules do not characterize optimal policy: a commitment to maintain rates low for *longer* than implied by standard rules is needed to provide an appropriate accommodation.

Exhibit D-2 shows the prescription of various policy rules using the expected value of the forecast distribution as an input. The path implied by the *Baseline* policy rule under the expected paths for output and inflation implies a liftoff in the second half of 2013. The *Nutter* rule, which puts weight only on inflation, is the only rule prescribing a liftoff earlier than 2013Q3. Exhibit D-2 also shows the implied nominal FFR for the *Outcome-based* rule, ignoring the zero bound constraint. Under the expected value of the forecast distribution, the unconstrained nominal FFR is almost -8% by the end of 2013.

Exhibit D-3 shows the prescriptions from alternative policy rules under the various scenarios. FFR paths under the *Asymmetric Price Targeting* rule are at the lower bound (0.25%) throughout the forecast horizon. The *Nutter* rule prescribes a liftoff in 2012 under most scenarios, including the *Central* scenario, and before mid-2013 even under the low-inflation scenarios, such as *Productivity Boom*, *Global Credit Crunch*, and *Global Deflation* scenarios. For the *Outcome-based* rule, ignoring the zero bound, the paths are at or below zero through the end of 2013 for all scenarios, and through the end of 2014 for most of them, with the exception of *Faster Recovery*.

Exhibit D-1 also shows the “shadow” 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 very gradual renormalization of the real rate, which increases from almost -5% in the current quarter to about -2.0% by the end of 2014. Exhibit D-3 shows the real rate (under alternative scenarios) for the *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 expected FFR path implied by futures shifted down slightly relative to the December Blackbook, with a liftoff in the second half of 2013. The median Primary dealer's expectation for the timing of the first tightening was relatively little changed, shifting forward one month to June 2014. Finally, the entire distribution of the first policy rate hike shifted towards later dates, but the difference with the December survey was small. On average, respondents attach 78% probability to the first policy rate hike occurring in 2014Q1 or later, up from 61% in December.

5. Significant Developments

5.1 Economic Developments

Foreign Data Releases. *Euro area*: Manufacturing stabilized in October and November after falling in September, but at a level significantly below the Q3 average. The PMI for manufacturing was unchanged in November and December. The unemployment rate stayed at 10.3 percent in November, with the number of unemployed up 4 percent over the year.

U.K.: Industrial production was down in November, continuing the steady decline that started last June. Export volumes, though, are set to rise in Q4 after falling the two previous quarters. The manufacturing PMI improved significantly in December, although it is still at a low level. The unemployment rate rose to 8.4 percent in October.

Key Data Releases

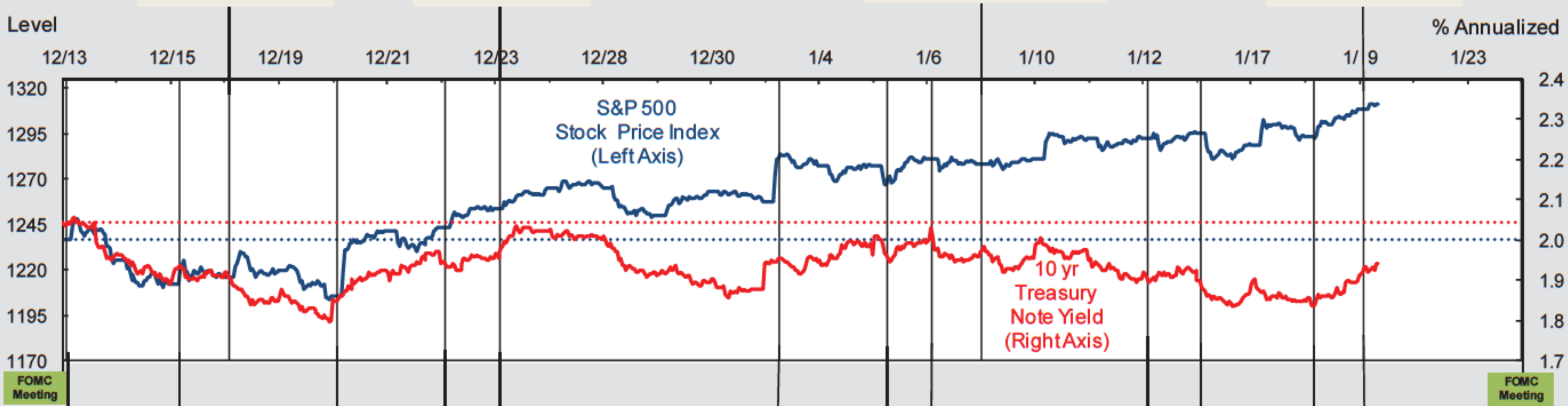
Price Releases

Consumer Price Index (Nov)
Overall:
flat (+0.1%)
+3.4% over twelve months
Core:
+0.2% (+0.1%)
+2.2% over twelve months

PCE Price Index (Nov)
Overall:
flat
+2.5% over twelve months
Core:
+0.1% (+0.1%)
+1.7% over twelve months

Core Logic Home Price Index (Nov)
Including distressed sales:
-1.3%
-4.3% over twelve months
Excluding distressed sales:
+0.4%
-0.6% over twelve months

Consumer Price Index (Dec)
Overall:
flat (+0.1%)
+3.0% over twelve months
Core:
+0.1% (+0.1%)
+2.2% over twelve months



Retail Sales (Nov)
Total:
+0.2% (+0.6%)
+6.7% over twelve months
Ex-auto:
+0.2% (+0.4%)
+6.6% over twelve months

New Residential Construction (Nov)
Total housing starts:
+9.3% to 685,000 SAAR
(+1.1% to 635,000)
+24.3% over twelve months
- Single-family starts: +2.3%
- Multi-family starts: +25.3%

Advance Durable Goods (Nov)
New Orders:
+3.8% (+1.8%)
+12.1% over twelve months
Shipments:
-0.4%
+9.1% over twelve months

ISM Manufacturing (Dec)
Composite index:
+1.2 points to 53.9
(+0.8 to 53.5)

ISM Non-Manufacturing (Dec)
Composite index:
+0.6 points to 52.6
(+1.0 to 53.0)

Retail Sales (Dec)
Total:
+0.1% (+0.3%)
+6.5% over twelve months
Ex-auto:
-0.2% (+0.3%)
+6.0% over twelve months

New Residential Construction (Dec)
Total housing starts:
-4.1% to 657,000 SAAR
(-0.7% to 680,000)
+24.9% over twelve months
- Single-family starts: +4.4%
- Multi-family starts: -20.4%

Industrial Production & Capacity Utilization (Nov)
IP:
-0.2% (+0.1%)
+3.7% over twelve months
CU:
-0.2% to 77.8% (77.8%)
Remains below historical averages

Gross Domestic Product (3rd Estimate for 2011Q3)
Real GDP: +1.8% (+2.0%)
Significant downward revision in real PCE spending growth

Personal Income and Spending (Nov)
Personal Income:
Nominal +0.1% (+0.2%)
Nominal disposable flat
Real disposable flat
PCE:
Nominal +0.1% (+0.3%)
Real +0.2%
Personal saving rate: 3.5%

Employment Situation (Dec)
Non-farm payroll:
+200,000 (+150,000)
Unemployment rate:
Down 0.2% to 8.5% (8.7%)
Labor force participation:
Unchanged at 64.0%

Trade Balance (Nov)
Total:
-$47.8 billion (-$45.0)
Up from revised -$43.3 billion in October
Exports:
-1.6%, +6.1% over twelve months
Non-oil Imports:
Flat, +5.5% over twelve months

Industrial Production & Capacity Utilization (Dec)
IP:
+0.4% (+0.5%)
+2.9% over twelve months
CU:
+0.3% to 78.1% (78.1%)
Remains below historical averages

Real Activity Releases

Note
Blue shading: Data release better than expected.
Red shading: Data release worse than expected.
Numbers in parentheses are the median of the Bloomberg survey.

Source: Bloomberg
On-the-run securities, 8:00AM - 4:00PM.
S&P 500 Stock Price Index 9:30AM - 4:00PM.

Japan: Industrial production dropped in November, driving the index 4 percent below its year-ago level. Export volumes also fell in November. The decline was fairly broad-based, but particularly pronounced in sales to Europe and China. The Reuters Tankan sentiment index dropped between September and November.

EM Asia: China's Q4 growth slowed but remained relatively vigorous at around 8.0 percent (saar). The slowdown was due to weakening export sales as well as a downshift in property sector activity. CPI inflation eased to 4.1 percent over the year in December, with signs of a broad cooling in price pressures, including in the property sector. The rest of Emerging Asia continues to experience soft trade, production, and survey data. Some bounce-back is expected in Q1 to make up for the impact of the severe flooding in Thailand.

Latin America: Brazil's output growth appears to have been minimal in Q4 after contracting mildly in Q3. Data suggest that activity bottomed in October. Mexico's domestic demand growth remains fairly resilient, highlighted by strong readings in the services PMI, while the export-oriented manufacturing sector seems to have picked up a bit after sluggish Q3 growth.

5.2 Financial Markets

Domestic Financial Markets. Broad stock market equity indexes rose and credit spreads narrowed, on net, over the intermeeting period on some apparent improvement of sentiment towards the European sovereign crisis as well as better-than-expected economic and earnings data. Financial stock prices outperformed broad stock market indexes. Treasury yields were little changed.

Nominal Interest Rates: Yields on the 10-year benchmark Treasury nominal security were little changed, on net, over the intermeeting period at about 2 percent, after dropping to a minimum of 1.8 percent earlier in late December following developments in Europe. With policy expectations pinned down by the "mid-2013" language in the FOMC statement, the short-end of the Treasury curve continued to trade in a very narrow band. Both the 2-year and 3-month Treasury yields were essentially unchanged at 24 basis points and 4 basis points, respectively. Option-implied volatilities on Treasuries and swaps as measured by the 3-month MOVE and SMOVE indexes declined significantly since the December FOMC meeting and currently trade near the bottom range experienced over the past few years. (Exhibit A-3: Treasury Yields)

Expected Policy Path and Short-term Funding Markets: The market-implied path for the federal funds rate was little changed since the December FOMC meeting. Consistent with the “mid-2013” language in the FOMC statements, futures quotes imply that the funds rate will trade in the current range until the end of 2013. Consistent with the market implied path, results from the January Blue Chip Financial survey also imply no target rate change until at least June 2013, which is the outermost month of the survey forecast horizon. Forecasters’ disagreement about the expected path, as measured by the inter-quartile range of survey responses, remains at historically low levels. The spread between the 3-month Libor and OIS rates stayed elevated at about 47 basis points pointing to some continued pressures in interbank funding markets. (Exhibit A-5: Policy Expectations)

Inflation Compensation: TIPS yields moved broadly in line with their nominal counterparts over the intermeeting. Inflation compensation over the next 5 years widened about 5 basis points to roughly 1.9 percent, while 5-year inflation breakevens 5-years ahead was essentially unchanged at about 2.5 basis points. Long-term breakeven measures remain at very low levels by historical standards. (Exhibit A-4: Real Yields and Implied Inflation)

Equity Markets: Earlier in the intermeeting period equity indexes fell from their December FOMC levels, following the uncertain situation in Europe. Since then, however, broad stock market indexes rose on some apparent improved sentiment about Europe as well as better-than-expected economic and earnings data. The S&P500 stock market index soared to 1315, which is about 6.5 percent higher than at the time of the December FOMC meeting, and a six-month high. Financial stock prices moved in line with broad indexes and are up about 11% since the December meeting. Realized and implied measures of stock market volatility continued to decline during the intermeeting period. The VIX index fell about 19 percent to a level of just below 20 percent, which is a six-month low. (Exhibits A-6: Equity)

Credit Spreads: Corporate bond credit spreads declined notably over the intermeeting period. High-yield corporate bond and CDS spreads fell about 85 and 115 basis points, respectively, to levels of about 675 and 600 basis points. Investment grade corporate credit spreads also declined about 20 basis points over the intermeeting period to about 240 and 110 basis points, respectively. (Exhibit A-7: Credit)

Foreign Financial Markets. *Euro Area*: Market sentiment appeared to have improved somewhat during the intermeeting period, as evidenced by declines in most peripheral euro area sovereign debt spreads relative to Germany. According to market participants, the decline in peripheral short-term sovereign yields, a number of relatively stronger peripheral auction performances, and dissipating concerns over some banks' ability to fund maturing debt, were all related to the effectiveness of the ECB's 3-year longer-term refinancing operations (LTROs). Domestic Italian and Spanish banks, in particular, reportedly boosted demand for their respective sovereign debt as a result of these 3-year LTROs. Standard & Poor downgraded the credit rating of a substantial number of euro area countries, including France which lost its triple-A status, resulting in a downgrade of S&P's rating of the European Financial Stability Facility from AAA to AA+. These downgrades, however, did not solicit any relevant price action as market participants had fully anticipated the moves. The euro was weaker against most major currencies over the intermeeting period and in particular was 1.4 percent weaker against the U.S. dollar, largely based on expectations of possible further monetary policy easing by the ECB. European equity indices were higher over the period.

Japan: Japan's sovereign debt rating was downgraded on December 21 to AA+ from AAA by R&I, a Japanese rating agency. Although this marked the first time that a domestic rating agency downgraded Japan's sovereign debt below triple-A, the market reaction was muted as most market participants had largely expected the move. The continued uncertainty regarding euro area sovereign debt helped support Japanese government bonds (JGBs) with the 10-year JGB yield declining 5 basis points since the last FOMC meeting. Increased safe haven flows into Japan could not keep the Japanese equity market from falling 1 percent over the period. The yen strengthened 6 percent against the euro, with the euro-yen currency pair falling below ¥100 per euro for the first time since late-2000. Against the U.S. dollar the yen appreciated a more modest 1 percent, due to the relatively stable U.S.-Japan yield differentials and the anticipated possibility of further intervention by Japanese authorities.

Emerging Asia: Currencies in this region appreciated, on average, by 1 percent against the dollar over the intermeeting period, led by an over 5 percent strengthening of the Indian rupee. The rupee appreciation followed a five month spell of weakening relative to the dollar. Shares rose by 5 percent, with gains broad-based. Local yields mostly declined, notably in Indonesia. Generally, these yield declines were driven by monetary policy easing in the EM Asia region. In the case of Indonesia the upgrade of its sovereign debt to investment grade by Fitch and Moody's was also a factor that led to lower yields.

Latin America: Since the last FOMC meeting Latin American currencies appreciated, on average, 4 percent against the dollar, while equities advanced by 5 percent. Mexico's local curve flattened amid an increase in foreign flows to long-dated local bonds. Brazil's local yields rose a bit after the central bank released a somewhat hawkish Quarterly Inflation Report.

5.3 Global Economic Policy

Euro Area: The ECB kept its policy rate at 1.0 percent at its January meeting and did not prepare the markets for a rate cut in February. The opening statement pointed to "tentative signs of stabilization" in the survey data, while also noting that downside risks remain substantial. The ECB announced on December 8 that it would hold two 3-year long-term refinancing operations, to be conducted under the fixed-rate, full allotment stance. The second 3-year refinancing operation will be conducted on February 29. The first offering on December 21 is estimated to have, on net, added €235 billion to bank liquidity, with most of it flowing to Italian and Spanish banks. An easing in collateral standards took effect on January 18: the Eurosystem now accepts all bank loans except non-performing ones as collateral and the rating threshold on asset-backed securities has been cut from triple-A to single-A.

Japan: The Bank of Japan kept its policy rate in a range of 0.0-0.10 percent at its December 20-21 policy meeting and will continue to do so until its official projections suggest price stabilization in the near-to-medium term. It also decided to keep the size of its Asset Purchase Program at ¥20 trillion. However, the Bank's statement following the December meeting did signal an increased downside risk to the growth outlook, citing both adverse effects from a growth slowdown in overseas economies and the recent appreciation of the Japanese yen. Additional currency intervention, like the effort on October 31, remains an option.

EM Asia: Monetary policy in this region has been largely in a wait-and-see mode over the intermeeting period. The central banks of Korea, Indonesia, and Taiwan have been holding rates steady in the past month, as growth concerns are balanced by inflation fears from further currency depreciation. China's currency reserve purchases slowed significantly in Q4, likely reflecting heightened speculative outflows. Monetary authorities in China injected liquidity through a rare reverse repo in mid-January and analysts expect additional reserve requirement cuts in the months ahead.

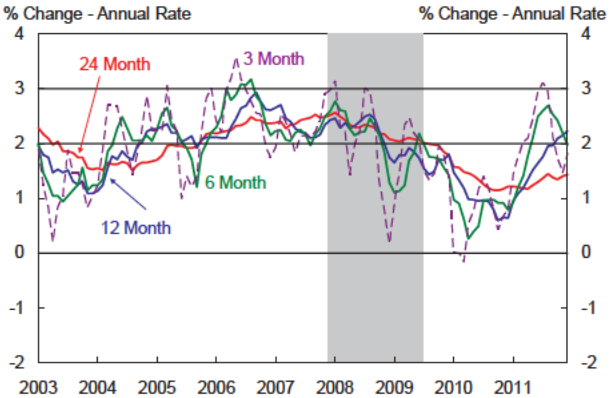
Latin America: The Mexican central bank held its policy rate at 4.5 percent and continued to signal the possibility of a rate cut should the global outlook deteriorate. However, in the wake of strong headline inflation in Q4, analysts now expect no rate changes in 2012 after previously anticipating a Q1 rate cut. In Brazil, the central bank continued its easing cycle with a 50 basis points cut, bringing the policy rate to 10.5 percent. Market participants anticipate two additional rate cuts of 50 basis points by April, with some analysts expecting a shift towards a tightening cycle by year-end.

Monetary conditions in Argentina eased modestly over the last two months, with the private bank benchmark 30-day deposit rate falling to 17 percent from a high of 22 percent in November.

A. Significant Developments

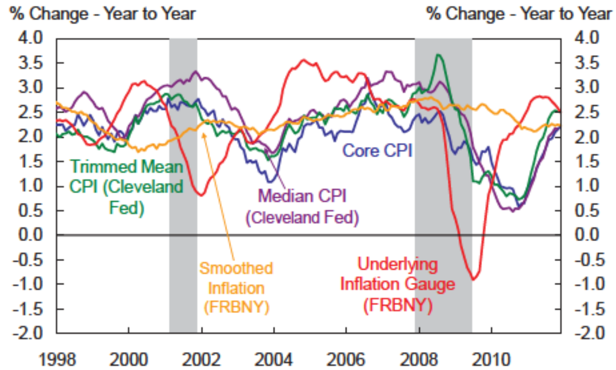
Exhibit A-1: Measures of Trend Inflation

Core CPI Inflation over Various Horizons



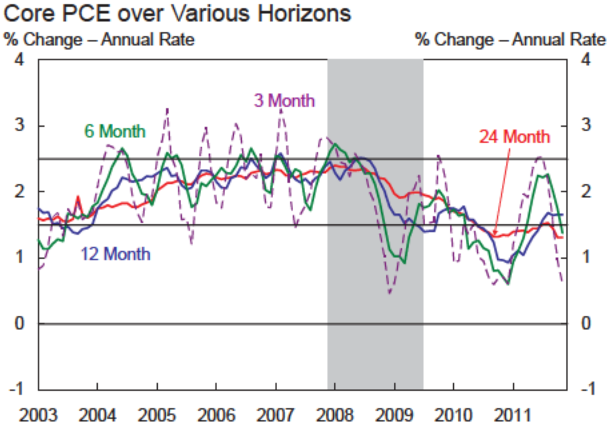
Source: Bureau of Labor Statistics

Alternative Measures of CPI Inflation



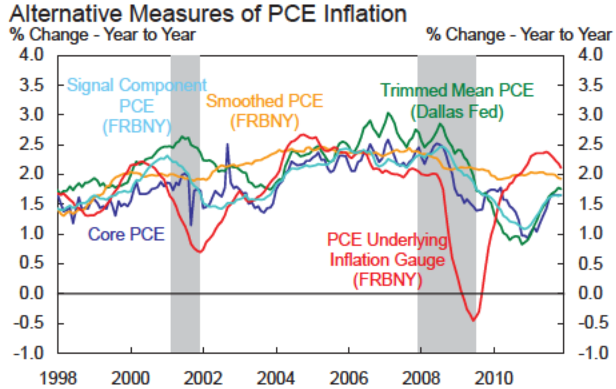
Source: Bureau of Labor Statistics, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Core PCE over Various Horizons



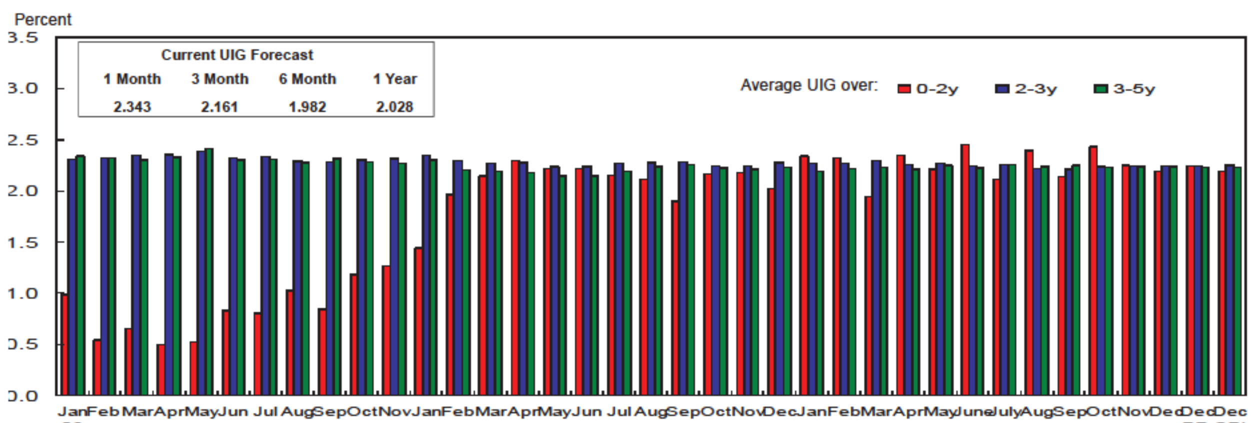
Source: Bureau of Economic Analysis

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

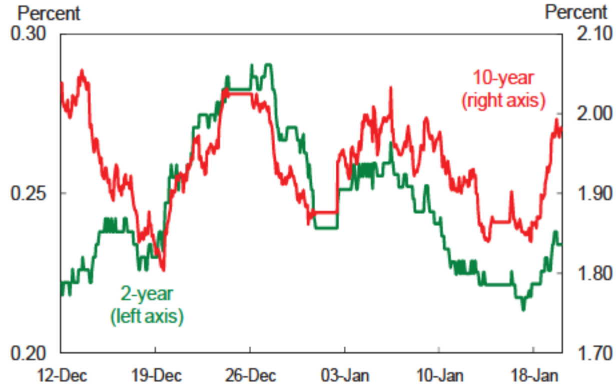
A. Significant Developments

Exhibit A-3:
Treasury Yields

Short- and Long-Term Rates

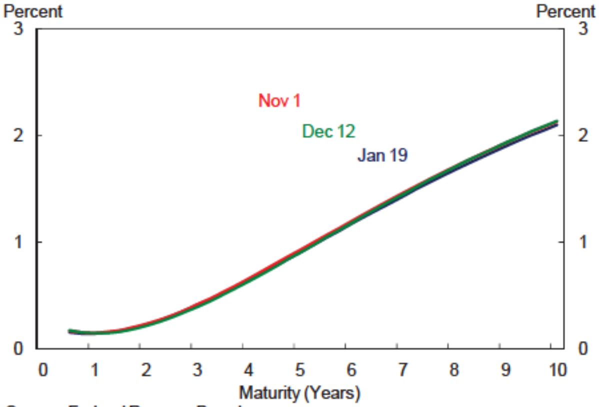
Source: Bloomberg   Note: Yields of on-the-run securities.

Short- and Long-Term Rates (Intraday)



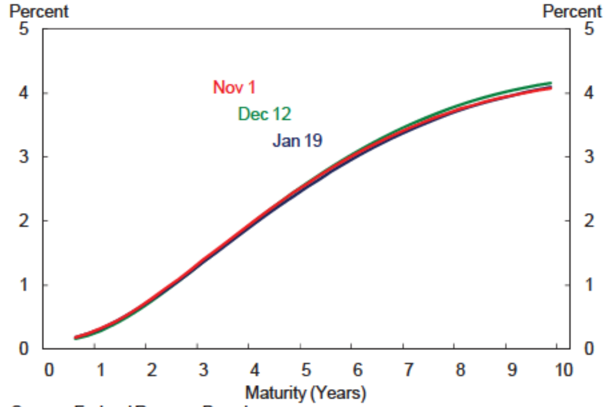
Source: Bloomberg   Note: On-the-run securities, 8:00 am to 4:00 pm.

Zero Coupon Yield Curves



Source: Federal Reserve Board

Zero Coupon Yield Curves: One-Year Forward Rates

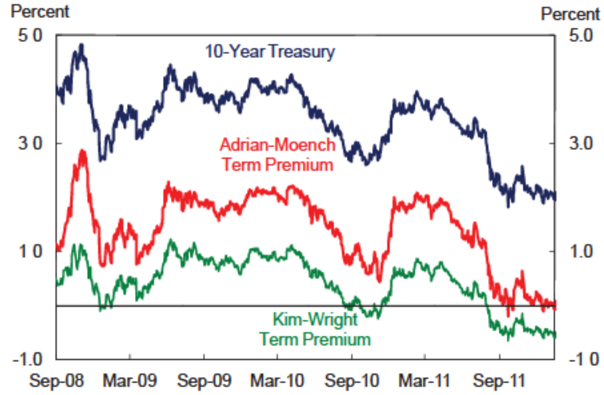


Source: Federal Reserve Board

Option and Swaption Volatility Expectations

Source: Federal Reserve Board, Barclays, and FRBNY

10-Year Treasury and Term Premia

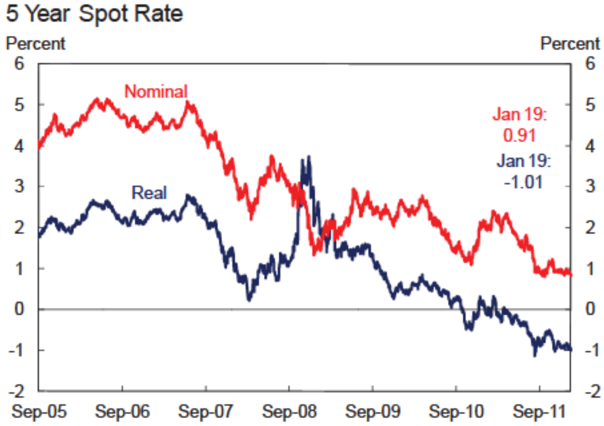


Source: FRBNY calculations, Federal Reserve Board

A. Significant Developments

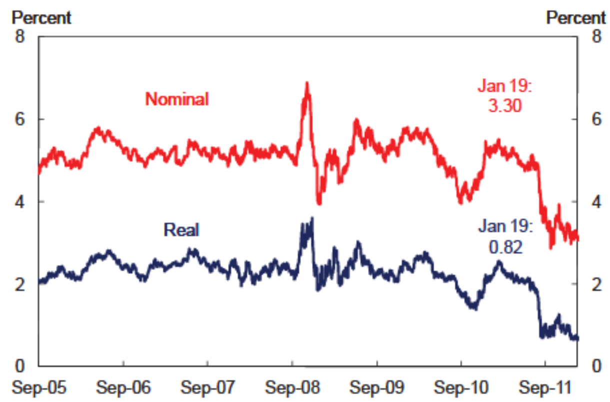
Exhibit A-4:
Real Yields and Implied Inflation

5 Year Spot Rate



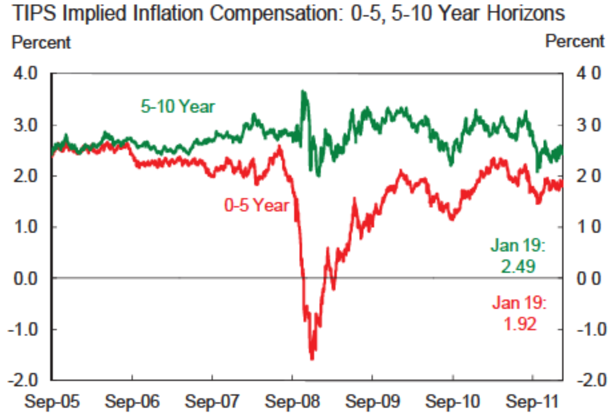
Source: Federal Reserve Board

5-10 Year Forward Rates



Source: Federal Reserve Board

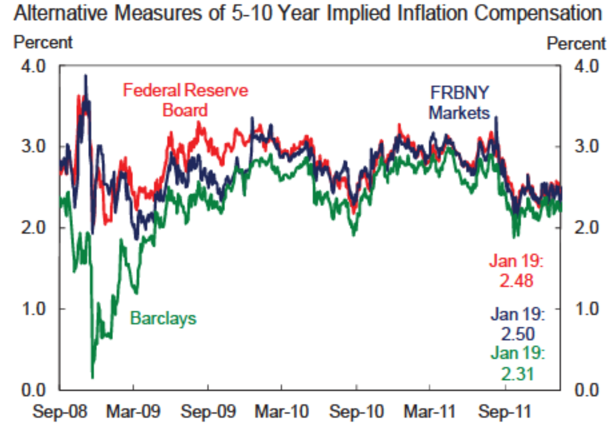
TIPS Implied Inflation Compensation: 0-5, 5-10 Year Horizons



Source: Federal Reserve Board

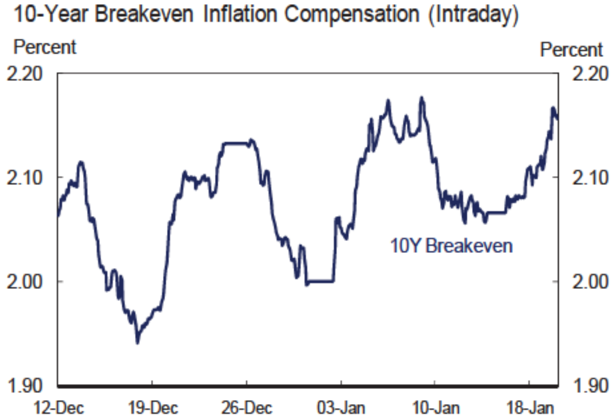
Note: Carry-adjusted.

Alternative Measures of 5-10 Year Implied Inflation Compensation



Source: Federal Reserve Board, Barclays, and FRBNY calculations

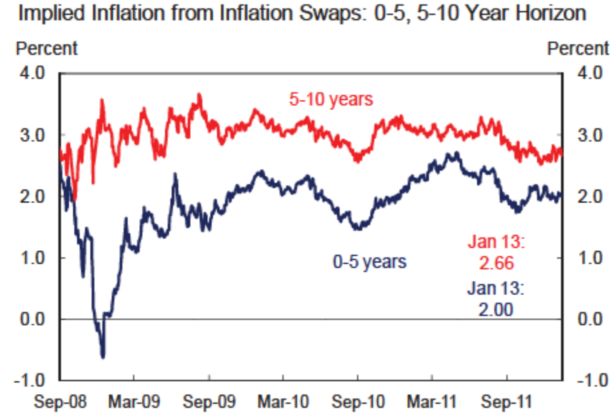
10-Year Breakeven Inflation Compensation (Intraday)



Source: Bloomberg

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

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

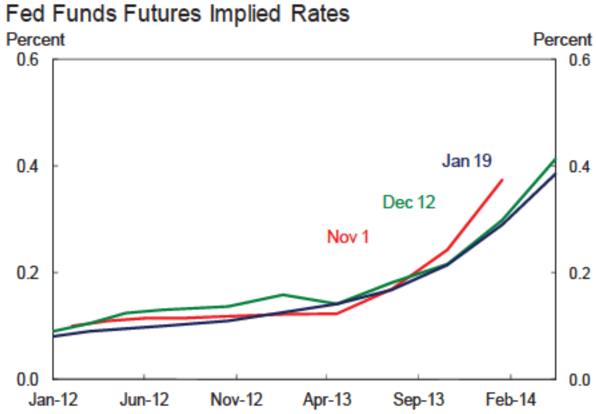


Source: Barclays

A. Significant Developments

Exhibit A-5:
Policy Expectations

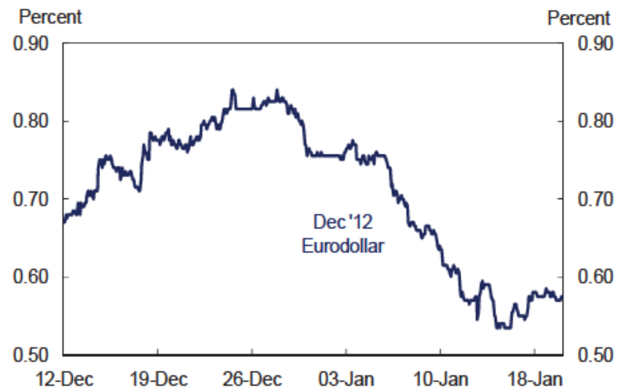
Fed Funds Futures Implied Rates



Source: Federal Reserve Board

Note: Estimated using fed funds and Eurodollar futures.

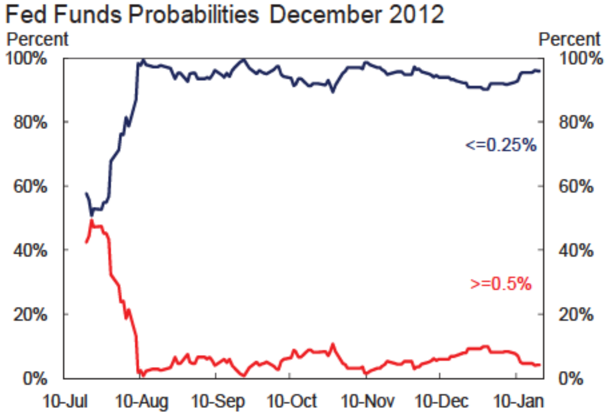
Implied Eurodollar Rates (Intraday)



Source: Bloomberg

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

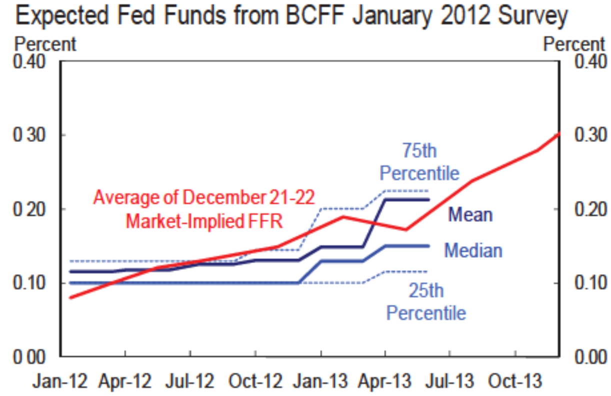
Fed Funds Probabilities December 2012



Source: Bloomberg

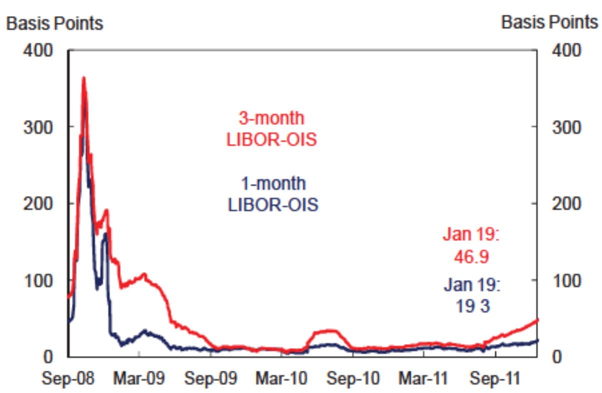
Note: Estimated from Fed Funds Futures

Expected Fed Funds from BCFF January 2012 Survey



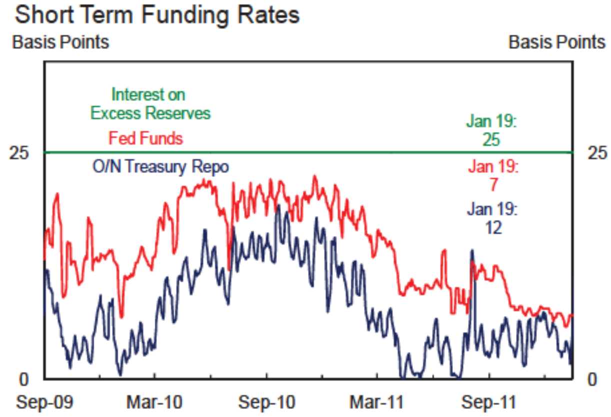
Note: Implied FFR are from Fed Funds and Eurodollar futures. The BCFF survey was conducted on December 21-22.

Libor to OIS



Source: Federal Reserve Board, Bloomberg

Short Term Funding Rates



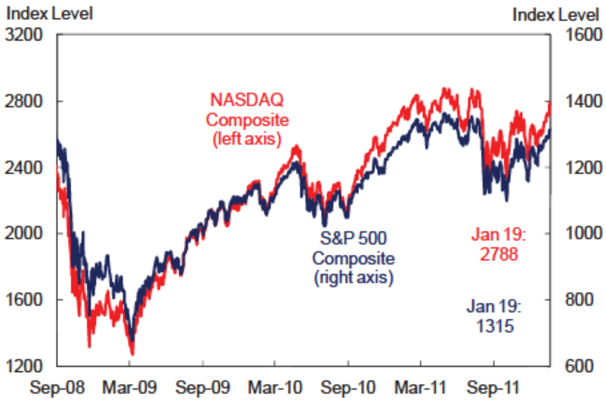
Source: Bloomberg, FRBNY calculations

Note: 1-week moving averages.

A. Significant Developments

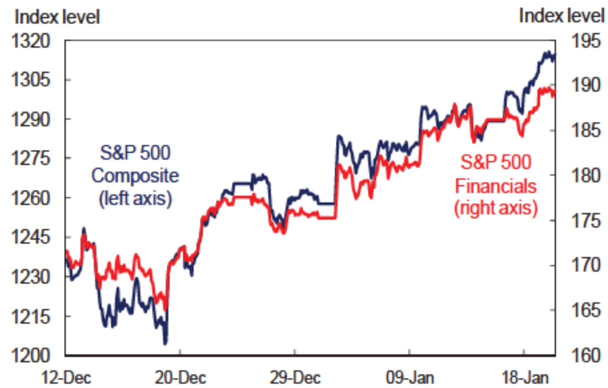
Exhibit A-6:
Equity

Equity Index Levels



Source: Bloomberg

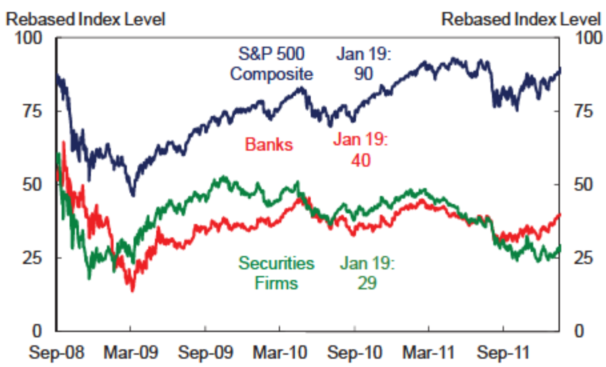
S&P 500 Indices (Intraday)



Source: Bloomberg

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

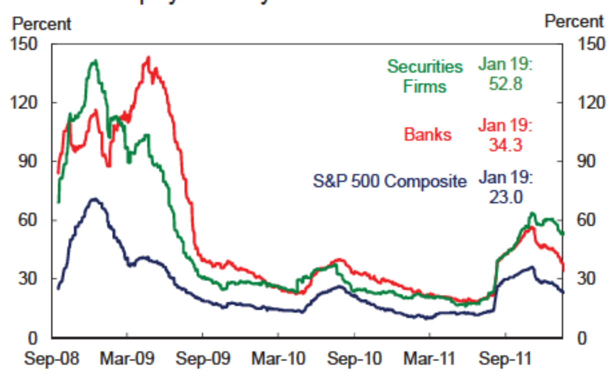
Equity Performance



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: Bloomberg

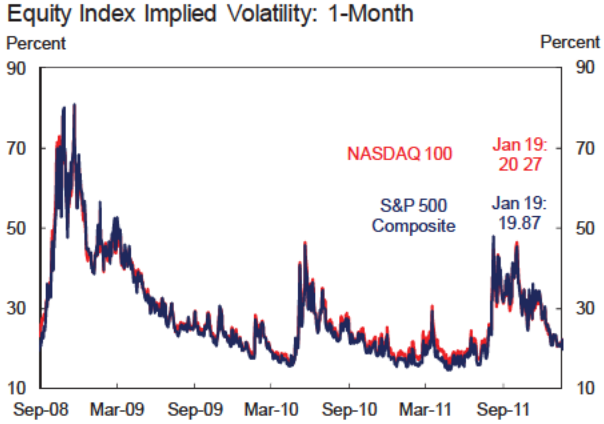
Historical Equity Volatility



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.

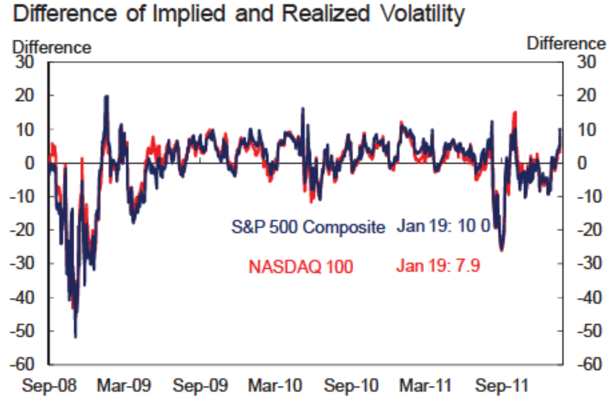
Source: Bloomberg

Equity Index Implied Volatility: 1-Month



Source: Bloomberg

Difference of Implied and Realized Volatility



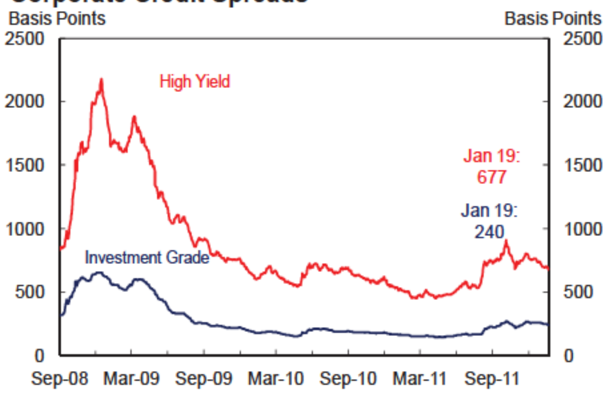
Source: Bloomberg

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

Corporate Credit Spreads



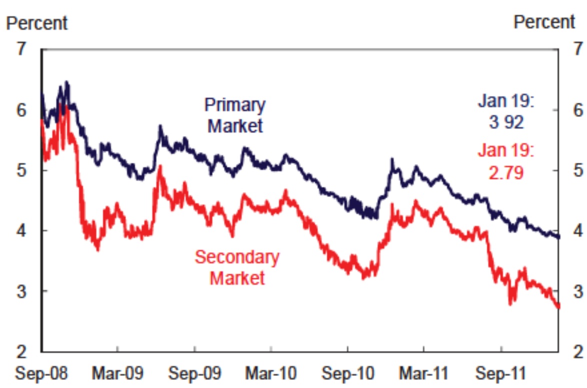
Source: Merrill Lynch

Note: Option-adjusted spreads.

CDS Spreads

Source: Bloomberg

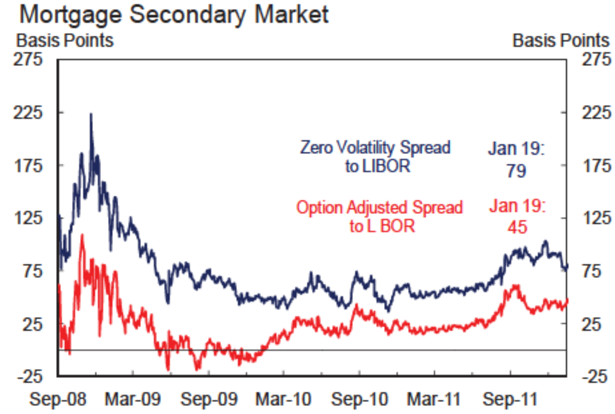
Mortgage Market Rates



Source: Bloomberg

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

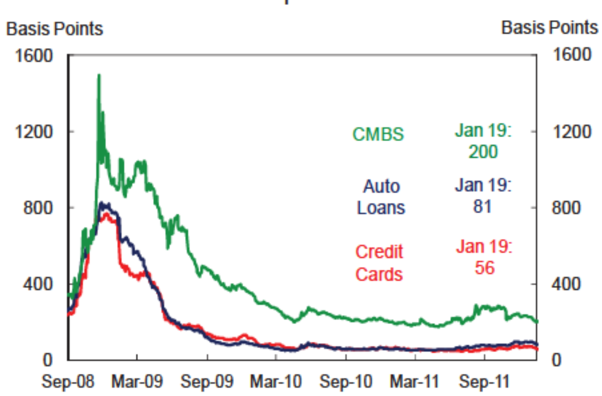
Mortgage Secondary Market



Source: J.P. Morgan

Note: 30 year current coupon Fannie Mae MBS.

AAA-Rated ABS/CMBS Spreads



Source: Merrill Lynch

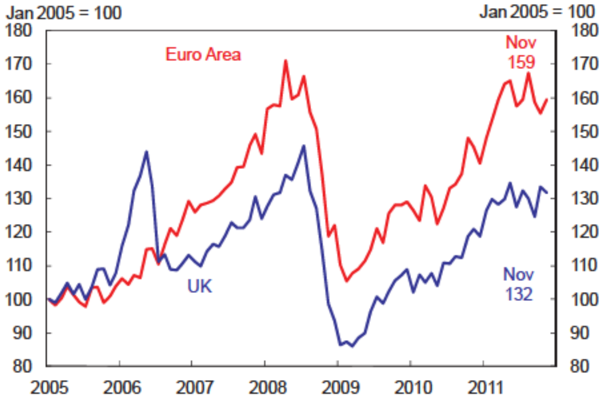
Note: Option-adjusted spreads.

A. Significant Developments

Exhibit A-8: Exports and Industrial Production

Exports

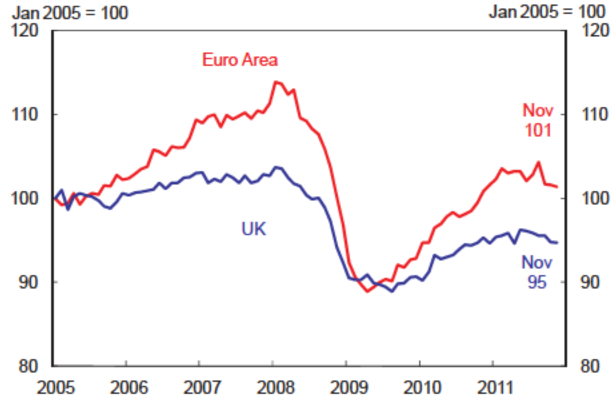
Jan 2005 = 100 Jan 2005 = 100



Source: Haver Note: In Dollar Terms

Industrial Production

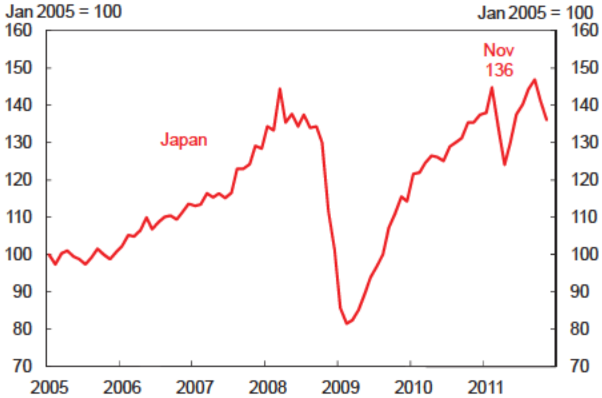
Jan 2005 = 100 Jan 2005 = 100



Source: Haver

Exports

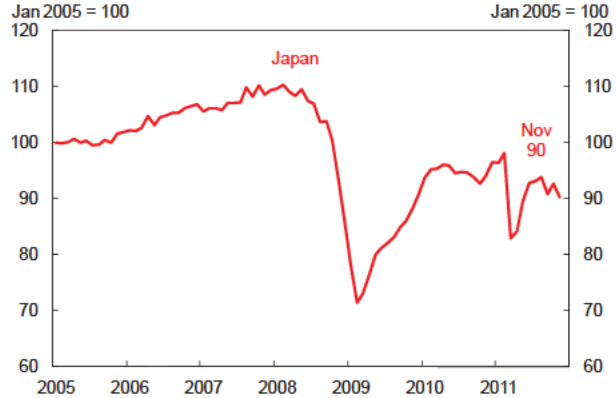
Jan 2005 = 100 Jan 2005 = 100



Source: Haver Note: In Dollar Terms

Industrial Production

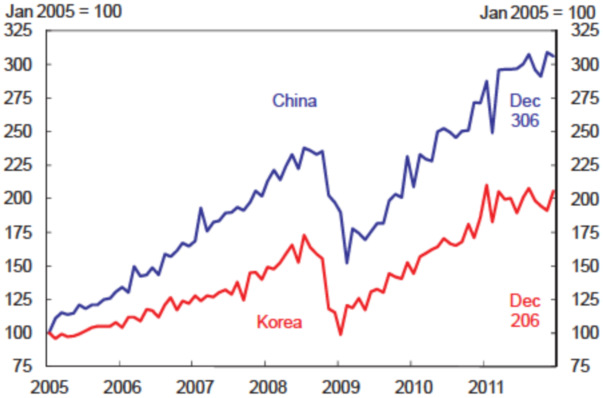
Jan 2005 = 100 Jan 2005 = 100



Source: Haver

Exports

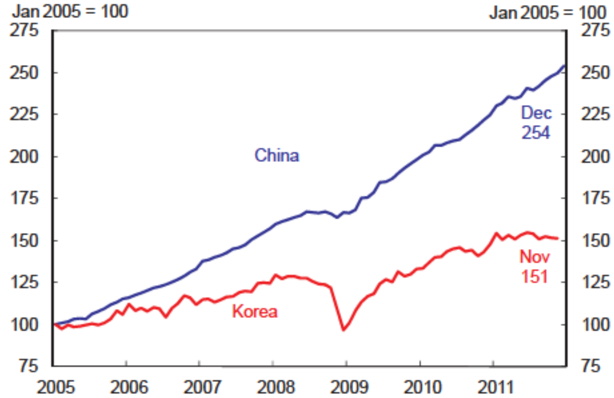
Jan 2005 = 100 Jan 2005 = 100



Source: Haver Note: In Dollar Terms

Industrial Production

Jan 2005 = 100 Jan 2005 = 100

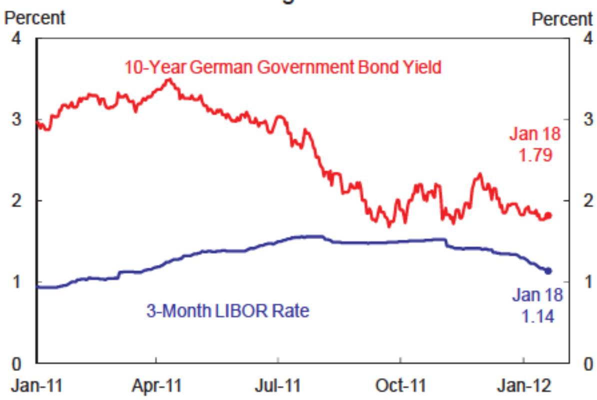


Source: Haver

A. Significant Developments

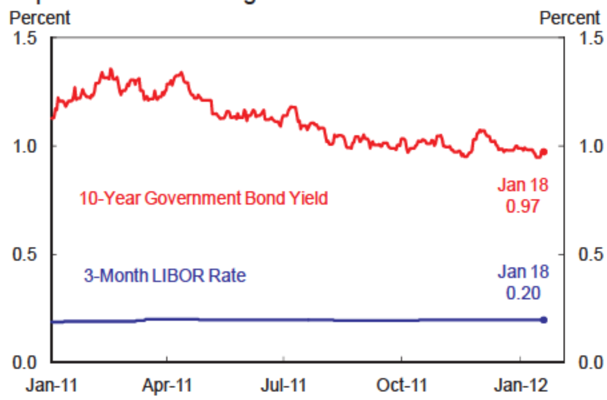
Exhibit A-9:
Global Interest Rates and Equity Markets

Euro Area Short- and Long-Term Interest Rates



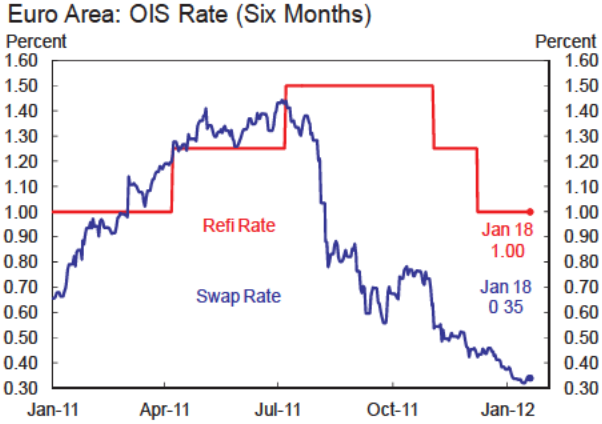
Source: Bloomberg

Japan Short- and Long-Term Interest Rates



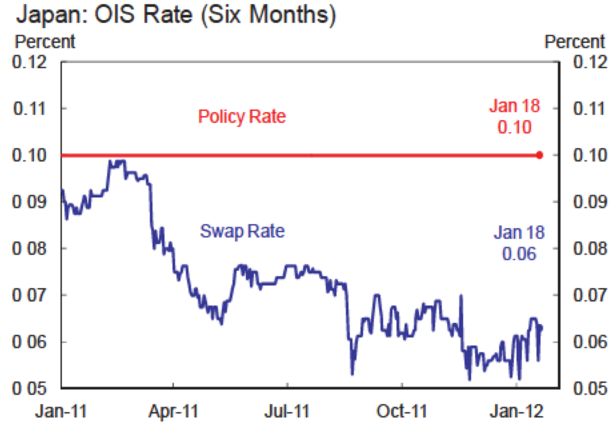
Source: Bloomberg

Euro Area: OIS Rate (Six Months)



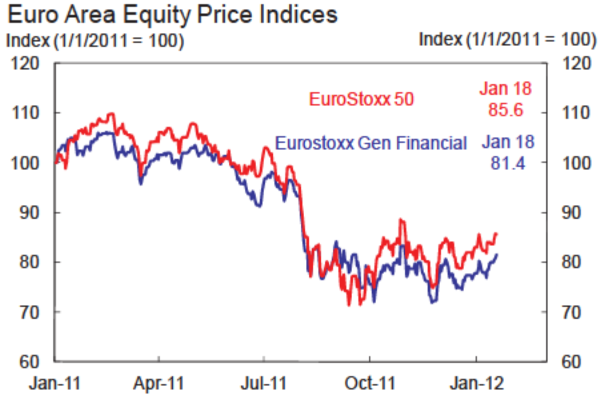
Source: Bloomberg

Japan: OIS Rate (Six Months)



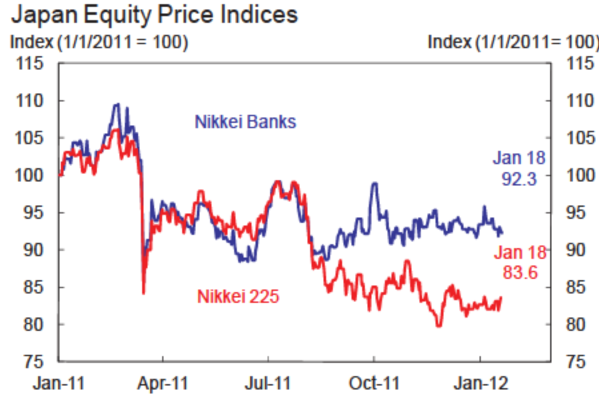
Source: Bloomberg

Euro Area Equity Price Indices



Source: Bloomberg

Japan Equity Price Indices

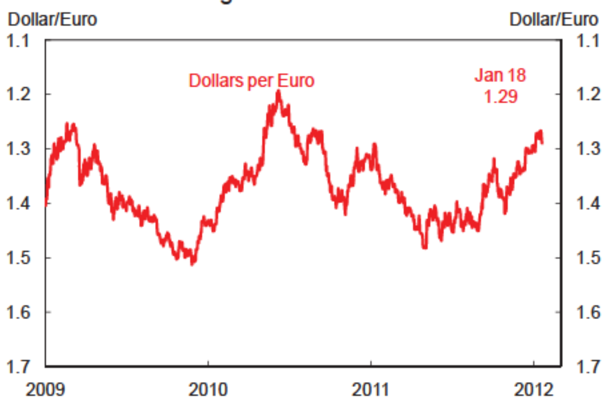


Source: Bloomberg

A. Significant Developments

Exhibit A-10:
Exchange Rates

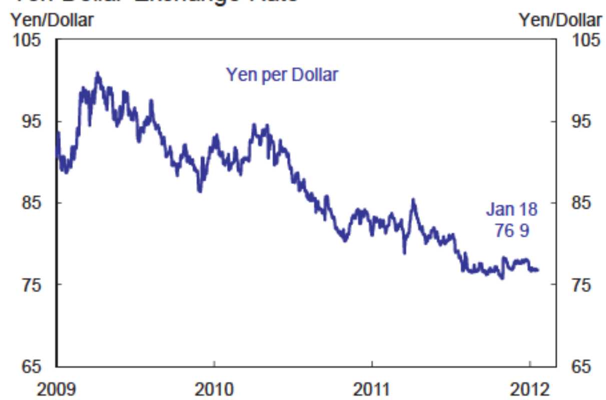
Dollar-Euro Exchange Rate



Source: Bloomberg

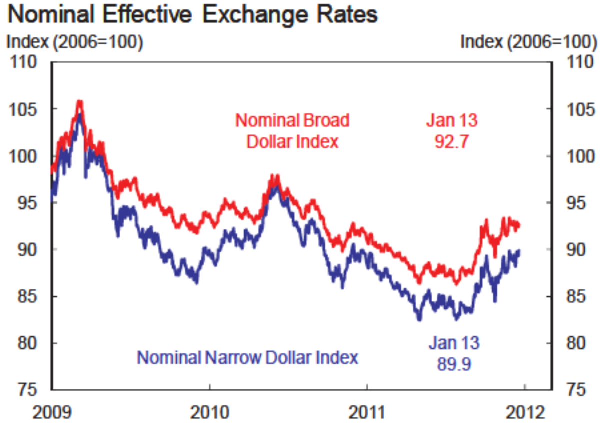
Note: Exchange rate scale is inverted.

Yen-Dollar Exchange Rate



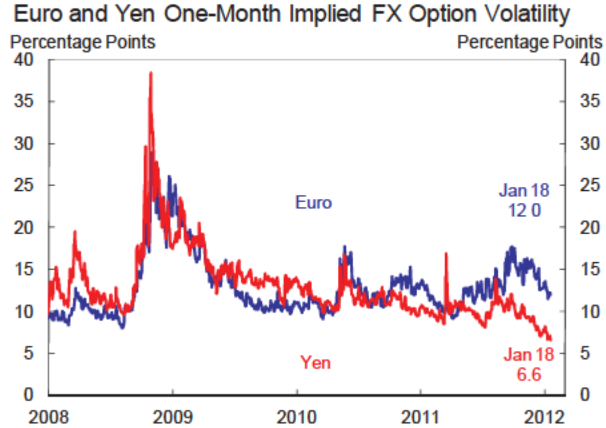
Source: Bloomberg

Nominal Effective Exchange Rates



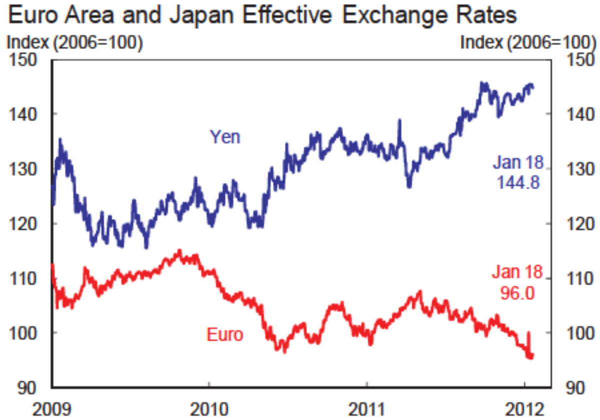
Source: Board of Governers

Euro and Yen One-Month Implied FX Option Volatility



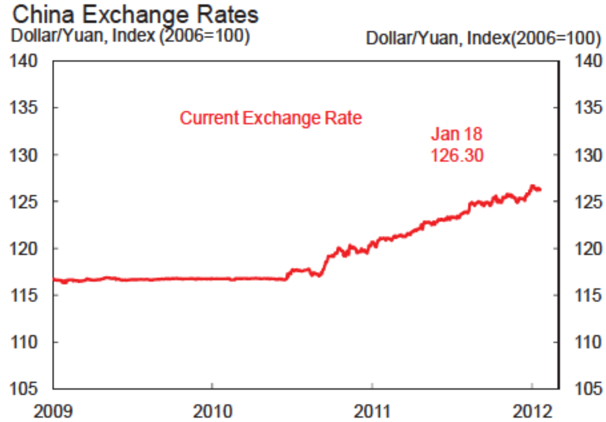
Source: Bloomberg

Euro Area and Japan Effective Exchange Rates



Source: Bloomberg and JPMorgan

China Exchange Rates



Source: Bloomberg

B. FRBNY Forecast Details

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

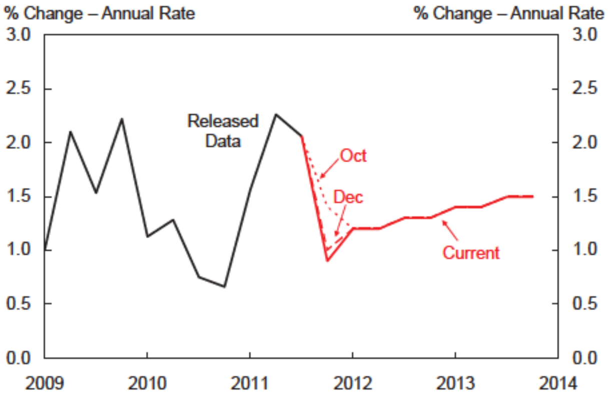
	Core PCE Inflation			Real GDP Growth			Unemployment Rate*			Fed Funds Rate**		
	Oct	Dec	Jan	Oct	Dec	Jan	Oct	Dec	Jan	Oct	Dec	Jan
2011												
Q1	1.5	1.5	1.5	0.4	0.4	0.4	8.9	8.9	9.0	0-0.25	0-0.25	0-0.25
Q2	2.2	2.2	2.2	1.3	1.3	1.3	9.1	9.1	9.0	0-0.25	0-0.25	0-0.25
Q3	2.1	2.0	2.0	2.5	2.0	1.8	9.1	9.1	9.1	0-0.25	0-0.25	0-0.25
Q4	1.4	1.0	0.9	3.0	3.7	3.2	9.0	8.8	8.7	0-0.25	0-0.25	0-0.25
2012												
Q1	1.2	1.2	1.2	2.3	1.2	1.9	8.9	8.7	8.6	0-0.25	0-0.25	0-0.25
Q2	1.2	1.2	1.2	2.9	2.1	2.6	8.8	8.6	8.4	0-0.25	0-0.25	0-0.25
Q3	1.3	1.3	1.3	3.0	3.0	2.9	8.8	8.5	8.2	0-0.25	0-0.25	0-0.25
Q4	1.3	1.3	1.3	2.6	3.3	3.0	8.7	8.3	8.0	0-0.25	0-0.25	0-0.25
2013												
Q1	1.4	1.4	1.4	3.6	3.3	2.3	8.5	8.0	7.9	0-0.25	0-0.25	0-0.25
Q2	1.4	1.4	1.4	3.4	3.2	2.8	8.3	7.8	7.8	0-0.25	0-0.25	0-0.25
Q3	1.5	1.5	1.5	3.4	3.3	3.6	8.1	7.6	7.6	0-0.25	0-0.25	0-0.25
Q4	1.5	1.5	1.5	3.6	3.4	3.1	7.8	7.4	7.5	0-0.25	0-0.25	0-0.25
Q4/Q4												
2010	1.0	1.0	1.0	3.1	3.1	3.1	-0.3	-0.3	-0.4	0.0	0.0	0.0
2011	1.8	1.7	1.7	1.8	1.8	1.7	-0.7	-0.9	-1.0	0.0	0.0	0.0
2012	1.2	1.2	1.2	2.7	2.4	2.6	-0.1	-0.3	-0.6	0.0	0.0	0.0
2013	1.4	1.4	1.4	3.5	3.3	3.0	-0.6	-0.9	-0.8	0.0	0.0	0.0

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

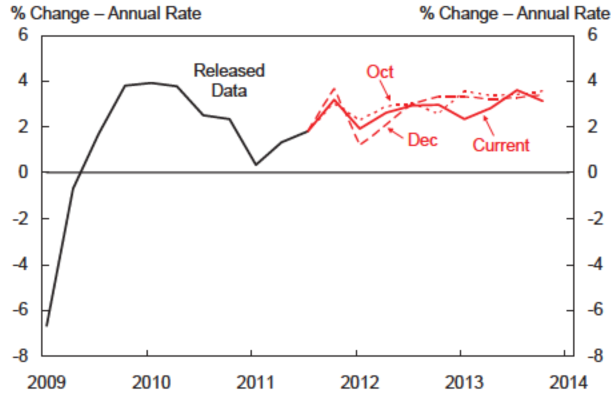
B. FRBNY Forecast Details

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

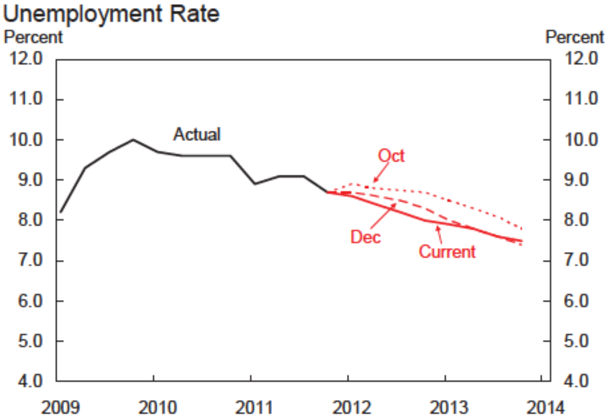
Core PCE Inflation



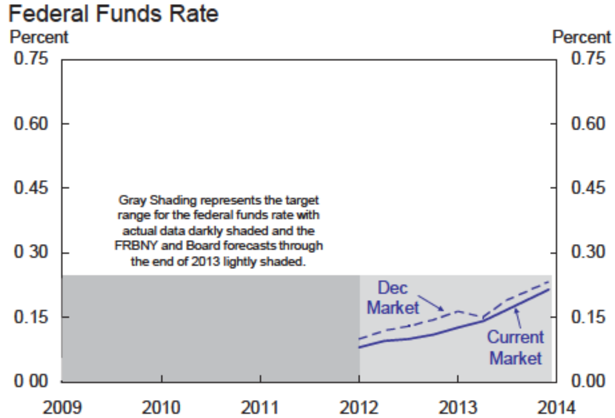
Real GDP Growth



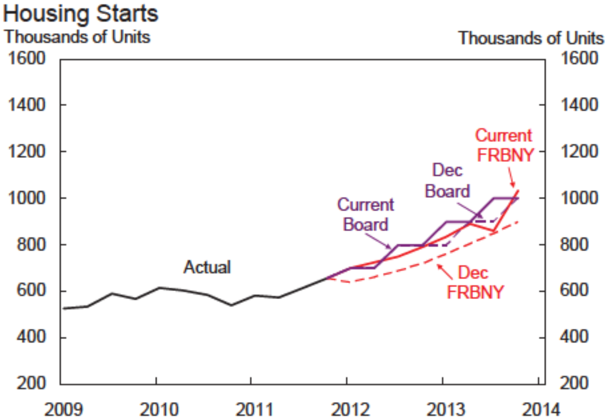
Unemployment Rate



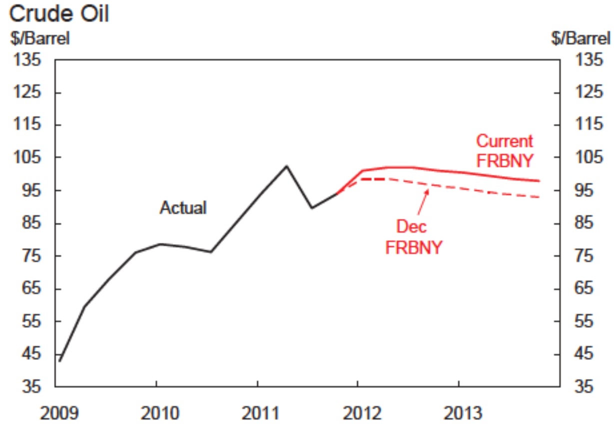
Federal Funds Rate



Housing Starts



Crude Oil



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

B. FRBNY Forecast Details

Exhibit B-3: Near-Term Projections

	Quarterly Growth Rates (AR)		Quarterly Growth Contributions (AR)	
	2011Q4	2012Q1	2011Q4	2012Q1
OUTPUT				
Real GDP	3.2	1.9	3.2	1.9
	(3.7)	(1.2)	(3.7)	(1.2)
Final Sales to Domestic Purchasers	2.1	1.6	2.1	1.6
	(2.7)	(0.8)	(2.7)	(0.8)
Consumption	2.6	2.1	1.8	1.5
	(2.6)	(1.0)	(1.9)	(0.7)
BFI: Equipment and Software	2.5	5.0	0.2	0.4
	(10.0)	(5.0)	(0.7)	(0.4)
BFI: Nonresidential Structures	2.0	4.0	0.1	0.1
	(9.0)	(8.0)	(0.2)	(0.2)
Residential Investment	8.1	4.3	0.2	0.1
	(-7.1)	(-6.2)	(-0.2)	(-0.1)
Government: Federal	1.0	-3.3	0.1	-0.3
	(3.0)	(-3.3)	(0.2)	(-0.3)
Government: State and Local	-1.5	-1.4	-0.2	-0.2
	(-1.6)	(-1.0)	(-0.2)	(-0.1)
Inventory Investment	--	--	0.8	0.3
	--	--	(0.5)	(0.6)
Net Exports	--	--	0.2	0.0
	--	--	(0.4)	(-0.2)
INFLATION				
Total PCE Deflator	0.6	1.1		
	(1.0)	(1.4)		
Core PCE Deflator	0.9	1.2		
	(1.0)	(1.2)		
PRODUCTIVITY AND LABOR COSTS*				
Output per Hour	1.3	1.0		
	(3.0)	(0.8)		
Compensation per Hour	0.5	1.0		
	(1.0)	(2.0)		
Unit Labor Costs	-0.8	0.0		
	(-2.0)	(1.3)		

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

B. FRBNY Forecast Details

Exhibit B-4: Real GDP and Inflation Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2011	2012	2013	2011	2012	2013
OUTPUT						
Real GDP	1.7	2.6	3.0	1.7	2.6	3.0
	(1.8)	(2.4)	(3.3)	(1.8)	(2.4)	(3.3)
Final Sales to Domestic Purchasers	1.6	2.2	2.6	1.7	2.3	2.7
	(1.8)	(1.8)	(3.0)	(1.9)	(1.9)	(3.1)
Consumption	1.8	2.3	2.1	1.3	1.6	1.5
	(1.9)	(1.9)	(2.7)	(1.4)	(1.3)	(1.9)
BFI: Equipment and Software	8.3	8.2	10.0	0.6	0.6	0.8
	(10.1)	(8.2)	(10.0)	(0.7)	(0.6)	(0.8)
BFI: Nonresidential Structures	5.2	7.0	8.0	0.1	0.2	0.2
	(6.5)	(8.0)	(8.0)	(0.2)	(0.2)	(0.2)
Residential Investment	2.7	11.0	14.0	0.1	0.2	0.3
	(-1.0)	(3.9)	(14.0)	(0.0)	(0.1)	(0.3)
Government: Federal	-1.2	-3.3	-2.0	-0.1	-0.3	-0.2
	(-0.8)	(-3.3)	(-2.0)	(-0.1)	(-0.3)	(-0.2)
Government: State and Local	-2.3	-1.1	0.0	-0.3	-0.1	0.0
	(-2.3)	(-0.6)	(0.4)	(-0.3)	(-0.1)	(0.0)
Inventory Investment	--	--	--	-0.1	0.2	0.1
	--	--	--	(-0.3)	(0.3)	(0.1)
Net Exports	--	--	--	0.1	0.1	0.2
	--	--	--	(0.2)	(0.2)	(0.1)
INFLATION						
Total PCE Deflator	2.5	1.3	1.5			
	(2.6)	(1.4)	(1.5)			
Core PCE Deflator	1.7	1.2	1.4			
	(1.7)	(1.2)	(1.4)			
Total CPI Inflation	3.4	1.7	1.9			
	(3.5)	(1.9)	(2.0)			
Core CPI Inflation	2.2	1.6	1.8			
	(2.1)	(1.6)	(1.8)			
GDP Deflator	2.1	1.4	1.6			
	(2.3)	(1.2)	(1.7)			

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		
	2011	2012	2013
INTEREST RATE ASSUMPTIONS			
Federal Funds Rate (End-of-Year)	0-0.25	0-0.25	0-0.25
	0-0.25	0-0.25	0-0.25
10-Year Treasury Yield (Avg. Q4 Level)	2.0	1.8	1.6
	(2.0)	(1.8)	(1.9)
PRODUCTIVITY AND LABOR COSTS*			
Output	2.5	3.3	3.7
	(2.6)	(3.0)	(4.1)
Hours	1.8	1.9	1.9
	(1.4)	(1.6)	(2.4)
Output per Hour	0.7	1.4	1.7
	(1.2)	(1.4)	(1.7)
Compensation per Hour	1.4	1.4	2.3
	(2.5)	(2.2)	(2.5)
Unit Labor Costs	0.7	0.0	0.6
	(1.1)	(0.7)	(0.7)
LABOR MARKET			
Unemployment Rate (Avg. Q4 Level)	8.7	8.0	7.5
	(8.8)	(8.3)	(7.4)
Participation Rate (Avg. Q4 Level)	64.1	64.2	64.3
	(64.1)	(64.1)	(64.2)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	134	186	185
	(133)	(150)	(225)
INCOME			
Personal Income	3.6	3.5	3.5
	(3.7)	(2.4)	(4.7)
Real Disposable Personal Income	-0.3	2.0	1.3
	(-0.1)	(0.7)	(2.6)
Personal Saving Rate	3.4	3.2	2.4
	(3.4)	(2.4)	(2.2)
Corporate Profits Before Taxes	8.6	3.4	3.3
	(11.2)	(3.1)	(3.7)

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

B. FRBNY Forecast Details

Exhibit B-6: FRBNY and Tealbook Forecast Comparison

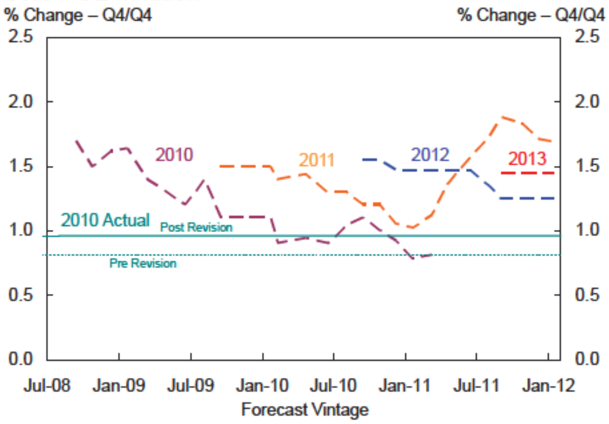
	FRBNY (Q4/Q4)			Board (Q4/Q4)		
	2011	2012	2013	2011	2012	2013
OUTPUT						
Real GDP	1.7	2.6	3.0	1.6	2.1	2.4
	(1.8)	(2.4)	(3.3)	(1.7)	(2.3)	(2.5)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	1.7	2.3	2.7	1.4	1.9	2.2
	(1.9)	(1.9)	(3.1)	(1.6)	(2.0)	(2.1)
Consumption	1.3	1.6	1.5	1.2	1.7	1.7
	(1.4)	(1.3)	(1.9)	(1.3)	(1.7)	(1.6)
BFI	0.7	0.8	1.0	0.7	0.2	0.5
	(0.9)	(0.8)	(1.0)	(0.8)	(0.2)	(0.5)
Residential Investment	0.1	0.2	0.3	0.1	0.1	0.2
	(0.0)	(0.1)	(0.3)	(0.0)	(0.1)	(0.2)
Government	-0.4	-0.4	-0.2	-0.6	-0.1	-0.2
	(-0.3)	(-0.3)	(-0.1)	(-0.5)	(0.0)	(-0.2)
Inventory Investment	-0.1	0.2	0.1	0.1	0.1	0.2
	(-0.3)	(0.3)	(0.1)	(-0.1)	(0.3)	(0.3)
Net Exports	0.1	0.1	0.2	0.1	0.0	0.0
	(0.2)	(0.2)	(0.1)	(0.1)	(0.0)	(0.0)
INFLATION						
Total PCE Deflator	2.5	1.3	1.5	2.5	1.4	1.3
	(2.6)	(1.4)	(1.5)	(2.5)	(1.4)	(1.2)
Core PCE Deflator	1.7	1.2	1.4	1.7	1.5	1.4
	(1.7)	(1.2)	(1.4)	(1.7)	(1.5)	(1.4)
INTREST RATE ASSUMPTION						
Fed Funds Rate (End-of-Year)	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25	0-0.25
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.7	1.4	1.7	0.5	1.4	1.4
	(1.2)	(1.4)	(1.7)	(0.9)	(1.3)	(1.2)
Compensation per Hour	1.4	1.4	2.3	1.8	2.3	2.2
	(2.5)	(2.2)	(2.5)	(1.8)	(2.3)	(2.2)
Unit Labor Costs	0.7	0.0	0.6	1.3	1.0	0.7
	(1.1)	(0.7)	(0.7)	(0.9)	(1.1)	(0.9)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	8.7	8.0	7.5	8.9	8.6	8.4
	(8.8)	(8.3)	(7.4)	(9.0)	(8.7)	(8.3)
Participation Rate (Avg. Q4 Level)	64.1	64.2	64.3	64.0	64.0	63.9
	(64.1)	(64.1)	(64.2)	(64.1)	(64.1)	(64.0)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	134	186	185	133	142	175
	(133)	(150)	(225)	(133)	(150)	(183)
SAVING						
Personal Saving Rate (Avg. Q4 Level)	3.4	3.2	2.4	4.1	4.9	4.1
	(3.4)	(2.4)	(2.2)	(4.3)	(5.0)	(4.4)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	657	790	1035	600	700	900
	(625)	(720)	(900)	(600)	(700)	(900)

B. FRBNY Forecast Details

Exhibit B-7: Evolution of FRBNY and Board Forecasts since Mid-2008

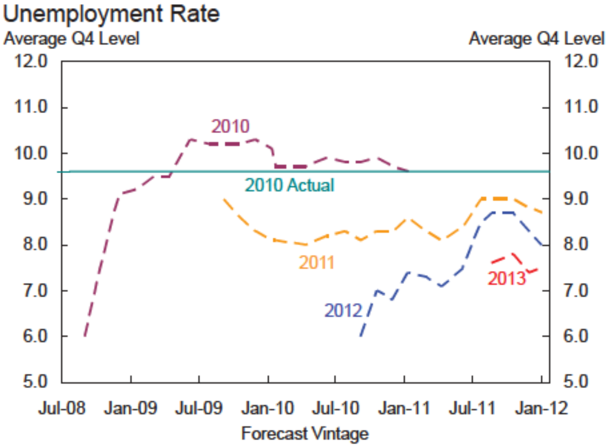
FRBNY

Core PCE Inflation



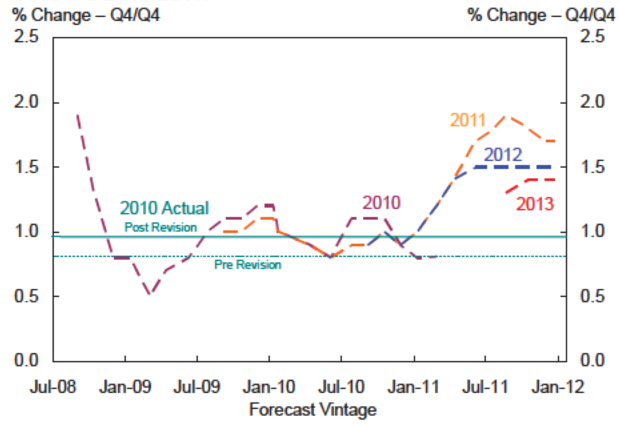
Real GDP Growth

Unemployment Rate

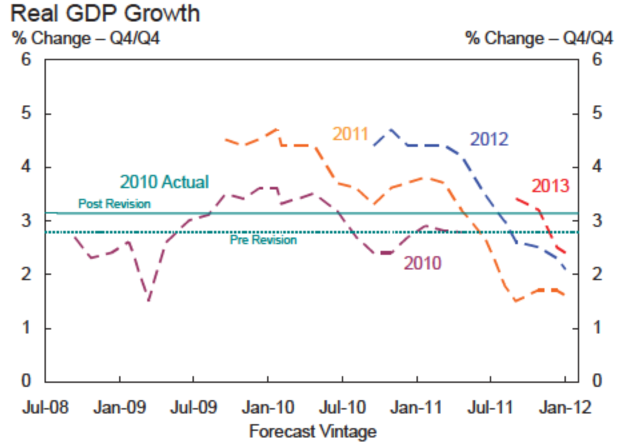


Board

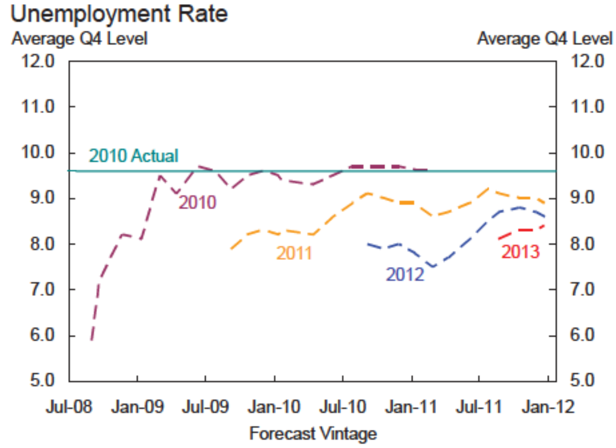
Core PCE Inflation



Real GDP Growth



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	2011Q4	2012Q1	2012 Q4/Q4	2013 Q4/Q4
FRBNY	1/19/2012	3.2	1.9	2.6	3 0
		(3.7)	(1.2)	(2.4)	(3.3)
Blue Chip	1/10/2012	3.1	2.0	2.3	2.8
		(2.7)	(1.9)	(2.2)	--
Median SPF	11/14/2011	2.6	2.4	2.6	--
		(2.6)	(2.4)	(2.6)	--
Macro Advisers	1/19/2012	3.1	1.8	2.3	3.6
		(2.7)	(2.0)	(2.2)	(3 9)

Core PCE Inflation

	Release Date	2011Q4	2012Q1	2012 Q4/Q4	2013 Q4/Q4
FRBNY	1/19/2012	0.9	1.2	1.2	1.4
		(1.0)	(1.2)	(1.2)	(1.4)
Median SPF	11/14/2011	1.4	1.6	1.6	--
		(1.5)	(1.5)	(1.6)	--
Macro Advisers	1/9/2012	0.8	1.4	1.4	1.4
		(1.1)	(1.4)	(1.4)	(1.4)

CPI Inflation

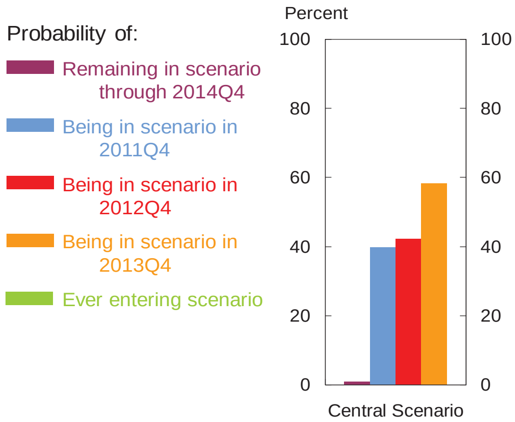
	Release Date	2011Q4	2012Q1	2012 Q4/Q4	2013 Q4/Q4
FRBNY	1/19/2012	1.1	1.3	1.7	1 9
		(1.8)	(2.0)	(1.9)	(2 0)
Blue Chip	1/10/2012	1.4	1.8	2.0	2 2
		(1.6)	(1.9)	(2.0)	--
Median SPF	11/14/2011	2.0	2.0	1.9	--
		(2.0)	(2.0)	(1.9)	--
Macro Advisers	1/9/2012	0.9	1.7	1.6	1.5
		(1.2)	(1.6)	(1.6)	(1.5)

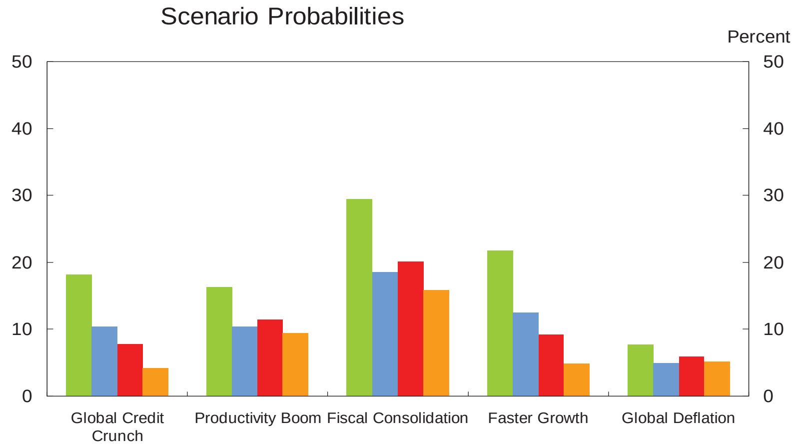
Core CPI Inflation

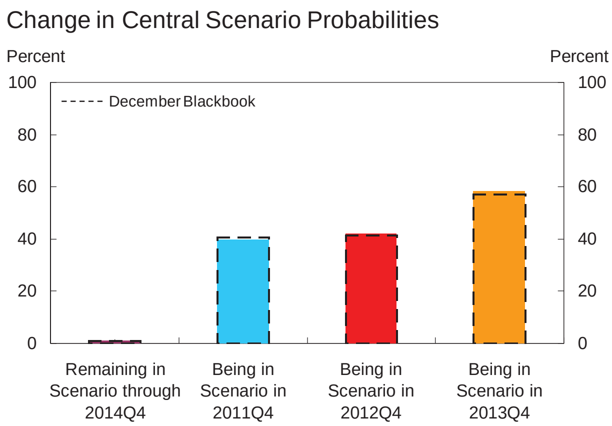
	Release Date	2011Q4	2012Q1	2012 Q4/Q4	2013 Q4/Q4
FRBNY	1/19/2012	1.7	1.6	1.6	1.8
		(1.6)	(1.6)	(1.6)	(1.8)
Median SPF	11/14/2011	1.7	1.8	1.8	--
		(1.7)	(1.8)	(1.8)	--
Macro Advisers	1/9/2012	1.6	1.9	1.6	1.6
		(1.6)	(1.9)	(1.6)	(1.6)

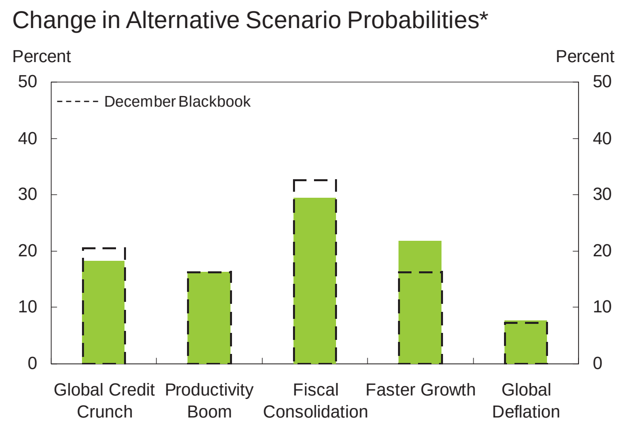
C. FRBNY Forecast Distributions

Exhibit C-1: Risks



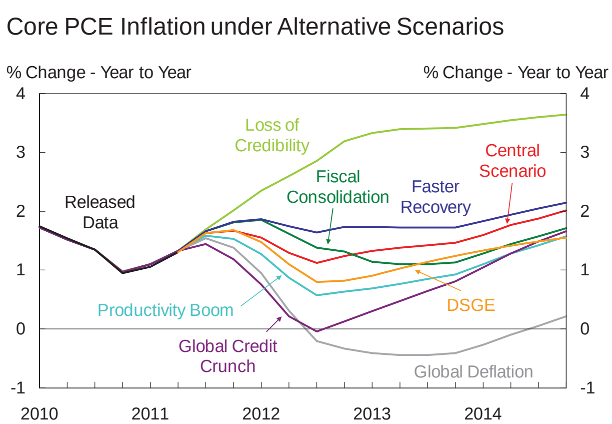


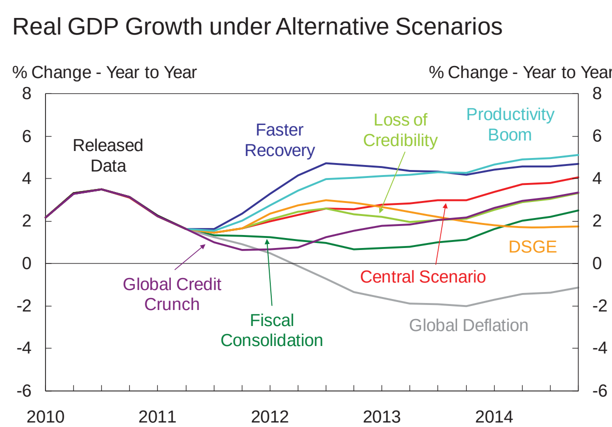




*Probability of ever reaching scenario

Exhibit C-2: Projections under Alternative Scenarios



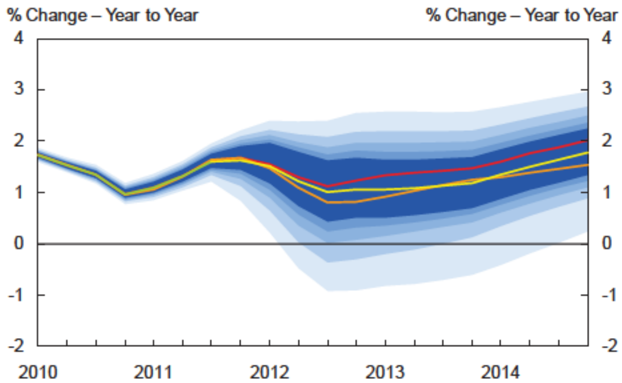


Source: MMS Function (FRBNY)

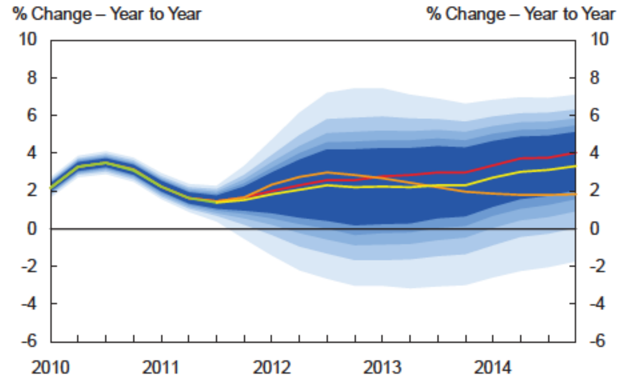
C. FRBNY Forecast Distributions

Exhibit C-3: Inflation and Output Forecast Distributions

Core PCE Inflation Forecast Distribution

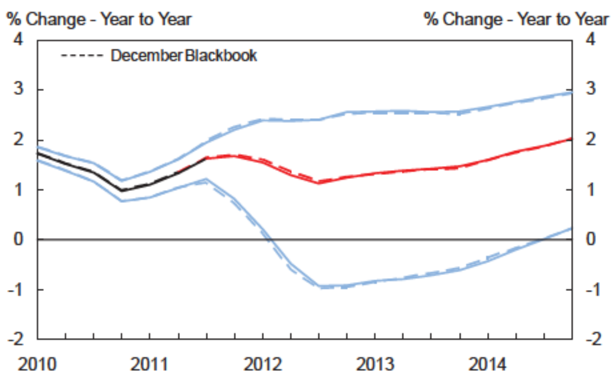


Real GDP Growth Forecast Distribution

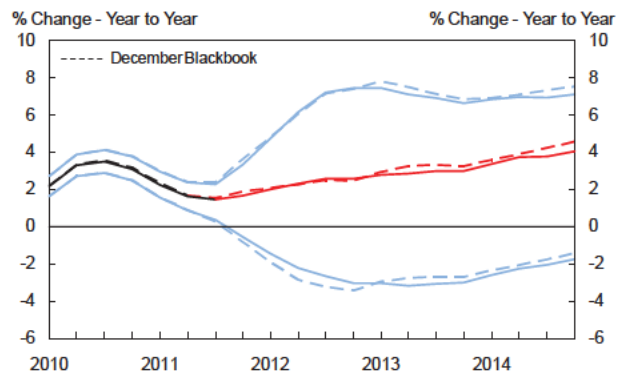


The yellow line represents the expected value of the forecast distribution, the red line represents the FRBNY central projection, the orange line represents the DSGE forecast, and the green line represents released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter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

Change in Core PCE Inflation Forecast Distribution

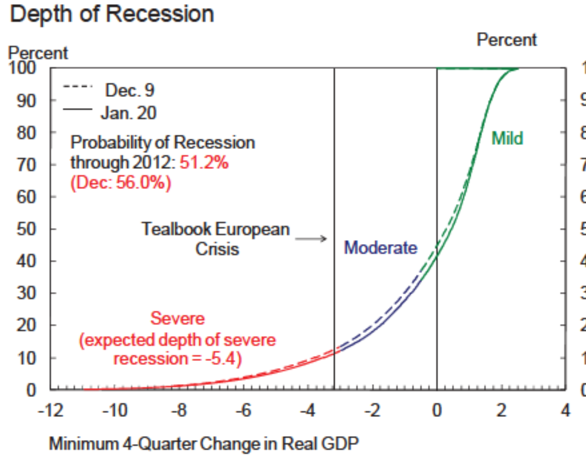


Change in Real GDP Growth Forecast Distribution

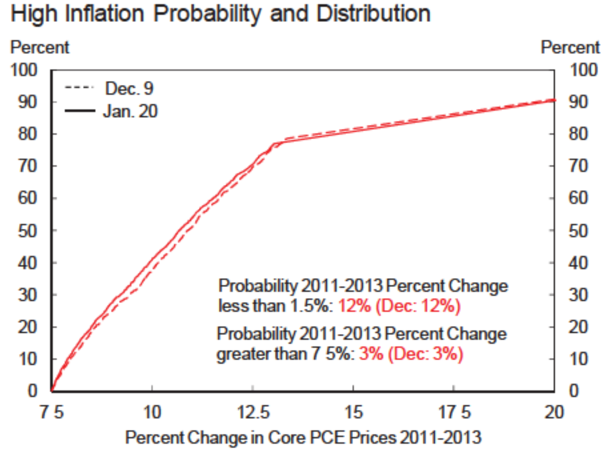


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from the previous Blackbook.

Depth of Recession



High Inflation Probability and Distribution

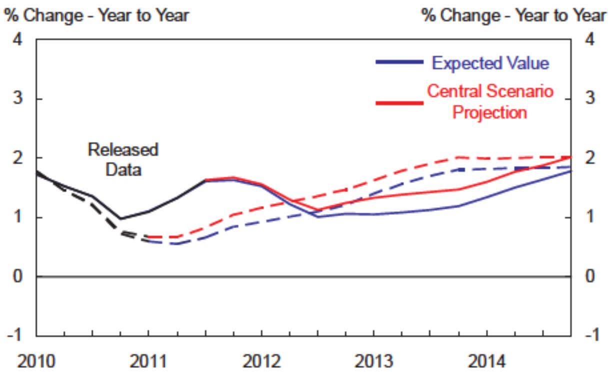


Source: MMS Function (FRBNY)

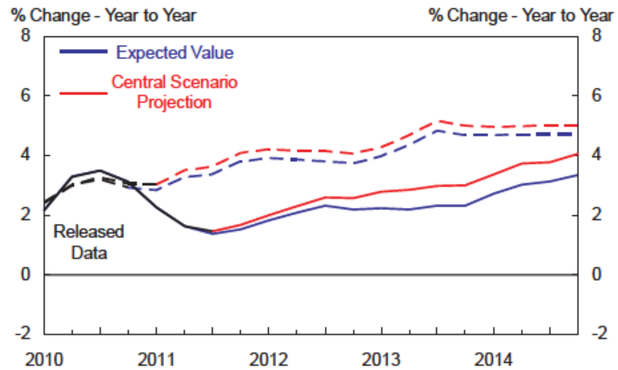
C. FRBNY Forecast Distributions

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

One-Year Comparison of Core PCE Inflation Forecast

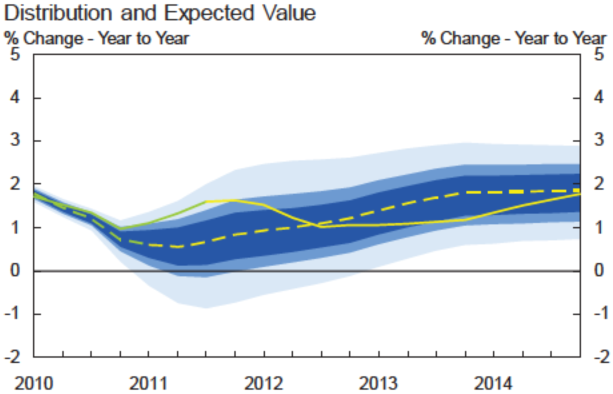


One-Year Comparison of Real GDP Growth Forecast

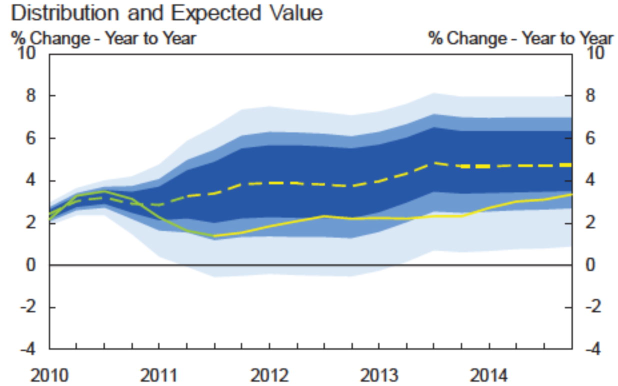


The solid lines represent the current central scenario projection and expected value, while the dashed lines represent those from the year-ago Blackbook.

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



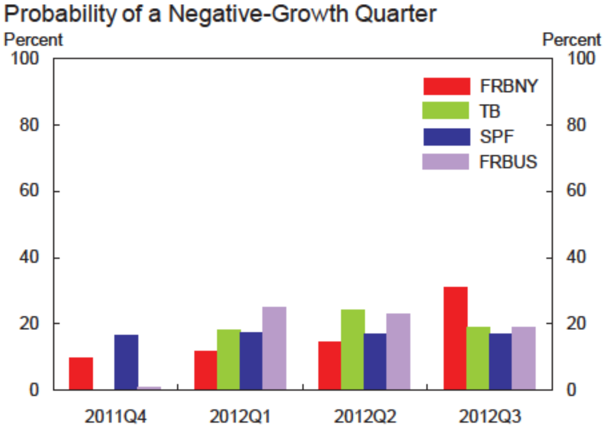
One-Year Comparison of Real GDP Growth Forecast Distribution and Expected Value



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

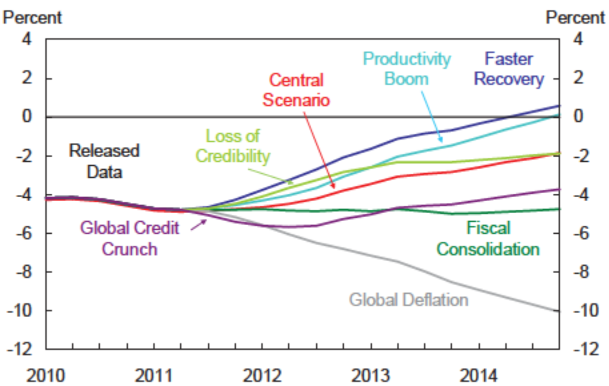


Source: MMS Function (FRBNY)

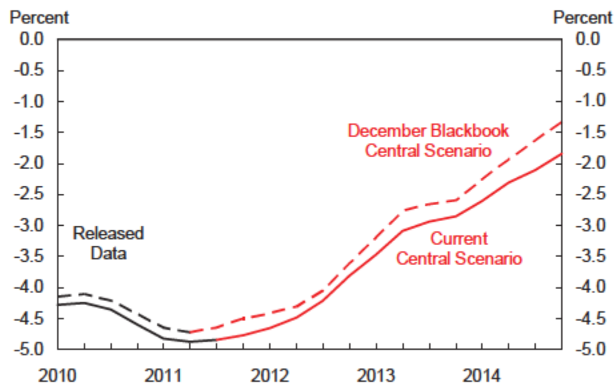
D. FRBNY Fed Funds Rate Projections

Exhibit D-1: *Baseline*
Policy Rule Analysis

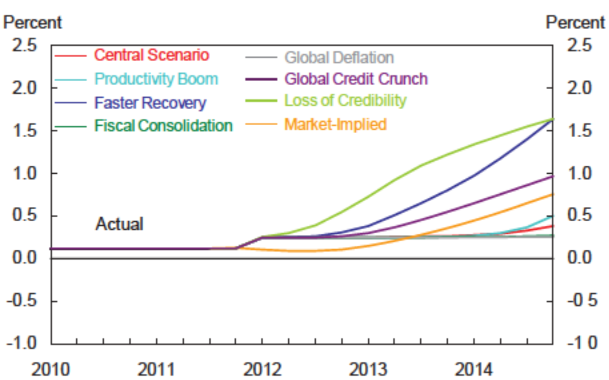
Real FFR under Alternative Scenarios



Change in Central Scenario Real FFR



Nominal FFR under Alternative Scenarios



Change in Central Scenario and Market-Implied Nominal FFR

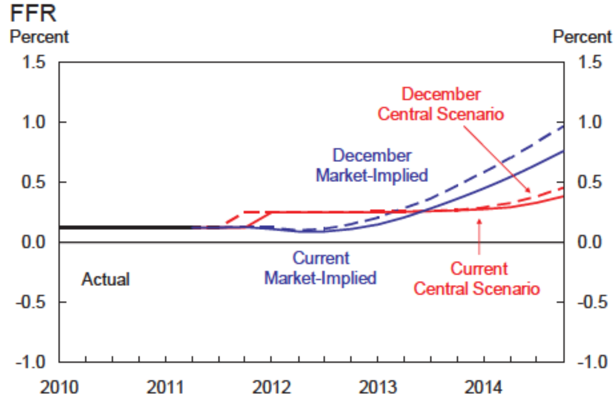
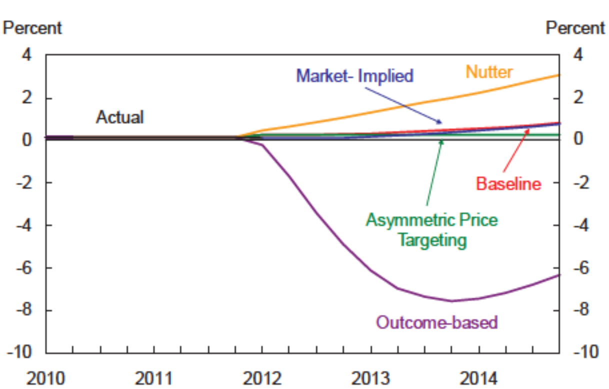


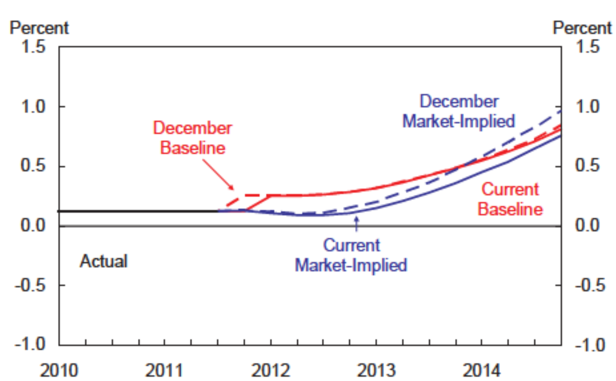
Exhibit D-2: Alternative Policy Rules under Expected Value of Forecast Distribution

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

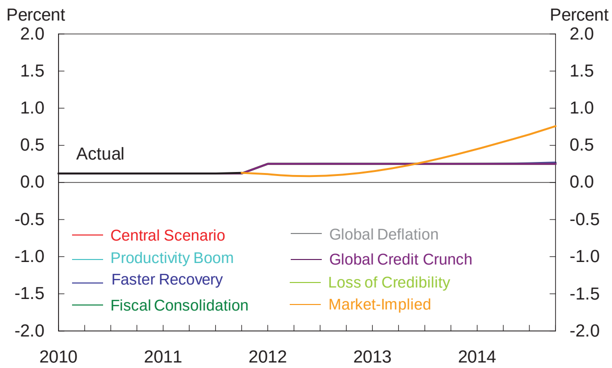
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

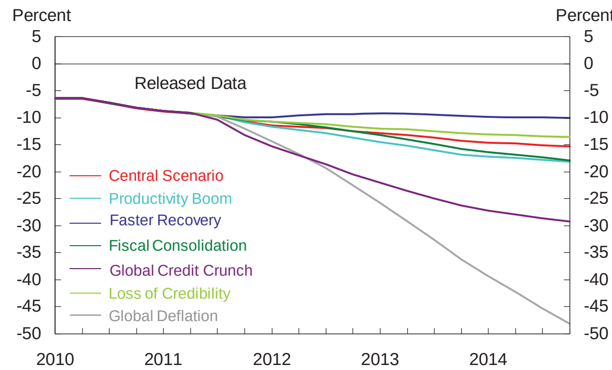
Exhibit D-3: Alternative Policy Rule Analysis

Policy Rule: *Asymmetric Price Targeting*

Nominal FFR under Alternative Scenarios

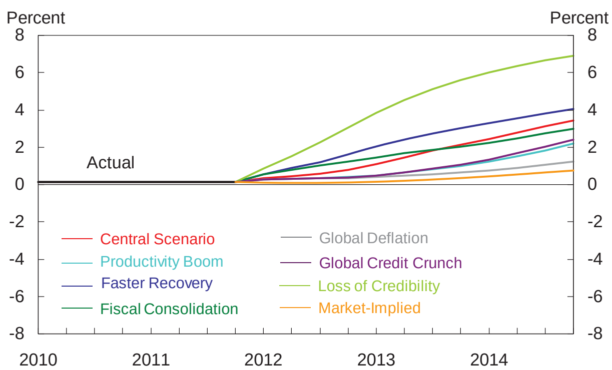


Real FFR under Alternative Scenarios

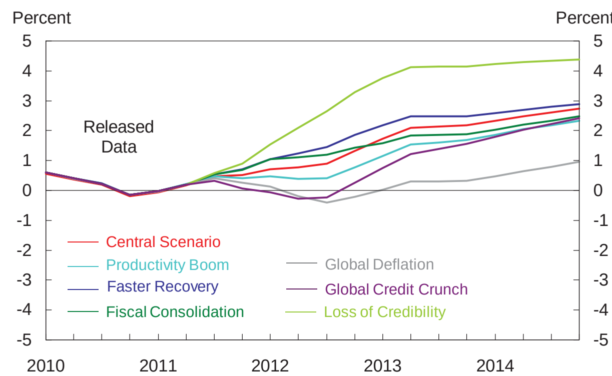


Policy Rule: *Nutter*

Nominal FFR under Alternative Scenarios

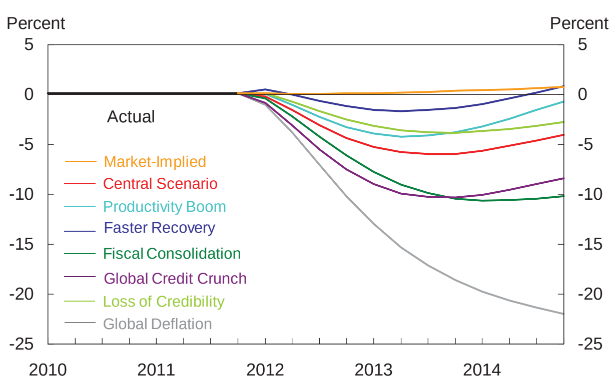


Real FFR under Alternative Scenarios

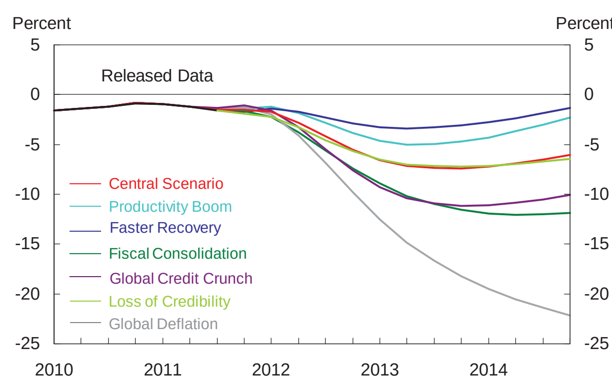


Policy Rule: *Outcome-based*

Nominal FFR under Alternative Scenarios



Real FFR under Alternative Scenarios

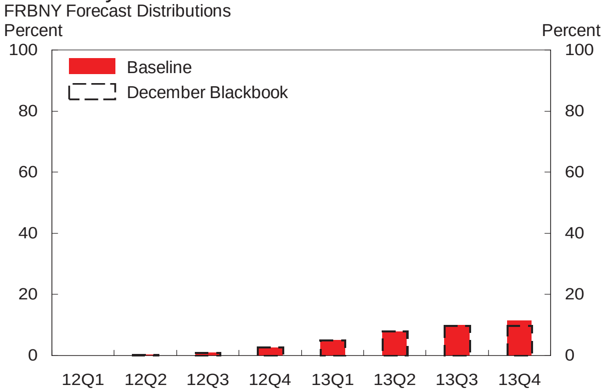


Source: MMS Function (FRBNY)

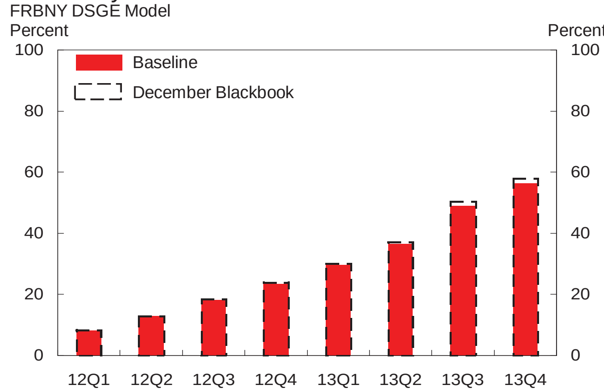
D. FRBNY Fed Funds Rate Projections

Exhibit D-4: FFR Probabilities

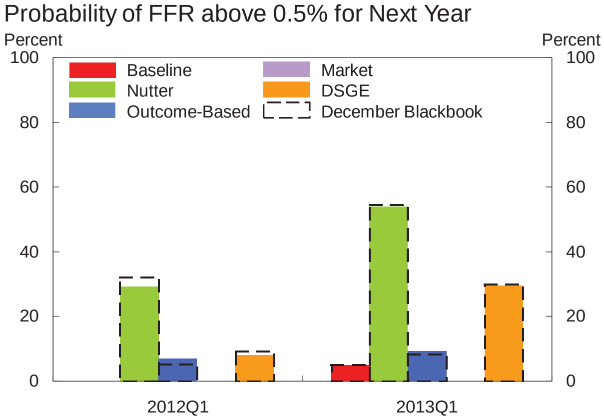
Probability of FFR above 0.5% for Next Year
FRBNY Forecast Distributions



Probability of FFR above 0.5% for Next Year
FRBNY DSGE Model



Probability of FFR above 0.5% for Next Year



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:

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

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

The two variants of the *Baseline* rule that we use are the *Asymmetric Price Targeting* and *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.