FRBNY BLACKBOOK

RESEARCH AND STATISTICS GROUP

FOMC Background Material

October 2010

CONFIDENTIAL (FR) Class II FOMC

FRBNY BLACKBOOK

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CONTENTS

EXHIBITS

EXHIBIT OVERVIEW

1. Policy Recommendation and Rationale

We recommend maintaining the target for the federal funds rate in the 0–0.25% range until 2012Q2, which is one quarter later than in the September Blackbook and consistent with the market implied path. We also suggest resuming an expansion of the Fed's balance sheet through large-scale purchases of long-term Treasury securities. Finally, we recommend providing more explicit forward guidance for the duration of the near-zero policy rate and the path of the Fed's balance sheet.

In light of the continued low readings on inflation and the accommodative stance of the most recent FOMC statement, we recommend additional monetary stimulus in the form of a resumption of large scale asset purchases of long-term Treasury securities. We continue to see the transmission of this balance sheet expansion through lower long-term rates, either via the direct effect of the purchases (portfolio balance channel) or through the signaling of a commitment to maintain policy accommodation for longer than currently implied by the "extended period" language. In addition, we also see a balance sheet expansion as depreciating the exchange rate value of the dollar, through its depressing effect on domestic interest rates. Changes in financial conditions since the last FOMC meeting suggest that market participants place significant odds to an announced resumption of LSAPs at the November meeting.

Regarding the LSAP announcement, we see value in providing guidance on the likely path of purchases several meetings ahead, so as to front-load any stimulative effect of the policies that might stem either from the signaling channel or from a reduction in policy uncertainty. We recommend that the Committee announces an initial purchase of $600 billion of long-term Treasury securities to be completed over the course of the coming year. In addition, we suggest maintaining an easing bias by announcing that the Committee stands ready to further expand the Fed's balance sheet should conditions warrant.

We regard the balance sheet expansion to be most effective within a framework that conditions the accommodative policy stance on achieving specific objectives. We recommend therefore that the FOMC commits to maintain near a zero interest rate and adjusts appropriately the size of the balance sheet until the accumulated deviations of inflation from the inflation objective (which we see as about 2% on a PCE basis) are eliminated. This communication strategy should reinforce expectations of looser financial conditions going forward, mitigate the risk of downward pressures on inflation expectations, as well as pave the way for a smoother exit from the current monetary policy stance when appropriate.

Special Topic

Price Level Targeting in the FRBNY DSGE Model

Marco Del Negro [redacted] Gauti Eggertsson, Argia Sbordone, and Jenny Chan

In this box we investigate the macroeconomic effects of introducing price level targeting (PLT) in an estimated model of the US economy - the FRBNY DSGE. We replace the model's baseline policy rule estimated over the sample with a new rule that implements a PLT regime starting in 2010Q3. With the new rule in place, we compute output and inflation forecasts and compare them to those obtained under the baseline rule.[1]

The model baseline policy rule is an interest rate rule with inertia, according to which the federal funds rate R_t responds to the difference between the 4-quarter inflation rate and target inflation π_* and to the 4-quarter output growth g_t (in deviation from steady state growth):

$$R_t = \rho_R R_{t-1} + (1-\rho_R)\left(\psi_1 \sum_{j=0}^{3}\left(\pi_{t-j} - \pi_*\right) + \psi_2 \sum_{j=0}^{3} g_{t-j}\right) + \sigma_r \epsilon_{R,t}, \quad (1)$$

where $\varepsilon_{R,t}$ captures policy shocks.

The PLT rule replaces the response of the interest rate to inflation deviations from target with a (negative) response to inflation debt (see the boxes by Gauti Eggertsson and Andrea Tambalotti in the September Blackbook).

[1] A more detailed discussion of this exercise is in the Supplement to the October issue of the FRBNY DSGE Newsletter, which can be found in the directory [redacted]. The model is estimated with Bayesian methods using US data on core PCE inflation, output growth, the FFR, labor supply, and the labor share from 1984Q2 to 2010Q2.

This variable, which we denote by Δ_t accumulates shortfalls of inflation from target, as in:

$$\Delta_t = \Delta_{t-1} + \left(\pi_* - \pi_t\right) = \Delta_0 + \sum_{j=1}^{t}\left(\pi_* - \pi_j\right) \quad (2)$$

The key difference between policy (1) and the PLT policy is that in the former interest rates only respond to current deviations of four-quarter inflation from target, while in the latter they respond to the entire cumulated history of deviations. As a result, the new policy maintains an easing bias "until the debt is repaid", that is, until Δ_t returns to zero. Note that the new policy aims at maintaining average inflation at the target level π_*. Therefore, it carries no inherent inflation bias.

Given the estimated model parameters, we compute counter-factual forecasts under the new rule, maintaining the assumption that the switch in policy is perfectly understood and believed by the public. Although this assumption is extreme, the exercise is useful to shed light on a number of issues. How large are the macroeconomic effects of adopting a PLT rule in a rational expectations model? How do these effects depend on the key features of a PLT rule in terms of its implementation? How robust are the results to various features of the economy, such as the degree of inertia in the formation of expectations?

Some answers are provided in the figure. The top row shows as red lines the baseline model forecasts (i.e. the forecasts under rule (1)) for core PCE inflation and real GDP growth.[2] The blue lines represent the forecasts under PLT, with an initial inflation debt Δ_0 set to 0.9. This is the level one obtains today by cumulating the deviations of inflation from a 2% target since 2008Q4, the first quarter in which the policy rate was pegged at the zero lower bound. All other model parameters, including those in the policy rule, are kept at their estimated value, namely $\psi_1 = 2.2$, $\psi_2 = 0.22$, average inflation $\pi_* = 2.4\%$ and $\rho_R = 0.8$. For both the baseline and the PLT forecast, we force the interest rate to be zero for 5 quarters, to be consistent with the "extended period" language in the FOMC statement. The graphs suggest the following observations:

- The introduction of PLT has a significant effect on both inflation and output. Inflation jumps from about 0.5% to about 3.5%, while output growth increases on impact from slightly above 2% to about 7%. The jumps in inflation and real activity follow from the forward-looking nature of the model. It is worth noting that similar jumps were observed in the U.S. following the introduction of a "reflation" policy similar in spirit to PLT in 1933.

[2] The baseline forecasts for core PCE inflation are very close to the FRBNY modal forecasts, while those for output are less upbeat than the FRBNY modal forecasts for 2011 and beyond.

- Large effects occur despite the small size of the initial inflation debt. This is because the threat under PLT to keep interest rates low for a substantial period of time leads to an immediate increase in inflation expectations, and consequently, in inflation, which rapidly reduces the inflation debt (as shown in the middle left panel). As inflation expectations increase, the real interest rate (depicted in the middle right panel) drops from close to 0 to almost −3%, stimulating output.

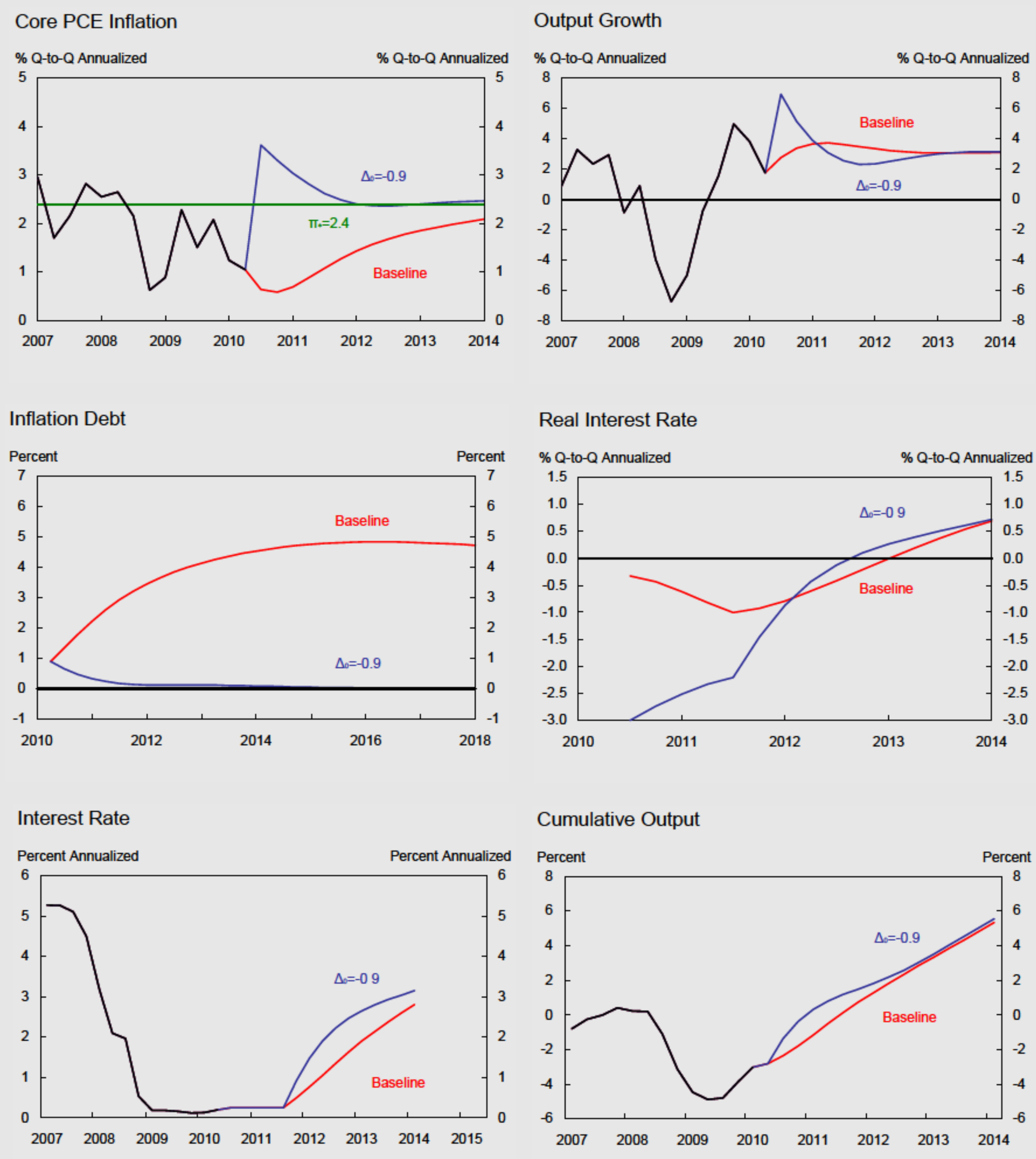
- Under the new policy, the renormalization in the nominal interest rate occurs earlier than under the baseline (see the bottom left panel). While this may seem puzzling, it is simply the result of the fact that the rapid return of the inflation debt to zero makes it unnecessary for interest rates to remain low. This result illustrates that a PLT policy only involves a conditional commitment to keep rates low, namely only in so far as the actual price-level remains below the target growth path. As a consequence of the earlier renormalization, under PLT long term nominal rates may actually increase.

- The bottom right panel in the figure shows the level of output (measured by cumulating output growth since the onset of the recession) under the two policies. Due to long-run money neutrality, the levels of output under the two policies are approximately the same toward the end of the forecast horizon. Through 2012, however, the level of output under PLT is above the baseline. So PLT produces both a higher level of output and a level of inflation closer to target throughout the forecast horizon. From this perspective, then, PLT appears superior to current policy rule.

- Assuming more inertia in the inflation process dampens the effects of the adoption of PLT on inflation. When we project inflation and output assuming a high degree of backward-looking behavior in price-setting, the impact on inflation is smoother, as we would expect, but remains substantial.

- Changes in the response coefficient ψ_1 with which the interest rate responds to changes in inflation debt (for example from the baseline value of 2.2 to 1) have little discernible effects on the outcome. This suggests that communication of the policy may not require a precise quantification of the "easing bias" associated with a positive level of inflation debt.

Baseline vs PLT



2. Evolution of Outlook and Risks

2.1 Central Forecast

Our modal forecast for real GDP growth has for some time anticipated that growth of real GDP would moderate in the second half of 2010. This assessment was based on the expectation that the growth impulse from the fiscal stimulus legislation enacted in early 2009 and from an unusually pronounced inventory cycle would peak around mid 2010 and then begin to fade before a robust recovery of private final demand was in full swing. Data released over the past several months indicate that this moderation of growth has been more intense than expected, with the economy losing substantial forward momentum over 2010Q3. At this writing we expect growth of real GDP in 2010 (Q4/Q4) of just 2.3%, essentially the same as in the September Blackbook but down from 3% in late June. For the second half of 2010 we now anticipate growth between 1¾% and 2% (annual rate), down from 2 ¾% over the first half of the year. As this anticipated second half growth rate is well below our estimate of potential, some movement upward in the unemployment rate over that period is quite likely. Coinciding with the loss of forward momentum, underlying inflation as measured by the core PCE deflator continued to slow over the third quarter, to just 0.8% at an annual rate and 1.3% on a year-over-year basis. Indeed, the core CPI for September was unchanged and our expectation for the change of the core PCE deflator for that month is now slightly negative, raising the possibility of a further slowing of core inflation over the next several months.

With the benefit of hindsight, it appears that the turmoil in European financial markets in 2010Q2 had a larger impact on the US economy than we expected. In addition to the direct effects of the decline in US equity prices, increase in the exchange value of the dollar, and increase in credit spreads, these events might have also elevated the already high degree of uncertainty among consumers and businesses. In addition, while it was widely anticipated that there would be a lull in housing market activity following the expiration of the home buyer tax credit, that lull has lasted much longer than anticipated despite the lowest mortgage interest rates since the mid 1950s. We now believe that mortgage underwriting standards are significantly tighter than previously thought. In addition, internal survey data indicates that household expectations of future home price appreciation have continued to decline in recent months, which is also likely contributing to the depressed level of housing market activity.

Conditioning assumptions. We continue to assume that potential GDP growth is around 2 ½%. This is composed of 1% trend hours growth and trend productivity growth of around 1 ½% (on a GDP basis, which is equivalent to about 1 3/4% on a nonfarm business sector basis). The Board staff estimates of potential in the October Tealbook are 2.5% for 2010 and 2011 and 2.6% for 2012.

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

The FRBNY outlook for foreign real GDP growth over the forecast horizon is essentially unchanged at 3.5% (Q4/Q4 on a GDP-weighted basis) in 2010, 3.1% in 2011, and 3.0% in 2012. The Board staff projections for foreign GDP growth are also little changed at 3.6% in 2010, 2.8% in 2011, and 3.4% in 2012.

The projected path of oil prices has been raised by between $5 and $6 per barrel, with an expected WTI price of $82 per barrel for 2010Q4, $87 per barrel for 2011Q4, and $89 per barrel for 2012Q4. The path for oil prices assumed by the Board staff is also higher and is quite similar to ours.

As is our usual practice, our assumptions regarding federal fiscal policy are the same as that of the Tealbook. It is now assumed that all of the 2001-2003 tax cuts will be extended through 2012, including those for high income taxpayers. However, the Making Work Pay tax credit will not be extended and so will expire at the end of 2010. Finally, a bonus depreciation provision for business investment spending in 2010 has been enacted into law as part of legislation intended to aid small businesses. Based on the Board's fiscal impulse measure, fiscal policy will subtract about 0.1 percentage point from growth in 2011 and 0.5 percentage points in 2012, after contributing 1 percentage point in both 2009 and 2010.

Our assumptions for equity prices and the real exchange value of the dollar are also similar to those of the Tealbook. Equity prices are assumed to increase at a 12 1/2% annual rate through the end of 2012, from a base that is about 5 ½% higher than assumed in September. The main driver of this increase is the return of the equity premium to more normal levels. The nominal exchange value of the dollar is expected to depreciate 1 ½% in both 2011 and 2012, but from a lower base than assumed in September. The value of the dollar at the end of the forecast horizon is a little over 3% lower than assumed in September.

Finally, our assumption regarding the future path of the Core Logic repeat sales home price index (formerly known as the Loan Performance Home Price Index) is also the same as the Board's. While that index firmed in the second quarter, it fell more than expected in July and August. With the flow of homes coming onto the market due to foreclosures and short sales still elevated while demand is weaker than expected, it is now assumed that home prices will decline somewhat through mid 2011 and then begin a gradual firming. For 2012Q4 the index is assumed to be back to where it is now.

The Outlook. Even though the growth and employment outlook for the second half of 2010 is weaker than anticipated last June, growth prospects for 2011 and 2012 have not been downgraded due largely to the improvement in financial conditions that has occurred since mid-summer, partly spurred by markets' assessment of a change in the FOMC's policy stance. From its recent low in early July, the S&P500 stock price index is up nearly 16 percent, close to late April levels. Mortgage interest rates have declined roughly 50 basis points since June, to the lowest levels since the mid 1950s. As measured by the Senior Loan Officer Survey, bank lending standards have stopped tightening and have begun to ease modestly. Finally, the exchange value of the dollar, as measured by a broad index of currencies, is roughly six percent lower than in June and below the previously assumed path.

We expect that this improvement in financial conditions along with slow but steady improvement in underlying fundamentals will boost growth of real GDP to around 4% in 2011 and about 5% in 2012-13, with the unemployment rate falling steadily to around 7% by the end of 2012. We expect a gradual strengthening of consumer spending and residential investment aided by an improving job market, an easing of underwriting standards, and a general increase in confidence. Indeed, our micro level analysis suggests that the household deleveraging process is far along. With an improving path for spending by the household sector, business investment is also likely to strengthen gradually. Continued favorable growth prospects among our major trading partners along with a lower exchange value of the dollar are expected to lead to a larger growth impulse from net exports than previously anticipated. Finally, with incomes rising, tax revenues to state and local governments are anticipated to recover and help put that sector on more solid fiscal footing.

Barring a significant decline in the level of the economy's potential output or its potential growth rate, our modal forecast for growth implies that a large output gap will persist over most of the forecast horizon. Accordingly, we expect core inflation to slow to around 1% (Q4/Q4) in 2010 from 1.7% in 2009. But by mid-2011 and into 2012, as final demand firms within the context of anchored inflation expectations, we expect core inflation to move up toward the "mandate consistent" range.

The balance of risks to our real activity projection remains skewed to the downside. As mentioned above, the US economy lost forward momentum over the summer, and while we think this was just a pause, it still could be the precursor of a more substantial slowdown. Housing market activity remains very sluggish and there is evidence of renewed downward pressure on home prices. If sustained, a negative wealth effect through this channel could induce households to boost their desired saving and thereby result in a significantly lower trajectory for consumer spending. Another downside risk is that growth prospects among major trading partners in Europe turn out to be weaker than expected as the full force of fiscal contraction begins to be felt later this year and into 2011. US fiscal policy is also a source of risk to our forecast. While a reduction in fiscal stimulus in 2011 is widely anticipated, it is possible that the US could engage in a more aggressive fiscal consolidation.

An important risk over the medium term remains our assumption of the economy's potential growth rate. While labor productivity growth has slowed in the last couple of quarters, consistent with our projection, we have not acquired any increased confidence in our long-run assumption on productivity growth. Given the low level of overall business investment and the apparent misallocation of labor and capital, the economy's potential growth rate may have slowed significantly. On the other hand, our analysis of recent labor market developments suggests a decline in the share of unemployment related to mismatch between job seekers and job openings.

The risks around the central scenario for inflation are also skewed to the downside. The downside risks to the growth projection combined with the possibility of no meaningful decline in potential implies downside risks to the inflation projection. Nevertheless, with the aggressive monetary policy response and the possibility of a stronger-than-expected rebound, there remains a risk of higher inflation than our modal projection.

The heightened uncertainty associated with the shape of recoveries from periods of banking and financial crisis, the uncertainty associated with the synchronization of global policy actions, and the lingering uncertainties associated with the peripheral European debt crisis result in greater uncertainty around our central projection compared to typical levels over the last twenty years.

2.2 Alternative Scenarios and Risks

The risk assessment has changed very little since the last Blackbook. Recent data have provided no indication that the economy is on the verge of leaving the soft patch it entered in 2010. The state of the labor market in particular remains dismal. At the same time there is no hint that things are getting any worse. In fact, the 2010Q3 GDP report provides some evidence that final demand is holding on.

The *Productivity Boom* scenario is still the most likely scenario, with a likelihood of about 35%, followed by the *Global Credit Crunch* scenario at 20% [Exhibit C-1]. The other scenarios, such as *Loss of Credibility* and *Global Deflation*, are far less likely at the moment. The likelihood of the *Productivity Boom* scenario has increased slightly since September, while the probabilities associated with the *Global Credit Crunch*, *Loss of Credibility*, and *Global Deflation* scenarios have all decreased slightly.

The paths for Core PCE inflation and real GDP growth associated with the various scenarios, including the *Central* scenario, are not very different since the last FOMC [Exhibit C-2]. Since the changes in the likelihoods of these scenarios are also modest, the bands of the forecast distribution are quite close to those in September [Exhibit C-3]. The main difference lies in the short run, where bands are narrower than in the last Blackbook, mainly reflecting one more quarter of data. The "Low Inflation/Deflation Probability and Distribution" and the "Scale of Recovery Through End of 2011" charts are also virtually identical to those in the last Blackbook. The former chart shows that the probability of an average Core PCE inflation less than .5% in 2010-12 is 16%; the latter chart shows that the likelihood of a strong recovery (e.g., at least as strong as the 1981-82 recovery) is dismal, at 6%.

Exhibit C-3 also shows, for comparison, the mean forecasts from the FRBNY DSGE model. The forecasts for inflation are below the expected value of the FRBNY forecast distribution, especially for 2011, but the difference is small. The forecasts for output are close to the *Central Scenario* in the short run, but the DSGE model does not foresee a rebound in output in 2011 and 2012.

3. Forecast Comparison

3.1 Tealbook Comparison.

The Tealbook and Blackbook forecasts for real GDP in 2010 were little changed since September, while both 2011 real GDP projections were revised higher on easier financial conditions and a weaker exchange value of the dollar. The Blackbook and Tealbook projections for both core and headline PCE in 2010 and 2011 are essentially unchanged since September. The Tealbook now assumes a resumption of LSAPs at the November meeting.

Conditioning Assumptions. The key driver of the revisions in the Tealbook's conditioning variables since September is the assumption that the FOMC will announce a new purchase program of $600 billion of Treasury securities at the November meeting. As a result of the announced purchases, long term rates and the dollar decline, while equity prices increase relative to the September Tealbook. In terms of conventional policies, the Board's staff continues to assume that the Committee's target for the federal funds rate will remain in the 0 to 0.25 percent range until 2012:Q4, two quarters later than in the Blackbook.

The Tealbook assumes that the 10-year Treasury yield drops about 30 basis points after the November LSAP announcement, but that it subsequently rises to about 4.25 percent by the end of 2012. In contrast to its own projection on the temporal profile of the balance sheet expansion, however, the Board's staff assumes that investors will anticipate a second round of Treasury LSAPs in the spring of 2011. Once markets are surprised by the lack of additional LSAP announcements in the spring, long-term yields increase, implying a steeper trajectory over the forecast horizon than in the September Tealbook. Corporate- and mortgage-rates follow similar trajectories. Consistent with the 5.5 percent increase in major stock market indices over the intermeeting period, the Tealbook's projected evolution of the stock market is higher than in September, although the stock market gains are depressed in the spring of 2011, once the second round of LSAPs does not materialize. The Board's staff near term outlook for foreign GDP growth was revised lower on weaker incoming data, while the projection further out was little changed since September. Consistent with the 2.5 percent decline of the dollar on a trade-weighted basis against major currencies, its exchange rate has been revised lower by about 3 percent in the near term. Board's staff anticipates a depreciation rate in 2011 and 2012 of about 2.5 percent, leaving the real exchange value of the dollar at the end of 2012 about 2.25 percent lower than in the September Tealbook.

Real Activity. The Blackbook and Tealbook 2010(Q4/Q4) projections are similar, with minor differences in composition. The Blackbook's modal forecast for real growth in 2010(Q4/Q4) is 2.3 percent, down from 2.4 percent in September, while the Tealbook forecast is unchanged at 2.4 percent. The Blackbook 2011(Q4/Q4) GDP growth projection remains higher than the Tealbook's, and both forecasts were revised higher by about a quarter percent since September. The Blackbook 2011(Q4/Q4) GDP growth forecast is now 4.0 percent, compared to 3.6 percent in the Tealbook. For 2012(Q4/Q4), the Tealbook now projects a real GDP growth rate of 4.7 percent, also .3 percent higher than in September. The Blackbook 2012(Q4/Q4) projection stands at 4.5 percent, a tenth higher than in September.

The Tealbook projection for unemployment in 2010Q4 was unchanged since September at 9.7 percent, two-tenths lower than in the Blackbook. Further out, the Tealbook projection for unemployment in 2011 was revised one-tenth lower to 9.0 percent and remains significantly higher than in the Blackbook. The 2010 nonfarm payroll employment projections in the Blackbook and Tealbook were revised lower. The 2011 Tealbook projection for nonfarm employment gains is at 2.6 million, slightly above that in September, and significantly below the Blackbook projection of about 4.1 million. The gap is likely due to differences in the projected average work week.

Inflation. The 2010 core PCE forecasts in the Tealbook and Blackbook are very similar at 1.1 and 1.0 percent respectively, while the Blackbook projects core PCE at 1.2 percent in 2011 and 1.6 percent in 2012, significantly higher than the 1 percent for both years in the Tealbook. Headline PCE projections were also essentially unchanged in the Tealbook and Blackbook, with the latter again significantly above the former in 2011 and 2012.

International Trade. The Blackbook forecast for the net export contribution to GDP growth in 2010 is of a slightly larger magnitude than the Board's – a drag of 1.1 percentage points versus 0.9 percentage points in the Tealbook. This is mainly because the FRBNY projection incorporates Q3 data from the October 29 GDP release. The Blackbook remains more optimistic for the net export contribution in 2011 than the Board's forecast: the FRBNY staff predicts a contribution of 0.5 percentage points to GDP growth, compared to 0.3 percentage points in the Tealbook. The difference in 2011 arises from the FRBNY's higher foreign demand elasticity. Both the Blackbook and the Board's forecasts are more optimistic than in September because of the weaker US dollar boosting export growth.

Uncertainty around the forecasts. Both the Tealbook and Blackbook risk assessments have changed relative to September. As in the last FOMC cycle, the FRBNY's staff inflation forecast continues to exhibit more downside risk in 2010, as captured by the lower bound on the 70% confidence intervals. The lower bound of the FRBNY forecast for 2011 is below that of the Board. For 2012, the Board forecast continues to assign a higher probability to lower inflation realizations, although relative to the September Tealbook the lower bound is now just in positive territory. The Board staff's inflation rate projections for 2010 and 2011 are in the upper half of our inflation forecast distribution.

The downside risks to our forecast for real activity continue to be somewhat larger than the risks in the Tealbook. The FRBNY intervals for 2010 real GDP growth narrowed by 0.4 percentage point, while this range declined by 0.7 percentage points in the Board staff's forecast. The Board staff's projection remains more balanced than our forecast, which continues to have substantially more downside risk. As a result, the Tealbook point forecast in 2010 remains within the right tail of our real GDP forecast distribution.

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

	Core PCE Inflation		Real GDP Growth	
	FRBNY	*Board*	*FRBNY*	*Board*
2010	0.4, 1.3 (0.4, 1.5)	0.9, 1.3 (0.8, 1.4)	0.8, 3.3 (0.6, 3.5)	1.9, 2.9 (1.5, 3.2)
2011	0.1, 1.7 (0.0, 1.7)	0.4, 1.7 (0.2, 1.6)	1.4, 5.9 (1.1, 5.7)	1.9, 5.4 (1.5, 5.2)
2012	0.6, 2.1 (0.5, 2.1)	0.2, 1.9 (-0.1, 1.9)	2.0, 6.3 (1.7, 6.2)	2.9, 6.5 (2.5, 6.3)

Table 2: Percentile of Tealbook Forecast in FRBNY Forecast Distribution

	Core PCE Inflation	Real GDP Growth
2010	68 (58)	56 (55)
2011	57 (53)	47 (45)
2012	35 (30)	56 (54)

Alternative Tealbook forecasting scenarios. The October Tealbook considers seven alternative scenarios. Four of these are similar to those examined in the September Tealbook. One new scenario explores the consequences of larger than expected disinflation. The remaining two new scenarios feature alternative risks arising from a larger-than-projected depreciation of the dollar.

The optimistic *Stronger Recovery* scenario assumes a quicker recovery, in which spending on consumer durables, housing and capital expenditure bounces back more rapidly than in the baseline, driven by optimism and improved credit and labor market conditions, which in turn feed higher equity prices. As a result, GDP grows about 5.5 percent in 2011 and 2012.

The next two scenarios consider pessimistic outlooks either due to weaker aggregate demand (*Weaker Recovery* scenario) or supply side considerations (*Lower Potential*). In the *Weaker Recovery* scenario, improvements in confidence as well as credit and labor market conditions are pushed back relative to the baseline. As a result, firms are reluctant to boost capital spending and households deleverage more aggressively, cutting back consumption relative to the baseline scenario. In this scenario, real GDP grows about half as fast as in the baseline in 2011. In the *Lower Potential* scenario, the output gap is only about half the 6.75 percent assumed in the baseline, reflecting a higher NAIRU and lower structural productivity. Real GDP grows 1 percentage point less per year, on average, than in the baseline case through 2015.

The *Higher Inflation* scenario considers the case of increases in commodity prices and/or a higher pass-through to core inflation. Real GDP is adversely affected as policy makers respond by increasing the FFR starting in early 2012. In the *Greater Disinflation* scenario inflation falls to zero by 2014, but real activity receives a boost, due to a delay in the first FFR increase.

Two more new scenarios consider a much more pronounced real depreciation of the dollar relative to the baseline. In the first scenario (*Dollar Depreciation*) the depreciation is broad based, while in the second the depreciation is concentrated in emerging Asia (*Asian Currency Depreciation)* due to appreciation of the Chinese yuan relative to the dollar. In both scenarios, GDP growth is higher due to stronger external demand, while inflation is higher because of higher import prices.

3.2 Comparison with Private Forecasters[1]

The FRBNY forecast for GDP growth lies within the range of private forecasts both for 2010Q4 and 2010 (Q4/Q4). Our inflation projections for 2010 are generally consistent with those of private forecasters. For 2011 (Q4/Q4), the FRBNY forecasts of all inflation

[1] The details of the forecast comparison are in Exhibit B-8. Release dates of the private forecasts discussed in this section are in parentheses: Blue Chip consensus (10/10), SPF (8/13), Macro Advisers (10/13), and the PSI Model (10/20). Quarterly numbers are SAAR.

measures remain above Macro Advisers but they are close to or below other private forecasts (Median SPF and Blue Chip).

GDP Growth. Relative to the last FOMC meeting, private forecasts for 2010 (Q4/Q4) are either unchanged or have been moderately revised downward. The FRBNY forecast is now 2.3%, down from 2.4% in the September Blackbook. Our projection is below that of Blue Chip, above Macro Advisers (2.2%) and below Median SPF (2.8%). Compared to the previous Blackbook, the FRBNY forecast for 2011 (Q4/Q4) has been revised up to 4.0% (up from 3.8%). This projection is above those from Macro Advisers (3.6%) as well as Blue Chip (2.9%).

Inflation. The FRBNY projection for core PCE in 2010 (Q4/Q4) has been slightly revised down from 1.1% in the September Blackbook to 1.0%. Our projection is only slightly below Macro Advisers and Median SPF. As before, our 2011 (Q4/Q4) forecast for core PCE inflation (1.2%, unchanged from the last Blackbook) lies between Median SPF (1.5%) and Macro Advisers (0.9%). Our forecasts for headline CPI inflation in 2010 (Q4/Q4) is 0.9%, the same as Median SPF and slightly below Blue Chip and Macro Advisers (1.0% and 1.1% respectively). The FRBNY projection for core CPI in 2010 (Q4/Q4) is 0.8%, close to Median SPF and Macro Advisers at 0.9% and 0.8%, respectively.

4. Robustness of Policy Recommendation

4.1 Sensitivity to Alternative Scenarios and Policy Rules

Our current policy recommendation is to maintain the target range for the federal funds rate at 0–0.25% through 2012Q2 – a quarter later than in the September Blackbook. This recommendation is consistent with the *Baseline* policy rule under the *Central*, *Global Deflation*, and *Productivity Boom* scenarios [Exhibit D-1]. Under the *Loss of Credibility* and the *Global Credit Crunch* scenarios, the *Baseline* policy rule prescribes an earlier lift-off, in 2011-Q2 and 2012-Q1, respectively.

The current policy recommendation is not quite consistent with the prescriptions from the *Baseline* policy under the expected value of the forecast distribution, as this policy prescribes a renormalization starting in 2012-Q1 [Exhibit D-2]. Exhibit D-2 shows also the implied nominal FFR ignoring the zero bound for the *Outcome-based* rule. Under the expected value of the forecast distribution, the unconstrained nominal FFR is below -4% by 2011Q4 and remains below 0 through the end of the forecast horizon.

Exhibit D-3 shows the prescriptions from alternative policy rules. The *Nutter* rule, which entails a strong response to inflation and no response to the output gap, prescribes the first rate increase in the current quarter under the *Loss of Credibility* scenario and in 2011Q2 under the *Central* scenario. FFR paths under the *Asymmetric Price Targeting* rule are at the lower bound (.25%) throughout the forecast horizon, while those for the *Outcome-based* rule are below zero under all scenarios through the end of 2012.

Exhibit D-1 shows the real FFR rates implied by the baseline rule under the various scenarios, ignoring the zero bound constraint. The *Baseline* rule under the *Central* scenario implies a real rate of about -4% in the current quarter. Exhibit D-3 shows the real rate (under alternative scenarios) for *Asymmetric Price Targeting*, the *Nutter*, and the *Outcome-based* rules.

We also use the DSGE model to assess the current stance of monetary policy. We perform a counterfactual exercise by eliminating 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

Both the mode and the mean of the market-implied FFR path, computed using the Board's assumptions concerning term premia, shifted down substantially during the intermeeting period. The implied start of the renormalization process shifted forward from 2012Q1 to 2012Q3, consistent with the change in our policy recommendation. The distribution of responses from the primary dealers' survey about the timing of the FFR lift-off shifted once again toward later dates. More than 50% of respondents currently envision a lift-off in 2012Q3 or later, versus only 25% in September. The median of modal forecasts for the first rate hike is the end of 2012Q2 for both the dealers and the buy-side surveys.

5. Significant Developments

5.1 Economic Developments

Real Activity. *GDP*: Based on the advance estimate, real GDP grew at a 2% annual rate in 2010Q3, in line with consensus expectation, up from 1.7% in 2010Q2. Business fixed investment was stronger than expected, as growth of investment in nonresidential structures was 3.9%. Business investment in equipment and software rose at a 12% annual rate, down from the 25% annual rate of the second quarter, but still reasonably robust, and federal government spending grew a strong 8.8% at annual rate. There were substantial surprises in the third quarter data on trade and inventories which were largely offsetting.

Production: Total industrial production decreased 0.2% in September, below the median expectation of private forecasts (+0.2%), and manufacturing production declined at a similar rate. The total capacity utilization rate declined slightly to 74.7% in September; the utilization rate in manufacturing also fell modestly to 72.2%. Utilization rates remain well below their long-run averages.

Construction: Construction spending rose 0.4% in August, above consensus expectations, and the levels of construction spending in June and July were revised upward.

Orders and Shipments: New orders for durable goods manufacturers increased 3.3% in September, after falling 1.0% in August. Excluding transportation equipment, however, orders fell 0.8% in September after increasing 1.9% in August. This report indicated that activity in manufacturing moderated somewhat in September. Shipments of nondefense capital goods ex aircraft rose 0.4%, hinting at slower growth for equipment spending in

2010Q3. Orders for these goods declined 0.6%, suggesting some ebbing of momentum going into the fourth quarter.

ISM: The ISM September manufacturing survey suggests that activity decelerated moderately, as the headline index slipped roughly 2 points to 54.4, in line with expectations. The specific activity indexes were mixed, though virtually all remained above 50. The prices paid index rose to around the middle of its recent range, suggesting that price pressures have picked up, but are still less widespread than earlier this year. The ISM non-manufacturing headline index instead rebounded in September, moving back into the middle of its recent range; the employment index suggests stable employment for non-manufacturing industries.

PCE: In line with expectations, real personal consumption expenditures rose at a 2.6% annual rate, the strongest quarterly growth of this component since 2006Q4. Nonetheless, the third quarter level of real PCE still remains somewhat below the level at the business cycle peak of 2007Q4.

Inventories: Total business inventories rose 0.6% in August following a 1.1% increase in July. The July-August pace of inventory accumulation was faster than what occurred in the second quarter, suggesting that inventory accumulation will again be a significant contributor to growth in 2010Q3.

Home sales/starts: Sales of new single-family homes increased 6.6% in September to 307,000 units (seasonally adjusted rate). Revisions to prior months were minor, with a net revision of -5,000 for June through August. Both the increase and the level of sales were above the median forecasts in the Bloomberg survey (+4.2% and 300,000 units respectively). The number of new homes for sale declined slightly in September to 204,000, an extremely low absolute level, but corresponding to an 8.0 month supply at the September sales pace. Existing home sales rose by 10% in September to 4.53 million units (seasonally adjusted annual rate). Despite sizable increases in the past two months, existing home sales are still at depressed levels, and the inventory of existing homes remains elevated, indicating that the housing market continues to be very weak. Total housing starts rose 0.3% in September to 610,000 (seasonally-adjusted annual rate) units while the levels of starts in July and August were both revised up by 1.7%. The consensus expectation had been for a 3% decline in September to 580,000. Housing permits fell 5.6% in September, led by a 20.2% decline in the multifamily category. The consensus expectation had been for a 0.7% increase.

Labor: Nonfarm payrolls decreased 95,000 in September, a considerably worse outcome than the consensus expectation of essentially no change (the median forecast in the Bloomberg survey was -5,000). Private payroll employment rose by 64,000, close to the consensus expectation of a 75,000 increase, and changes in private payroll employment over the previous two months were revised up by a cumulative 36,000. Key contributor to private employment growth was the service-providing sector. Federal government employment fell by 74,000, as anticipated, and employment at the state and local government level fell by 83,000; state and local government employment over the preceding two months was also revised down by a cumulative 51,000. Hours worked by all private sector employees were unchanged in September after rising just 0.1% in August. Both the unemployment rate and the labor force participation rate were unchanged in September, at 9.6% and 64.7% respectively.

Prices and Income. *CPI*: The total consumer price index increased 0.1% in September and 1.1% over the year. The increase in the core measure was unchanged for the second consecutive month; the core goods component fell 0.2% and core services were up 0.1%. The 12-month change of the core index was 0.8%, the lowest 12-month core inflation rate since February 1961.

PCE deflator: The PCE deflator rose 1.0% (annual rate) in 2010Q3, up from 0% in the second quarter. The year-over-year change of the PCE deflator was 1.4%. The core PCE deflator rose just 0.8%, below the consensus expectation of a 1.0% increase. The year-over-year change of the core PCE deflator slowed to 1.3% from 1.5% in 2010Q2 and 1.8% in 2010Q1. The 0.8% increase of the core PCE deflator for the third quarter as a whole suggests that it fell over the month of September.

Personal income: Personal income rose 2.1% (annual rate) in the third quarter, down from a nearly 4% annual rate over the first half of the year. Total labor compensation increased at a 2.5% annual rate in the third quarter, somewhat stronger than over the first half of the year.

Home Prices: The 20-city composite Case-Shiller home price index fell 0.3% in August, a somewhat steeper decline than the -0.2% consensus expectation. Over the past year the index is up 1.7%, below consensus expectation of a 2.1% increase. The FHFA purchase-only national index rose 0.4% after declining in June and July. Despite the August increase, the 12-month change of this index is -2.4%. The seasonally-adjusted CoreLogic national home price index fell a steep 1.8% in August, its third consecutive monthly decline. Overall, home prices are under renewed downward pressure due to a continued large flow of properties coming onto the market through foreclosure and short sales while demand remains weak.

Trade. The GDP advance release estimates that net exports subtracted 2 percentage points from GDP growth in 2010 Q3. Real imports of goods and services continued to increase at a very rapid rate, rising 17.4 percent (annual rate) in Q3, which follows a 33.5 percent surge in the previous quarter. In contrast, the growth in real exports of goods and services slowed to 5 percent (annual rate), which is well below its trend rate of around 10 percent.

Foreign Data Releases. The data released over the intermeeting period have not materially changed the foreign outlook. There has been a general slowdown in foreign growth in Q3 as the large boost from the inventory cycle over the past year is ending. The key exceptions are China and the United Kingdom, which reported accelerations in Q3.

Euro area: Manufacturing showed some strength in August after falling the previous two months. August orders were also strong, from both domestic and foreign customers.

Business and consumer confidence measures improved again in October, with the economic sentiment index exceeding its long-run average by 4 percent. At the depth of the downturn, the index was 30 percent below the average. Core inflation was unchanged at 1.0 percent, staying near the pace set at the beginning of 2010.

U.K.: The UK economy did better than expected in Q3, with output up 3.2 percent (seasonally adjusted annual rate). The jump was supported by an unsustainable construction boom. Declines in business surveys in recent months point to slower growth in Q4. The government's public spending review confirmed the fiscal tightening announced in the June budget. The government plans to cut the budget deficit from 10.1 percent in 2010-11 to 2.1 percent by 2014-15.

Japan: Production fell slightly in August, the third consecutive monthly fall. A survey of producers' forecasts suggests that production dipped again in September, export volumes remained largely flat, and domestic car sales fell for the first time in over a year, as a government program to promote purchases came to an end. Headline consumer price deflation stabilized in August at 0.9 percent, while deflation in core was unchanged at 1.5 percent.

EM Asia: China's growth in Q3 accelerated a bit from Q2 to roughly an 8.5 percent pace (seasonally adjusted annual rate), easing earlier concerns about potential over-tightening. Export growth has moderated in recent months, reflecting payback for unusual strength in H1. Import growth has maintained a robust clip, especially for domestic demand products, including commodities. Credit growth has also been strong and somewhat above expectations while activity in the property sector remains buoyant, prompting new administrative tightening measures. Elsewhere in Asia, tepid readings for exports and production indicate that growth downshifted to a somewhat below-trend pace in Q3, with economies now on the downside of the inventory cycle. Korean growth slowed to 2.9 percent in Q3.

Latin America: Brazilian index of real activity was flat through the summer, portending subdued Q3 GDP growth. Still, domestic demand is being supported by historically low unemployment and brisk growth of real income and credit. Mexico's economy downshifted in Q3, but steadily rising consumer confidence and job creation, along with a summer pick-up in retail sales, point to improvement in Q4. Industrial production growth is slowing in Argentina, but the overall economy continues to do relatively well, supported by government stimulus and consumer spending.

5.2 Financial Markets

Domestic Financial Markets. The intermeeting period was characterized by a decline in the expected policy rate path, rising equity prices and breakeven inflation rates, and, on balance, little change in the level of long-term nominal interest rates.

Nominal Interest Rates: Treasury yields generally fell for the first three weeks of the intermeeting period but have partially retraced those declines since then. The yield on a 10-year Treasury note is currently at about 2.65%, approximately the same as on September 20th, but about 20 basis points higher than on October 8th. Meanwhile, the yield on a 2-year note is about 0.40%, which is approximately 5 basis points below its level on September 20th. This is consistent with the decline in the expected policy rate path discussed below.

Options-Implied volatility in Treasury and swap markets as measured by the MOVE and SMOVE indices has declined over the intermeeting period. The 3-month MOVE and SMOVE indices stand at 90 and 91, down from 101.4 and 101.4 on September 20th, respectively (Exhibit A-3: Treasury Yields).

Inflation Compensation: Market-based measures of inflation expectations generally rose throughout the intermeeting period. The 0-5 year inflation compensation rose to about 1.7% from 1.28% on September 20th. Meanwhile, 5-10 year inflation compensation rose to about 3.0% from 2.7% on September 20th. Despite the rise in 5-10 year breakeven inflation rates over the intermeeting period, their level is still only moderately above its pre-crisis levels and implies that inflation expectations remain well-anchored. This is consistent with the expectations expressed in the Survey of Professional Forecasters, whose median expectation is now for the Consumer Price Index to grow at 2.0% and 2.3% on average over the next five and ten years, respectively.

Expected Policy Rate Path: The expected path of the fed funds rate inferred from futures markets declined markedly since the last FOMC meeting. Market participants are now expecting further monetary accommodation and have postponed their expectations of the date of the first increase in the federal funds rate. Market prices are consistent with a target federal funds rate at 0.00%-0.25% through the first quarter of 2012. Professional forecasters have also revised down their expected policy paths over the medium term. The median expectation from the Blue Chip Financial Forecasts Survey for the fourth quarter of 2011 stood at 0.6% in October, down from 0.9% in September (Exhibit A-5: Policy Expectations).

Equity Markets: Equity markets have continued their rally that began at the end of August. Although the economic data have been mixed over the intermeeting period, expectations of additional monetary accommodation may have spurred the rise in equity prices. The S&P 500 is now at about 1186 and is nearing the recent peak of about 1217 observed on April 23, 2010.

Implied equity volatility, as measured by the VIX is now at about 20, down slightly from its level at the beginning of the intermeeting period. This level is well below the recent peak at the end of the second quarter, but remains well above its pre-crisis levels (Exhibit A-6: Equity).

Credit Spreads: Credit spreads declined only moderately over this intermeeting period. The spreads on A-rated financials and all corporate bonds decreased from 166 and 236 basis points on September 20th to 162 and 231 basis points on October 26th, respectively. BBB-rated spreads experienced larger declines. BBB-rated spreads on financials and all corporate bonds decreased from 235 and 390 basis points on September 20th to 226 and 372 basis points on October 26th, respectively. (Exhibit A-7: Credit)

Money Markets: Although measures of money market stress ticked up at the end of the second quarter, they reversed course more recently and rose by less than one basis point from moderate levels over the intermeeting period. The 3-month LIBOR-OIS spread currently trades around 11 basis points, which is only somewhat above the average level observed before the crisis. (Exhibit A-9: Money Markets)

Foreign Financial Markets. Global funding conditions slightly improved over the intermeeting period, with LIBOR-OIS spreads declining in the euro area and remaining broadly unchanged elsewhere. Since late September, euro area bank demand for funding from the ECB eased. This resulted in a decline of excess liquidity in the area and in an increase in the overnight interest rate. Peripheral sovereign spreads narrowed over the period. These moves were mostly driven by improved risk sentiment and less uncertainty amongst investors about the respective fiscal consolidation programs. In late September, Irish authorities announced the total estimated cost of support for the banking sector. Chinese officials pledged support for Greek bond issuance once it resumes and informal comments by ECB officials suggest that IMF support would continue after the current program expires.

Emerging Market (EM) asset prices broadly increased since the last FOMC, boosted by expectations of further U.S. monetary accommodation. Attractive interest rate and growth differentials relative to advanced economies continue to fuel heavy flows into EM bond and equity markets. As a consequence, EM equity markets outperformed U.S. shares, EM bond yields declined markedly and EM currencies appreciated against advanced market currencies. Emerging Market bond issuance continues to accelerate, with volumes already surpassing last year’s record level.

The trade-weighted U.S. dollar index fell since the last FOMC meeting, with the dollar depreciating relative to the euro, yen and sterling. Over the period, expectations have been building regarding an announcement of further monetary accommodation by the Federal Reserve. As a consequence, U.S. bond yields have been falling against their foreign equivalents. The dollar moves over the period closely tracked these relative interest rate movements. The dollar depreciated about 70 basis points against the Chinese yuan. However, the yuan has weakened on a trade-weighted basis since the reintroduction of a managed flexible exchange rate regime in June, due to substantial depreciations relative to the euro and the yen.

5.3 Global Economic Policy

The prospect for further monetary easing in advanced economies has increased over the intermeeting period, particularly in Japan and the U.S. Although elsewhere monetary tightening had become the *modus operandi,* the pace of this tightening has grinded to a halt due to a more uncertain economic outlook.

The ECB kept its policy rate unchanged at 1.0% at its October meeting, as has been the case since March last year, and sees mild downside risk to its 2011 growth projections on account of unsettled financial markets and higher commodity prices. The ECB continues to allow unlimited access to its 3-month and shorter-term refinancing facilities, which will be in place at least through December 2010. The size of the ECB's balance sheet decreased from €2.0 trillion around the time of the last FOMC meeting to €1.9 trillion. The pace of sovereign bond purchases under the "Securities Markets Program" (SMP) decreased from €1.4 billion in late September to zero towards the end of the period. The cumulative amount purchased through the SMP now totals €63 billion.

On October 5 the Bank of Japan lowered its policy rate from 0.10% to a range of 0-0.10%. It also introduced a duration commitment under which the policy rate will remain in the 0-0.10% range until the Bank's official projections signal a return to 'price stability', i.e., an annual CPI (excluding food) inflation rate close to +1.0%. Finally, the BoJ is to set up an asset purchase program aimed at buying up to ¥5 trillion in public and private securities. By allowing the overnight call rate to fall to zero, while buying securities through its current bank lending program, the announced asset purchase program and possible future currency interventions, the Bank will no longer sterilize the effect of these purchases on its balance sheet as it has done up to now. Going forward, the BoJ singled out the strength of the yen as the main downside risk to the growth outlook. A possible future expansion of the asset purchasing program might therefore serve to accommodate potential further currency interventions by the Bank.

Since January, China has initiated a number of monetary tightening measures such as increased reserve requirements and higher managed interest rates. In June, Chinese monetary authorities restarted a crawling appreciation of the yuan exchange rate *vis-à-vis* the U.S. dollar. Recent data releases show a solid rebound in activity after slowing for several months, suggesting that growth may be stabilizing at a still robust pace. Both credit growth and property sector activity have been stronger than expected. As a consequence, Chinese authorities hiked reserve requirements for large banks by another 50 basis points and raised administered interest rates by 25 basis points. Forward contracts imply expectations of a modest yuan strengthening against the dollar over the next twelve months.

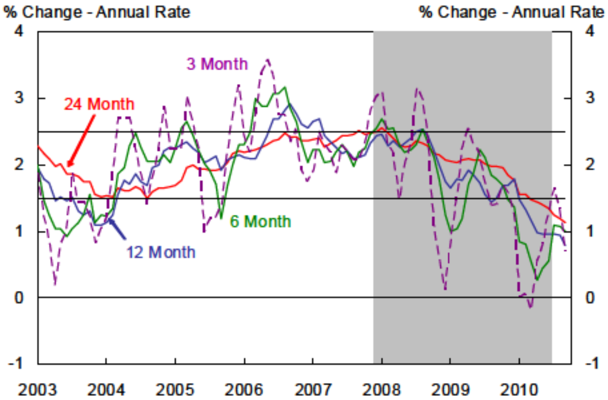
In the rest of Emerging Asia, where central banks have been pursuing monetary tightening, policy remained on hold over the intermeeting period. External growth risks and moderating inflation, except in India, have slowed the pace of tightening in this region. The outlook is for this tightening cycle to resume in the coming months, with policy rates expected to increase by an average of about 100 basis points by mid-2011.

The Reserve Bank of Australia and the New Zealand central bank kept their policy rates unchanged over the intermeeting period, on account of an uncertain growth outlook due to financial market volatility and the prospect of slowing external demand. Brazil and Mexico held their policy rates unchanged. In Brazil, the outlook is for the central bank to resume rate hikes by Q1 2011, with an expectation of an accumulated increase of 100 basis points for 2011. Expectations of policy rate increases in Mexico have been pushed back, with surveys now suggesting that an initial hike will not occur before September 2011. The total expected tightening for Mexico by the end of 2011 has been downgraded from 100 basis points to 25 basis points. Other central banks, such as the Bank of Canada, the Bank of England and the Swiss National Bank, kept their policy rates unchanged.

A. Significant Developments

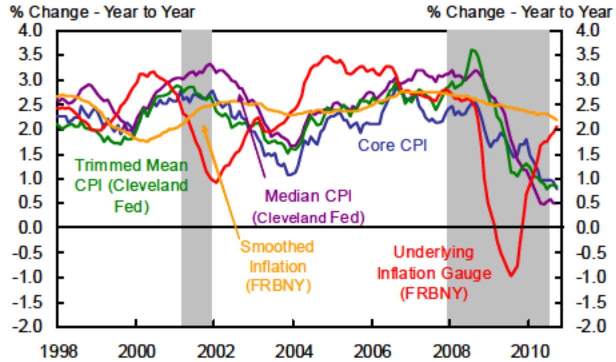
Exhibit A-1:
Measures of Trend Inflation

Core CPI Inflation over Various Horizons



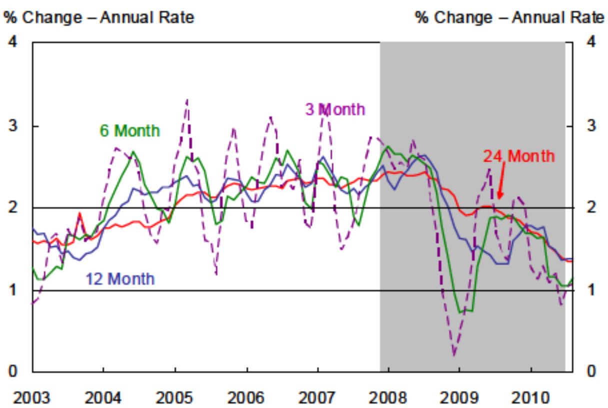
Source: Bureau of Labor Statistics

Alternative Measures of CPI Inflation



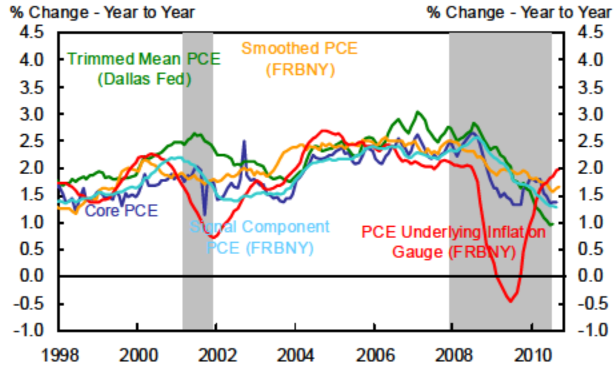
Source: Bureau of Labor Statistics, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Core PCE over Various Horizons



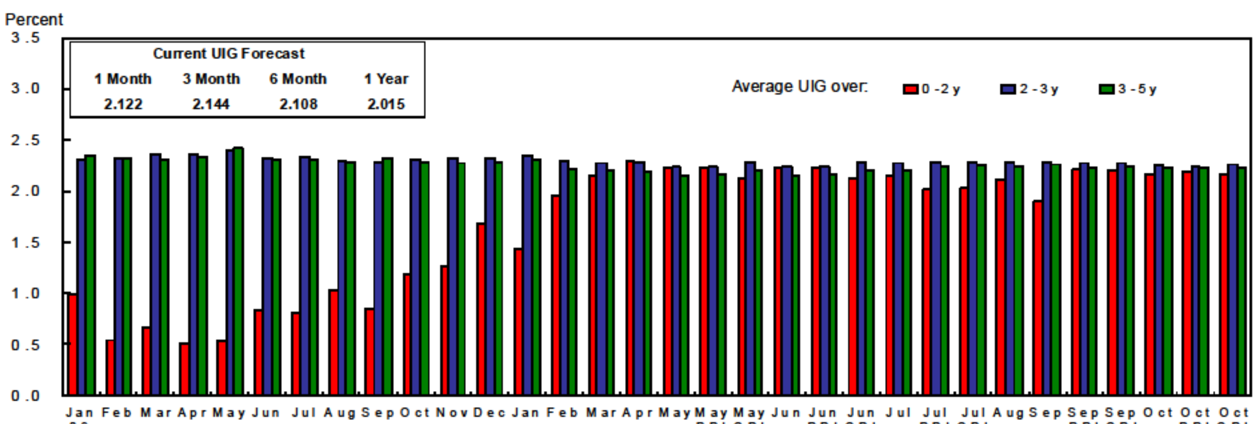
Source: Bureau of Economic Analysis

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)

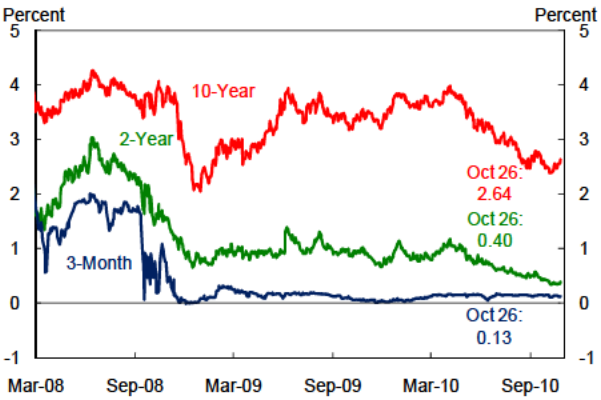


Source: MMS Function (FRBNY) and Swiss National Bank

A. Significant Developments

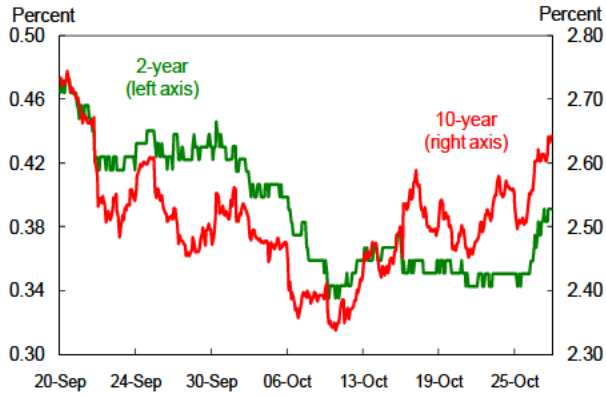
Exhibit A-3:
Treasury Yields

Short- and Long-Term Rates



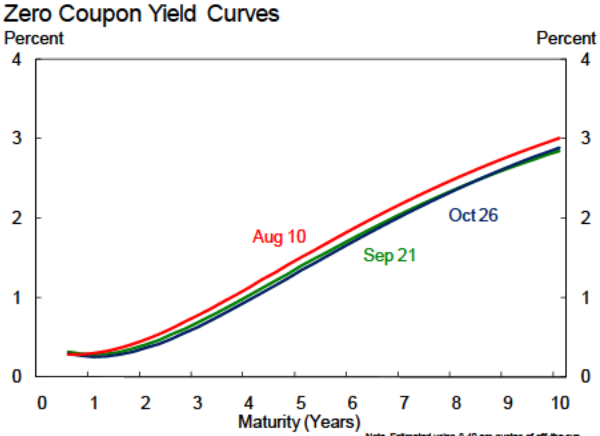
Source: Bloomberg Note: Yields of on-the-run securities.

Short- and Long-Term Rates (Intraday)



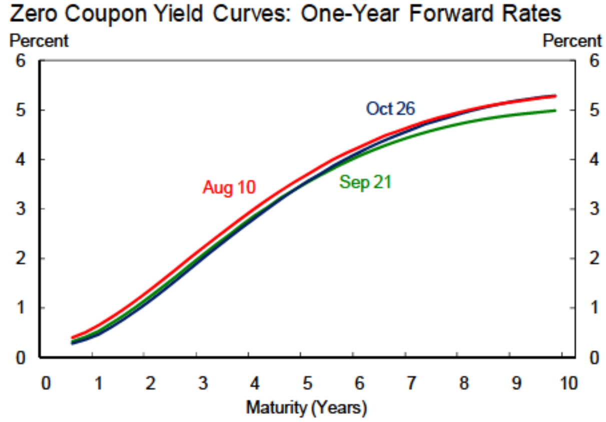
Source: Bloomberg Note: On-the-run securities, 8:00 am to 4:00 pm.

Zero Coupon Yield Curves



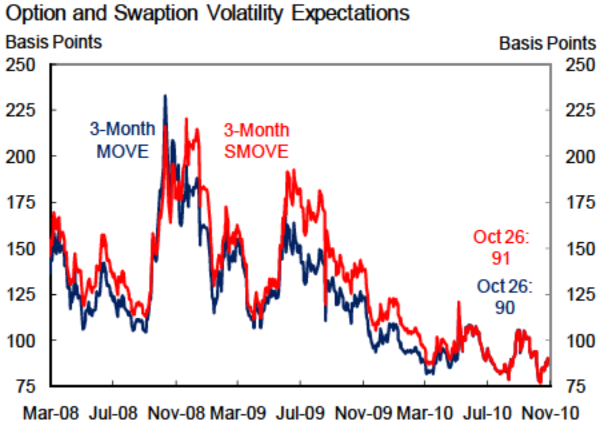
Source: Federal Reserve Board Note: Estimated using 8:40 am quotes of off-the-run securities.

Zero Coupon Yield Curves: One-Year Forward Rates



Source: Federal Reserve Board

Option and Swaption Volatility Expectations

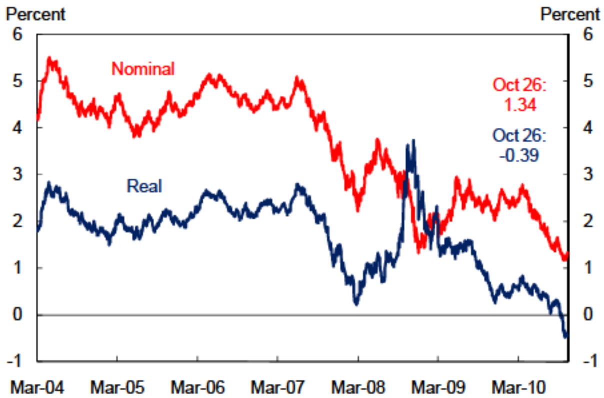


Source: Federal Reserve Board, Barclays, and FRBNY

A. Significant Developments

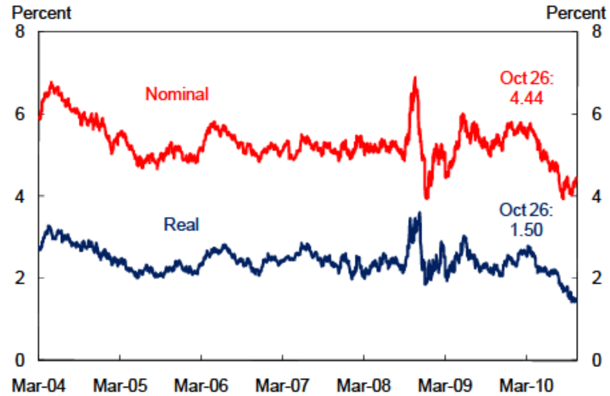
Exhibit A-4:
Real Yields and Implied Inflation

5 Year Spot Rate



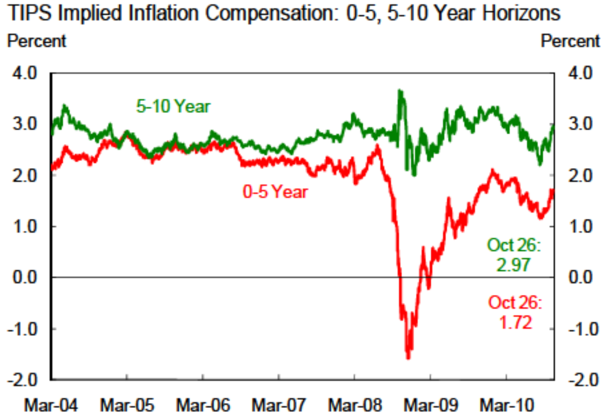
Source: Federal Reserve Board

5-10 Year Forward Rates



Source: Federal Reserve Board

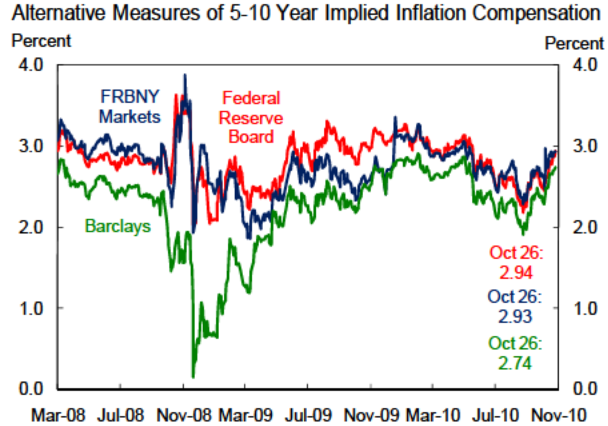
TIPS Implied Inflation Compensation: 0-5, 5-10 Year Horizons



Source: Federal Reserve Board

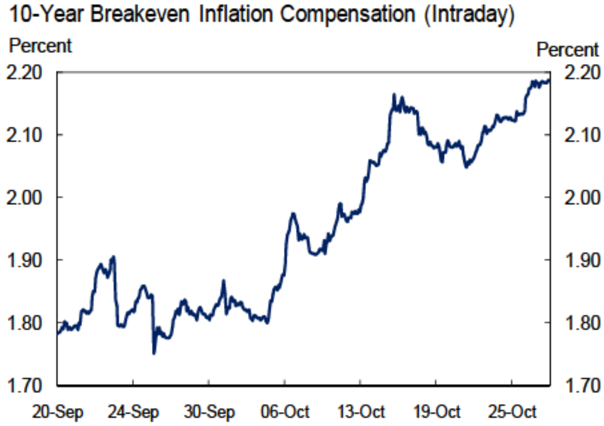
Note: Carry-adjusted.

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.

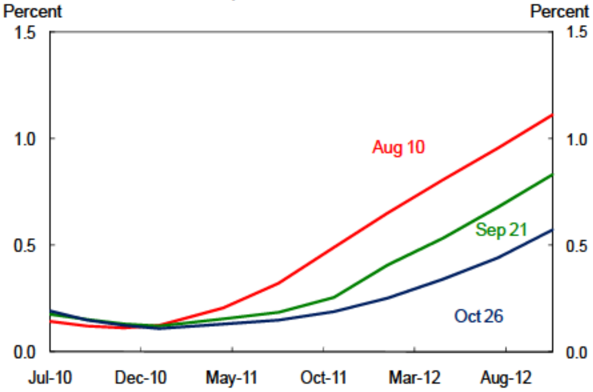
Implied Inflation from Inflation Swaps: 0-5, 5-10 Year Horizon

Source: Barclays

A. Significant Developments

Exhibit A-5:
Policy Expectations

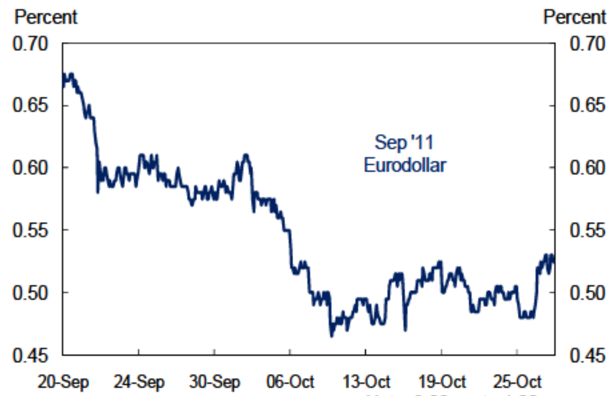
Fed Funds Futures Implied Rates



Source: Federal Reserve Board

Note: Estimated using fed funds and Eurodollar futures.

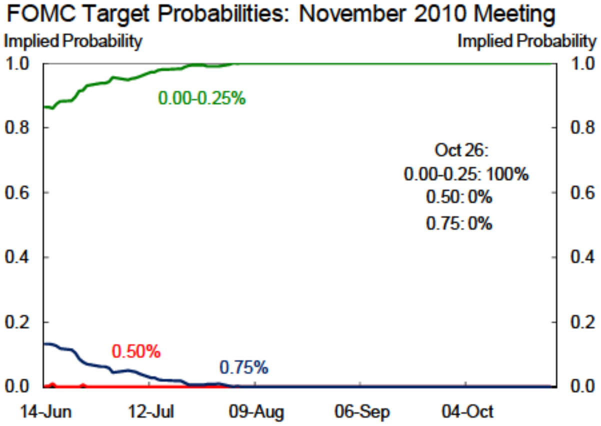
Implied Eurodollar Rates (Intraday)



Source: Bloomberg

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

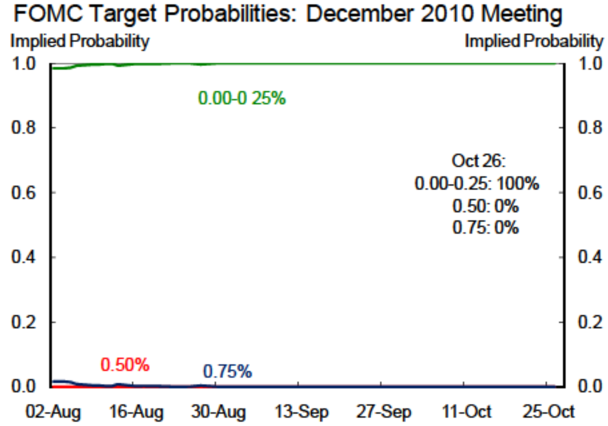
FOMC Target Probabilities: November 2010 Meeting



Source: Cleveland FRB

Note: Estimated using options on fed funds futures.

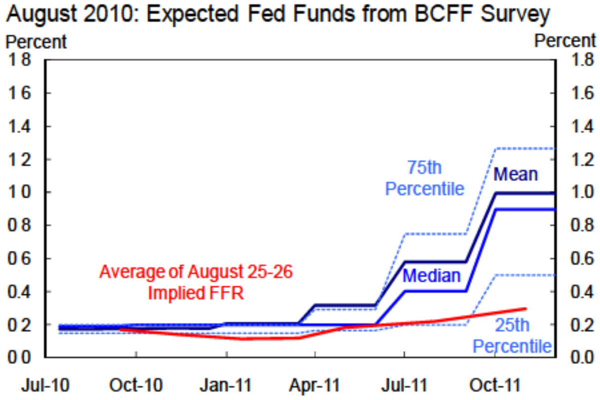
FOMC Target Probabilities: December 2010 Meeting



Source: Cleveland FRB

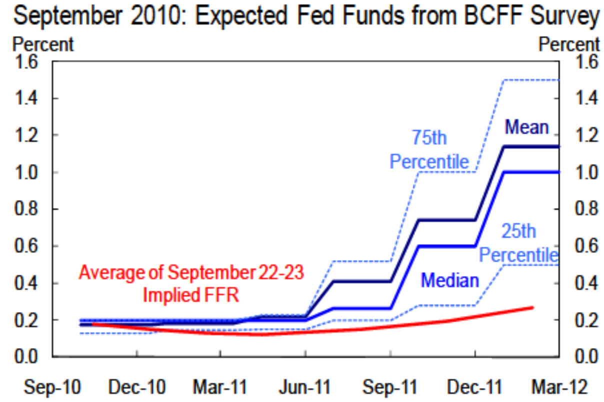
Note: Estimated using options on fed funds futures.

August 2010: Expected Fed Funds from BCFF Survey



Note: Implied FFR are from fed funds and Eurodollar futures.
The BCFF survey was conducted on August 25-26.

September 2010: Expected Fed Funds from BCFF Survey

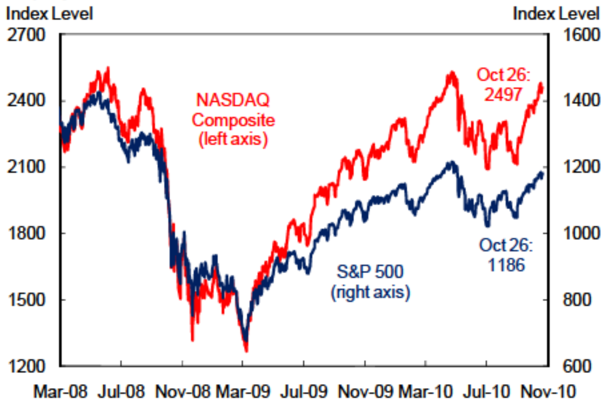


Note: Implied FFR are from fed funds and Eurodollar futures.
The BCFF survey was conducted on September 22-23.

A. Significant Developments

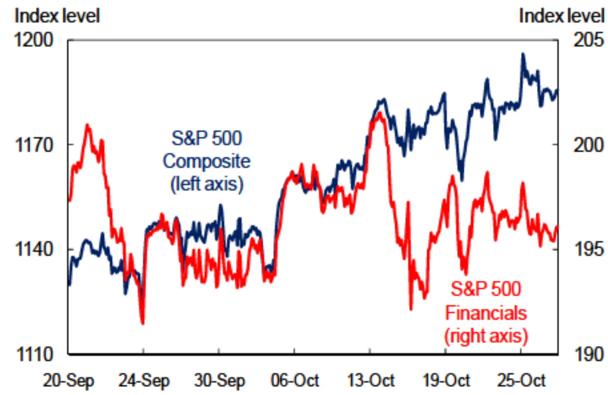
Exhibit A-6:
Equity

Equity Index Levels



Source: Datastream

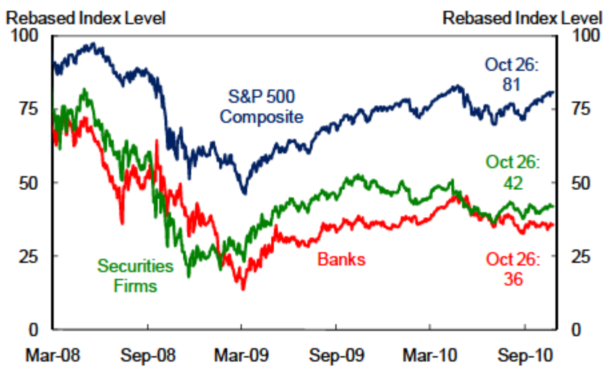
S&P 500 Indices (Intraday)



Source: Bloomberg

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

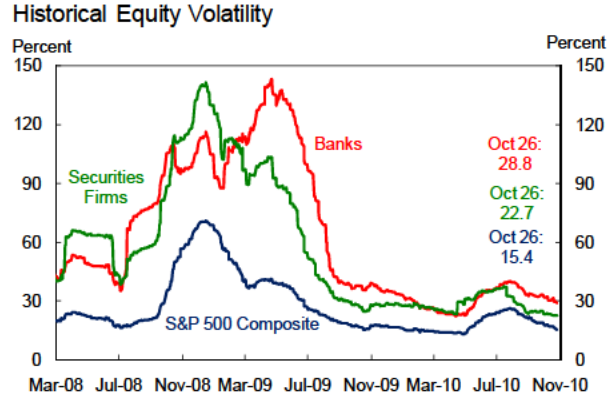
Equity Performance



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

Source: Datastream

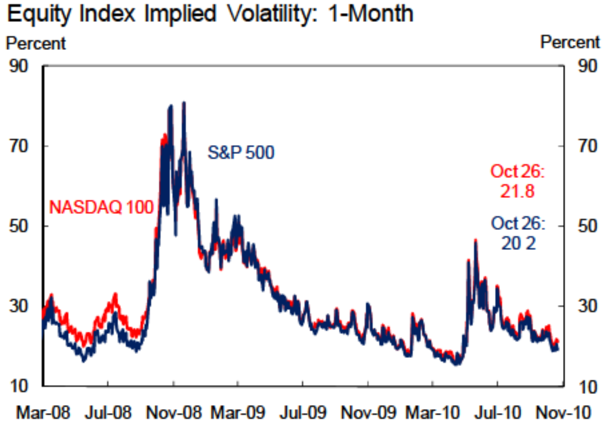
Historical Equity Volatility



Source: Datastream

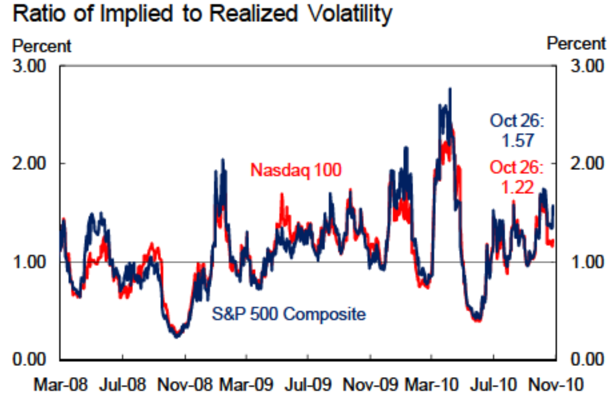
Note: Annualized rolling 3-month standard deviation of daily returns. Banks series is S&P 500 Banks index. Securities Firms series is S&P 500 Investment Banks and Brokerages index.

Equity Index Implied Volatility: 1-Month



Source: Datastream

Ratio of Implied to Realized Volatility



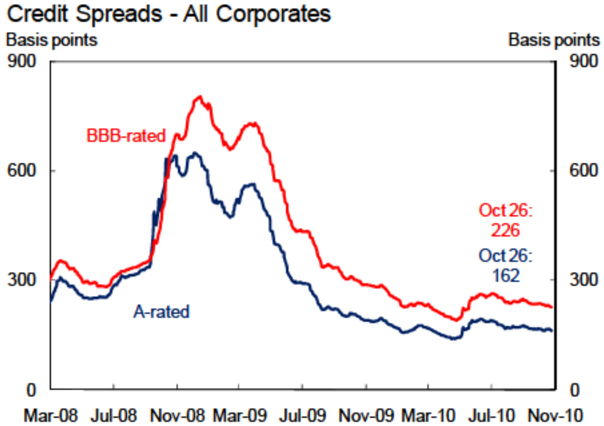
Source: Datastream

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

A. Significant Developments

Exhibit A-7:
Credit

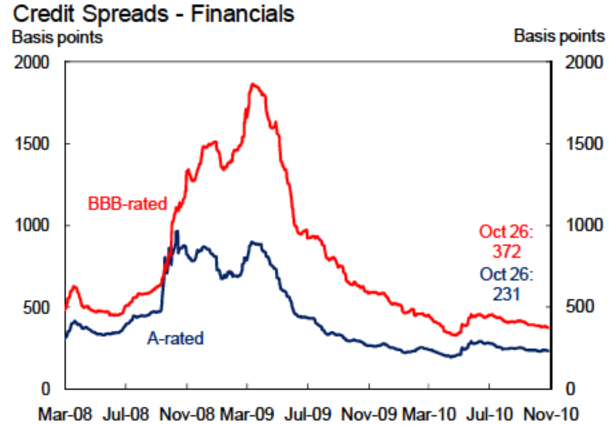
Credit Spreads - All Corporates



Source: Merrill Lynch

Note: Option-adjusted spreads.

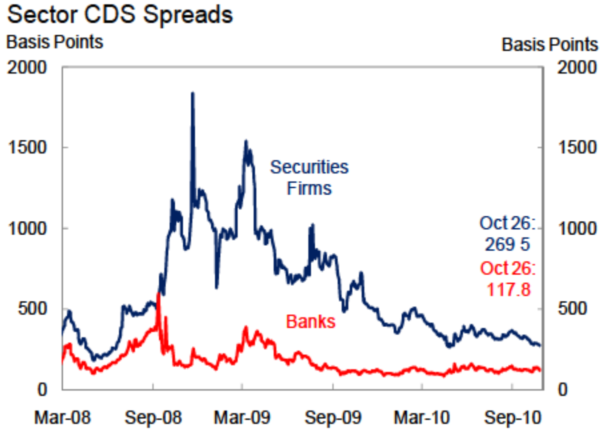
Credit Spreads - Financials



Source: Merrill Lynch

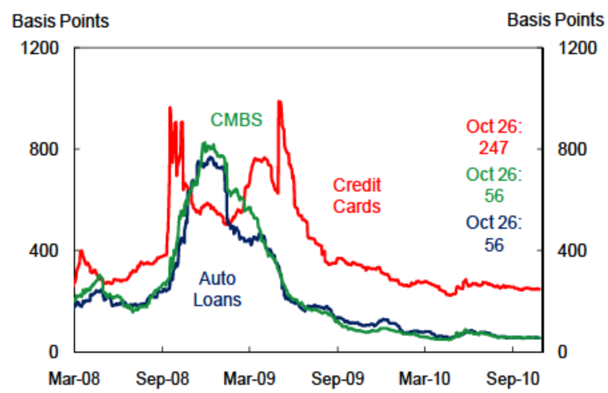
Note: Option-adjusted spreads.

Sector CDS Spreads



Source: CMA

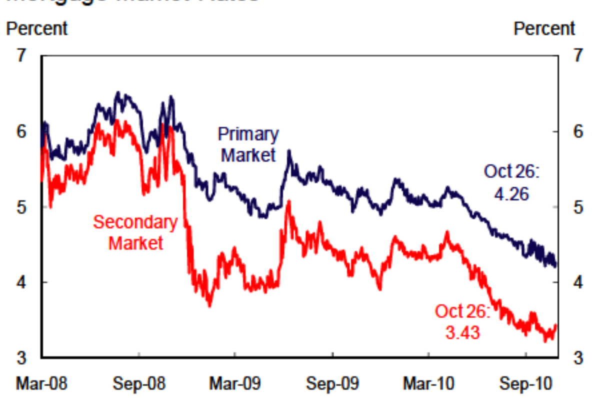
AAA-Rated ABS/CMBS Spreads



Source: Merrill Lynch

Note: Option-adjusted spreads.

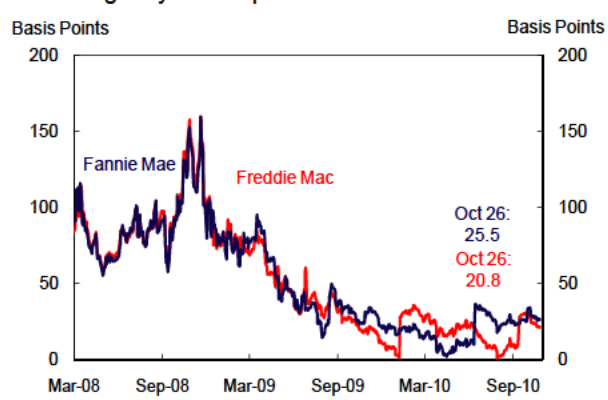
Mortgage Market Rates



Source: Bloomberg

Note: 30-Year Fixed Mortgage rate and Fannie Mae current coupon yield.

5-Year Agency Debt Spreads

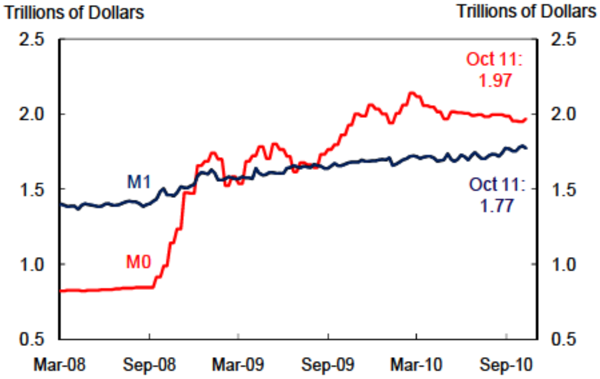


Source: Bloomberg

A. Significant Developments

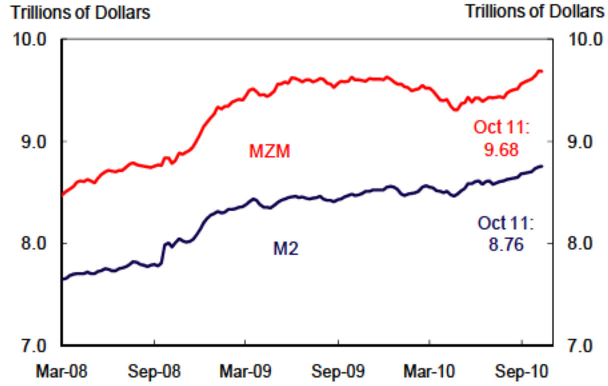
Exhibit A-8:
Money and Banking

Measures of Money Supply: M0, M1



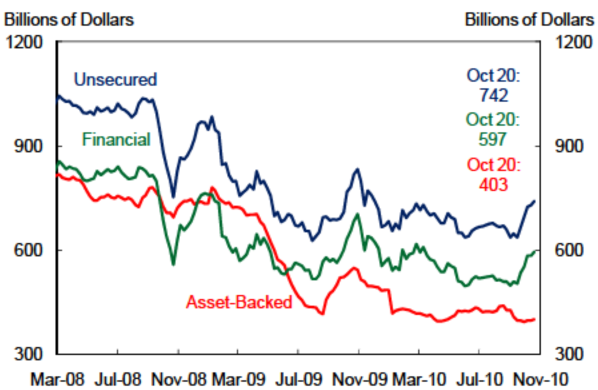
Source: Federal Reserve Board, Haver

Measures of Money Supply: M2, MZM



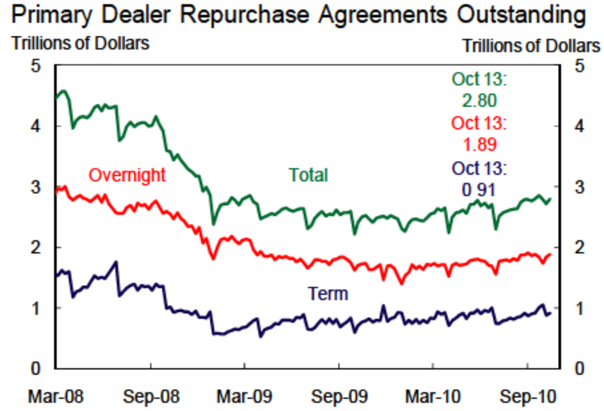
Source: Federal Reserve Board, Haver

Commercial Paper Outstanding



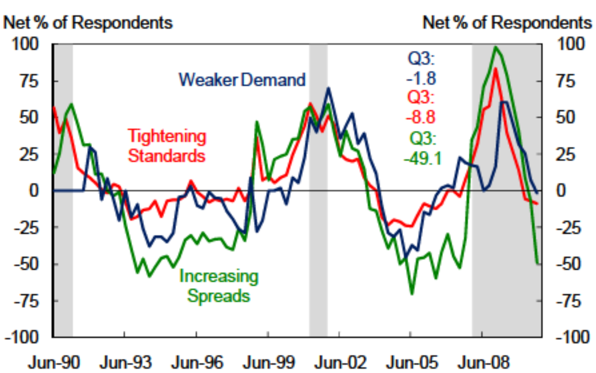
Source: Federal Reserve Board

Primary Dealer Repurchase Agreements Outstanding



Source: Federal Reserve Board

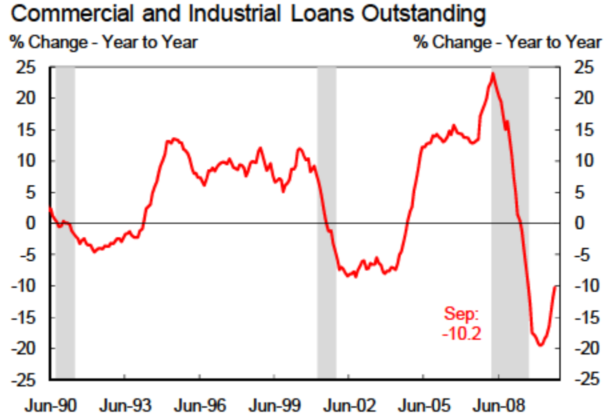
Bank Lending Practices



Source: Federal Reserve Board

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

Commercial and Industrial Loans Outstanding

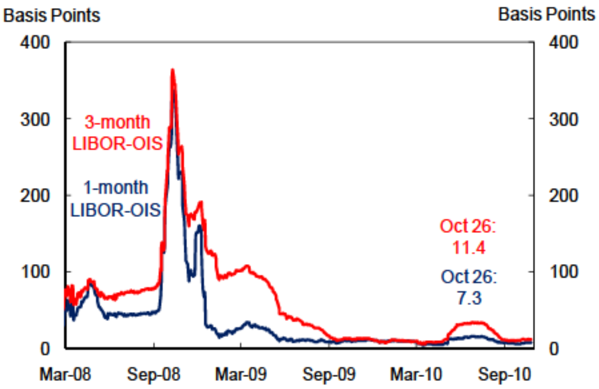


Source: Federal Reserve Board

A. Significant Developments

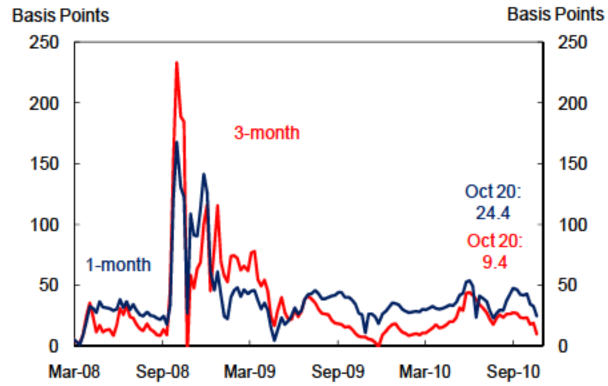
Exhibit A-9:
Money Markets

Libor to OIS



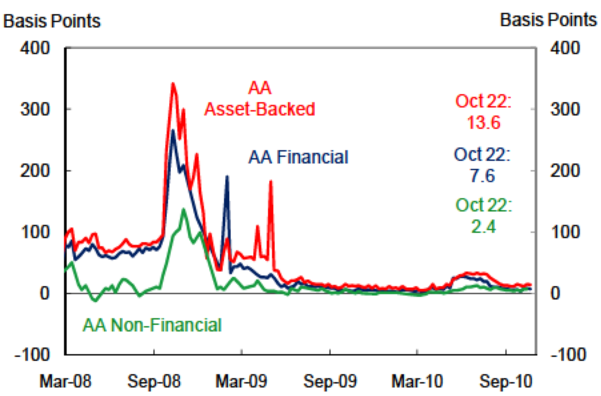
Source: Federal Reserve Board, Bloomberg

Euro-Dollar Swap Implied Basis Spreads



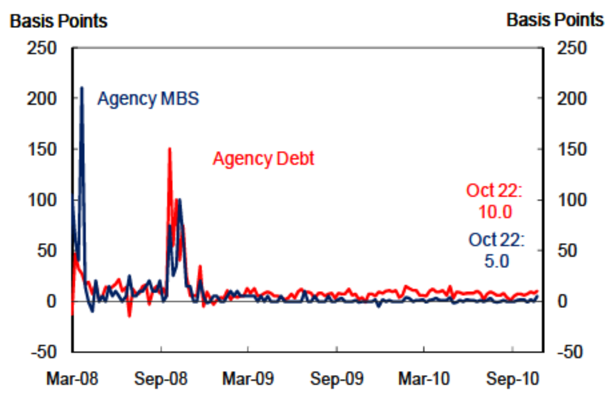
Source: Reuters, Tullett

3-Month CP Rates over OIS



Source: Federal Reserve Board, Haver, Bloomberg

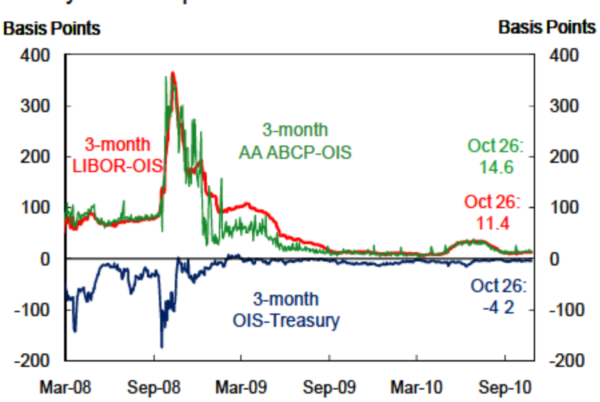
Overnight Financing Spreads



Source: Bloomberg

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

Money Market Spreads

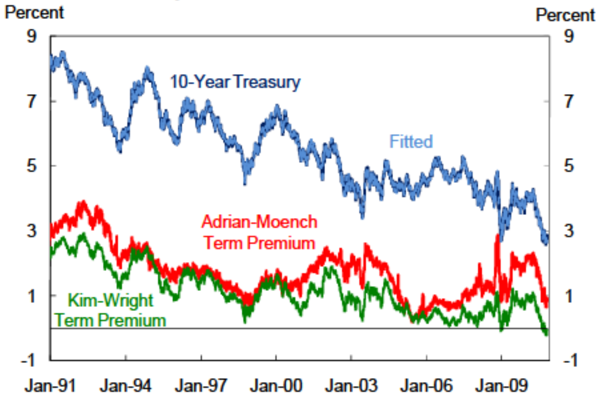


Source: Federal Reserve Board, Bloomberg

A. Significant Developments

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

10-Year Treasury and Term Premia

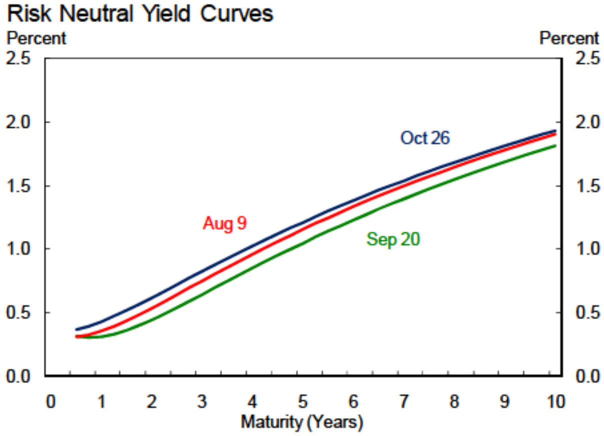


Source: FRBNY calculations, Federal Reserve Board

10-Year Treasury and Term Premia

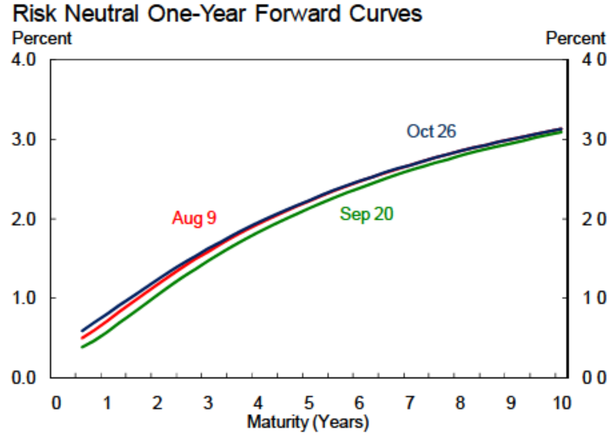
Source: FRBNY calculations, Federal Reserve Board

Risk Neutral Yield Curves



Source: FRBNY calculations

Risk Neutral One-Year Forward Curves



Source: FRBNY calculations

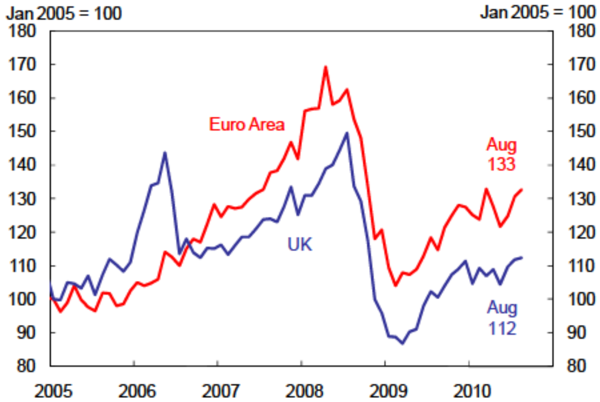
Term Premium for 10-Year Treasury and 6-Month MOVE Index

Source: FRBNY calculations, Haver, Merrill Lynch

A. Significant Developments

Exhibit A-11: Exports and Industrial Production

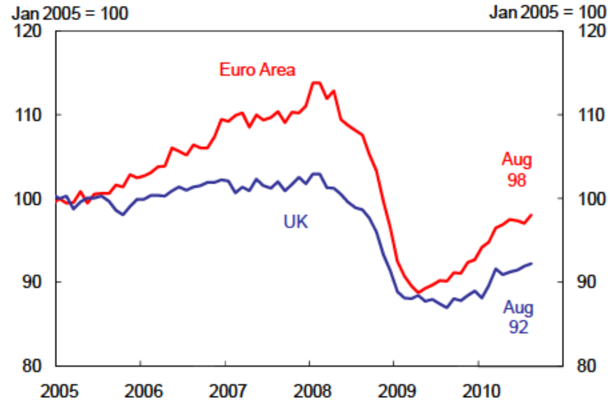
Exports



Source: Haver

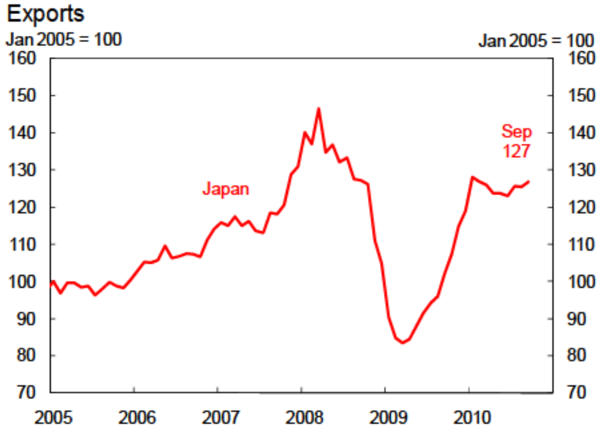
Note: In Dollar Terms

Industrial Production



Source: Haver

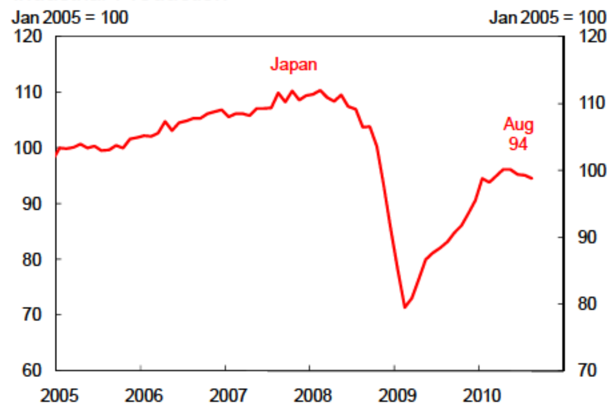
Exports



Source: Haver

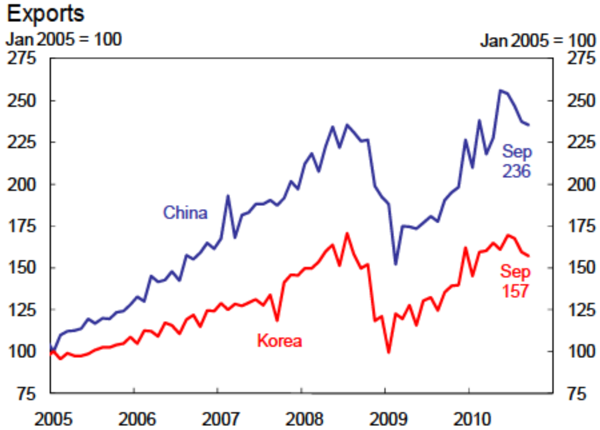
Note: In Dollar Terms

Industrial Production



Source: Haver

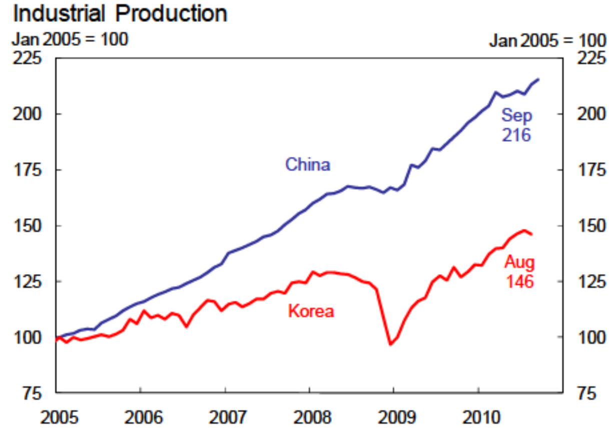
Exports



Source: Haver

Note: In Dollar Terms

Industrial Production

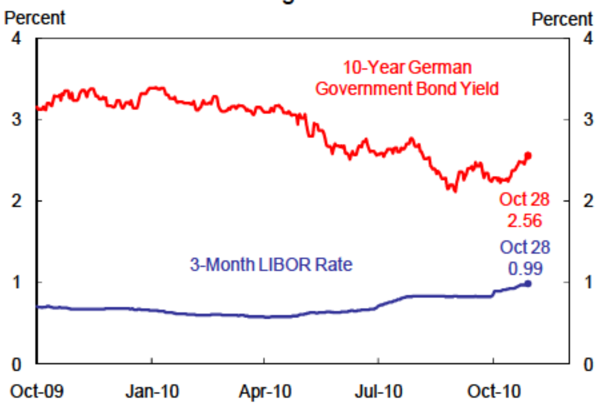


Source: Haver

A. Significant Developments

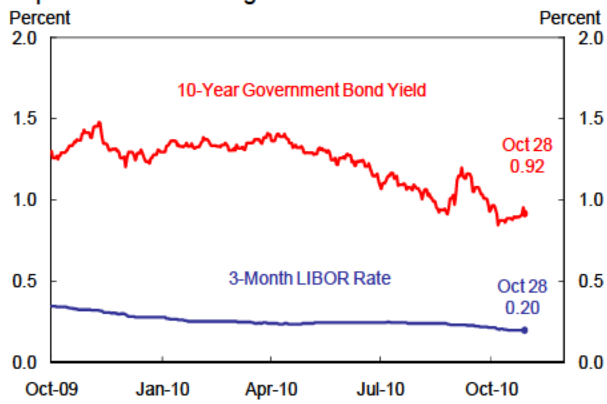
Exhibit A-12:
Global Interest Rates and Equity Markets

Euro Area Short- and Long-Term Interest Rates



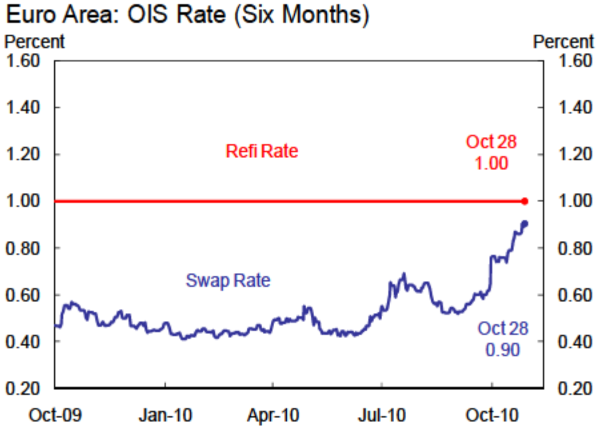
Source: Bloomberg

Japan Short- and Long-Term Interest Rates



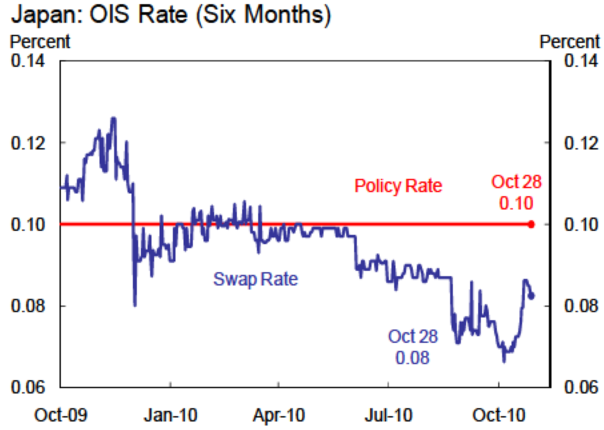
Source: Bloomberg

Euro Area: OIS Rate (Six Months)



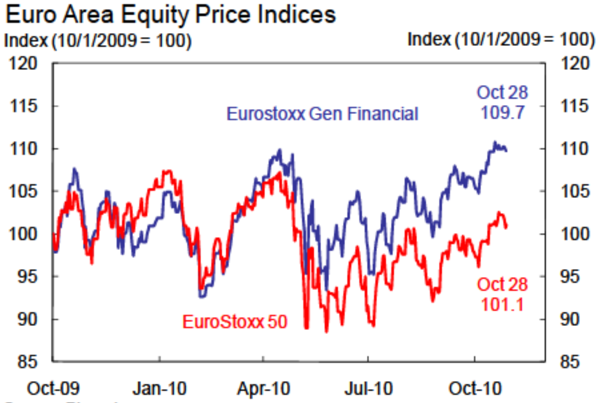
Source: Bloomberg

Japan: OIS Rate (Six Months)



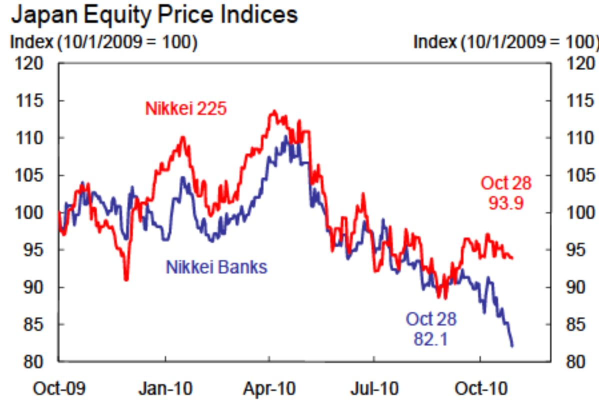
Source: Bloomberg

Euro Area Equity Price Indices



Source: Bloomberg

Japan Equity Price Indices

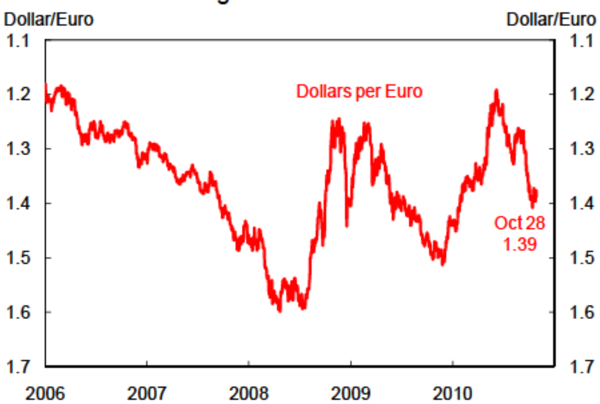


Source: Bloomberg

A. Significant Developments

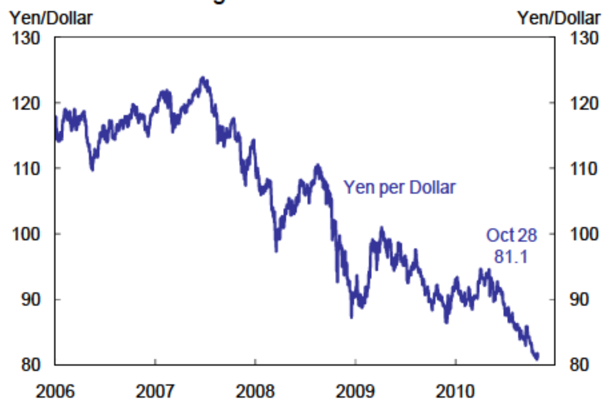
Exhibit A-13: Exchange Rates

Dollar-Euro Exchange Rate



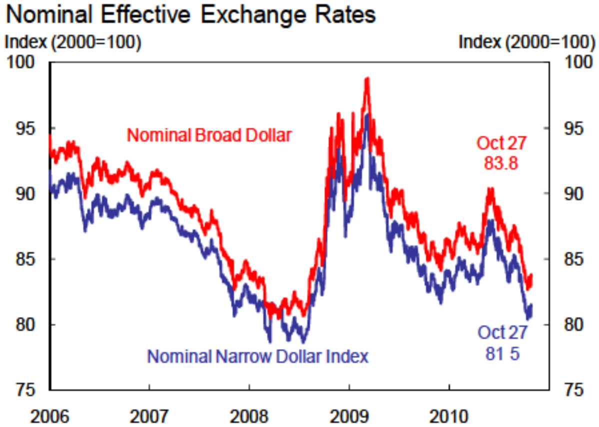
Source: Bloomberg
Note: Exchange rate scale is inverted.

Yen-Dollar Exchange Rate



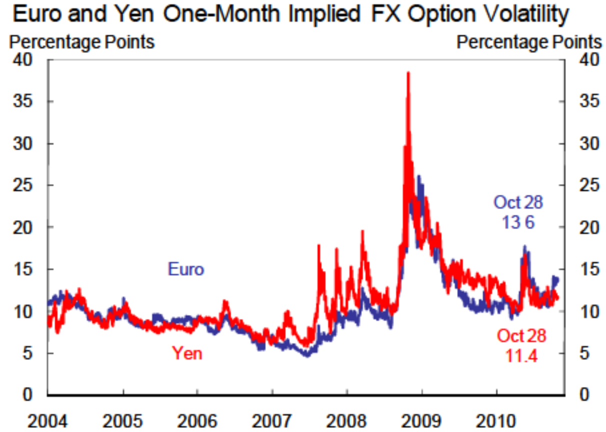
Source: Bloomberg

Nominal Effective Exchange Rates



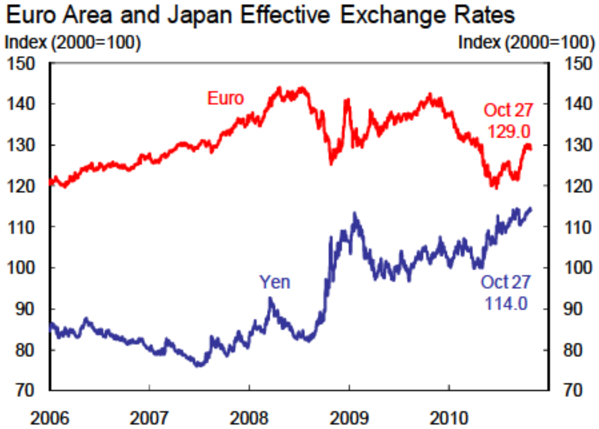
Source: Bloomberg and JPMorgan

Euro and Yen One-Month Implied FX Option Volatility



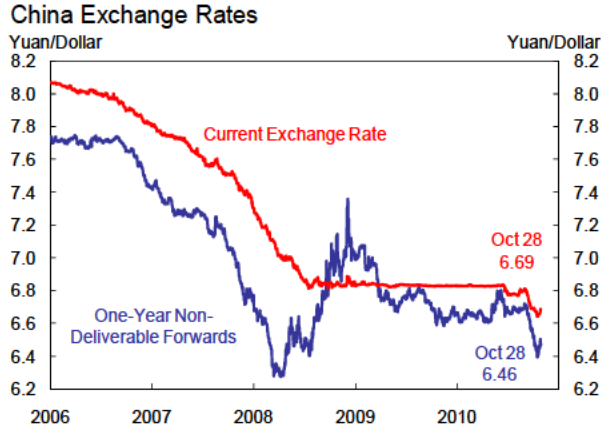
Source: Bloomberg

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**		
	Aug	Sep	Oct	Aug	Sep	Oct	Aug	Sep	Oct	Aug	Sep	Oct
2010												
Q1	*1.2*	*1.2*	*1.2*	*3.7*	*3.7*	*3.7*	*9.7*	*9.7*	*9.7*	*0-0.25*	*0-0.25*	*0-0.25*
Q2	1.1	*1.0*	*1.0*	2.4	*1.6*	*1.7*	9.7	*9.7*	*9.7*	0-0.25	*0-0.25*	*0-0.25*
Q3	0.9	1.1	*0.8*	1.1	1.6	*2.0*	9.6	9.7	*9.6*	0-0.25	0-0.25	0-0.25
Q4	0.9	1.0	0.9	3.7	2.5	1.8	9.5	9.8	9.9	0-0.25	0-0.25	0-0.25
2011												
Q1	1.1	1.0	1.0	3.8	3.4	3.6	9.1	9.4	9.4	0-0.25	0-0.25	0-0.25
Q2	1.2	1.1	1.1	3.5	3.5	3.6	8.8	9.0	9.0	0-0.25	0-0.25	0-0.25
Q3	1.3	1.2	1.2	3.6	3.1	3.3	8.6	8.8	8.6	0-0.25	0-0.25	0-0.25
Q4	1.4	1.3	1.3	5.1	5.2	5.5	8.1	8.1	8.3	0.5-1.0	0-0.25	0-0.25
2012												
Q1	1.5	1.4	1.4	4.9	4.7	4.9	7.4	7.3	7.6	0.5-1.0	0.5-1.0	0-0.25
Q2	1.6	1.5	1.5	4.8	3.9	3.8	6.7	6.9	7.4	0.5-1.0	0.5-1.0	0-0.25
Q3	1.7	1.6	1.6	4.9	3.4	3.6	6.1	6.7	7.2	0.5-1.0	0.5-1.0	0.25
Q4	1.8	1.7	1.7	5.3	5.5	5.8	5.4	6.0	7.0	0.5-1.0	0.5-1.0	0.5
Q4/Q4												
2009	*1.7*	*1.7*	*1.7*	*0.2*	*0.2*	*0.2*	*3.1*	*3.1*	*3.1*	*0.0*	*0.0*	*0.0*
2010	1.0	1.1	1.0	2.7	2.4	2.3	-0.5	-0.2	-0.1	0.0	0.0	0.0
2011	1.3	1.2	1.2	4.0	3.8	4.0	-1.4	-1.7	-1.6	0.75	0.0	0.0
2012	1.6	1.5	1.5	5.0	4.4	4.5	-2.7	-2.1	-1.3	0.0	0.75	0.5

Note: Columns reflect the forecast dates. Numbers in gray are from previous Blackbooks, and numbers in italics are released data.

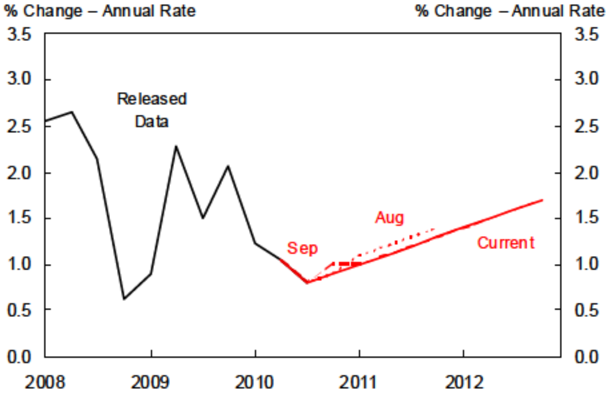
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**Quarterly values are the end-of-quarter value. Yearly values are the difference between the end-of-year value in the previous year and the end-of-year value in the listed year.

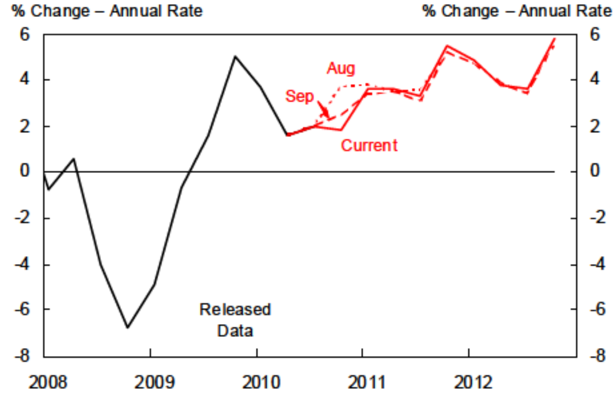
B. FRBNY Forecast Details

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

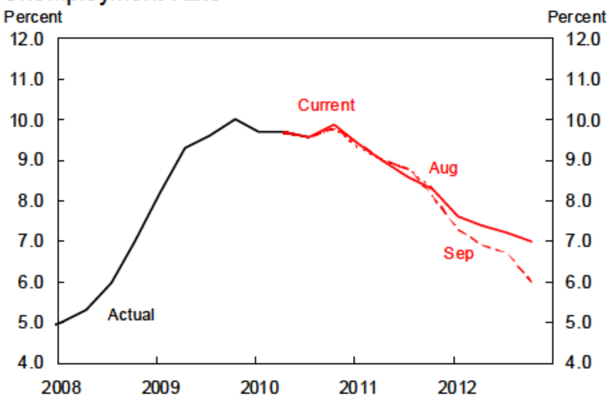
Core PCE Inflation



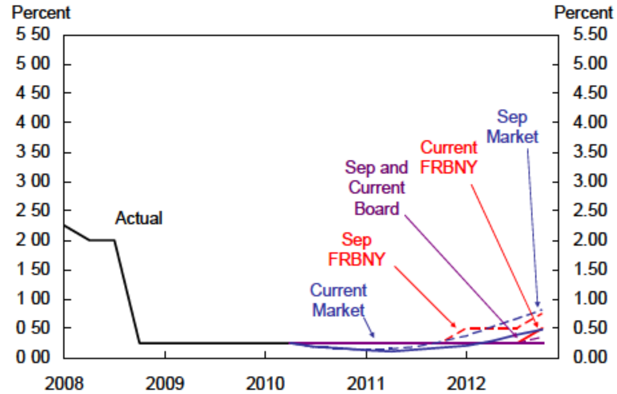
Real GDP Growth



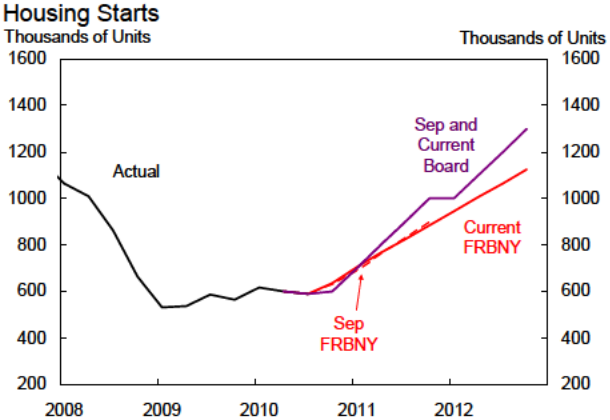
Unemployment Rate



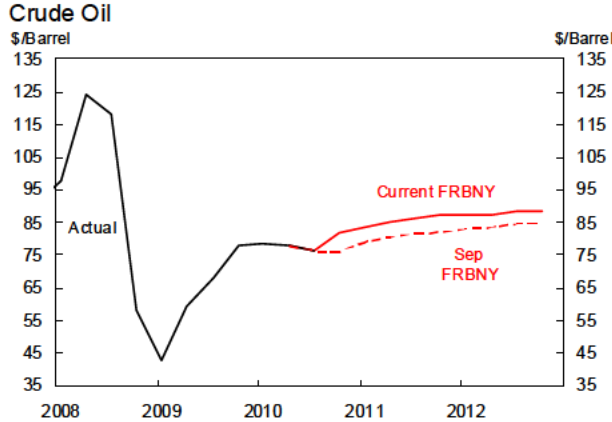
Federal Funds Rate



Housing Starts



Crude Oil



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

B. FRBNY Forecast Details

Exhibit B-3: Near-Term Projections

	Quarterly Growth Rates (AR)		Quarterly Growth Contributions (AR)	
	2010Q4	2011Q1	2010Q4	2011Q1
OUTPUT				
Real GDP	1.8	3.6	1.8	3.6
	(2.5)	(3.4)	(2.5)	(3.4)
Final Sales to Domestic Purchasers	2.2	2.7	2.2	2.8
	(2.1)	(2.7)	(2.1)	(2.7)
Consumption	2.2	2.2	1.6	1.5
	(2.2)	(2.2)	(1.6)	(1.5)
BFI: Equipment and Software	8.0	8.0	0.6	0.6
	(8.0)	(8.0)	(0.6)	(0.6)
BFI: Nonresidential Structures	0.0	4.0	0.0	0.1
	(0.0)	(4.0)	(0.0)	(0.1)
Residential Investment	-9.0	15.0	-0.2	0.3
	(-12.8)	(15.0)	(-0.3)	(0.3)
Government: Federal	1.7	1.5	0.1	0.1
	(1.7)	(1.5)	(0.1)	(0.1)
Government: State and Local	1.3	1.2	0.2	0.1
	(1.3)	(1.2)	(0.2)	(0.1)
Inventory Investment	--	--	-1.8	-0.3
	--	--	(-0.9)	(0.0)
Net Exports	--	--	1.4	1.1
	--	--	(1.3)	(0.6)
INFLATION				
Total PCE Deflator	1.2	1.3		
	(1.2)	(1.3)		
Core PCE Deflator	0.9	1.0		
	(1.0)	(1.0)		
PRODUCTIVITY AND LABOR COSTS*				
Output per Hour	1.8	1.8		
	(1.8)	(1.8)		
Compensation per Hour	0.8	1.0		
	(1.0)	(1.3)		
Unit Labor Costs	-1.0	-0.8		
	(-0.8)	(-0.5)		

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

B. FRBNY Forecast Details

Exhibit B-4: Real GDP and Inflation Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2010	2011	2012	2010	2011	2012
OUTPUT						
Real GDP	2.3	4.0	4.5	2.3	4.0	4.5
	(2.4)	(3.8)	(4.4)	(2.4)	(3.8)	(4.4)
Final Sales to Domestic Purchasers	2.6	3.2	4.1	2.7	3.3	3.9
	(2.3)	(3.3)	(4.2)	(2.4)	(3.4)	(4.0)
Consumption	2.2	2.6	3.4	1.6	1.8	2.4
	(2.1)	(2.6)	(3.4)	(1.5)	(1.8)	(2.4)
BFI: Equipment and Software	16.1	8.0	10.0	1.0	0.6	0.6
	(15.1)	(8.0)	(10.0)	(1.0)	(0.6)	(0.6)
BFI: Nonresidential Structures	-4.0	6.5	8.0	-0.1	0.2	0.2
	(-6.4)	(6.5)	(8.0)	(-0.2)	(0.2)	(0.2)
Residential Investment	-8.2	21.2	20.0	-0.2	0.5	0.5
	(-9.2)	(24.8)	(22.5)	(-0.2)	(0.5)	(0.6)
Government: Federal	5.3	1.5	1.6	0.4	0.1	0.1
	(4.3)	(1.5)	(1.6)	(0.4)	(0.1)	(0.1)
Government: State and Local	-0.5	1.1	1.9	-0.1	0.1	0.1
	(-0.3)	(1.1)	(1.9)	(0.0)	(0.1)	(0.1)
Inventory Investment	--	--	--	0.8	0.2	0.3
	--	--	--	(0.7)	(0.2)	(0.3)
Net Exports	--	--	--	-1.1	0.5	0.4
	--	--	--	(-0.7)	(0.2)	(0.2)
INFLATION						
Total PCE Deflator	1.1	1.4	1.8			
	(1.1)	(1.4)	(1.8)			
Core PCE Deflator	1.0	1.2	1.5			
	(1.1)	(1.2)	(1.5)			
Total CPI Inflation	0.9	1.6	1.8			
	(0.9)	(1.7)	(1.8)			
Core CPI Inflation	0.8	1.4	1.7			
	(0.9)	(1.5)	(1.7)			
GDP Deflator	1.3	1.2	1.7			
	(1.4)	(1.2)	(1.6)			

Note: Numbers in parentheses are from the previous Blackbook.

B. FRBNY Forecast Details

Exhibit B-5: Projections of Other Key Economic Variables

	Q4/Q4 Growth Rates		
	2010	**2011**	**2012**
INTEREST RATE ASSUMPTIONS			
Federal Funds Rate (End-of-Year)	0-0.25	0-0.25	0.5
	0-0.25	0-0.25	0.5-1.0
10-Year Treasury Yield (Avg. Q4 Level)	2.7	3.7	--
	(3.0)	(3.8)	--
PRODUCTIVITY AND LABOR COSTS*			
Output	3.1	5.5	6.2
	(3.1)	(5.3)	(6.0)
Hours	1.7	3.8	4.4
	(1.8)	(3.5)	(4.3)
Output per Hour	1.4	1.7	1.7
	(1.3)	(1.7)	(1.7)
Compensation per Hour	-0.1	1.4	2.3
	(0.0)	(1.6)	(2.0)
Unit Labor Costs	-1.5	-0.4	0.6
	(-1.3)	(-0.1)	(0.3)
LABOR MARKET			
Unemployment Rate (Avg. Q4 Level)	9.9	8.3	7.0
	(9.8)	(8.1)	(6.0)
Participation Rate (Avg. Q4 Level)	64.8	65.0	66.0
	(64.8)	(65.0)	(65.3)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	56	345	445
	(90)	(350)	(446)
INCOME			
Personal Income	2.8	5.0	6.2
	(3.2)	(4.9)	(5.4)
Real Disposable Personal Income	1.5	3.3	4.1
	(2.1)	(3.3)	(3.3)
Personal Saving Rate	5.0	5.7	6.4
	(5.6)	(6.3)	(6.1)
Corporate Profits Before Taxes	18.9	5.6	6.3
	(7.0)	(4.8)	(4.8)

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

B. FRBNY Forecast Details

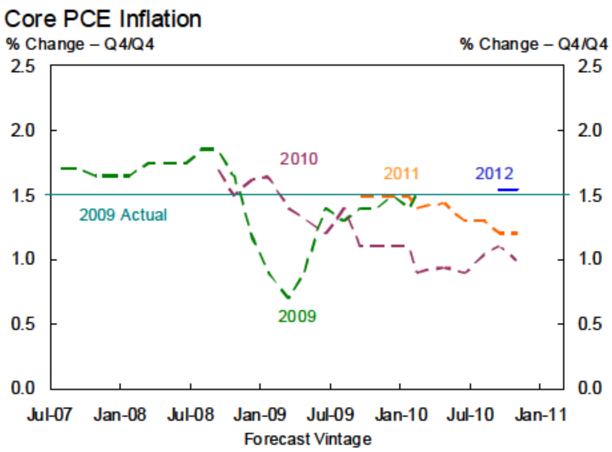
Exhibit B-6: FRBNY and Tealbook Forecast Comparison

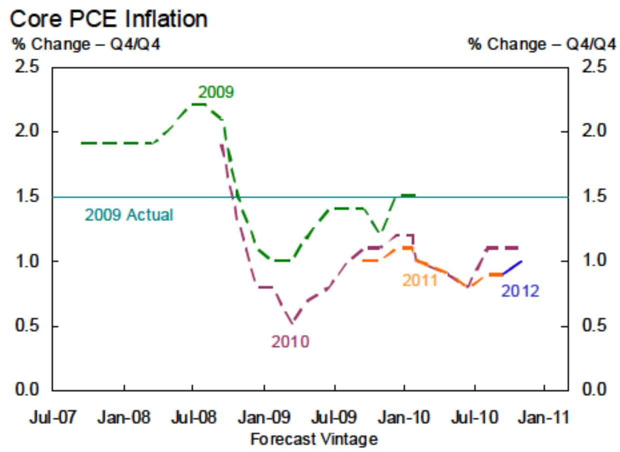
	FRBNY (Q4/Q4)			Board (Q4/Q4)		
	2010	2011	2012	2010	2011	2012
OUTPUT						
Real GDP	2.3	4.0	4.5	2.4	3.6	4.7
	(2.4)	(3.8)	(4.4)	(2.4)	(3.3)	(4.4)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	2.7	3.3	3.9	2.4	3.4	4.6
	(2.4)	(3.4)	(4.0)	(2.1)	(3.3)	(4.4)
Consumption	1.6	1.8	2.4	1.6	2.2	3.1
	(1.5)	(1.8)	(2.4)	(1.4)	(2.1)	(2.9)
BFI	0.9	0.7	0.8	0.8	0.6	0.9
	(0.8)	(0.7)	(0.8)	(0.6)	(0.7)	(0.8)
Residential Investment	-0.2	0.5	0.5	-0.2	0.5	0.4
	(-0.2)	(0.5)	(0.6)	(-0.1)	(0.4)	(0.5)
Government	0.4	0.3	0.3	0.2	0.1	0.2
	(0.3)	(0.3)	(0.3)	(0.2)	(0.1)	(0.2)
Inventory Investment	0.8	0.2	0.3	0.9	-0.1	0.2
	(0.7)	(0.2)	(0.3)	(0.9)	(0.0)	(0.1)
Net Exports	-1.1	0.5	0.4	-0.9	0.3	0.0
	(-0.7)	(0.2)	(0.2)	(-0.7)	(0.0)	(-0.1)
INFLATION						
Total PCE Deflator	1.1	1.4	1.8	1.3	1.1	1.1
	(1.1)	(1.4)	(1.8)	(1.2)	(1.1)	(1.0)
Core PCE Deflator	1.0	1.2	1.5	1.1	1.0	1.0
	(1.1)	(1.2)	(1.5)	(1.1)	(0.9)	(0.9)
INTREST RATE ASSUMPTION						
Fed Funds Rate (End-of-Year)	0-0.25	0-0.25	0.5	0-0.25	0-0.25	0-0.25
	0-0.25	0-0.25	0.5-1.0	0-0.25	0-0.25	(0.3)
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	1.4	1.7	1.7	1.5	1.5	2.0
	(1.3)	(1.7)	(1.7)	(1.3)	(1.6)	(2.0)
Compensation per Hour	-0.1	1.4	2.3	0.6	1.9	2.1
	(0.0)	(1.6)	(2.0)	(0.5)	(1.8)	(1.9)
Unit Labor Costs	-1.5	-0.4	0.6	-0.9	0.4	0.1
	(-1.3)	(-0.1)	(0.3)	(-0.8)	(0.2)	(-0.1)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	9.9	8.3	7.0	9.7	9.0	7.9
	(9.8)	(8.1)	(6.0)	(9.7)	(9.1)	(8.0)
Participation Rate (Avg. Q4 Level)	64.8	65.0	66.0	64.7	64.7	64.8
	(64.8)	(65.0)	(65.3)	(64.7)	(64.7)	(64.6)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	56	345	445	58	217	308
	(90)	(350)	(446)	(67)	(200)	(291.7)
SAVING						
Personal Saving Rate (Avg. Q4 Level)	5.0	5.7	6.4	5.4	5.3	5.0
	(5.6)	(6.3)	(6.1)	(5.6)	(5.5)	(5.3)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	635	885	1125	600	1000	1300
	(630)	(900)	--	(600)	(800)	(1100)

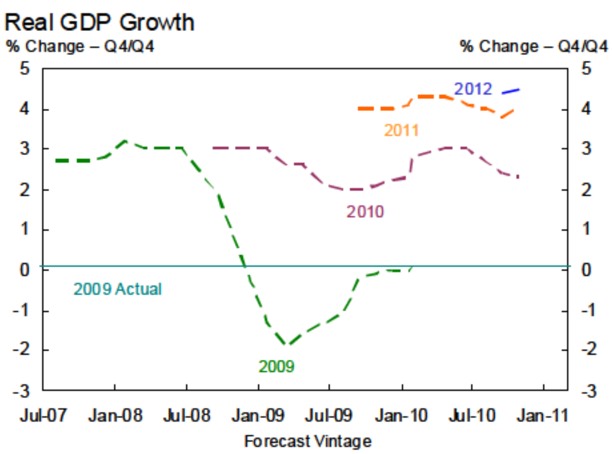
B. FRBNY Forecast Details

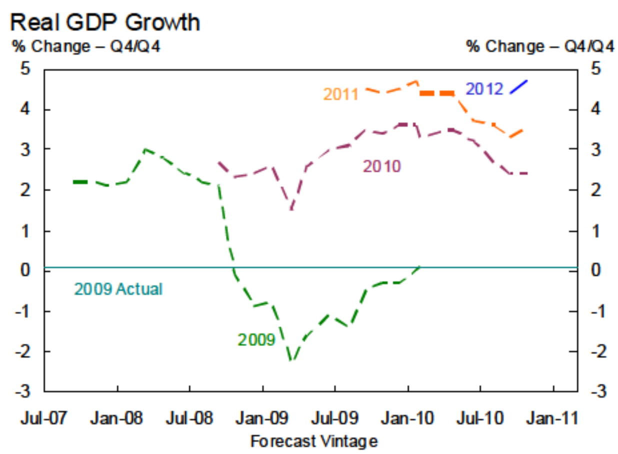
Exhibit B-7: Evolution of FRBNY and Board Forecasts since Mid-2006

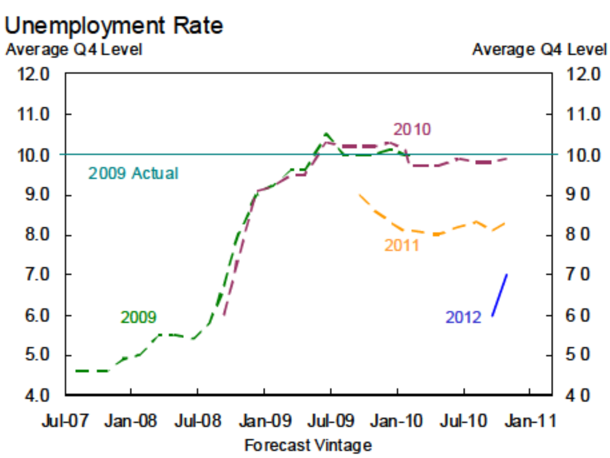
FRBNY	**Board**

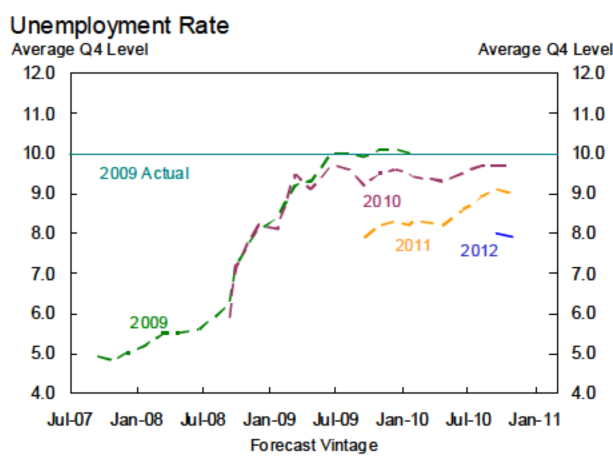












Note: Forecast vintage is the date the forecast was produced.

B. FRBNY Forecast Details

Exhibit B-8: Alternative GDP and Inflation Forecasts

		Real GDP Growth			
	Release Date	**2010Q4**	**2011Q1**	**2010 Q4/Q4**	**2011 Q4/Q4**
FRBNY	10/29/2010	1.8	3.6	2.3	4 0
		(2.5)	(3.4)	(2.4)	(3.8)
PSI Model	10/20/2010	1.2	--	--	--
		(2.4)	--	--	--
Blue Chip	10/10/2010	2.3	1.6	2.4	2 9
		(2.3)	(2.5)	(2.4)	(2 9)
Median SPF	8/13/2010	2.8	2.3	2.8	--
		(2.8)	(2.7)	(3.1)	--
Macro Advisers	10/29/2010	1.8	2.6	2.2	3.6
		(2.4)	(2.8)	(2.3)	(3.7)

		Core PCE Inflation			
	Release Date	**2010Q4**	**2011Q1**	**2010 Q4/Q4**	**2011 Q4/Q4**
FRBNY	10/29/2010	0.9	1.0	1.0	1 2
		(1.0)	(1.0)	(1.1)	(1 2)
Median SPF	8/13/2010	1.1	1.4	1.1	1.5
		(1.3)	(1.4)	(1.2)	(1.6)
Macro Advisers	10/13/2010	1.1	1.0	1.1	0 9
		(1.1)	(0.9)	(1.1)	(0.8)

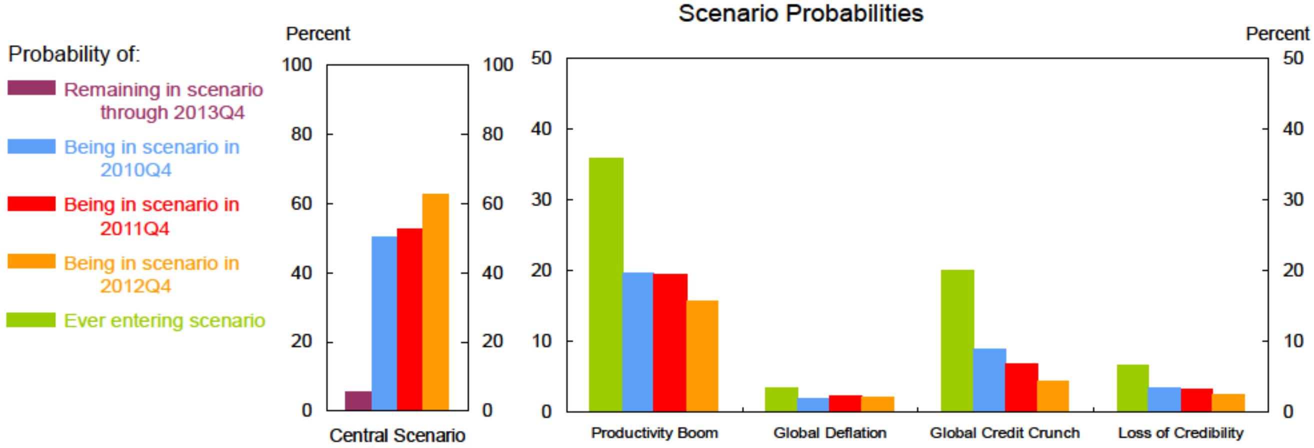
		CPI Inflation			
	Release Date	**2010Q4**	**2011Q1**	**2010 Q4/Q4**	**2011 Q4/Q4**
FRBNY	10/29/2010	1.5	1.5	0.9	1.6
		(1.4)	(1.5)	(0.9)	(1.7)
Blue Chip	10/10/2010	1.6	1.7	1.0	1.7
		(1.4)	(1.6)	(0.9)	(1.7)
Median SPF	8/13/2010	1.6	1.8	0.9	1.8
		(1.8)	(1.9)	(1.6)	(2 0)
Macro Advisers	10/13/2010	2.0	1.2	1.1	1.1
		(1.0)	(0.9)	(0.8)	(1 0)

		Core CPI Inflation			
	Release Date	**2010Q4**	**2011Q1**	**2010 Q4/Q4**	**2011 Q4/Q4**
FRBNY	10/29/2010	1.1	1.3	0.8	1.4
		(1.4)	(1.4)	(0.9)	(1.5)
Median SPF	8/13/2010	1.2	1.2	0.9	1.5
		(1.5)	(1.5)	(1.0)	(1.6)
Macro Advisers	10/13/2010	1.1	0.9	0.8	0.8
		(1.1)	(0.9)	(0.9)	(0.8)

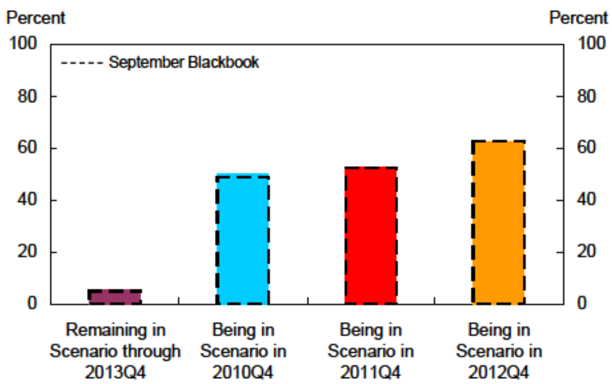
C. FRBNY Forecast Distributions

Exhibit C-1: Risks

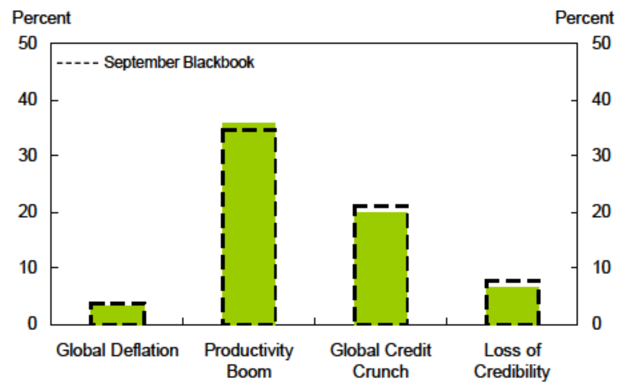
Scenario Probabilities



Change in Central Scenario Probabilities



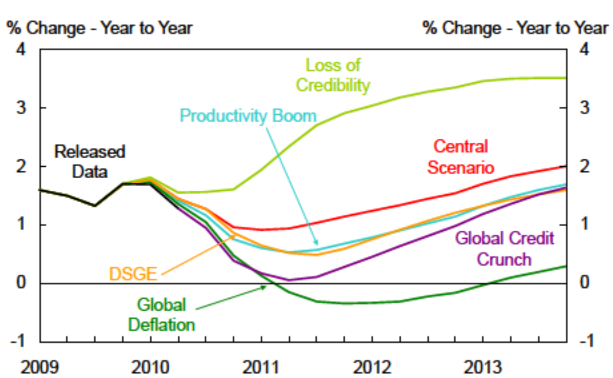
Change in Alternative Scenario Probabilities*



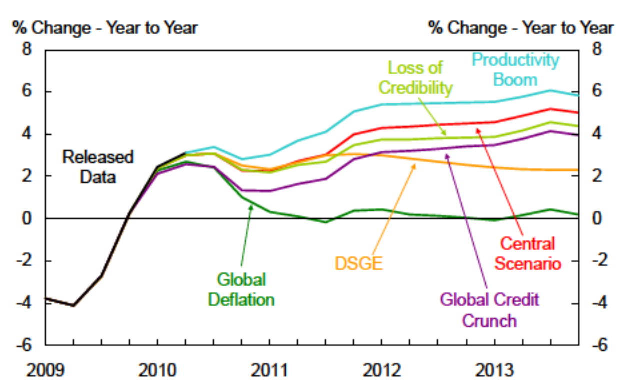
*Probability of ever reaching scenario

Exhibit C-2: Projections under Alternative Scenarios

Core PCE Inflation under Alternative Scenarios



Real GDP Growth under Alternative Scenarios

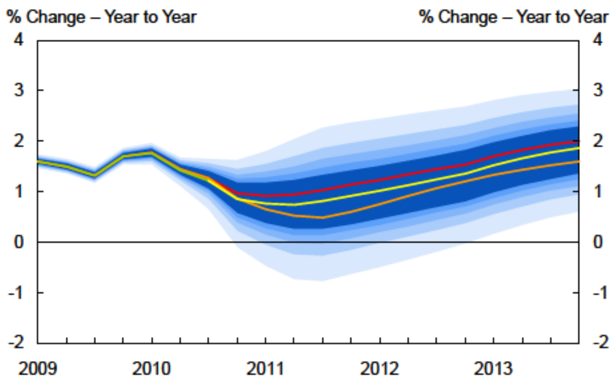


Source: MMS Function (FRBNY)

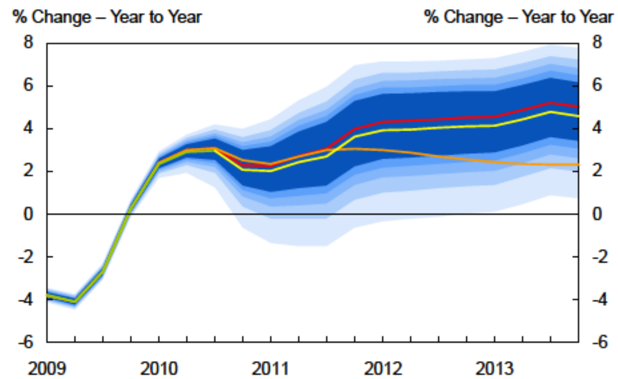
C. FRBNY Forecast Distributions

Exhibit C-3: Inflation and Output Forecast Distributions

Core PCE Inflation Forecast Distribution

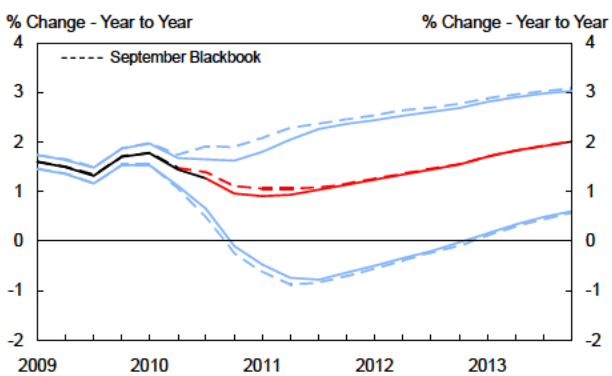


Real GDP Growth Forecast Distribution

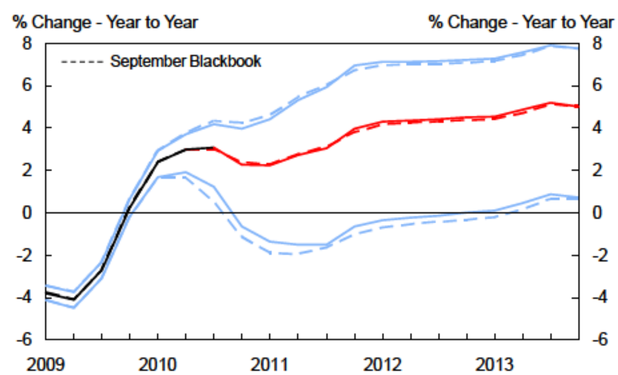


The yellow line represents the expected value of the forecast distribution, the red line represents the FRBNY central projection, the orange line represents the DSGE forecast, and the green line represents released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter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

Change in Core PCE Inflation Forecast Distribution

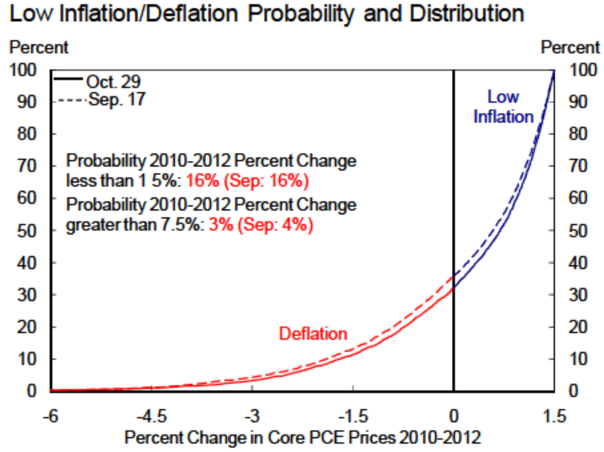


Change in Real GDP Growth Forecast Distribution

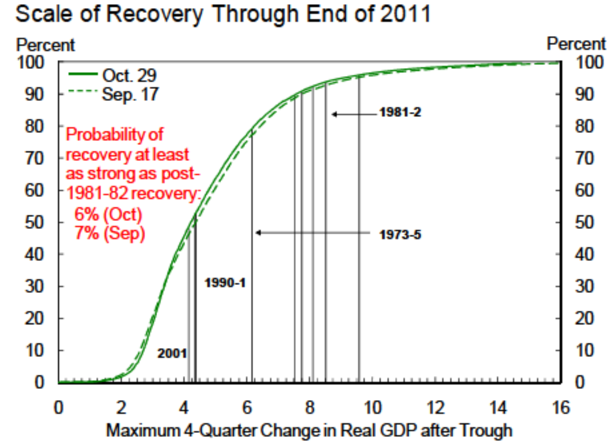


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from the previous Blackbook.

Low Inflation/Deflation Probability and Distribution



Scale of Recovery Through End of 2011

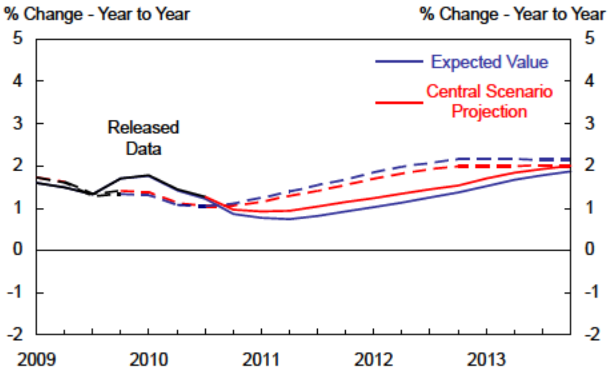


Source: MMS Function (FRBNY)

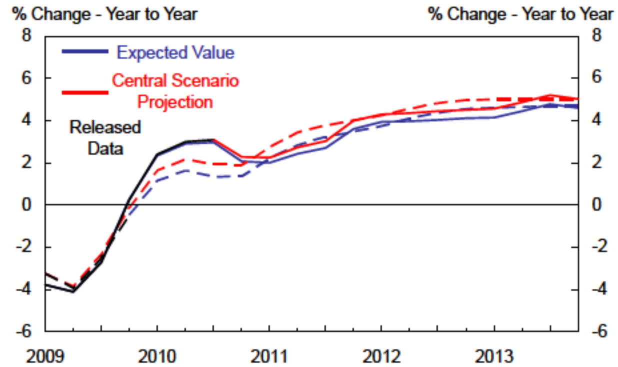
C. FRBNY Forecast Distributions

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

One-Year Comparison of Core PCE Inflation Forecast

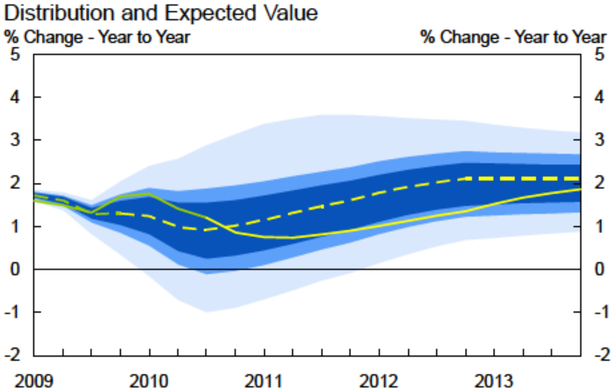


One-Year Comparison of Real GDP Growth Forecast

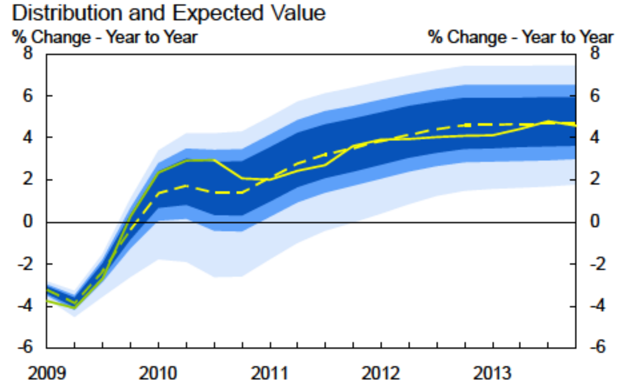


The solid lines represent the current central scenario projection and expected value, while the dashed lines represent those from the year-ago Blackbook.

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



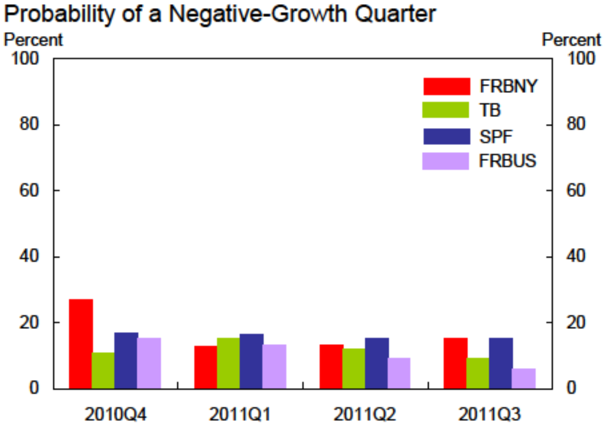
One-Year Comparison of Real GDP Growth Forecast Distribution and Expected Value



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

Exhibit C-5: Probability of a Negative Growth Quarter

Probability of a Negative-Growth Quarter

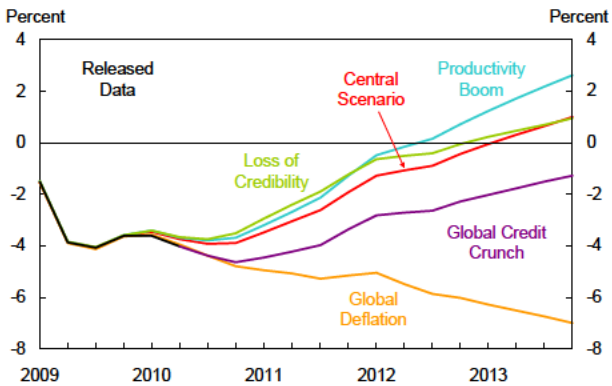


Source: MMS Function (FRBNY)

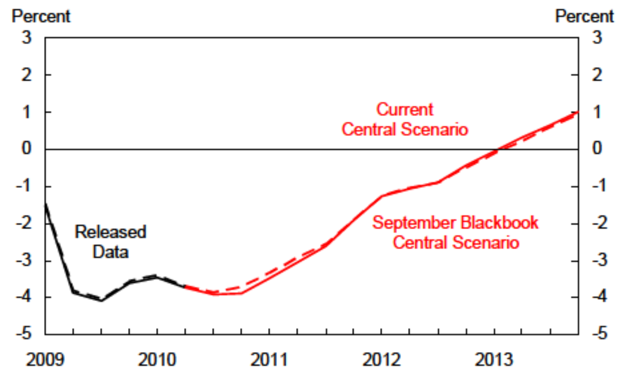
D. FRBNY Fed Funds Rate Projections

Exhibit D-1: *Baseline*
Policy Rule Analysis

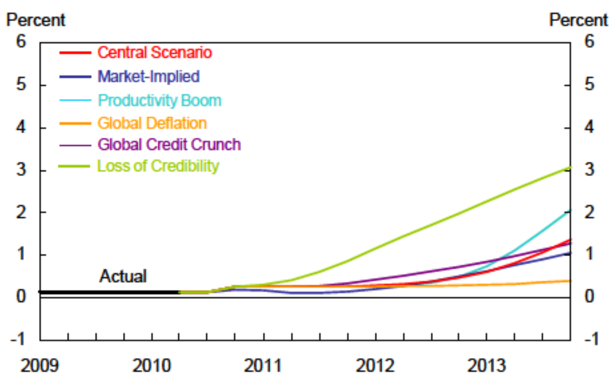
Real FFR under Alternative Scenarios



Change in Central Scenario Real FFR



Nominal FFR under Alternative Scenarios



Change in Central Scenario and Market-Implied Nominal FFR

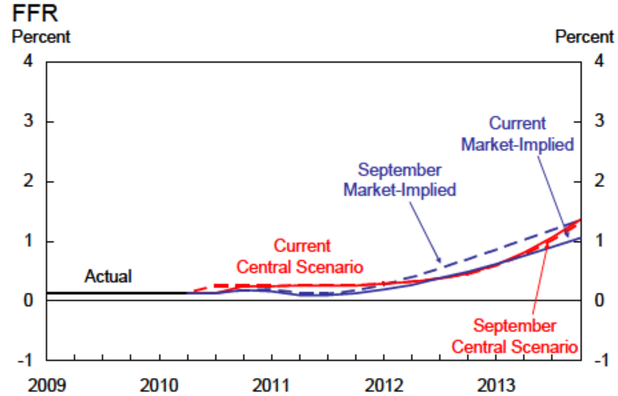
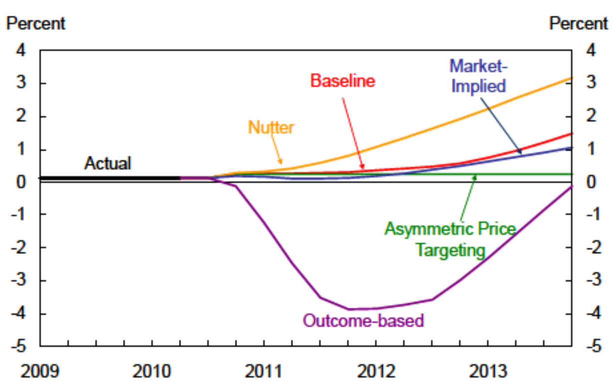


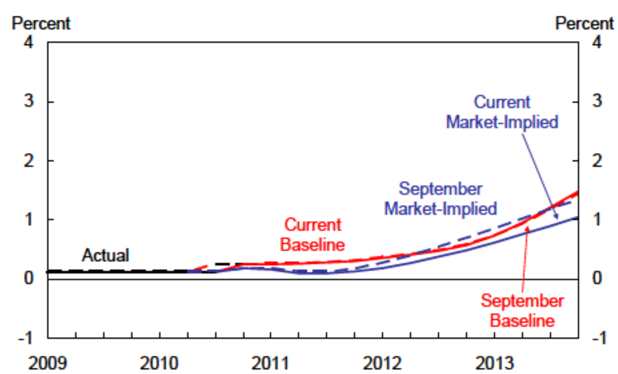
Exhibit D-2: Alternative Policy Rules under
Expected Value of Forecast Distribution

Nominal FFR using Alternative Policy Rules*



*Evaluated using yellow line from C-3

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



*Evaluated using yellow line from C-3

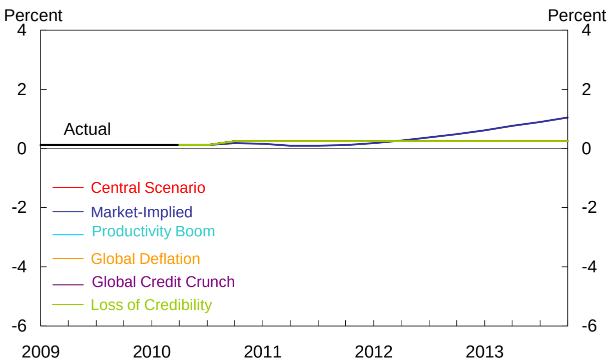
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

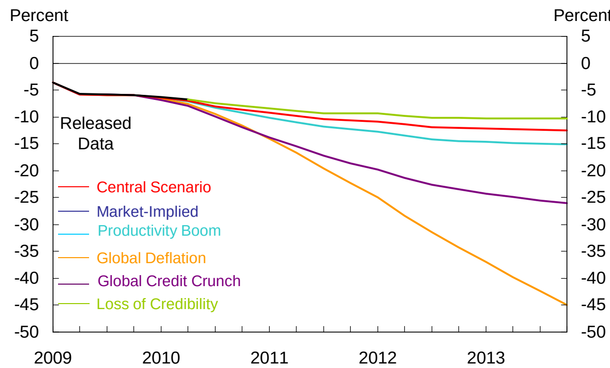
Exhibit D-3: Alternative Policy Rule Analysis

Policy Rule: *Asymmetric Price Targeting*

Nominal FFR under Alternative Scenarios

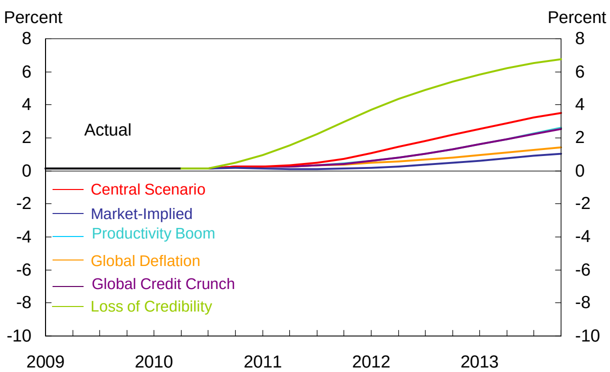


Real FFR under Alternative Scenarios

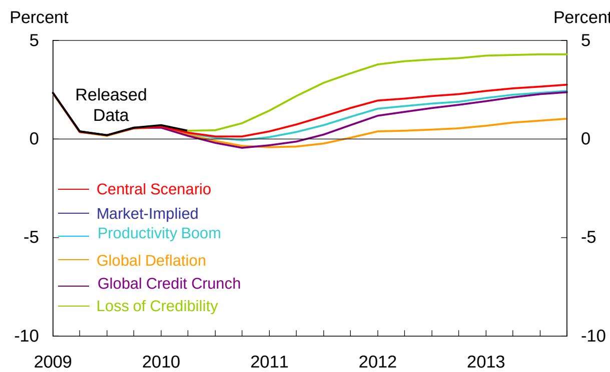


Policy Rule: *Nutter*

Nominal FFR under Alternative Scenarios

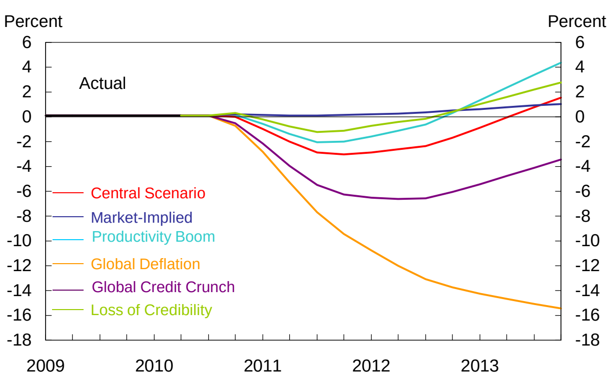


Real FFR under Alternative Scenarios

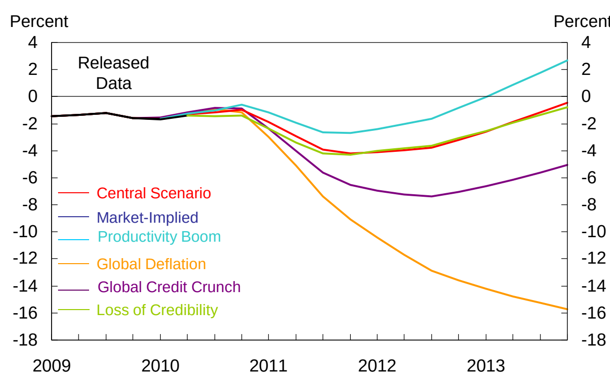


Policy Rule: *Outcome-based*

Nominal FFR under Alternative Scenarios



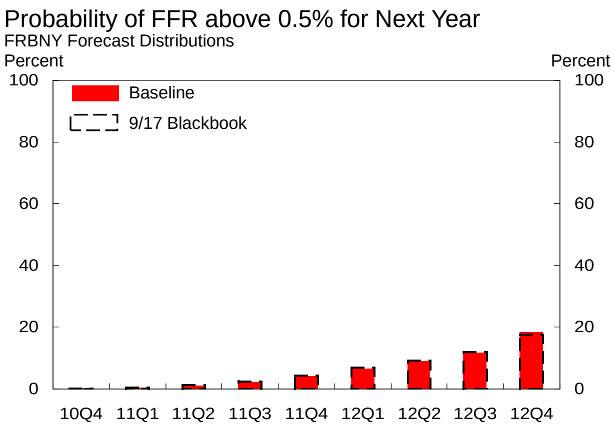
Real FFR under Alternative Scenarios

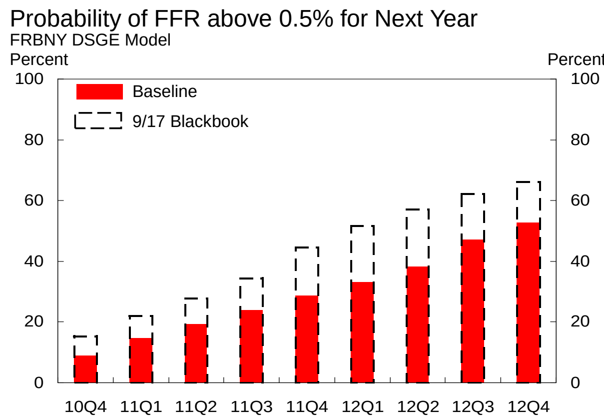


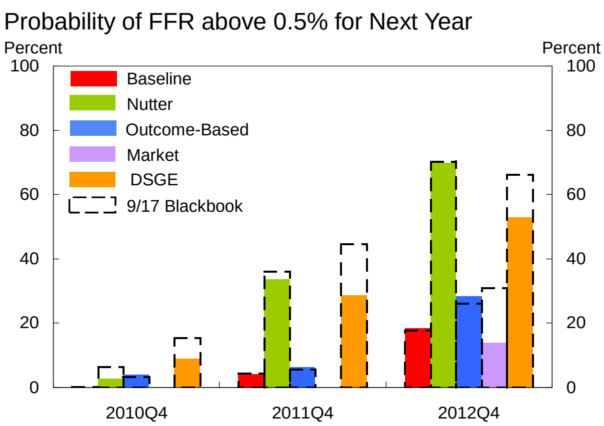
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

Exhibit D-4: FFR Probabilities







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

Source: MMS Function (FRBNY)

Alternative Scenario Descriptions

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

Our first two alternative scenarios consider the impact of above- and below-trend productivity growth, respectively. Our current assumption of trend productivity growth is around 1.75% on a nonfarm business sector basis. Sustained productivity growth above or below this assumption would have important consequences for the economy; consequently these alternative scenarios are expected to be included in almost all periods.

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: *Productivity Slump*

Despite the recent surge in productivity growth, there are a number of reasons that productivity growth could slow substantially in the future. First, the recent rise may reflect a new cyclical pattern whereby firms protective of their profit margins reduce labor input in anticipation of slower profit growth. The massive declines in hours worked that have been associated with recent strong productivity growth lend supporting evidence to this view. Second, it is possible that the IT developments that drove the longer-term upswing in productivity that began in the mid-1990s may have run their course. Third, a renewed increase in the level and volatility of energy and commodity prices could lead to lower productivity growth, as occurred in the 1970s. In any case, if the rapid gains in productivity seen during the recession prove to be only transitory, there could be an extended period of productivity growth below the trend in our central forecast. Below-trend productivity growth would imply a lower estimate of potential output growth (and therefore a smaller output gap) and would also push inflation above the level projected in our central forecast.

We also currently consider four additional scenarios. In two of them (*Fiscal Consolidation* and *Loss of Credibility*), the public and investors lose confidence in the current stances of fiscal or monetary 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 3: *Fiscal Consolidation*

Events in Europe in early and mid-2010 concerning the fiscal position of several euro zone countries raises 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 premiums 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]. However, after several quarters, with the government embarking on a credible fiscal

[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.

consolidation, inflation declines below the central forecast as a consequence of the drop in aggregate demand and output growth.

Alternative 4: *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 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 5: *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 rises in inflation and inflation expectations above forecast.

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. *Productivity Slump*: inflation above central forecast, output below central forecast.
3. *Fiscal Consolidation*: inflation initially above and then below central forecast, output below central forecast.
4. *Global Credit Crunch*: inflation below central forecast, output significantly below central forecast.

5. *Loss of Credibility*: inflation far above central forecast, output slightly below central forecast.
6. *Global Deflation*: inflation far below central forecast, output far below central forecast.

Policy Rule Descriptions

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

In both our *Baseline* and alternative policy rule specifications, the policy rate responds to deviations of inflation from target and of output from potential (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 ($\varphi_\pi = 2$ 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: $i_t = 1.20*i_{t-1} - 0.39*it\text{-}2 + 0.19*(1.17 + 1.73*\pi_t + 3.66*x_t - 2.72*x_{t-1})$

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.