FRBNY - cleared for release

FRBNY BLACKBOOK

RESEARCH AND STATISTICS GROUP

FOMC Background Material

September 2009

CONFIDENTIAL (FR) Class II FOMC

FRBNY BLACKBOOK

September 2009

CONTENTS

EXHIBITS

EXHIBIT OVERVIEW

1. Policy Recommendation and Rationale

Our policy recommendation is to maintain the target range for the federal funds rate at 0–0.25% until the end of 2010. We also suggest no change in the large scale asset purchase programs with the caveat that the purchases of MBS should be tapered so that they end in early 2010.

This policy recommendation is based on our current projections for near-term inflation and output growth. Data released since the August FOMC meeting have provided some consistent evidence that the slump in housing is bottoming out and that financial market conditions continue to ease. As a result, the outlook for economic activity has improved, with a further reduction in extreme downside risk. Nonetheless, we expect unemployment to continue to rise over the near-term, even as economic growth rebounds. Moreover, there is still a non-negligible risk that inflation might fall below levels consistent with price stability. Therefore, we recommend maintaining the current accommodative stance of monetary policy until the economy appears on a more solid path to recovery, which in our central scenario does not occur until the end of 2010.

In the inter-meeting period financial conditions have stabilized further, and many spreads have returned to levels more in line with historical standards. The commitment to bring to completion the asset purchase program will continue to support this stabilization in the upcoming months, and will contribute to further align market expectations of the federal funds rate with our recommended path over the medium-term.

Effective communication of the timing and pace of the removal of accommodation is especially important at this stage. The FOMC should continue to reinforce that its commitment to a federal funds rate near zero is conditional upon the evolution of the forecast. In particular, it should emphasize that the policy rate will start rising only once the economic recovery is judged to be well underway, provided long-term inflation expectations remain well-anchored. This conservative approach to interest rate normalization should minimize the risk of a return to financial fragility and abnormal credit spreads, as well as guard against the possibility of deflation.

One potential consequence of a delayed start of the renormalization process is that inflation might temporarily rise above the FOMC's long-term goal, without eliciting an interest rate reaction. The possibility of such an outcome should be made explicit in advance, explaining that it is consistent with the goal of price stability, in order to ensure that long-term inflation expectations remain well-anchored. Once the re-normalization is under way, the path of the policy rate can easily be steepened if a significant increase in inflation expectations is detected.

2. Evolution of Outlook and Risks

2.1 Central Forecast

Conditioning Assumptions. Recent data pertaining to final demand and production have, on balance, been stronger than expected. Accordingly, we have raised projected growth of real GDP over the second half of 2009 from between 1 ½% and 1 ¾% (annual rate) in the August Blackbook to around 3 ½%. The "cash for clunkers" program was tripled in size, with the federal government devoting $3 billion to provide credits for nearly 700,000 new vehicles. The August pace of new light vehicles sales rose to 14.1 million units from an average of 9.6 million in 2009Q2. Even if vehicle sales fall sharply in September, we expect growth of real PCE to be roughly 2% (annual rate) in 2009Q3, the strongest since the first quarter of 2007. Similarly, housing starts and sales have been stronger than expected in recent months, partly due to the first-time home buyer tax credit. It is now estimated that 40% of home purchasers this year will qualify for the credit and that the cost to the Treasury will be three to four times the initial scoring of the provision. Also contributing to the stronger growth of the second half is less drag from net exports as the recovery of exports has been stronger than expected. Finally, with the revised Q2 GDP data showing substantially more drag from inventory drawdown during the first half of the year, we anticipate a larger positive growth contribution from inventories in the second half.

Despite this more rapid growth, our projection of the average unemployment rate for 2009Q4 is only modestly lower (10% versus 10 ½%). Productivity growth was surprisingly strong in 2009Q2 (6.6%, annual rate) and, at this point, looks like it will grow at a similar rate in 2009Q3. Moreover, both the average work week and the labor force participation rate in July and August were higher than we were expecting.

Total consumer price inflation, as measured by the PCE deflator, was essentially zero over the first half of 2009 as the effects of the sharp decline of commodity prices during 2008Q4 worked their way through the system. Over the second half of 2009 we expect total consumer price inflation to rise at a nearly 2% annual rate as the effects of the run up of energy prices this year are felt. For all of 2009 the PCE deflator is likely to increase at just 1% (Q4/Q4). The core PCE deflator rose at a 1.6% annual rate over the first half of 2009, somewhat higher than we had anticipated, due in large measure to unexpected firmness in prices of motor vehicles and unusually large increases in tobacco prices stemming from an increase in taxes. For the second half of 2009 we expect core inflation to slow somewhat to around 1 1/4% (annual rate) as these temporary factors dissipate and the ongoing slowing of core services prices continues.

The outlook for foreign growth has been upgraded further over the intermeeting period. Foreign GDP (on a GDP-weighted basis) is expected to increase 0.2% in 2009 (Q4/Q4) versus contraction of 0.1% in the August Blackbook and contraction of 0.7% in the June Blackbook. For 2010 projected foreign growth has been boosted to 2.9% from 2.6%. For the second half of 2009 the improvement in the outlook has been most pronounced for developing economies. For 2010 the outlook for both developing and developed economies is more promising.

Despite this improvement in global growth prospects, the projected path of oil prices is modestly lower than in the last Blackbook. We expect the price of West Texas Intermediate grade oil to average $70 per barrel in 2009Q4, then rising to $75 per barrel by 2010Q4 and $77 per barrel by 2011Q4. Our assumed path for oil prices is essentially the same as that of the Greenbook.

Our assumptions regarding fiscal policy are the same as that of the Greenbook. We assume that no new stimulus measures will be enacted. In particular, the first time home buyer tax credit will not be extended (or expanded). We also assume that most of the 2001 and 2003 tax cuts will be extended, and the lower AMT exemption amount will be extended for the entire forecast horizon.

As is our usual practice, our assumptions for equity prices, the real exchange value of the dollar, and home prices are similar to those of the Greenbook. Equity prices are assumed to increase 16 % in 2010 and 12% in 2011, from a base that is about 5% higher than in August. The exchange value of the dollar (trade-weighted basis) is assumed to decline 6.5% (Q4/Q4) in 2009, 1.8% in 2010, and 1.8% in 2011. The cumulative decline of the dollar over the forecast horizon is essentially the same as that assumed in the Greenbook.

Normally we would adopt the Board staff's assumptions regarding the future path of home prices. Based on the recent upside surprises for home sales and prices, the Board has made a significant change in that assumption. Based on the Loan Performance Home Price Index, the Board now assumes that prices are essentially unchanged over the second half of 2009 rather than falling at an 11% annual rate. For 2010 home prices fall just 2.8% rather than 7.3%. And in 2011 home prices rise modestly rather than declining about 2%. We question the sustainability of the recent strength in home sales. It appears to us to be largely fueled by temporary factors such as the first-time home buyer tax credit and the Fed's massive purchases of agency MBS. Moreover, there is substantial evidence from multiple sources that there is a very substantial backlog in processing foreclosures and putting foreclosed homes on the market. Meanwhile, serious mortgage delinquencies continue to rise and, if history is a guide, will not peak until well after the peak of the unemployment rate.

We continue to assume that potential GDP growth is between 2 ½% and 2 ¾%. This is composed of 1% to 1 ¼% trend hours growth (although we assume this growth will begin to decline in 2010) and trend productivity growth of around 1 ½% (on a GDP basis, which is equivalent to about 1 ¾% on a nonfarm business sector basis). The Board staff has modestly raised their estimate of potential over the forecast horizon, from 2.0% to 2.1% for 2010 and then to 2.3% for 2011.

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

The Outlook. For 2010 we continue to project growth of around 2% (Q4/Q4), with the first half of the year notably weaker than the second half. As this is below our estimate of potential, there is some further upward movement of the unemployment rate to around 10 ¼% by midyear. A key feature of our central scenario for 2010 has been that consumer spending will not experience a typical cyclical rebound. The headwinds confronting the household sector are substantial. Payroll employment is roughly five percent below its peak level and is expected to recover very slowly. The household sector has made only minimal progress in reducing its substantial debt overhang. The effects of the stimulus bill on taxes and transfers are largely behind us, and energy prices have increased from recent lows. While the stock market and home prices have improved of late, the ratio of household net worth over disposable income remains roughly 20% below its peak. Finally, while credit conditions appear to be gradually easing, we expect them to remain tight relative to the standards of the recent past.

In fact, in this cycle we have further lowered the path of consumer spending in 2010. Recent analysis of the FRBNY Equifax Panel Dataset suggests that the bulk of the debt growth over the past several years has occurred in the middle of the income distribution. This suggests that while the top of the income distribution accounts for a disproportionate share of overall consumer spending, the middle of the income distribution accounted for a disproportionate share of the growth of consumer spending that was financed with debt. Credit quality at the middle of the distribution has deteriorated rapidly, and will likely continue to do so given the sharp rise of the unemployment rate.

A second key feature of our modal forecast is that while it appears that the correction in housing production is over, it is unlikely that we will experience the surge of residential investment typical of the early stages of most post-WWII recoveries. In addition to tightened mortgage underwriting standards, high volumes of existing homes will continue to come onto the market through the foreclosure process. Finally, new construction of multifamily units has taken a distinct movement downward reflecting excess supply of condos and high rental vacancy rates. While to a lesser degree than for consumption, we have damped somewhat the upward trajectory for total housing starts in 2010.

With consumption and residential investment recovering on a gradual path, it follows that any recovery of business investment in new equipment and software and new structures is likely to be delayed. This is even more the case given the steepness of the decline of output during the recession, which has led to capacity utilization rates at historic lows, rapidly rising retail and office vacancy rates, and sharply declining prices for existing commercial real estate. Finally, as growth of final demand in the US recovers, we will likely see a reversal of recent trends such that imports grow faster than exports.

Offsetting the lower paths for consumption and residential investment is the fact that the inventory-sales ratio at the end of 2009 is now projected to be lower, suggesting a somewhat larger inventory growth contribution. Finally, an upgrading of foreign growth prospects and a lower trajectory for the exchange value of the dollar suggest less drag from trade. While the level of real GDP in 2010 is now projected to be higher due to the stronger growth of real output in the second half of 2009, the output gap will not be materially smaller. Thus, we continue to expect that core PCE deflator inflation will remain quite low in 2010 (around 1% measured Q4/Q4) with some risk that it will run even lower.

As is the custom, we have explicitly added an additional year to our forecast horizon for this FOMC cycle. We have believed for some time that by 2011 the deleveraging process should be far enough along and financial market functioning should be sufficiently restored that a more traditional cyclical recovery will take hold with growth accelerating to an above potential rate. At this point we project growth of 4% in 2011, sufficient to reduce the unemployment rate to around 9% by year end. While there would still be an output gap, the more rapid growth is likely to be associated with some modest increase in core inflation to around 1 ½% (Q4/Q4). Of course there is a huge range of uncertainty around this projection, and for a host of reasons. On the fiscal policy front, a key source of uncertainty is whether the tax provisions enacted in 2001 and 2003 will expire as scheduled under current law. The most likely scenario, which is assumed in the Greenbook, is that most of those tax provisions will be extended except that the maximum marginal tax rate for high income tax payers will be returned to its previous level. In addition, relatively modest changes in variables such as productivity growth, the participation rate, and the average work week could end up having a significant impact on the ultimate path of the unemployment rate.

As growth firms and the dollar continues to decline, we expect inflation to begin moving back toward the mandate consistent range over the course of 2011. However, given that the unemployment rate is likely to remain well above NAIRU, it will likely take until 2012 until that convergence is complete.

2.2 Alternative Scenarios and Risks

The risk assessment has once again changed for the better but only modestly relative to the August Blackbook. This may not be too surprising in light of the fact that there have not been major events in the intermeeting period, but rather a sequence of slightly better than expected data releases. This positive news, as well as the renormalization in financial markets, led to a further decrease in the probability associated with the *Global Credit Crunch* scenario, but the change in the risks has not been as dramatic as in recent months [Exhibit C-1]. The likelihood associated with this scenario is 25%, about half of what it was in the aftermath of Lehman's default. For the first time in two years, the *Global Credit Crunch* scenario is no longer the most likely scenario, which is quite telling in terms of the degree of renormalization in financial markets. The most likely scenario is the *Productivity Boom* scenario, with an associated probability of about 27%. The probability associated with this scenario has increased in the intermeeting period: the strong productivity numbers observed in the last few quarters indicate that productivity may not have decreased in the aftermath of the crisis as much as assumed under the *Central* scenario. The *Global Deflation* scenario, which involves deflation and an even worse contraction in output than the *Global Credit Crunch* scenario, has such a low associated probability that we no longer include it in the exhibits. The probability associated with the more inflationary scenarios, namely the *Loss of Credibility* and the *Effects of Overheating*, is roughly the same as it was in the August Blackbook (the good news in terms of productivity led to a minor decrease in the probability associated with the *Effects of Overheating* scenario).

The paths for Core PCE inflation and Real GDP growth associated with the various scenarios have changed very modestly, and only to the extent that the *Central* scenario inflation path has changed [Exhibit C-2]. (Recall that the paths associated with the alternative scenarios are defined relative to the *Central* scenario.) The reduced likelihood of deflationary scenarios over the past few months implies that the risks in terms of inflation are now roughly balanced [Exhibit C-3]. In spite of the reduced risks of deflation, uncertainty about inflation is currently much larger than uncertainty about output. The uncertainty about inflation has come down however, at least in the short run, relative to the past few months.

The "Rate of Recovery Through 2011" chart replaces the "Depth of Recession" chart in Exhibit C-3 (by now we are fairly confident about how deep the current recession has been). The new chart shows that the pace of recovery in this recession is likely to be abnormally slow for a recession of this magnitude. In the recent past, deep recessions have led to strong recoveries. Instead, the pace of recovery is likely to be much closer to that of the last two recessions (1990-1 and 2001), which were relatively mild.

Special Topic

Recent Time Series Behavior of Consumption, Wealth and Labor Income

Simon Potter Redacted

The increased uncertainty about economic prospects and the need to rebuild savings suggests that consumption might be sluggish relative to fundamentals for some time and that households will have an incentive to supply more labor.

The recession and financial crisis have produced very large movements in a number of macroeconomic variables. Further, the real wealth of the household sector as measured by the Flow of Funds has declined considerably: on a per capita basis it is back at its level in 1998. The increased uncertainty about economic prospects and the need to rebuild savings suggests that consumption might be sluggish relative to fundamentals for some time and that households will have an incentive to supply more labor.

There are a number of data series and methods one can use to address the issue of consumption/saving in the aftermath of the crisis. This note considers one set of aggregate data and cointegration methods to examine the recent behavior of consumption in light of the large fall in wealth and weakness in the labor market.

The data are total real personal consumption expenditures, real labor income, and real net worth excluding consumer durables. The cointegration framework is based on the work of Sydney Ludvigson and various co-authors at the New York Fed. This framework was developed in the late 1990s to understand the behavior of consumption in response to the large increase in stock market wealth. A conclusion from this research was that much of the movement in wealth is transitory, and consumers do not respond to these large transitory increases in wealth. This conclusion was contrary to the viewpoint held by many of the Board staff that the wealth effect was larger. The conclusion supported a New York Fed staff viewpoint that large fluctuations in asset prices have small effects on macroeconomic quantities unless they are associated with permanent changes in wealth, which occur more infrequently. This viewpoint implicitly provides backing for a clean-up-after-the-“burst” approach to asset price booms.

The New York Fed cointegration model was re-estimated with data through 2009Q2 (and includes substantial revisions to earlier data). Figure 1 repeats a standard exercise with this model in which we use the observed data on net worth (and labor income) to predict consumption after the recent large fall in wealth.

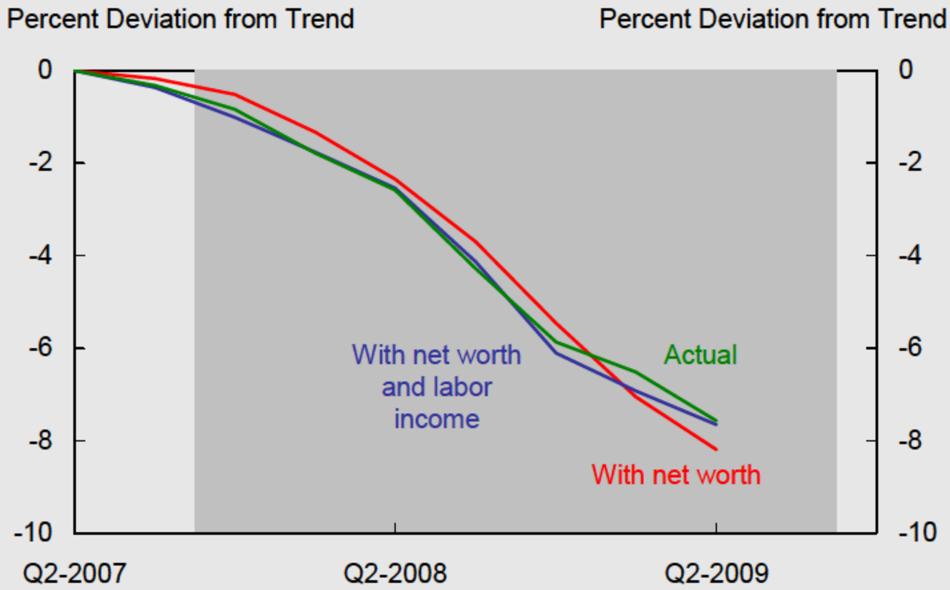
Large differences between predicted and actual consumption could then be interpreted as consumers either viewing the fall in wealth as transitory (consumption was higher than predicted, the 2001 episode) or permanent (consumption was lower than predicted, the 1973 episode). This exercise was conducted for the period 2007Q2 to 2009Q2 with results reported relative to the estimated trend in consumption. The results are striking. First, the extent to which consumption has fallen below the estimated trend is remarkable. Second, this fall in consumption is almost perfectly in line with the error-correction model. If just the path of real net worth over this period is used to predict consumption, there is little difference between actual and predicted consumption. Further, this small difference nearly disappears once the path of labor income is added as a predictor variable.

The closeness of actual and predicted consumption suggests that the consumers' decomposition of movements in wealth and labor income into permanent and transitory components agrees with the model's. Figure 2 contains an estimate of the level of the transitory component in wealth and consumption over the last 55 years. Previous estimates had shown a negligible transitory component in consumption but a large transitory component in wealth.

The current estimate shows that the transitory component in wealth reached its highest level in late 2007 and, more importantly, that the transitory component of consumption also reached its highest level at the same time. These transitory components decline rapidly during the recession. The dashed line in Figure 2 also shows the prediction from the model for the next five years. The model is predicting a sustained period of consumption and wealth below their permanent levels, undermining the previous clean-up-after-the-"burst" conclusion.

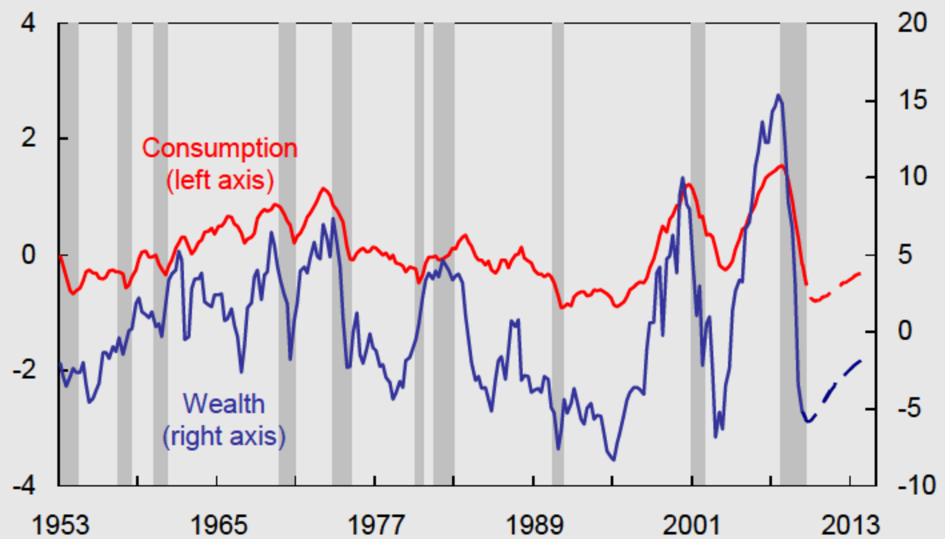
Finally, Figure 3 investigates the recent period and the prediction for the next year in more details. It shows the contribution of the permanent and transitory component in consumption growth (by construction the permanent component is centered at the long run consumption growth rate and the transitory component at zero). The very large falls in consumption in second half of 2008 are mainly due to large negative values in the permanent component. The permanent component almost returns to its long run value of just over 3% by the end of the prediction period. However, the transitory component remains negative until 2010. This suggests temporary "over-saving" by consumers relative to permanent factors.

Figure 1: Predicting Recent Path of Consumption



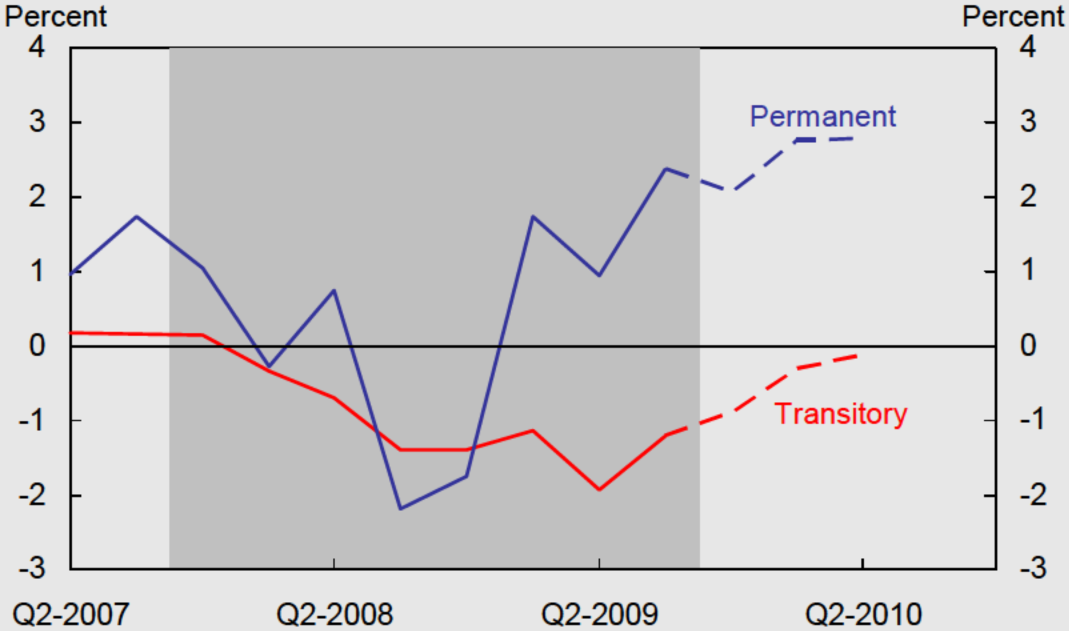
Note: Shading represents NBER recession.

Figure 2: Level of Transitory Component in Consumption and Wealth



Note: Shading represents NBER recession.
Dashed lines represent forecast.

Figure 3: Transitory and Permanent Components of Consumption Growth



Note: Shading represents NBER recession.

3. Forecast Comparison

3.1 Greenbook Comparison

The overall tone of the Greenbook forecast for economic activity has improved significantly since August. The Board Staff is now closer to our projection of a slightly negative GDP growth in the second half of 2009, but markedly more optimistic for 2010. The Board forecasts a growth rate in output of 3.5% in 2010 (Q4/Q4), compared with an FRBNY forecast of 2.0% growth. The two projections are closer for 2011, when the Greenbook expects a GDP growth rate of 4.5%, 0.5 percentage points above the FRBNY forecast.

The Blackbook forecast for inflation remains very similar to the Greenbook forecast, with no significant changes in either projection since August.

Conditioning Assumptions. The Greenbook projects the Federal Funds Rate (FFR) to remain in the current target range of 0–0.25% through the end of 2011, while in the Blackbook it is assumed to rise to between 1% and 2% by the end of 2011. Over this period, the 10-year Treasury rate is expected to move gradually towards 4 percent, while bond spreads continue to narrow. The Greenbook also assumes that equity prices will rise at a fairly brisk pace over 2010 and 2011, with house prices roughly stable at the current level.

The Board Staff expects a further improvement in foreign growth with respect to August and further depreciation of the dollar through 2011, although at a slowing rate. Both these assumptions are in line with those built into the FRBNY forecast.

International. The FRBNY forecast for the net export contribution to 2009 GDP growth is the same as the Board's at 1.0 percentage point. The projections for the net export contributions for 2010 and 2011 are very close, zero for the FRBNY for both years and -0.2 for the Board for both years, despite very different assumptions on domestic demand. This result reflects that the FRBNY is forecasting relatively faster import growth in response to demand changes than does the Board—given that imports slumped 15 percent last quarter compared with exports falling by 5 percent, we are expecting a relatively larger payback in import growth.

Inflation. The FRBNY and Board staff both forecast core PCE inflation to be 1.1% in 2010. However, the Greenbook projects core PCE to continue falling to 1% in 2011, while we see it rebounding to 1.5% in 2011.

Real Activity. For the second half of 2009, the Board staff projects a growth rate of real GDP of 2.8%, more than double the 1.2% growth rate expected in August. This revision, which reflects a general improvement in private domestic final purchases, brings the Greenbook's 2009 Q4/Q4 growth rate to -0.5%, close to the -0.2% of the Blackbook.

For 2010, however, FRBNY and Board staff forecasts diverge significantly. As in August, our forecast is for a growth rate of real GDP of 2.0%, while the Board staff is even more optimistic than in August, with a projected growth rate of 3.5%. According to the Greenbook, this solid performance will be driven by a general improvement in underlying economic conditions: continued growth in the stock market and a leveling off of house prices with the attendant positive wealth effect, low interest rates, and further improvements in the availability of credit and in the prospects for labor income and firms' output. In comparison, our forecast relies less on the transmission from brighter income and wealth prospects to demand and takes into account some doubts on the solidity of the recovery in financial markets.

Uncertainty around forecasts. The FRBNY forecasts for core PCE inflation are somewhat more uncertain than those of the Board Staff. They capture both a higher risk of deflation in 2010, as well as the possibility of a rebound above the long-run inflation goal in 2011, which is fairly unlikely according to the Greenbook. The extremely low inflation rate projected by the Board Staff for 2011 (1.0%) remains in the left tail of our distribution, although less so than in August.

The Board Staff is quite confident that the economy will rebound in 2010 and that it will expand at a solid pace in 2011. According to their forecast distribution, the probability of a double-dip recession is lower than 5%. On the contrary, the Blackbook distribution continues to contemplate a non-negligible probability of negative growth in 2010, although less than in August. As a consequence, the Greenbook's point forecast is in the right tail of our distribution for both 2010 and 2011, even more than in August.

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

	Core PCE Inflation		Real GDP Growth	
	FRBNY	*Board*	*FRBNY*	*Board*
2009	0.8, 1.9 (0.5, 1.9)	1.1, 1.8 (1.0, 1.7)	-1.4, 0.7 (-2.8, -0.1)	-1.4, 0.3 (-2.2, -0.6)
2010	0.0, 2.0 (0.3, 2.3)	0.4, 1.8 (0.3, 1.7)	-0.5, 3.4 (-1.0, 3.6)	1.7, 5.3 (1.4, 4.9)
2011	0.7, 2.4 (0.9, 2.7)	0.0, 2.0 (n/a)	1.7, 5.5 (2.2, 6.6)	2.8, 6.3 (n/a)

Table 2: Percentile of Greenbook Forecast in FRBNY Forecast Distribution

	Core PCE Inflation	Real GDP Growth
2009	53 (59)	42 (47)
2010	54 (39)	87 (78)
2011	26 (16)	69 (55)

Alternative Greenbook Forecasting Scenarios. The September Greenbook explores six alternative scenarios. The first two scenarios, "V-shaped recovery" and "Earlier liftoff," represent more robust growth and possibly higher inflation relative to the baseline. The "V-shaped recovery" is a new scenario relative to the previous Greenbook and reflects surprises in the data that may lead to a faster recovery in real activity, even if still below historical patterns. This scenario would imply growth rates averaging a strong 5.25% over the next couple of years. The "Earlier liftoff" scenario combines the previous one with higher inflation expectations. This reflects the concerns about the ability or willingness of the Federal Reserve to restrain inflationary pressures, due to the large balance sheet and strong output growth. These pressures would push the FOMC to increase the FFR by the end of 2010, as opposed to by the end of 2011 as in the baseline scenario.

The next two scenarios represent downside risks to real activity, either in the form of a "Higher saving rate" or due to "Greater financial headwinds." The first scenario considers the case in which the saving rate would jump to 7%, as opposed to the baseline assumption of 4%, which would imply lower demand growth. The second represents a scenario in which there is some probability of a fall back to financial fragility. This scenario allows for the possibility that recent strength in demand due to improved financial conditions proves to be only temporary and thus the gains in real activity are reversed. The "Greater financial headwinds" scenario leads to slower GDP growth, higher unemployment and lower inflation. Even in this case GDP still recovers fairly quickly from 2011 onwards, representing only a temporary setback in economic conditions.

The last two scenarios represent aggregate supply risks, in the form of "Greater disinflation" or "Labor market damage." The first of these considers the case in which inflation falls even further to nearly zero by 2011 and remains unchanged thereafter, instead of hitting the bottom at about 1%. In this scenario the nominal FFR is constrained at the lower bound, implying higher real rates and leading to a decline in real activity in the short run. Monetary policy would then keep the FFR at the lower bound for much longer, bringing real activity growth in the long run above the baseline. The "Labor market damage" scenario assumes that the currently very high level of unemployment leaves the labor market functioning inefficiently for some time, raising the NAIRU to 6.5% by 2010-2011. This leads to slower growth and higher inflation.

Compared to the August Greenbook, this configuration of scenarios represents a departure from financial sector considerations and a return to more standard macroeconomic considerations.

For most scenarios the Federal Funds rate (FFR) is expected to stay at the effective lower bound through the end of 2011. One exception is the "Early liftoff" scenario, where increased inflation expectations force the FOMC to raise the FFR in 2010. In the "V-shaped recovery" and "Labor market damage" scenarios the FFR would start increasing earlier than in the baseline assumption, but the increase would begin only in 2011.

Real GDP growth is much weaker in 2010 than under the baseline forecast under the "Higher saving rate" and "Greater financial headwinds" scenarios. Both scenarios imply a quick recovery afterwards, however. The "V-shaped recovery" and "Early liftoff" scenarios instead entail a 5% growth rate in 2010 and 2011. The "Labor market damage" and "Greater disinflation" scenarios imply growth mildly below the baseline in 2010 and 2011.

On the inflation front, the Baseline, "Labor market damage" and "V-shaped recovery" scenarios imply inflation between 1% and 2% through 2012. The "Higher savings rate" and "Greater financial headwinds" scenarios foresee inflation below 1% in 2011 and 2012, but gradually reverting to the 1–2% range afterwards. The "Greater disinflation" scenario brings the inflation rate down to zero through the end of 2014. The "Early liftoff" scenario embodies the upside risks to inflation. This scenario pushes inflation above 1.5% in 2010 and towards 3% by 2013-14.

3.2 Comparison with Private Forecasters[1]

The FRBNY forecast for real GDP growth is slightly above the private forecasters' estimates for 2009 (Q4/Q4) but well below for 2010 (Q4/Q4). With respect to inflation the FRBNY forecasts for both 2009 and 2010 are more or less aligned with the range of private forecasters' estimates. This comparison will ignore the median SPF given that those estimates are now fairly old (from August 14). Forecasts are reported in Exhibit B-8.

[1] Release dates of the private forecasts discussed in this section are in parentheses: Blue Chip consensus (09/10), SPF (08/14), Macro Advisers (09/16 for real GDP growth; 09/08 for inflation measures), and the PSI Model (09/10). Quarterly numbers are SAAR.

GDP Growth. The FRBNY forecast for GDP growth in 2009Q3 is 3.5% (annual rate), which is only slightly above the estimate advanced by Macro Advisers (3.3%), and also above the PSI model (1.5%) and Blue Chip (3.0%). For 2009Q4 the FRBNY forecast is 3.4%, which is well above all the private forecasts (ranging from 2.1 to 2.7%). Similarly, the FRBNY estimate for GDP growth in 2009 (Q4/Q4), at -0.2%, is above the private ones (ranging from -0.6 to -0.4%). For 2010 (Q4/Q4) this relation is inverted, with the FRBNY projection of 2.0% below those of the private forecasters (ranging from 2.7% in the Blue Chip to 4.0% from Macro Advisers).

Core PCE Inflation. The FRBNY estimate for core PCE inflation is currently 1.4% for 2009 (Q4/Q4) and 1.1% for 2010 (Q4/Q4), roughly in line with the forecast of Macro Advisers, the only recent private forecast for this measure. The same is true of the two remaining quarters of 2009.

CPI Inflation. The FRBNY forecast for CPI inflation is currently higher than the private forecasts for 2009Q3 but more or less aligned for 2009Q4, 2009 (Q4/Q4) and 2010 (Q4/Q4). Specifically, the FRBNY forecast is 3.7% for 2009Q3, while the Blue Chip estimate is 2.7% and Macro Advisers' is 3.4%. For 2009Q4 FRBNY estimates CPI inflation to be 1.4%, equal to the Macro Advisers' forecast but lower than that of the Blue Chip (1.8%). For 2009 (Q4/Q4) the FRBNY estimate is 1.0%, only slightly above the Macro Advisers and Blue Chip figures of 0.9 and 0.8%, respectively. For 2010 (Q4/Q4) the FRBNY forecast is 1.5%, well within the range of private forecasts, which ranges from 1.1% (Macro Advisers) to 1.8% (Blue Chip).

Core CPI Inflation. The FRBNY estimate for core CPI inflation is 1.5% for 2009Q3 and 1.2% for 2009Q4, slightly above the estimates of Macro Advisers, which register 1.4 and 0.9%, respectively. For 2009 (Q4/Q4) both FRBNY and Macro Advisers agree on a forecast of 1.6%. For 2010 (Q4/Q4) the FRBNY estimate for core CPI inflation is 1.3%, somewhat above Macro Advisers' estimate of 0.9%.

4. Robustness of Policy Recommendation

4.1 Sensitivity to Alternative Scenarios and Policy Rules

Our current policy recommendation is to keep the target federal funds rate in the 0–0.25% range through 2010, as was the case in August. Macroeconomic conditions have continued to improve in the intermeeting period, but as a consequence of the zero bound not much has changed in terms of the predictions of the various interest rate rules. Indeed, as in the August Blackbook, our recommendation is consistent with the *Baseline* policy rule under all scenarios except the *Loss of Credibility* scenario [Exhibit D-1], as well as under the expected value of the forecast distribution [Exhibit D-2].

The prescription from the *Nutter* rule, which has a high response to inflation and no response to the output gap, matches those from market expectations under the expected value of the forecast distribution. Under both the *Effects of Overheating* and *Loss of Credibility* scenarios the *Nutter* rule produces a FFR path that is steeper than the market-implied path [Exhibit D-3]. All other rules (*Asymmetric Price Targeting* and *Outcome-based*) result in a FFR path that is close to zero until the end of 2011. For the *Outcome-based* rule, we show the nominal FFR ignoring the zero bound, which implies that under the expected value of the forecast distribution the FFR is as low as -6% by the end of 2010, increasing to -4% by the end of 2011 [Exhibit D-2].

Since for all rules except the *Nutter* there is no change in the nominal FFR paths given the zero bound constraint, Exhibit D-1 shows the *shadow* real rates - that is, the real FFR rates implied by the various rules under the various scenarios *ignoring* the zero bound constraint. The "shadow" real rate implied by the *Baseline* rule under the *Central* scenario is about -3 ½ % in the current quarter. This figure can be interpreted as indicating the desired level of expected inflation given that the nominal FFR is constrained at zero. Exhibit D-3 shows the real rate under two of the alternative policy rules, namely the *Asymmetric Price Targeting* and the *Outcome-based* rule.

As a robustness check, we also use the DSGE-VAR and the DSGE models to assess the current stance of monetary policy. We perform a counterfactual exercise eliminating past policy shocks. We find that the DSGE-VAR model predicts a counterfactual FFR for the current quarter in line with the policy rate, while the DSGE model predicts a counterfactual FFR of about 1%. The latter result is, however, sensitive to the functional form chosen for the policy rule.

4.2 Comparison to Market Expectations

The market-implied FFR path has moved down further in the intermeeting period, partly as the result of the language in the FOMC statement as well as speeches by Fed officials. Also, the beginning of the renormalization process, as implied by the expected FFR, occurs in 2010Q3, which is more in line with our policy recommendation than it was at the start of the summer. The market-implied FFR path is almost in line with forecasts from the primary dealers, albeit still a bit more aggressive. Primary dealers forecasts did not change substantially in the intermeeting period, and on average imply that rates will begin to increase no earlier than 2010Q4. In June the discrepancy between the market-implied path and the views from primary dealers was much more substantial, with the market expecting the FFR at 1% by 2010Q1, and the majority of primary dealers expecting the FOMC to start raising rates in 2010Q4.

5. Significant Developments

5.1 Economic Developments

U.S. Data Releases. Data over the intermeeting period came in slightly above expectations. Housing sector data provided some upside surprise, with signs of firming in the sector. Retail sales increased in August, suggesting that consumer spending may be rebounding. Industrial production posted robust gains in both July and August. Despite an increase in the unemployment rate, the pace of employment contraction continued to soften.

Real Activity. *GDP:* Output fell 1.0% (saar) in 2009Q2 according to the preliminary estimate, better than the median forecast that anticipated a steeper decline (1.5%). There was a downward revision to inventory investment, offset by all major components of final sales. This shift in the composition of Q2 GDP, with higher final sales and large inventory liquidation, suggests that output may grow faster than previously expected in Q3.

Production: Industrial production rose 0.8% in August, following a (revised) increase of 1% in July. Both numbers were quite a bit stronger than market expectations. July data represented the first gain since last October, mostly (but not entirely) due to the restart of many auto plants. Manufacturing output rose 0.6% in August, following a robust 1.4% increase in July. The growth in manufacturing output was led by the production of motor vehicles, which rose 5.5% following a 20.1% surge in July. With the pickup in output, the capacity utilization rate in manufacturing advanced from 65.1% in June to 66.6% in August.

Orders and Shipments: Overall orders for manufactured goods rose 1.3% in July, with a strong increase of 5.1% in the durable goods category. Manufacturers' shipments were unchanged, as the decline in nondurables held down the overall series. The book value of manufacturers' inventories fell 0.7% in July, and the June decline was revised from -0.8% to -1.1%. These numbers appear supportive of some turnaround in manufacturing.

Retail Sales: Retail sales rose a robust 2.7% in August, and increased 1.1% ex-autos. Both increases were well above the median forecasts of a 1.9% and 0.4% gain, respectively. Retail control (sales less autos, building materials, and gasoline), which provides information for the estimate of personal consumption expenditures, was up a solid 0.7%, the largest gain since February.

Inventories: The book of business inventories fell another 1.0% in July, with retail inventories also down 1.0%. These figures show that the inventory correction is proceeding smoothly, and the sharp increase in retail sales in August will likely further pare the inventory-sales ratio.

Productivity: The rapid productivity growth number for Q2 was revised up from a 6.4% to a 6.6% annual rate, above the median forecast. With meager compensation growth of

0.3% at annual rate, unit labor costs fell at a 5.9% annual rate, slightly more than the initial estimate. Revisions to earlier quarters resulted in a marked downward revision to the year-to-year growth of hourly compensation from 1.3% to 0.7%. According to the latest data, unit labor costs have tumbled 1.2% over the last year.

Home Sales/Starts: Sales of existing homes (contracts closed) rose a rapid 7.2% in July, much higher than the median forecast of a 2.1% gain. This was the largest gain in the 10-year record of this series, which includes multifamily as well as single-family units. The annual rate of sales was 5.24 million, the highest since August 2007 and the first time above 5 million since September 2008. Sales rose substantially in three of the four regions of the nation, but fell in the West. The July sales pace was 15.4% above last November's low point.

Housing starts rose 1.5% in August to 598,000 units (saar), exactly in line with consensus expectation. The level of starts in June and July were revised up modestly. Single-family starts fell modestly in August, while the volatile multi-family category increased 25%, after a cumulative decline of 33% over the two preceding months. Building permits rose 2.7% in August, led by a 16% increase in the multi-family category. Permits had declined 1.1% in July, due to a steep fall in the multi-family category. Single-family permits were essentially unchanged in August, after a healthy increase of 6.9% in July.

House Prices: The FHFA home price index rose 0.5% in June. However, the quarterly FHFA index dropped 0.7% in Q2. The Case-Shiller (nsa) home price index for 20 large metropolitan areas rose 1.4% in June, though it still was 15.4% under its level a year ago. The seasonally adjusted index rose 0.7%, the first seasonally-adjusted monthly increase in the 20-city index since May 2006. The quarterly national index rose 1.4% from Q1 to Q2 (sa), the first increase since 2006Q1.

Construction Spending: Total nominal construction put in place fell a relatively modest 0.2% in July, led by declines in private nonresidential and public construction. Private residential outlays rose a sharp 2.3%, led by an increase in value-put-in-pace of new single-family homes. This is the largest increase in this sector since last September. Private nonresidential expenditure fell 1.2% in July, and the June figure was revised downward to show a 2.2% drop.

Flow of Funds: Household net worth increased by $2 trillion in Q2 to a level of $53.1 trillion. This level is still more than $12 trillion under the 2007Q3 peak, but nonetheless represents the first increase in net worth since 2007Q3.

Labor Market. *Nonfarm Payrolls:* During the intermeeting period the pace of employment losses continued to moderate and the manufacturing sector showed signs of stabilization. Nonfarm payroll employment fell by 216,000 in August, which brings the total employment losses to 6.9 million jobs since the beginning of the recession. This represents a cumulative loss of 5 percent from the peak employment, which exceeds the employment contractions observed in any of the past nine post-war recessions. The level of total nonfarm employment in August stood at 131.2 million, indicating that the increases in employment over the last ten years have all been erased. Employment declines were still widespread across all industries. The only sector which added jobs was education and health care services. Employment in goods-producing sectors fell by a total of 136,000, while employment in service-providing sectors declined by 80,000, the smallest decline since July 2008. The manufacturing diffusion index went up from 22.3 to 29.5, indicating that the sector might be stabilizing. With weak job creation, the unemployment rate continued to rise, reaching 9.7%, its highest level since 1983. The prime-age male unemployment rate jumped up from 9.5% to 10.0%, the highest level in post-World War II history. The increase in the unemployment rate was accompanied by a decline in the employment/population ratio from 59.4% to 59.2%, while labor force participation remained unchanged at 65.5%. The average duration of unemployment was at a very high level of 24.9 weeks. Hours worked continued to decline during the intermeeting period, for a cumulative decline of 8.3% since the beginning of the recession.

Initial claims for unemployment insurance fell to 545,000 in the week ended September 12, the lowest level since early July. After peaking in March at 674,000, initial claims have been declining, although their level remains high. Continuing claims have fluctuated during the intermeeting period, but remain at levels similar to those of a month ago.

Trade. The trade deficit widened from $27.5 billion in June to $32.0 billion in July. Both export and import volumes increased substantially, with import volumes growing faster than export volumes. Although autos were the main driver of the rebound in exports and imports in July (note that they were starting from a low level), there has been broad-based recovery in all major categories.

Inflation. *CPI:* Total CPI increased 0.4% in August, somewhat above the median expectation of a 0.3% increase. Core CPI edged up 0.1%, in line with expectations. Over the last 12 months the overall CPI (sa) has fallen 1.4%, reflecting a 23% decline in energy prices. Core CPI is up 1.5% over the past 12 months, down from 1.6% in July. Core inflation was held down by a 1.5% decline in vehicle prices in August, as the BLS decided to report these prices net of the cash for clunkers rebates. Core good prices fell 0.3% in August, which is the first decline since December. Core service prices increased a modest 0.2%.

PCE Deflator: The PCE deflator was essentially unchanged in July and has now fallen 0.8% since last July. The core PCE deflator has increased 1.4% over the past year. In a possible sign of further price weakness, the annualized monthly change in the medical care component of the PCE deflator was only 1.2% in July, compared to a twelve-month change of 2.3%.

Surveys. *ISM Manufacturing:* The headline index rose in August for the eighth consecutive month, and now stands at 52.9. The index reached its highest level in more than two years, and stands above 50 for the first time since the early stages of the recession. The new orders index jumped to a 4½-year high, suggesting a pickup in the nation's manufacturing sector.

ISM Non-Manufacturing: The composite index rose modestly in August to 48.4. While it remains slightly below the neutral level of 50, the current level is the highest since September 2008.

Foreign Data Releases. The global recession appears to be over, with Emerging Asia leading the recovery and Europe making more modest progress. Global confidence measures are improving.

Europe: Euro area GDP declined only 0.5% (saar) in Q2, with consumption increasing for the first time in five quarters and the rates of decline in investment spending and exports easing considerably. Industrial production was flat though June, but survey data suggests it started to turn up in August. Business and consumer confidence measures continued the steady improvement that started in April. The unemployment rate reached 9.5% in June, with employment down almost 2% over the year in Q2. By comparison, U.S. employment was down roughly 4%.

U.K. GDP contracted 3.2% (saar) in Q2. Production and exports started to recover in June and July. House prices increased for the fourth consecutive month in August.

Asia: Japan's GDP grew 2.3% (saar) in Q2, the first increase in five quarters. Output is still down 7.2% over the year. Japanese production and exports improved significantly from March through July, but are still substantially below year-ago levels. Surveys suggest that production continued to improve in August.

China's strong domestic-led recovery is continuing, although the rate of GDP growth is slowing considerably from the 19% (saar) surge in Q2. Exports remain weak. In Korea and Taiwan, recoveries in production and exports have been somewhat stronger than expected.

Latin America: Mexico's economy contracted 4.2% (saar) in Q2, putting output down nearly 10% over the year. Brazil's economy did better than expected in Q2, growing 7.8% due to increases in consumption and exports.

5.2 Financial Markets

U.S. Markets. Financial markets showed further signs of improvement over the intermeeting period. Equity markets increased with the generally better-than-expected economic data. Money market spreads and longer-term credit spreads were unchanged or slightly lower, although credit spreads did narrow markedly for financial firms. Treasury yields declined, despite the positive economic data, and longer-term inflation compensation narrowed. Commensurate with the decline in Treasury yields, the expected path of policy shifted lower.

Equity markets increased over the intermeeting period with the generally better-than-expected economic data, with the S&P 500 and Dow Jones U.S. Total Stock Market indices both 6% higher [Exhibit A-7]. Since its March lows, the S&P 500 index has risen over 50% and the S&P Financials index has more than doubled.

Credit spreads were generally little changed to somewhat lower over the intermeeting period, consistent with somewhat lower downside risks [Exhibit A-7]. Single A corporate spreads narrowed 13 basis points to 207 basis points and BB corporate spreads narrowed 5 basis points to 604 basis points. Credit spreads for financials narrowed more notably, with single A spreads 33 basis points narrower to 299 basis points and BBB spreads 111 basis points narrower to 683 basis points.

Money market spreads were also little changed to somewhat lower since the last FOMC meeting [Exhibit A-8]. The 3-month LIBOR/OIS spread, for example, narrowed 15 basis points to 11 basis points and the 1-month spread narrowed 3 basis points to 7 basis points. Consistent with the continued improvement in money market conditions, amounts outstanding under the Fed's money market liquidity facilities have continued to decline. Purchases have continued in the outright purchase programs, as expected, albeit at a tapered pace for Treasury securities [Exhibit A-9].

Treasury yields declined over the intermeeting period despite the generally improved economic outlook, with the 2-year yield declining 23 basis points to 0.94% and the 10-year yield declining 21 basis points to 3.46% [Exhibit A-3]. Real yields declined even more, especially at the short end of the curve [Exhibit A-4]. Shorter term inflation compensation thus increased, with 0-5 year compensation 27 basis points wider at 1.42%. In contrast, longer term inflation compensation narrowed 26 basis points to 3.00%.

The expected path of policy in 2010 and thereafter shifted down over the intermeeting period [Exhibit A-5]. Consistent with this, risk-neutral one-year forward curves also shifted down [Exhibit A-3].

While the level of rates, spreads, and asset prices more generally have reverted back to levels prior to the financial turbulence of one year ago, the asset allocation on financial intermediary balance sheets is vastly different than it was one year ago [Exhibit A-10]. In some cases, these developments suggest a more stable financial system: for example, the share of liquid assets on security broker-dealers balance sheets have substantially increased, while funding in short term money markets has substantially declined. However, the substantially lower level of short term funding available in commercial paper and repo markets raises the question of how credit supply will be funded. Temporary TALF funding, together with the outright purchases, substitutes for some of the declined lending capacity in the short run [Exhibits A-8 and A-9].

Foreign Markets. Global funding conditions continued to improve over the inter-meeting period, as LIBOR-OIS spreads declined 8 and 13 basis points in the euro area and the U.K, respectively. In emerging markets, liquidity conditions are also improving further with less need for liquidity support for these economies. The global financial sector, however, remains fragile, as lending in Europe continues to stagnate, particularly in the corporate market segments. Similarly, credit conditions also remain tight in emerging market economies, with the exception of Brazil and China.

Reflecting ongoing improvements in global liquidity conditions, 84-day U.S. dollar auctions conducted by the Bank of England, the ECB and the SNB received no bids over the intermeeting period. Bank of Korea reduced its Federal Reserve dollar swap line to $8 billion, allowing $8.3 billion to roll off since mid-March. The Mexican central bank announced that from October 1st onwards it will suspend its daily dollar auctions, which were first initiated last March to address tight external funding conditions. The Bank of Korea reduced its Federal Reserve swap line outstanding to $4.6 billion, allowing $11.8 billion to roll off since mid-March.

Credit conditions in Europe remain tight. In the euro area, lending to corporations grew only 1.6% year-to-year in July whereas household lending was unchanged over the year. Lending to businesses in the U.K. was down 7% (annual rate) in June. Emerging Asia outside of China showed increasingly stronger signs of a credit thaw, as mortgage and corporate credit lending have been increasing at an accelerating pace in Korea and Malaysia.

At the G-20 meeting on September 4th and 5th an agreement was reached on strengthening supervision of the global financial system. The agreement comprised higher capital requirements, limits on the size of bank balance sheets, improved ability for regulators to wind-down banks, and required securitization exposure. In addition, the Basel Committee agreed on September 7th that at least 50% of Tier 1 capital must be common shares or retained earnings. This will pose problems to European banks as they rely more heavily on a mix of debt and equity to fulfill their capital requirements than U.S. banks. Further, the Committee will strive to introduce a system of countercyclical capital buffers as well as a leverage ratio to supplement the Basel II risk-based framework.

Increasingly robust signs of an easing of the global economic slowdown and a continued decline in risk aversion amongst investors resulted in higher global equities since the last

FOMC meeting. In Europe equities were up around 9%, with European financials showing further gains. For example, Barclays and Deutsche Bank rose 8% and 13%, respectively. Japanese equities were down around 2% due to increased political uncertainty after a landslide victory in the August parliamentary elections saw the ruling LDP party lose power for the first time in 50 years. Emerging market equities gained but not as much as in Europe.

European 10-year government bond yields were broadly unchanged since the last FOMC meeting, and comparable yields declined 12 basis points in Japan as deflationary pressures build in the Japanese economy.

The trade-weighted U.S. dollar index was broadly unchanged over the period. The dollar depreciated *vis-à-vis* the euro and the yen by 2% and 5%, respectively, as the growth outlook abroad improved and investors' risk appetite increased. The dollar remained stable against the Chinese yuan and forward contracts suggest modest dollar weakening over the next 12 months.

5.3 Global Economic Policy

There have been tentative signals of a decoupling in global monetary policies. Developed nation central banks publicly committed themselves to maintaining the current accommodative stance for a prolonged period. Monetary authorities in emerging markets, however, are clearly at the end of their loosening cycle and may possibly move towards a tightening in the near future.

As has been the case since March, the ECB kept its policy rate unchanged at 1.0% at its September meeting. In addition, the ECB kept the target rate for its upcoming one-year refinancing program operation for September 30th unchanged at 1.0%, which was lower than expected. Official statements made it clear that despite an improved outlook for the euro area economy the ECB is unlikely to move away from the current accommodative policy stance in the near future. With respect to the purchase of €60 billion in covered bonds that commenced on July 6th, €11 billion has been spent so far, and the program is set to be completed in the coming year.

The Bank of England also kept its policy rate unchanged at 0.5%. The Bank is scheduled to complete its GBP 175 billion asset purchase program, financed through monetary base expansion, by late-October. Given the persistently tight credit conditions as well as 'dovish' statements by senior MPC members, a further expansion of this program appears to be possible.

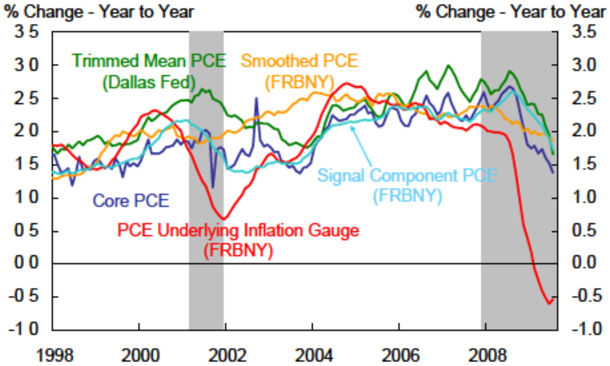
The remaining G-20 central banks also kept their policy rates unchanged at historically low levels. Both the Bank of Canada and the Swedish Riksbank reiterated at their September meetings their intention to keep their policy rates at 0.25% until Q2 and Q3 2010, respectively.

Elsewhere, the central bank of Hungary lowered its policy rate by 25 basis points, but the Israeli central bank surprised markets with a policy rate increase of 25 basis points to 0.75%. Accelerating inflation motivated the latter decision. Central banks in Emerging Asia have kept their rather accommodative policy stances unchanged, and are expected to remain on hold until early 2010. U.S. dollar reserves have been increasing over the period in the region, as authorities continued to limit an appreciation of their domestic currencies relative to the dollar.

A. Significant Developments

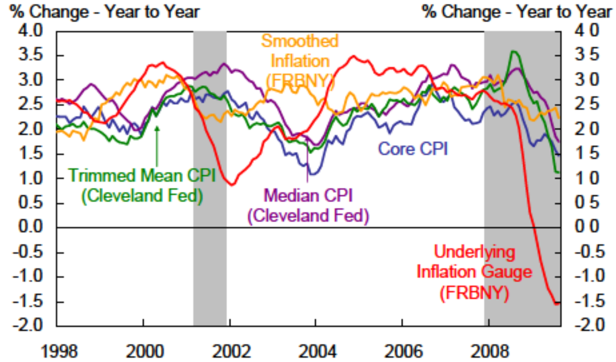
Exhibit A-1:
Measures of Trend Inflation

Alternative Measures of PCE Inflation



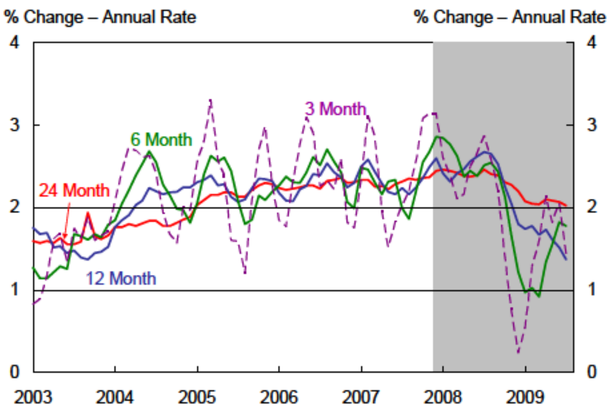
Source: Bureau of Economic Analysis, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Alternative Measures of CPI Inflation



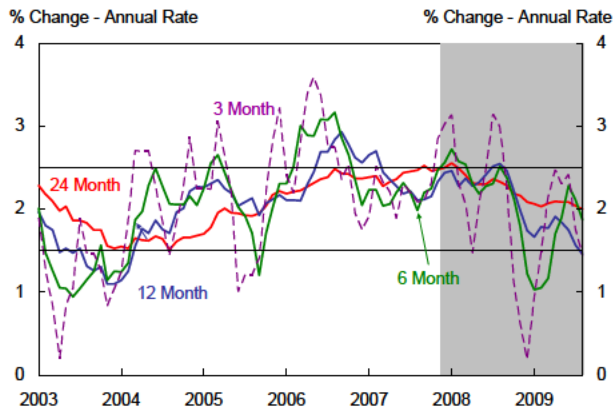
Source: Bureau of Labor Statistics, Cleveland Fed, MMS Function (FRBNY), and Swiss National Bank

Core PCE over Various Horizons



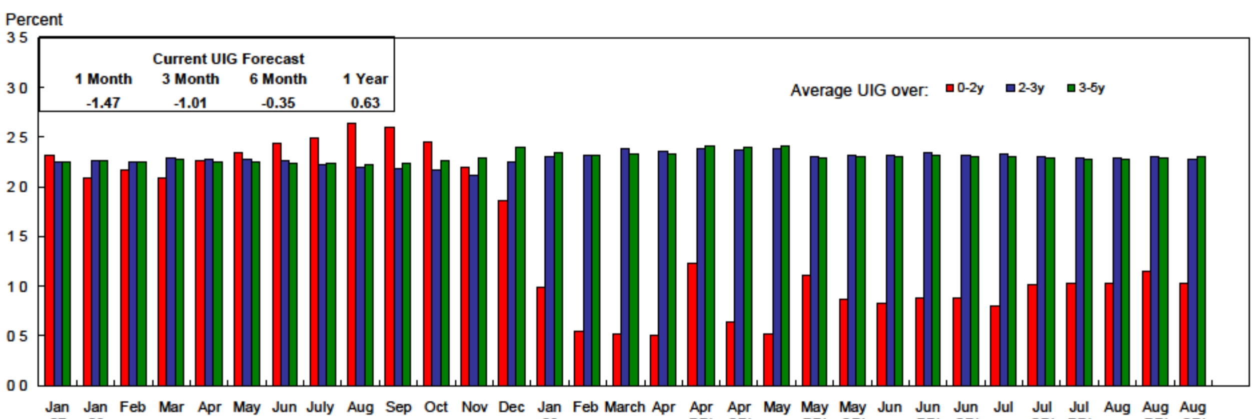
Source: Bureau of Economic Analysis

Core CPI Inflation over Various Horizons



Source: Bureau of Labor Statistics

Exhibit A-2:
Underlying Inflation Gauge (UIG)



Source: MMS Function (FRBNY) and Swiss National Bank

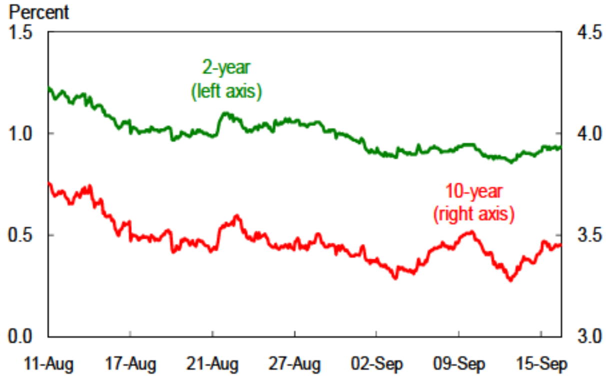
A. Significant Developments

Exhibit A-3: Treasury Yields

Short- and Long-Term Rates

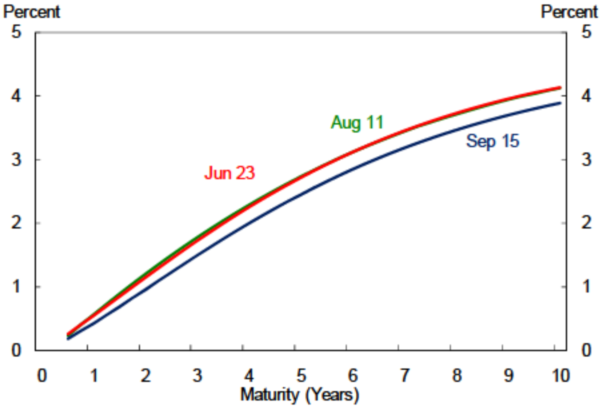
Source: Bloomberg
Note: Yields of on-the-run securities

Short- and Long-Term Rates (Intraday)



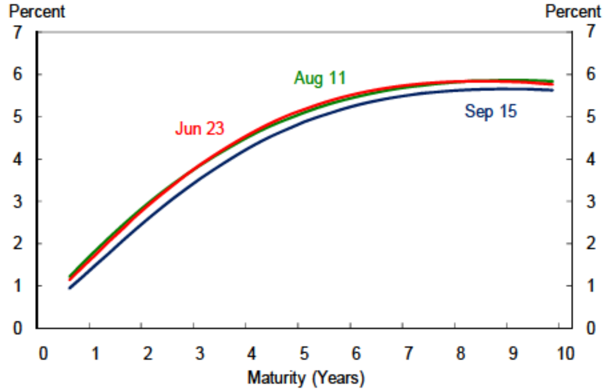
Source: Bloomberg
Note: On-the-run securities, 8:00 am to 4:00 pm.

Yield Curves



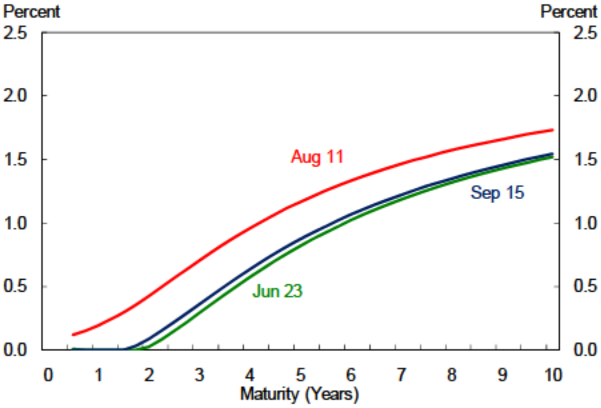
Source: Federal Reserve Board

Yield Curves: Implied One-Year Forward Rates



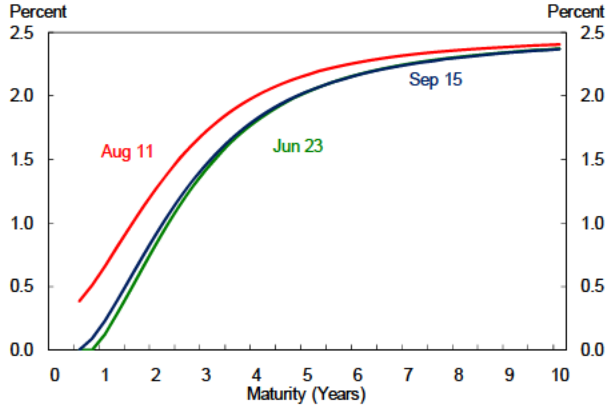
Source: Federal Reserve Board

Risk Neutral Yield Curves



Source: FRBNY calculations

Risk Neutral One-Year Forward Curves

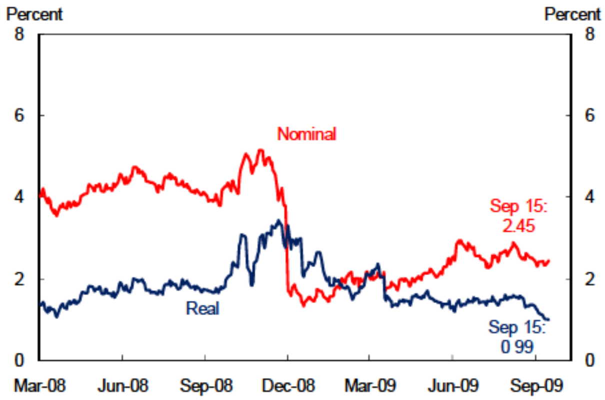


Source: FRBNY calculations

A. Significant Developments

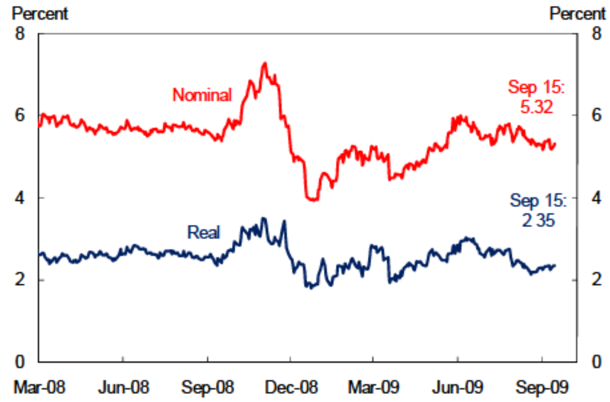
Exhibit A-4:
Real Yields and Implied Inflation

5 Year Spot Rate



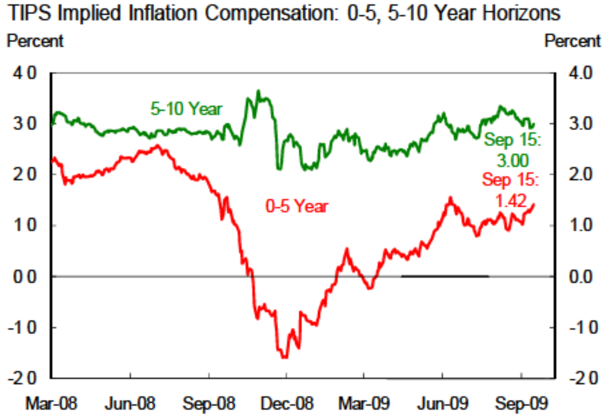
Source: Federal Reserve Board

5-10 Year Forward Rates



Source: Federal Reserve Board

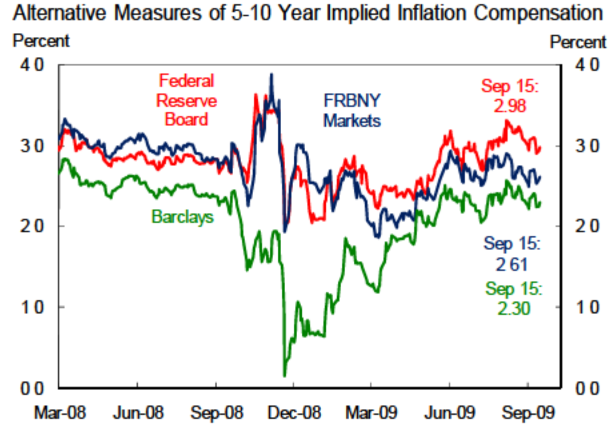
TIPS Implied Inflation Compensation: 0-5, 5-10 Year Horizons



Source: Federal Reserve Board

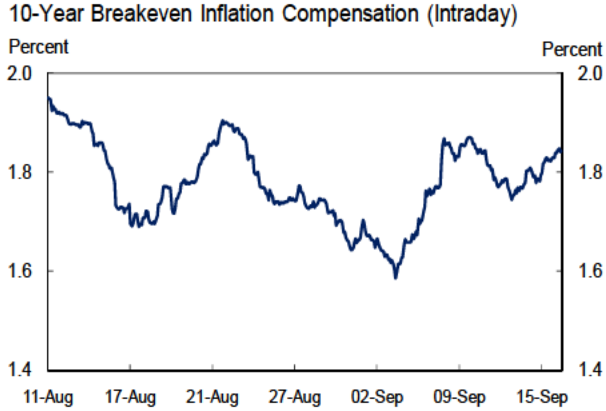
Note: Carry-adjusted

Alternative Measures of 5-10 Year Implied Inflation Compensation



Source: Federal Reserve Board, Barclays, and FRBNY calculations

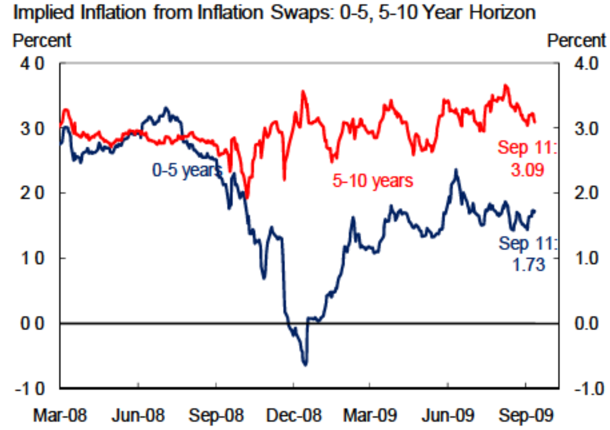
10-Year Breakeven Inflation Compensation (Intraday)



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

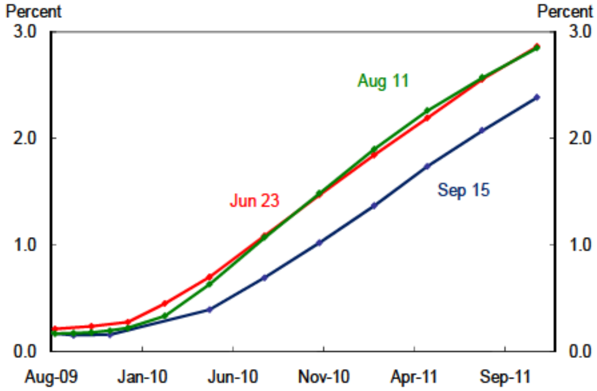


Source: Barclays

A. Significant Developments

Exhibit A-5:
Policy Expectations

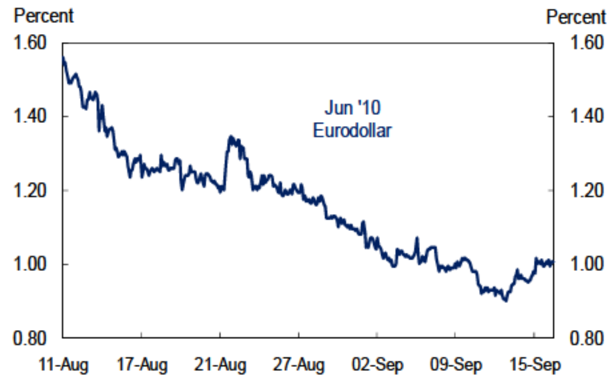
Fed Funds Futures Implied Rates



Source: Federal Reserve Board

Note: Estimated using fed funds and Eurodollar futures.

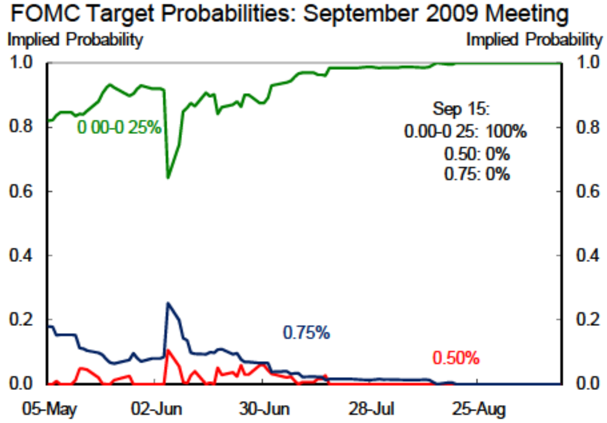
Implied Eurodollar Rates (Intraday)



Source: Bloomberg

Note: 8 00 am to 4:00 pm.

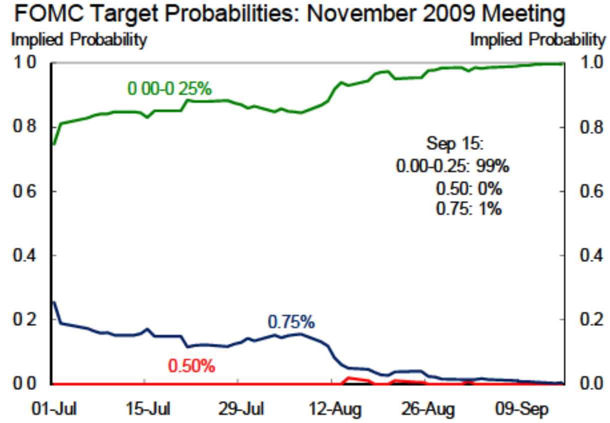
FOMC Target Probabilities: September 2009 Meeting



Source: Cleveland FRB

Note: Estimated using options on fed funds futures.

FOMC Target Probabilities: November 2009 Meeting



Source: Cleveland FRB

Note: Estimated using options on fed funds futures.

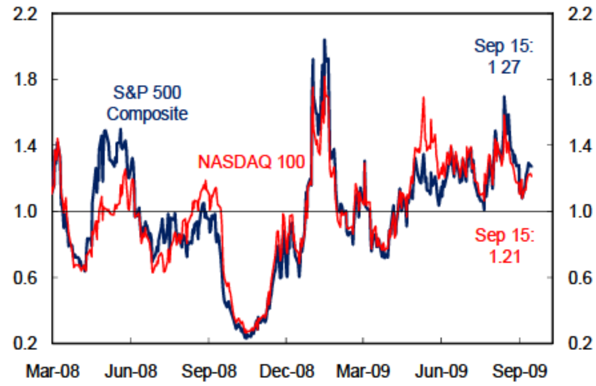
A. Significant Developments

Exhibit A-6:
Implied Volatility

Equity Index Implied Volatility: 1-Month

Source: Datastream

Ratio of Implied to Realized Volatility



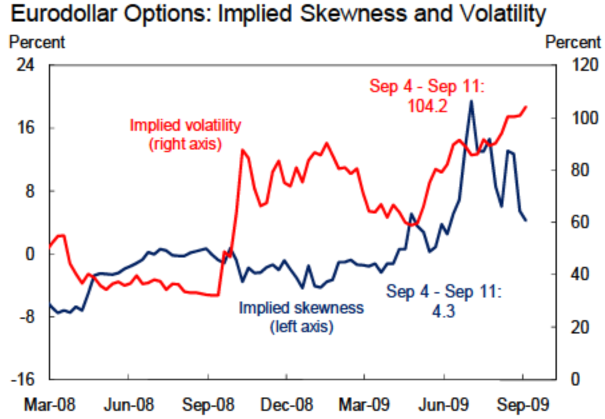
Source: Datastream

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

Option and Swaption Volatility Expectations

Source: Merrill Lynch, Haver

Eurodollar Options: Implied Skewness and Volatility

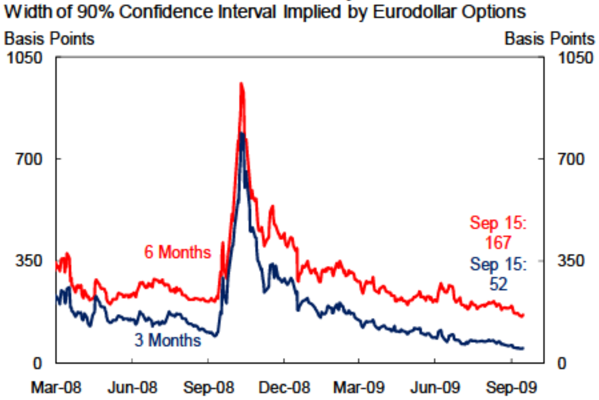


Source: CME and FRBNY calculations

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

Short-Term Interest Rate Volatility

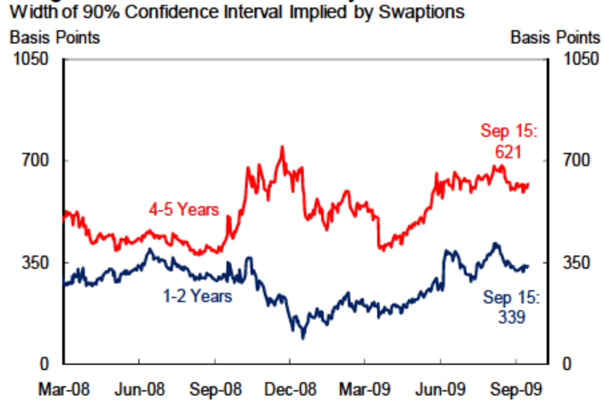
Width of 90% Confidence Interval Implied by Eurodollar Options



Source: Datastream, FRBNY calculations

Long-Term Interest Rate Volatility

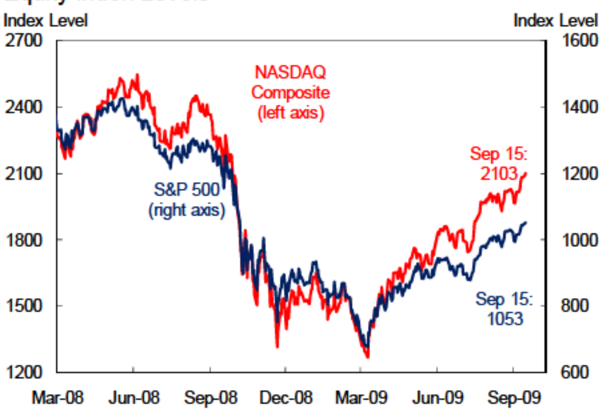
Width of 90% Confidence Interval Implied by Swaptions



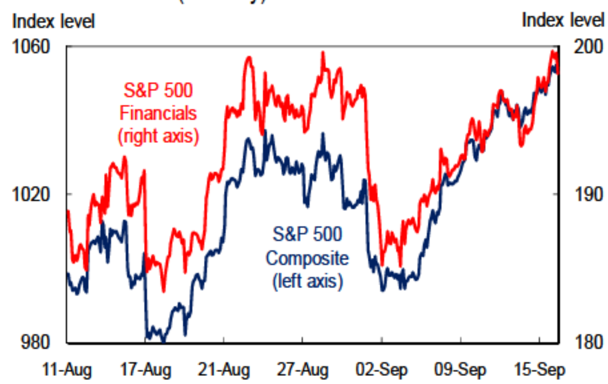
Source: Datastream, FRBNY calculations

A. Significant Developments

Exhibit A-7:
Equity and Credit

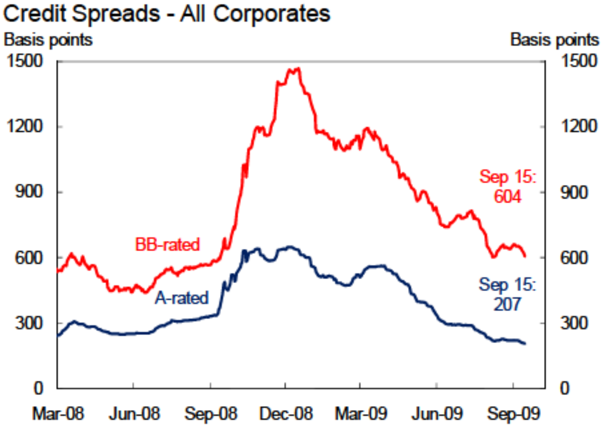


Source: Datastream



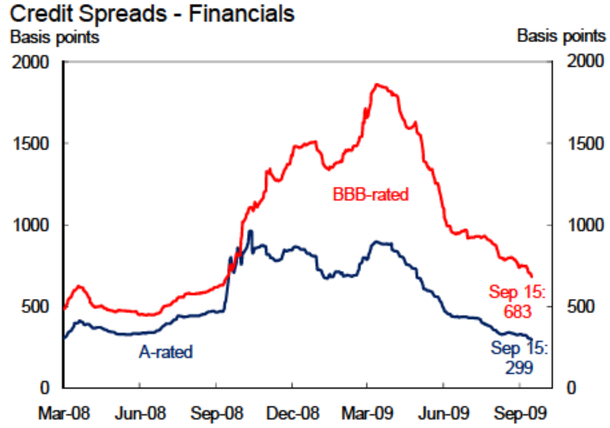
Source: Bloomberg

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



Source: Merrill Lynch

Note: Option-adjusted spreads.



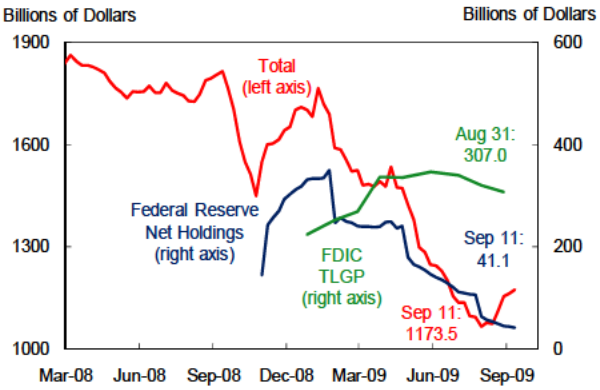
Source: Merrill Lynch

Note: Option-adjusted spreads.

A. Significant Developments

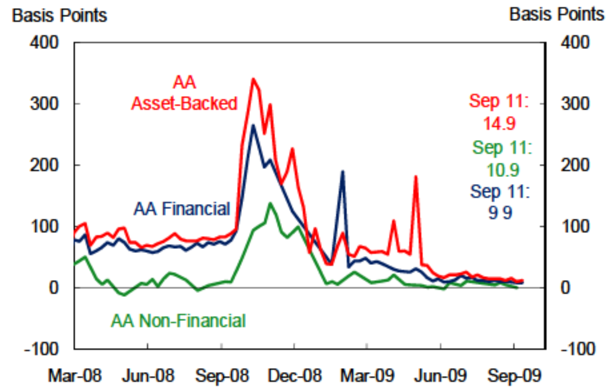
Exhibit A-8:
Liquidity Facilities

CPFF and Commercial Paper Outstanding



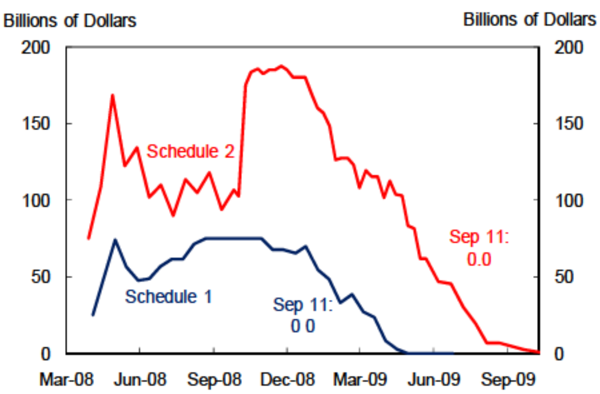
Source: Federal Reserve Board, Haver

3-Month CP Rates over OIS



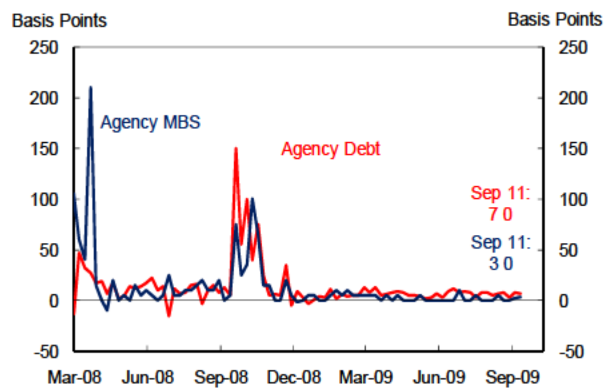
Source: Federal Reserve Board, Haver, Bloomberg

TSLF Outstanding



Source: Federal Reserve Bank of New York

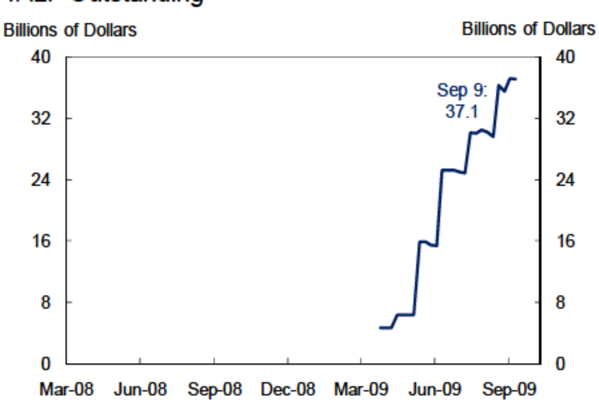
Overnight Financing Spreads



Source: Bloomberg

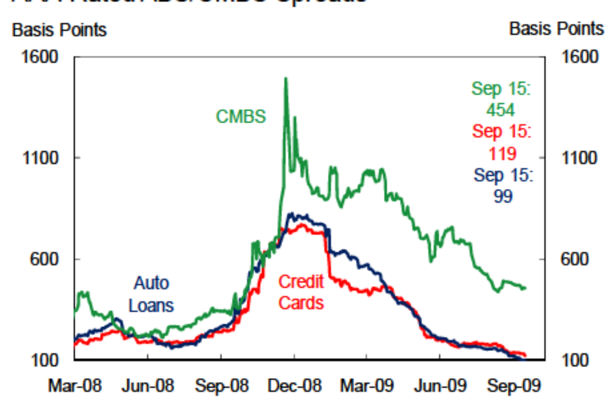
Note: Spreads are between overnight agency debt and MBS and Treasury general collateral repo rates

TALF Outstanding



Source: Federal Reserve Board

AAA-Rated ABS/CMBS Spreads



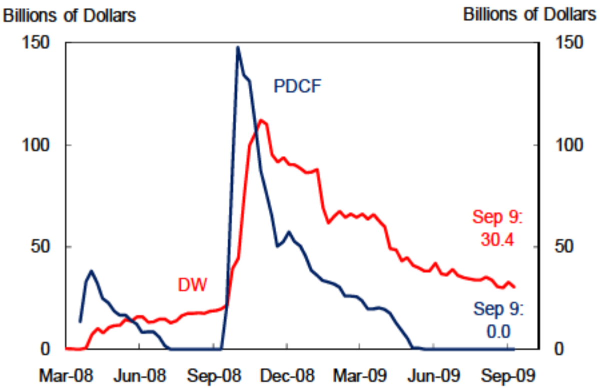
Source: Merrill Lynch

Note: Option-adjusted spreads.

A. Significant Developments

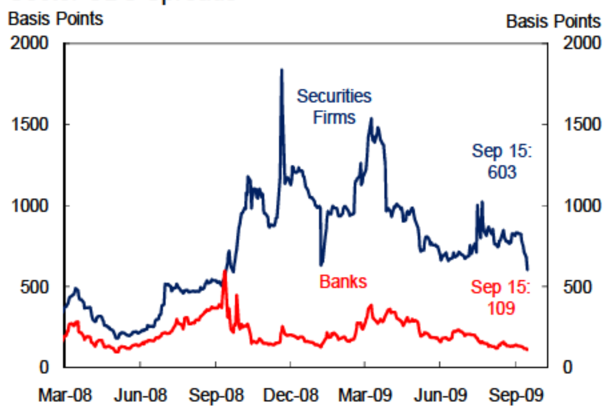
Exhibit A-8:
Liquidity Facilities

Discount Window and PDCF Borrowing



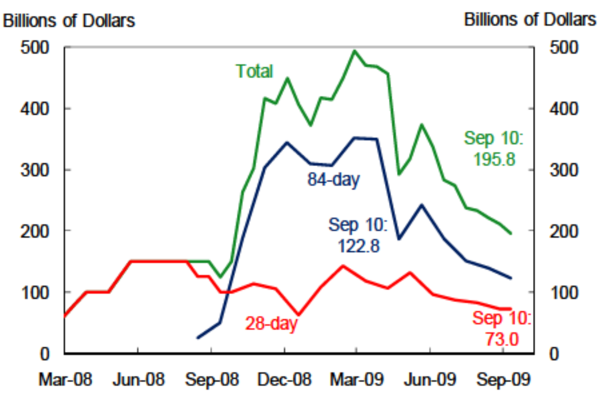
Source: Federal Reserve Board

Sector CDS Spreads



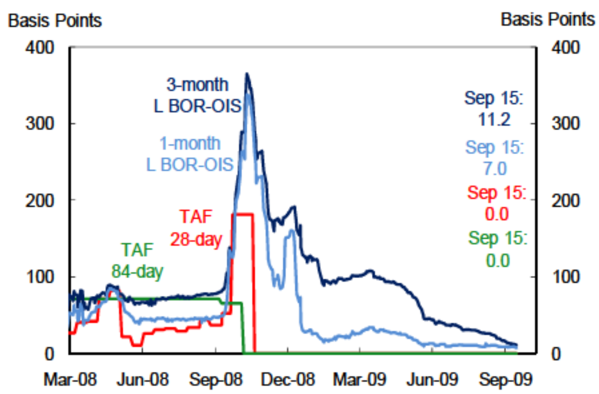
Source: Datastream

TAF Outstanding



Source: Federal Reserve Board

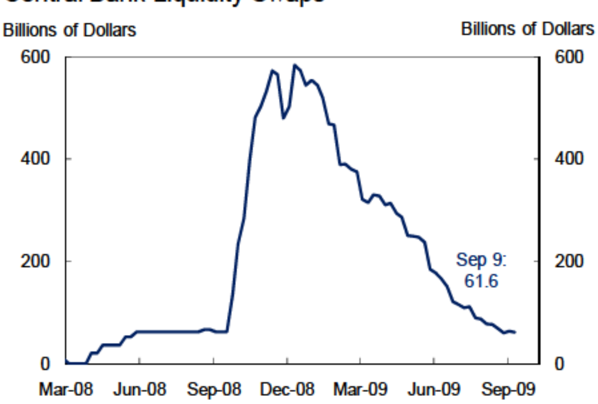
TAF Spreads and Libor to OIS



Source: Federal Reserve Board, Bloomberg

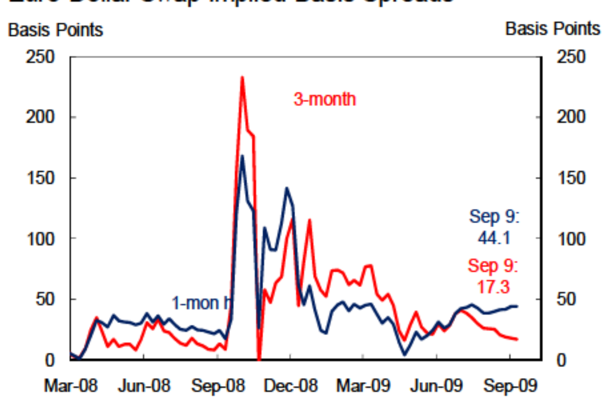
Note: The TAF spread is defined as the stop-out rate less the minimum bid rate.

Central Bank Liquidity Swaps



Source: Federal Reserve Board, Bloomberg

Euro-Dollar Swap Implied Basis Spreads

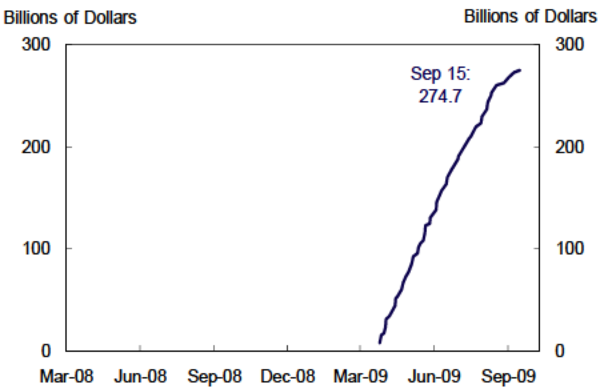


Source: Reuters, Tullett

A. Significant Developments

Exhibit A-9:
Outright Purchase Program

Treasury Outright Purchases

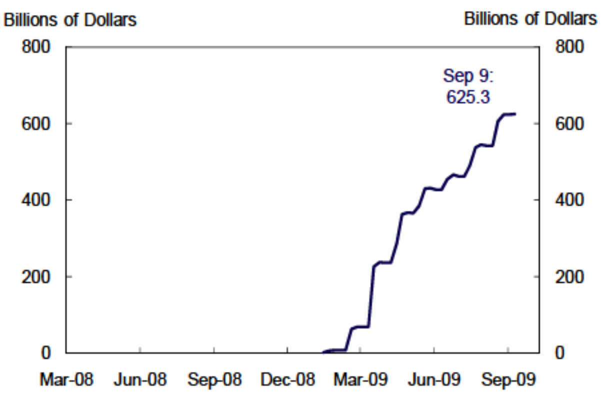


Source: Federal Reserve

Treasury Rates

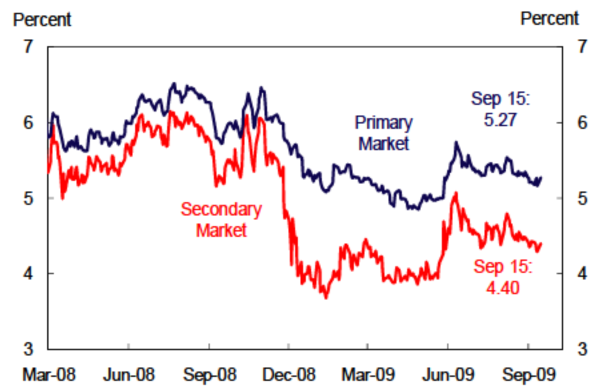
Source: Wall Street Journal, Haver

Agency MBS Net Outright Purchases



Source: Federal Reserve

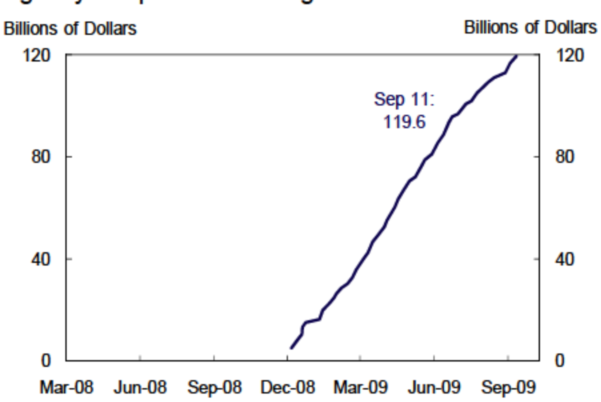
Mortgage Market Rates



Source: Bloomberg

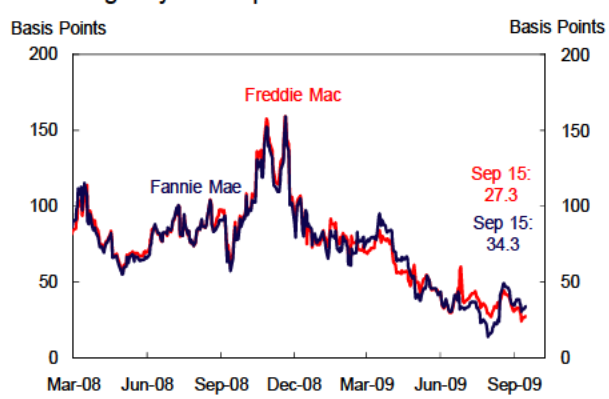
Note: 30-Year Fixed Mortgage rate and Fannie Mae current coupon yield.

Agency Coupon Debt Outright Purchases



Source: Federal Reserve

5-Year Agency Debt Spreads

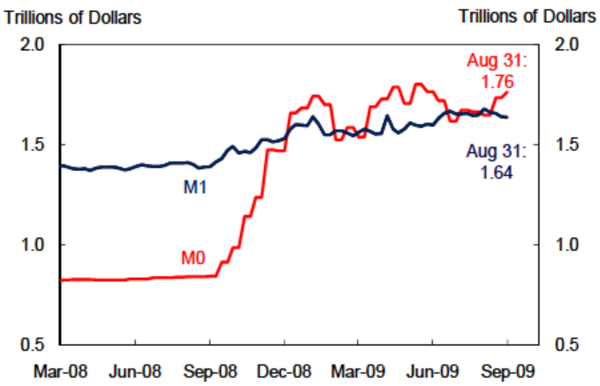


Source: Bloomberg

A. Significant Developments

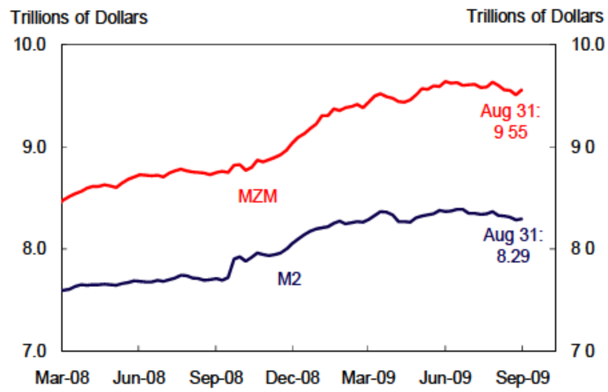
Exhibit A-10:
Money and Banking

Measures of Money Supply: M0, M1



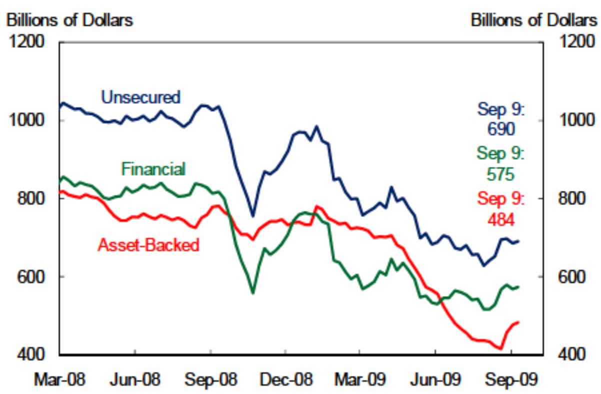
Source: Federal Reserve Board, Haver

Measures of Money Supply: M2, MZM



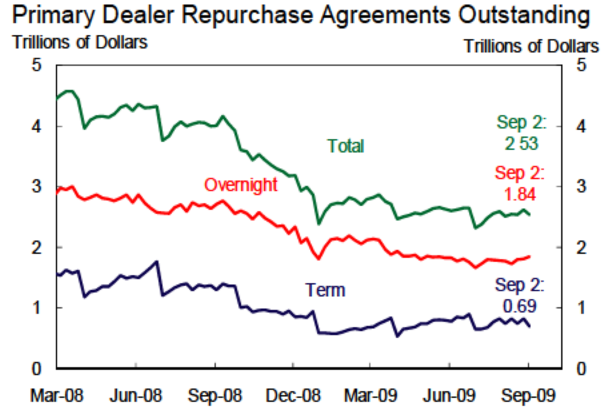
Source: Federal Reserve Board, Haver

Commercial Paper Outstanding



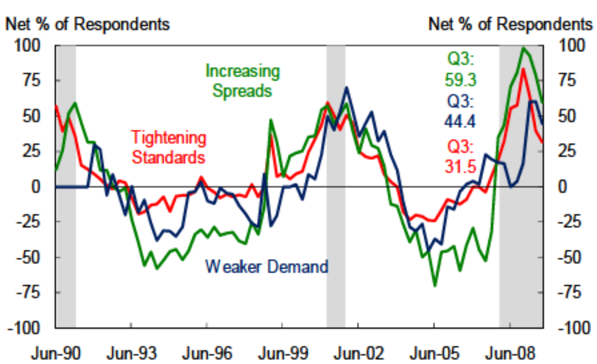
Source: Federal Reserve Board

Primary Dealer Repurchase Agreements Outstanding



Source: Federal Reserve Board

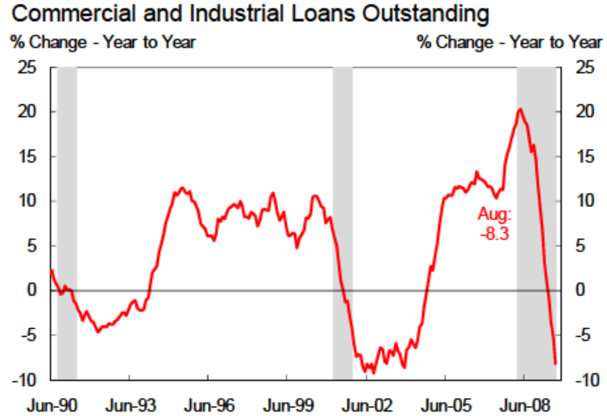
Bank Lending Practices



Source: Federal Reserve Board

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

Commercial and Industrial Loans Outstanding

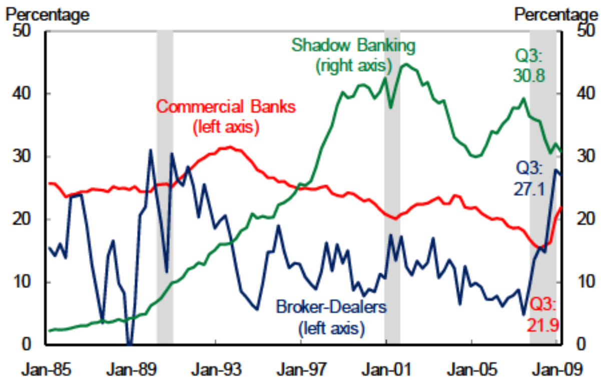


Source: Federal Reserve Board

A. Significant Developments

Exhibit A-10:
Money and Banking

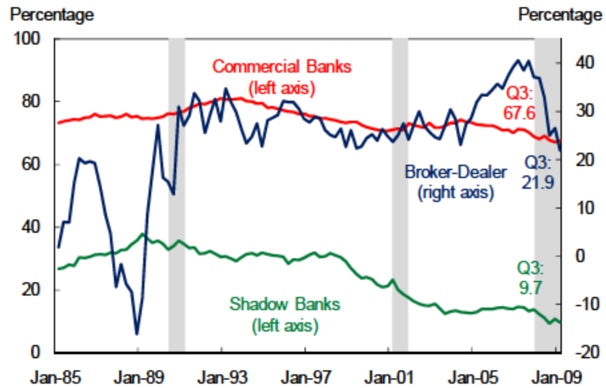
Liquid Assets as a Fraction of Total Assets



Source: Federal Reserve Board

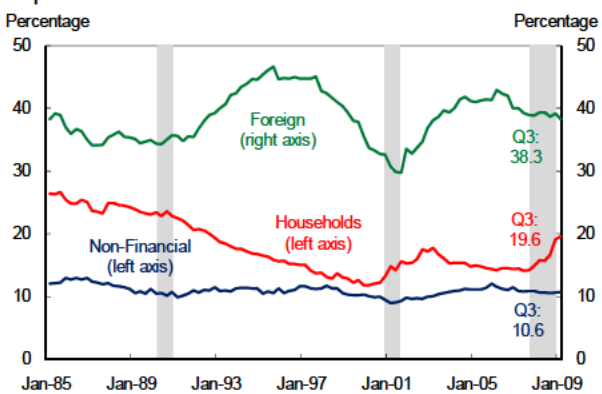
Note Shadow Banks Funding Corporations + Finance Companies

Short-term Debt as a Fraction of Total Assets



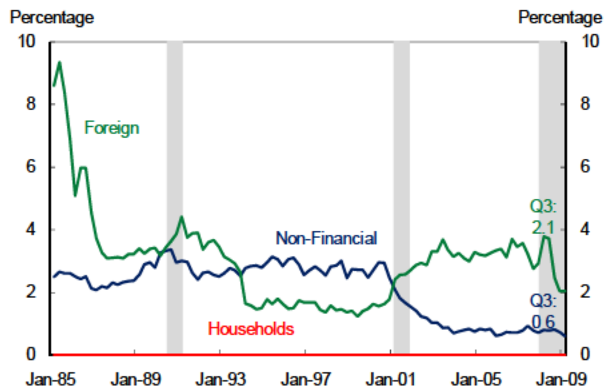
Source: Federal Reserve Board

Liquid Assets as a Fraction of Total Assets



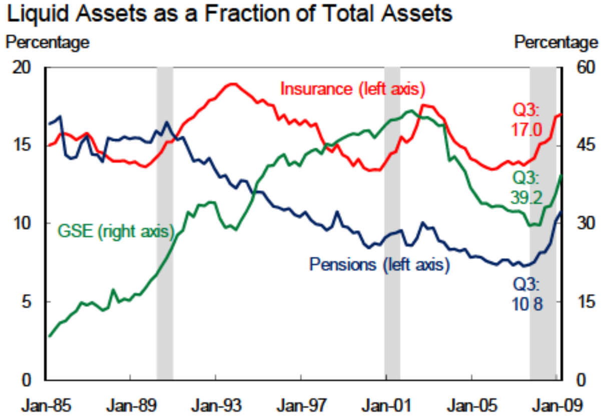
Source: Federal Reserve Board

Short-term Debt as a Fraction of Total Assets



Source: Federal Reserve Board

Liquid Assets as a Fraction of Total Assets

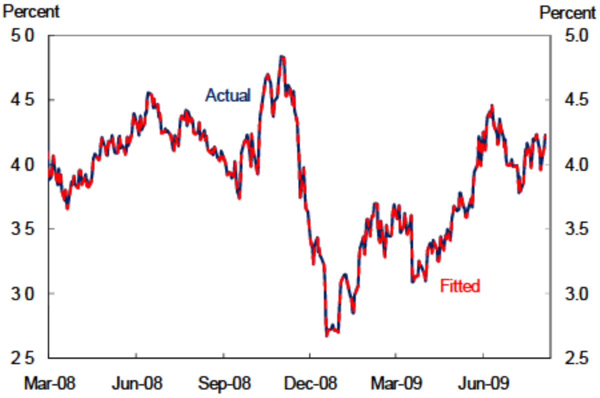


Source: Federal Reserve Board

A. Significant Developments

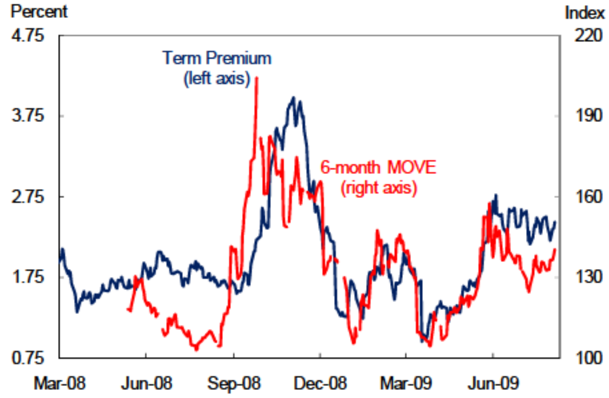
Exhibit A-11:
Estimates of Term Premia in Treasury Yields

10-Year Treasury



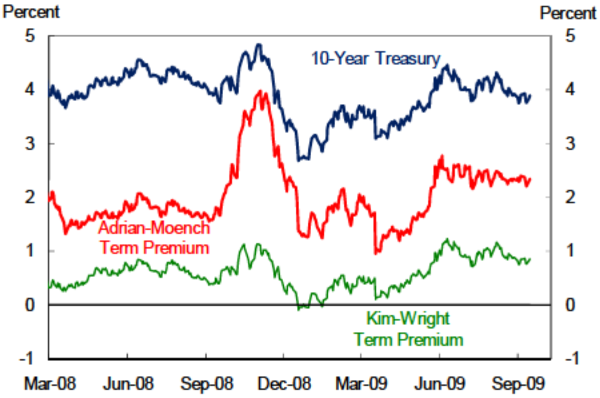
Source: FRBNY calculations, Federal Reserve Board

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



Source: FRBNY calculations, Haver, Merrill Lynch

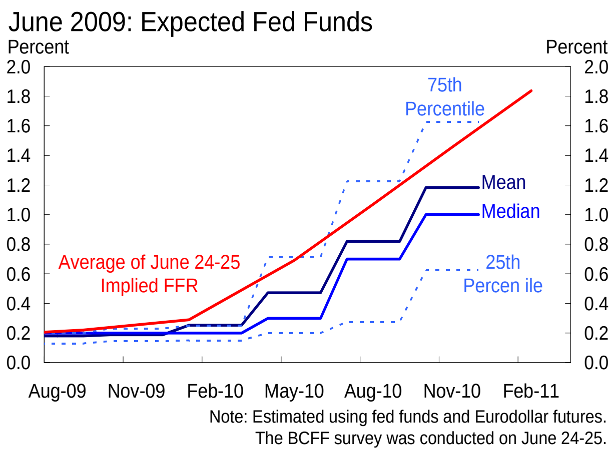
10-Year Treasury and Term Premia

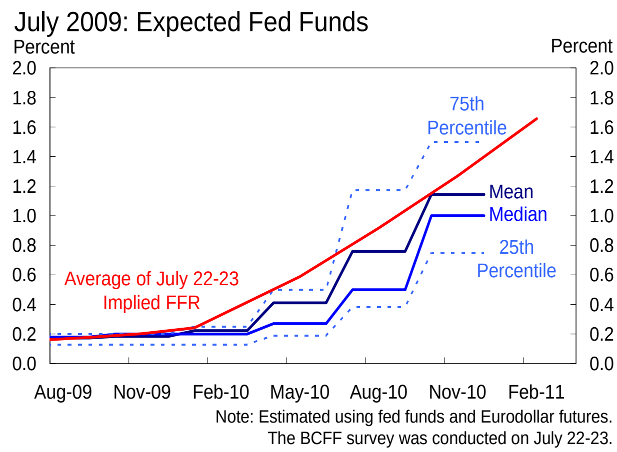


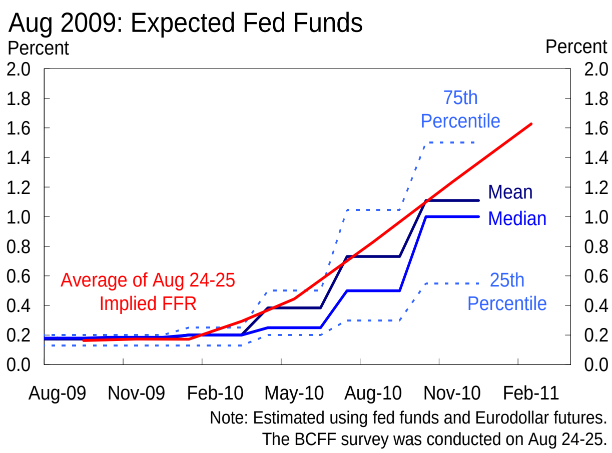
Source: FRBNY calculations, Federal Reserve Board

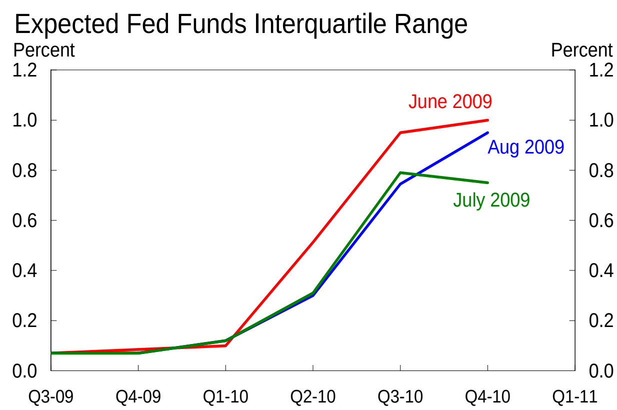
A. Significant Developments

Exhibit A-12:
Blue Chip Financial Forecasts: Policy Expectations









Source: Blue Chip Financial Forecasts

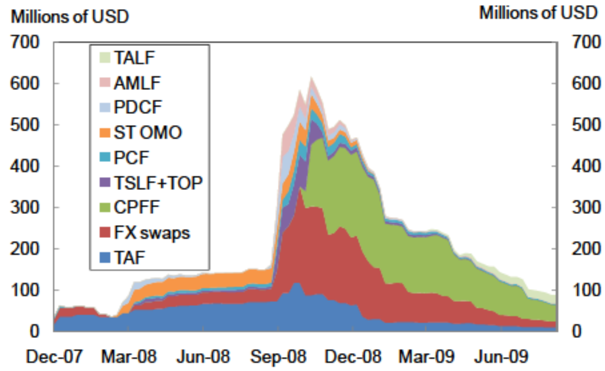
A. Significant Developments

Exhibit A-13:
Income Effects of Fed Balance Sheet Changes

Recent Developments

- Total facility interest income over the four weeks ending September 2 was $384mn, down from $480mn over the previous four weeks. The difference is largely driven by smaller outstanding amounts in the CPFF and the FX swaps.
- 2009 pro forma income from the liquidity facilities has declined commensurately and is now $8.5bn.
- Pro forma income from all sources going forward is $62.9bn (based on the 9/2/09 balance sheet), with declining income from the facilities more than offset by increased income from securities held outright.

Weekly Income by Facility



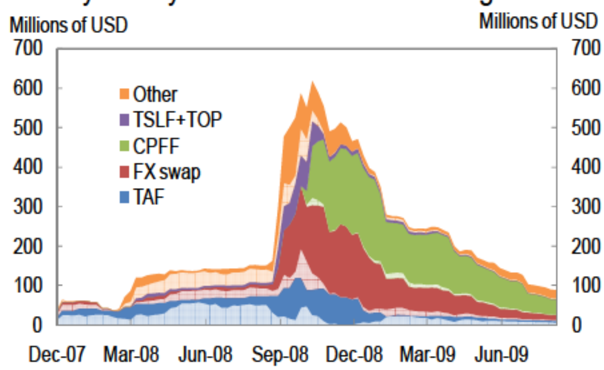
Sources: Federal Reserve, Bloomberg, foreign central banks.

Income Effects of Liquidity Facilities

Period	Interest/Fee Income	Interest Foregone	Difference
2008	11,773	3,713	8,060
2009 YTD	7,253	1,072	6,181
2009 Pro Forma	8,507	1,346	7,161
Last 4 weeks	384	55	329
Total since 8/8/07	**19,717**	**4,852**	**14,865**

Note: Figures in millions of USD.

Weekly Facility Income and Interest Foregone



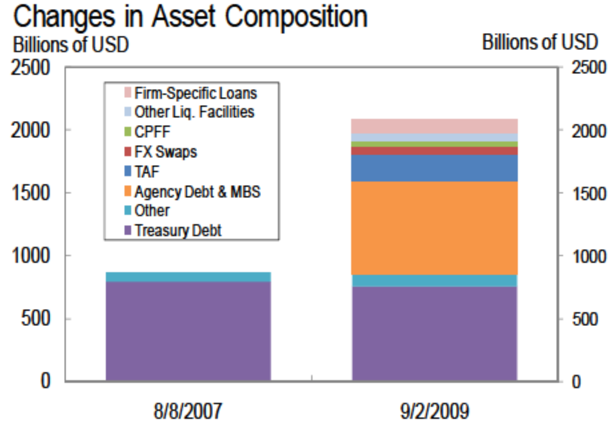
Note: Lighter colors indicate interest foregone.
Sources: Federal Reserve, Bloomberg, foreign central banks.

Pro Forma Income, Next 12 Months

Line Item	Balance Sheet 8/8/07	9/2/09	Difference
Sec. Held Outright	24,241	58,872	34,631
Liquidity Facilities	0	3,760	3,760
Firm-Specific Loans	0	1,907	1,907
Other	819	802	-17
Liabilities	-26	-2,435	-2,409
Net	**25,033**	**62,906**	**37,873**

Note: Es imates based on 8/8/07 and 9/2/09 balance sheets along with common (and current) assumptions about policy and market interest rates. Figures in millions of USD.

Changes in Asset Composition

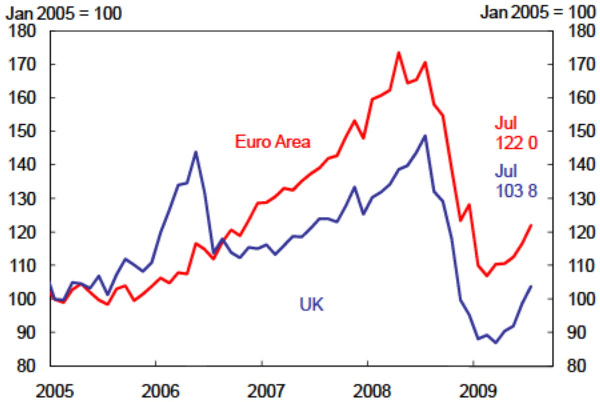


Source: Federal Reserve.

A. Significant Developments

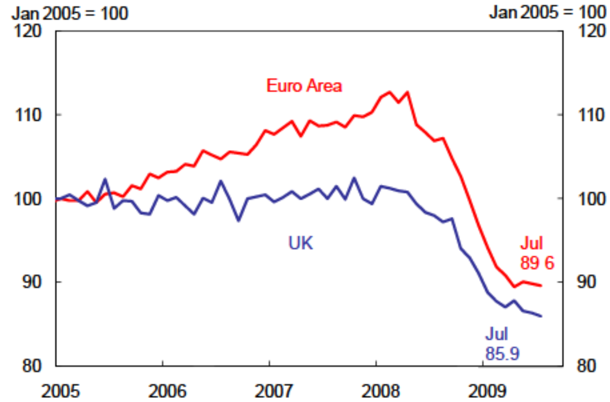
Exhibit A-14: Exports and Industrial Production

Exports



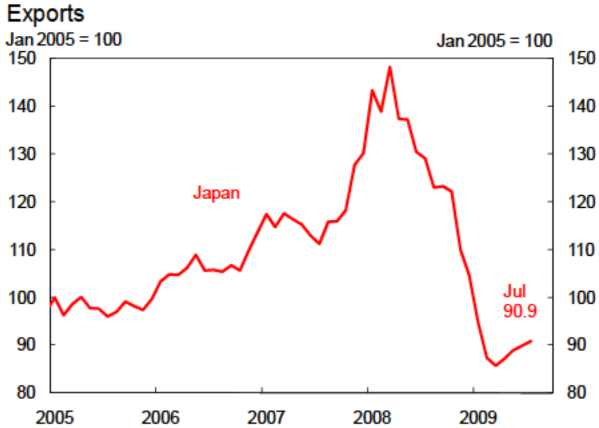
Source: Haver
Note: In Dollar Terms

Industrial Production



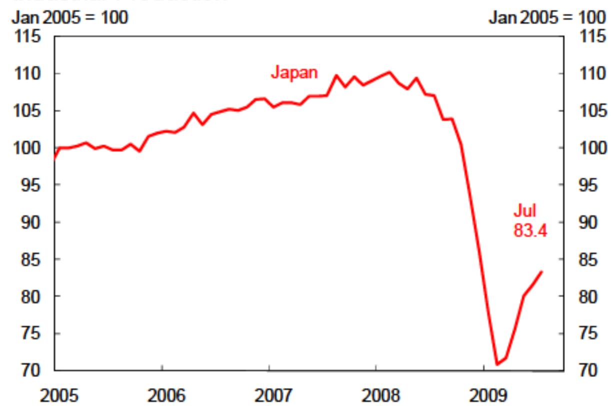
Source: Haver

Exports



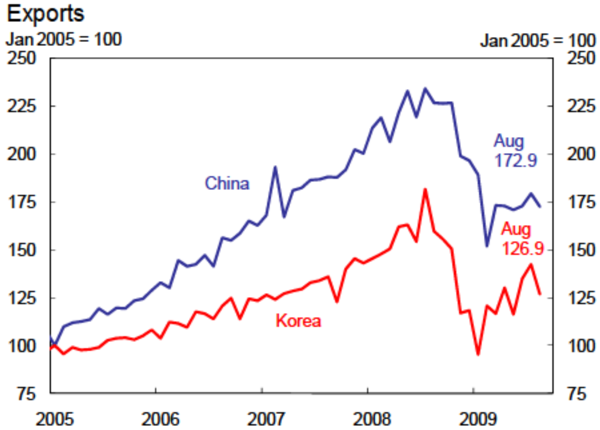
Source: Haver
Note: In Dollar Terms

Industrial Production



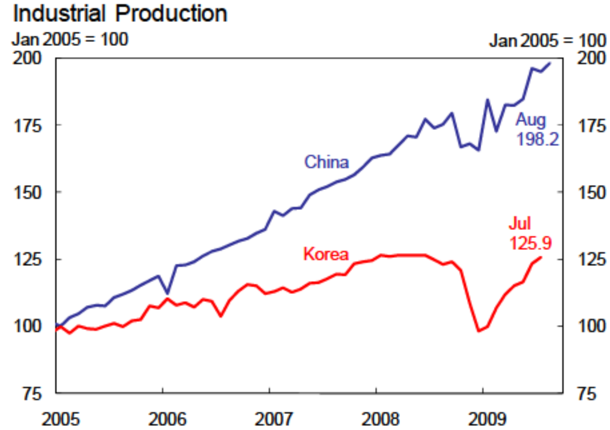
Source: Haver

Exports



Source: Haver
Note: In Dollar Terms

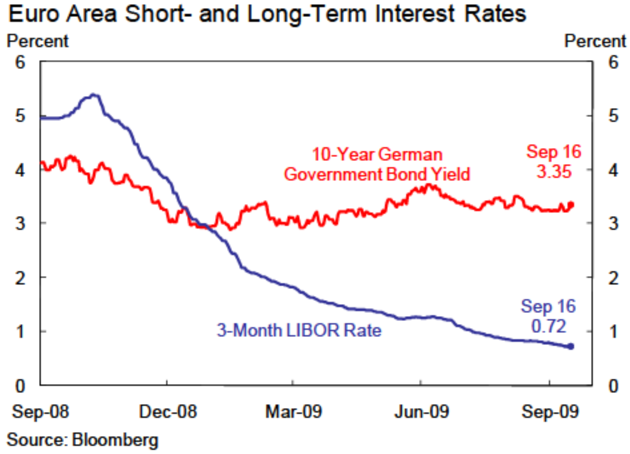
Industrial Production

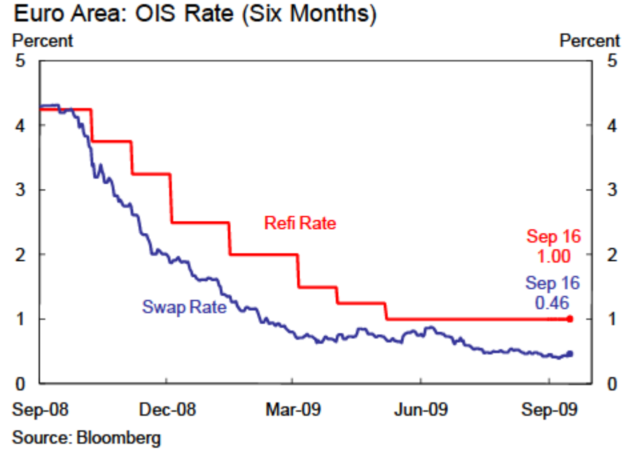


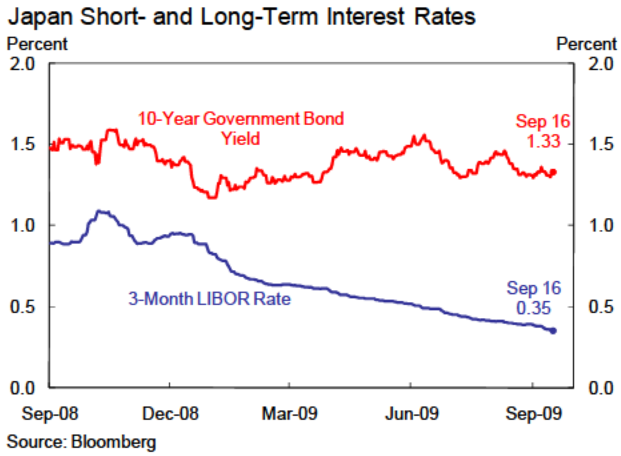
Source: Haver, CEIC

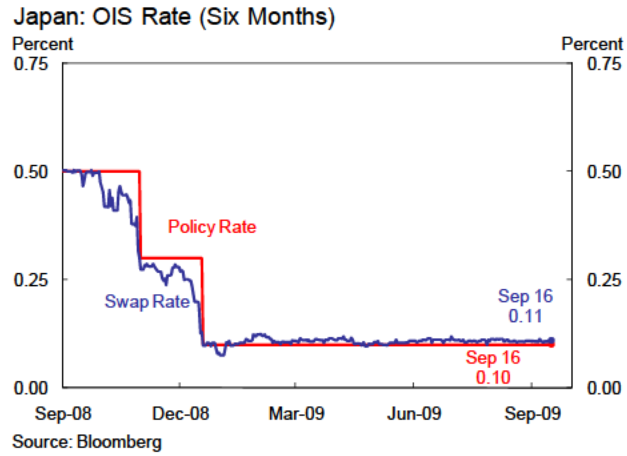
A. Significant Developments

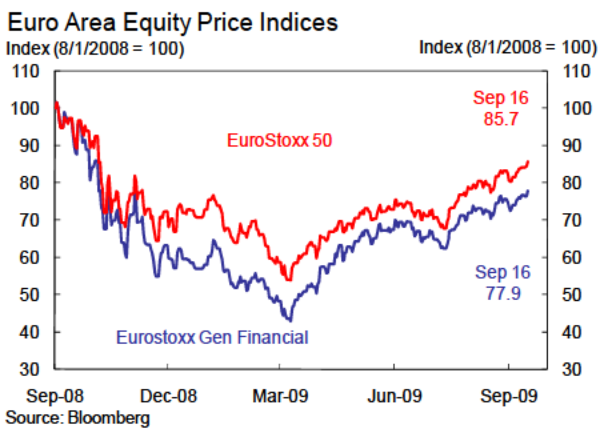
Exhibit A-15:
Global Interest Rates and Equity Markets

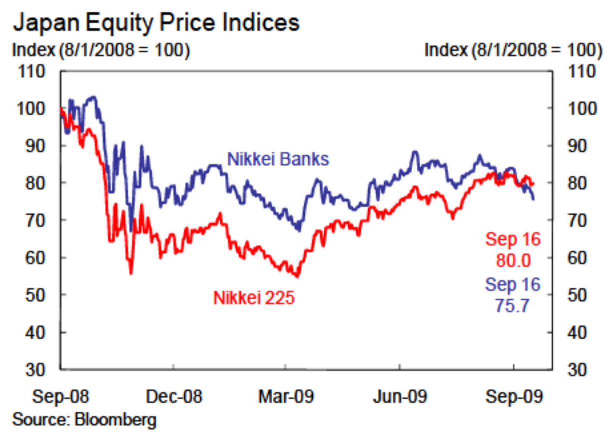








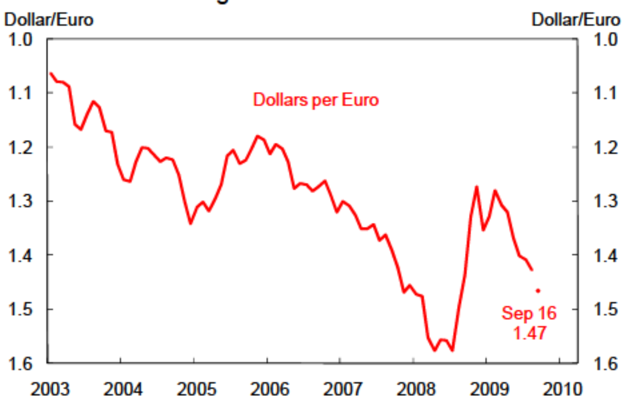




A. Significant Developments

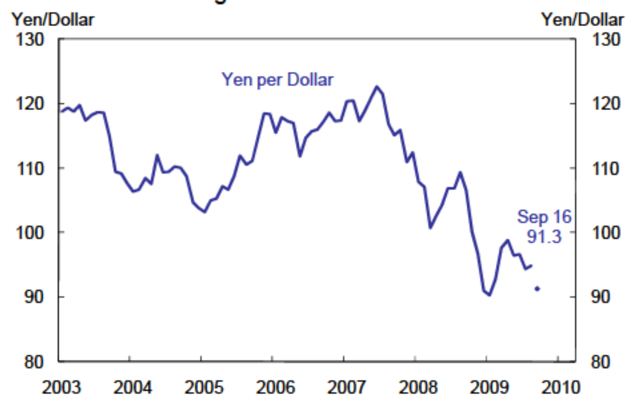
Exhibit A-16:
Exchange Rates

Dollar-Euro Exchange Rate



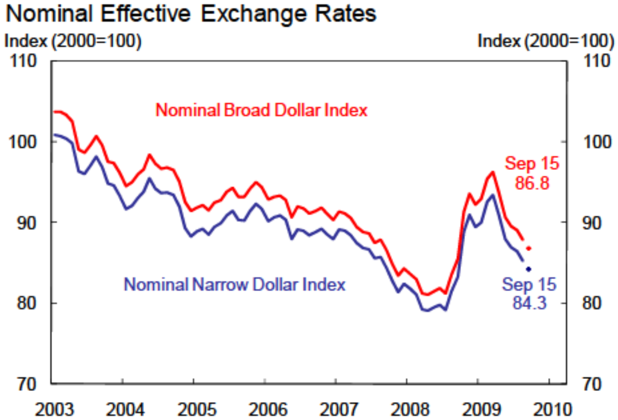
Source: Bloomberg Note: Data are monthly averages. Exchange rate scale is inverted.

Yen-Dollar Exchange Rate



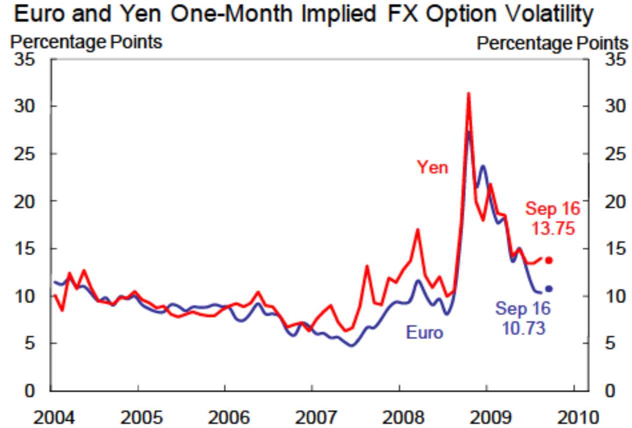
Source: Bloomberg Note: Data are monthly averages.

Nominal Effective Exchange Rates



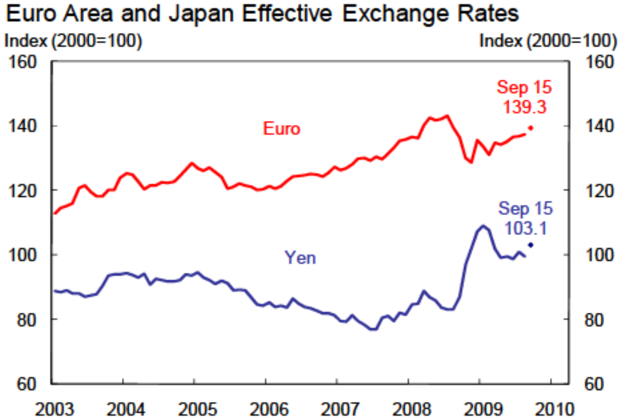
Source: Bloomberg and JPMorgan Note: Data are monthly averages.

Euro and Yen One-Month Implied FX Option Volatility



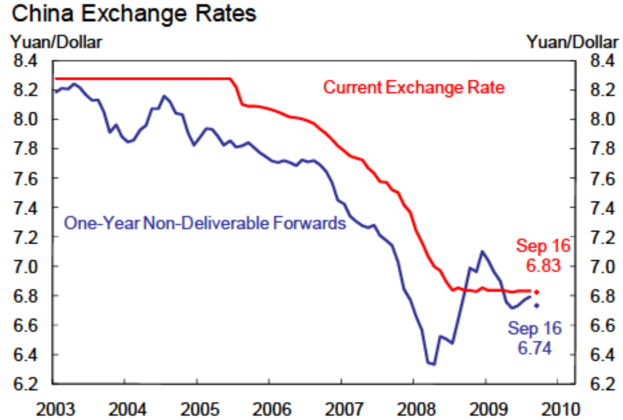
Source: Bloomberg

Euro Area and Japan Effective Exchange Rates



Source: Bloomberg and JPMorgan Note: Data are monthly averages.

China Exchange Rates



Source: Bloomberg Note: Data are monthly averages.

B. FRBNY Forecast Details

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

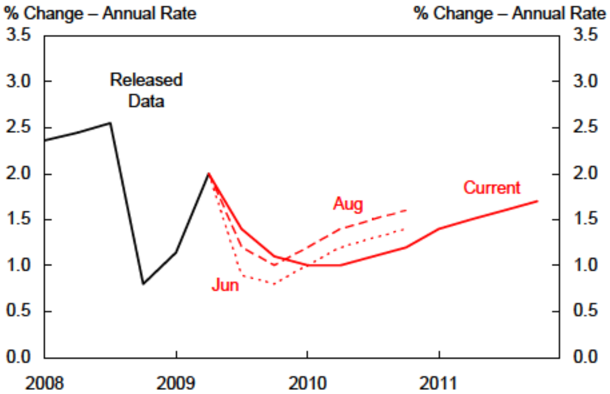
	Core PCE Inflation			Real GDP Growth			Unemployment Rate*			Fed Funds Rate**		
	Jun	Aug	Sep	Jun	Aug	Sep	Jun	Aug	Sep	Jun	Aug	Sep
2009												
Q1	*1.5*	*1.1*	*1.1*	*-5.7*	*-6.4*	*-6.4*	*8.1*	*8.1*	*8.1*	*0-0.25*	*0-0.25*	*0-0.25*
Q2	2.4	*2.0*	*2.0*	-0.8	*-1.0*	*-1.0*	9.3	*9.3*	*9.3*	0-0.25	*0-0.25*	*0-0.25*
Q3	0.9	1.2	1.4	0.7	2.5	3.5	10.0	9.6	9.7	0-0.25	0-0.25	0-0.25
Q4	0.8	1.0	1.1	0.6	0.8	3.4	10.5	10.0	10.0	0-0.25	0-0.25	0-0.25
2010												
Q1	1.0	1.2	1.0	0.9	1.1	0.6	10.7	10.1	10.1	0-0.25	0-0.25	0-0.25
Q2	1.2	1.4	1.0	2.1	1.4	1.2	10.6	10.2	10.2	0-0.25	0-0.25	0-0.25
Q3	1.3	1.5	1.1	2.5	2.3	2.6	10.5	10.2	10.3	0-0.25	0-0.25	0-0.25
Q4	1.4	1.6	1.2	3.0	3.2	3.4	10.3	10.2	10.2	0-0.25	0-0.25	0-0.25
2011												
Q1	--	--	1.4	--	--	4.0	--	--	9.9	--	--	0-0.25
Q2	--	--	1.5	--	--	3.8	--	--	9.6	--	--	0.5
Q3	--	--	1.6	--	--	4.0	--	--	9.4	--	--	1.0
Q4	--	--	1.7	--	--	4.3	--	--	9.0	--	--	1.5
Q4/Q4												
2008	*1.9*	*2.0*	*2.0*	*-0.8*	*-1.9*	*-1.9*	*2.1*	*2.1*	*2.1*	*-4.0*	*-4.0*	*-4.0*
2009	1.4	1.3	1.4	-1.3	-1.1	-0.2	3.6	3.1	3.1	0.0	0.0	0.0
2010	1.2	1.4	1.1	2.1	2.0	2.0	-0.2	0.2	0.2	0.0	0.0	0.0
2011	--	--	1.5	--	--	4.0	--	--	-1.2	--	--	1.3

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.

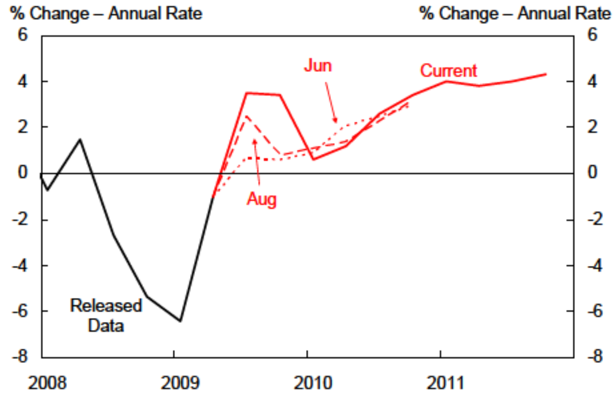
B. FRBNY Forecast Details

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

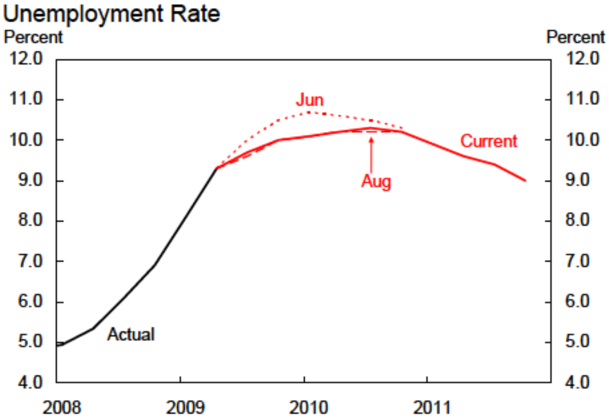
Core PCE Inflation



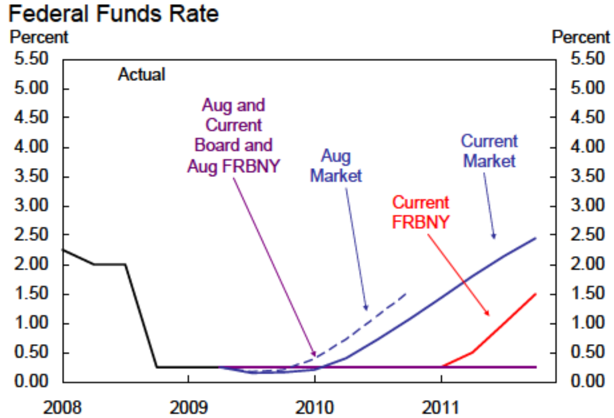
Real GDP Growth



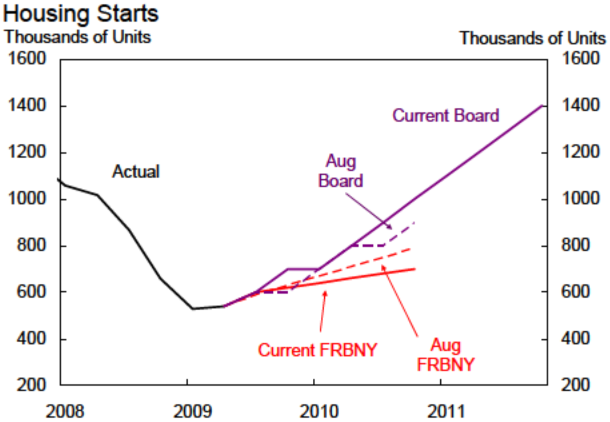
Unemployment Rate



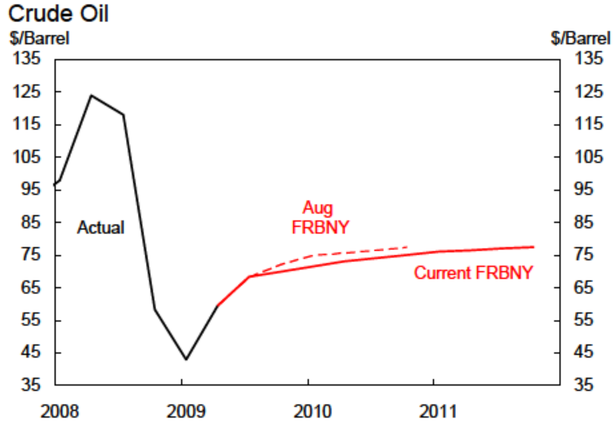
Federal Funds Rate



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)	
	2009Q3	2009Q4	2009Q3	2009Q4
OUTPUT				
Real GDP	3.5	3.4	3.5	3.4
	(2.5)	(0.8)	(2.5)	(0.8)
Final Sales to Domestic Purchasers	1.6	-0.2	1.6	-0.2
	(-0.5)	(-0.1)	(-0.5)	(-0.1)
Consumption	2.1	0.0	1.5	0.0
	(1.4)	(1.0)	(1.0)	(0.7)
BFI: Equipment and Software	5.0	-5.0	0.3	-0.3
	(-12.5)	(-8.0)	(-0.8)	(-0.5)
BFI: Nonresidential Structures	-12.0	-8.0	-0.4	-0.3
	(-10.0)	(-8.0)	(-0.4)	(-0.3)
Residential Investment	10.0	5.0	0.2	0.1
	(-20.0)	(-10.0)	(-0.5)	(-0.2)
Government: Federal	0.5	1.5	0.0	0.1
	(1.5)	(1.5)	(0.1)	(0.1)
Government: State and Local	0.0	1.0	0.0	0.1
	(0.5)	(0.8)	(0.1)	(0.1)
Inventory Investment	--	--	2.0	3.9
	--	--	(3.7)	(1.6)
Net Exports	--	--	-0.2	-0.3
	--	--	(-0.6)	(-0.7)
INFLATION				
Total PCE Deflator	2.5	1.3		
	(2.2)	(1.7)		
Core PCE Deflator	1.4	1.1		
	(1.2)	(1.0)		
PRODUCTIVITY AND LABOR COSTS*				
Output per Hour	6.5	2.0		
	(2.4)	(0.3)		
Compensation per Hour	2.0	1.8		
	(2.0)	(1.8)		
Unit Labor Costs	-4.5	-0.3		
	(-0.4)	(1.5)		

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		
	2009	2010	2011	2009	2010	2011
OUTPUT						
Real GDP	-0.2	2.0	4.0	-0.2	2.0	4.0
	(-1.1)	(2.0)	--	(-1.1)	(2.0)	--
Final Sales to Domestic Purchasers	-1.6	1.7	3.7	-1.6	1.7	3.8
	(-2.2)	(2.4)	--	(-2.2)	(2.5)	--
Consumption	0.4	1.3	2.6	0.3	0.9	1.8
	(0.4)	(2.2)	--	(0.3)	(1.6)	--
BFI: Equipment and Software	-12.7	3.0	14.2	-0.9	0.2	0.9
	(-17.4)	(2.3)	--	(-1.2)	(0.1)	--
BFI: Nonresidential Structures	-21.1	2.6	8.0	-0.9	0.1	0.3
	(-19.2)	(2.6)	--	(-0.8)	(0.1)	--
Residential Investment	-13.9	6.2	14.4	-0.4	0.2	0.4
	(-25.1)	(12.4)	--	(-0.7)	(0.3)	--
Government: Federal	2.0	1.5	1.5	0.2	0.1	0.1
	(2.3)	(1.5)	--	(0.2)	(0.1)	--
Government: State and Local	0.7	1.9	2.6	0.1	0.2	0.3
	(0.5)	(2.0)	--	(0.1)	(0.2)	--
Inventory Investment	--	--	--	0.5	0.2	0.2
	--	--	--	(0.5)	(0.0)	--
Net Exports	--	--	--	1.0	0.0	0.0
	--	--	--	(0.7)	(-0.4)	--
INFLATION						
Total PCE Deflator	0.9	1.4	1.8			
	(0.9)	(1.8)	--			
Core PCE Deflator	1.4	1.1	1.5			
	(1.3)	(1.4)	--			
Total CPI Inflation	1.0	1.5	1.9			
	(1.7)	(1.6)	--			
Core CPI Inflation	1.6	1.3	1.7			
	(1.8)	(1.4)	--			
GDP Deflator	1.1	1.2	1.5			
	(1.1)	(1.8)	--			

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		
	2009	2010	2011
INTEREST RATE ASSUMPTIONS			
Federal Funds Rate (End-of-Year)	0-0.25	0-0.25	1.50
	0-0.25	0-0.25	--
10-Year Treasury Yield (Avg. Q4 Level)	3.6	4.0	4.0
	(3.8)	(4.0)	--
PRODUCTIVITY AND LABOR COSTS*			
Output	-0.7	2.1	4.8
	(-1.9)	(2.2)	--
Hours	-4.4	0.5	3.3
	(-3.8)	(1.3)	--
Output per Hour	3.8	1.6	1.5
	(1.9)	(0.9)	--
Compensation per Hour	-0.2	1.4	1.7
	(2.8)	(1.5)	--
Unit Labor Costs	-4.0	-0.3	0.2
	(0.8)	(0.6)	--
LABOR MARKET			
Unemployment Rate (Avg. Q4 Level)	10.0	10.2	9.0
	(10.0)	(10.2)	--
Participation Rate (Avg. Q4 Level)	65.6	65.6	65.8
	(65.5)	(65.6)	--
Avg. Monthly Nonfarm Payroll Growth (Thous.)	-326	67	295
	(-366)	(101)	--
INCOME			
Personal Income	-1.1	2.2	5.5
	(-0.4)	(2.8)	--
Real Disposable Personal Income	1.1	0.7	3.5
	(2.0)	(0.8)	--
Corporate Profits Before Taxes	19.3	-4.6	1.9
	(18.5)	(-3.5)	--

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

B. FRBNY Forecast Details

Exhibit B-6: FRBNY and Greenbook Forecast Comparison

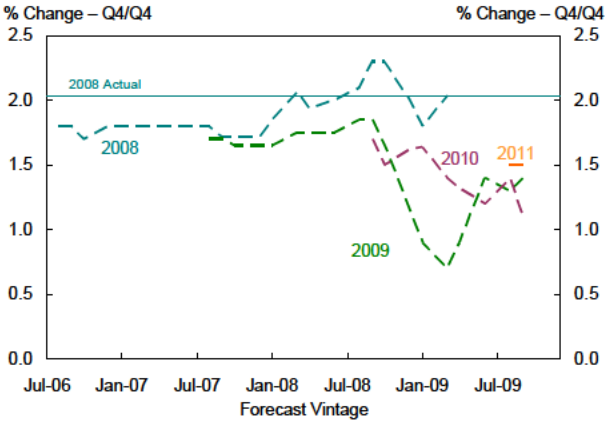
	FRBNY			Board		
	2009	2010	2011	2009	2010	2011
OUTPUT						
Real GDP	-0.2	2.0	4.0	-0.5	3.5	4.5
	(-1.1)	(2.0)	--	(-1.4)	(3.1)	--
GDP Growth Contributions						
Final Sales to Domestic Purchasers	-1.6	1.7	3.8	-1.5	3.1	4.3
	(-2.2)	(2.5)	--	(-2.2)	(2.7)	--
Consumption	0.3	0.9	1.8	0.5	2.0	2.5
	(0.3)	(1.6)	--	(0.2)	(1.9)	--
BFI	-1.8	0.3	1.1	-2.0	0.5	0.9
	(-2.0)	(0.2)	--	(-2.2)	(0.3)	--
Residential Investment	-0.4	0.2	0.4	-0.5	0.3	0.7
	(-0.7)	(0.3)	--	(-0.7)	(0.2)	--
Government	0.3	0.4	0.5	0.5	0.3	0.2
	(0.2)	(0.4)	--	(0.5)	(0.3)	--
Inventory Investment	0.5	0.2	0.2	0.0	0.6	0.4
	(0.5)	(0.0)	--	(-0.1)	(0.5)	--
Net Exports	1.0	0.0	0.0	1.0	-0.2	-0.2
	(0.7)	(-0.4)	--	(0.9)	(-0.1)	--
INFLATION						
Total PCE Deflator	0.9	1.4	1.8	1.0	1.3	1.0
	(0.9)	(1.8)	--	(1.1)	(1.1)	--
Core PCE Deflator	1.4	1.1	1.5	1.4	1.1	1.0
	(1.3)	(1.4)	--	(1.4)	(0.8)	--
INTREST RATE ASSUMPTION						
Fed Funds Rate (End-of-Year)	0-0.25	0-0.25	1.5	0-0.25	0-0.25	0-0.25
	0-0.25	0-0.25	--	0-0.25	0-0.25	--
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	3.8	1.6	1.5	3.7	1.3	1.4
	(1.9)	(0.9)	--	(2.3)	(1.4)	--
Compensation per Hour	-0.2	1.4	1.7	-0.3	1.8	2.1
	(2.8)	(1.5)	--	(-0.4)	(1.2)	--
Unit Labor Costs	-4.0	(0.3)	0.2	-3.8	0.5	0.6
	(0.8)	(0.6)	--	(-2.6)	(-0.2)	--
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	10.0	10.2	9.0	10.0	9.6	7.9
	(10.0)	(10.2)	--	(10.0)	(9.7)	--
Participation Rate (Avg. Q4 Level)	65.6	65.6	65.8	65.5	65.4	65.3
	(65.5)	(65.6)	--	(65.6)	(65.3)	--
Avg. Monthly Nonfarm Payroll Growth (Thous.)	-326	67	295	-383	200	308
	(-366)	(101)	--	(-383)	(150.0)	--
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	620	700	--	700	1000	1400
	(630)	(790)	--	(600)	(900.0)	--

B. FRBNY Forecast Details

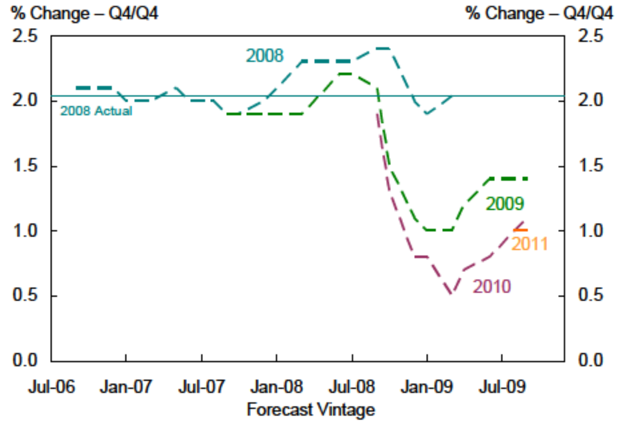
Exhibit B-7: Evolution of FRBNY and Board Forecasts since Mid-2006

FRBNY | **Board**

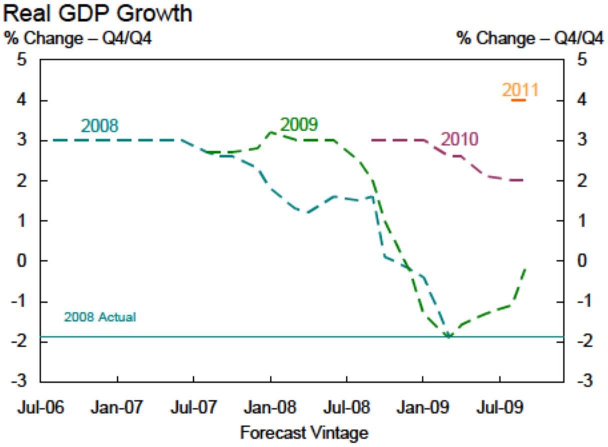
Core PCE Inflation



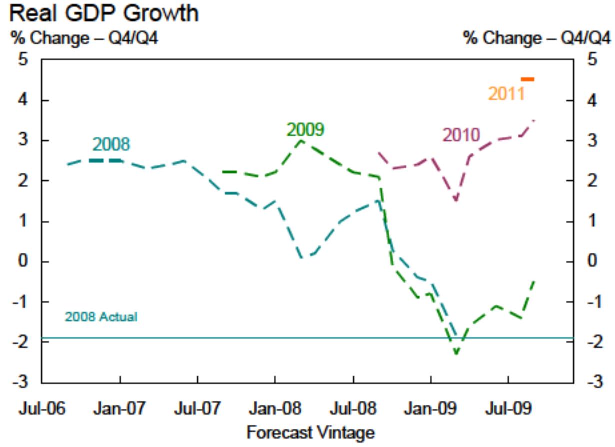
Core PCE Inflation



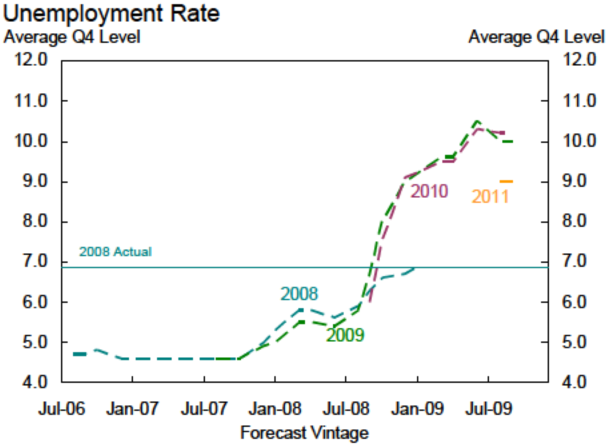
Real GDP Growth



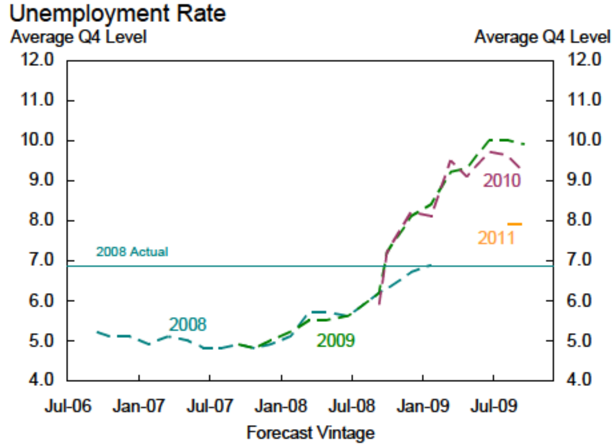
Real GDP Growth



Unemployment Rate



Unemployment Rate



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

B. FRBNY Forecast Details

Exhibit B-8: Alternative GDP and Inflation Forecasts

Real GDP Growth

	Release Date	2009Q3	2009Q4	2009 Q4/Q4	2010 Q4/Q4
FRBNY	9/16/2009	3.5	3.4	-0.2	2.0
		(2.5)	(0.8)	(-1.1)	(2.0)
PSI Model	9/10/2009	1.5	2.1	--	--
		(1.2)	--	--	--
Blue Chip	9/10/2009	3.0	2.4	-0.6	2.7
		(1.0)	(1.9)	(-1.1)	(2.7)
Median SPF	8/14/2009	2.4	2.2	-0.8	2.7
		(0.4)	(1.7)	(-1.4)	--
Macro Advisers	9/16/2009	3.3	2.7	-0.4	4.0
		(2.6)	(2.7)	(-0.5)	(3.5)

Core PCE Inflation

	Release Date	2009Q3	2009Q4	2009 Q4/Q4	2010 Q4/Q4
FRBNY	9/16/2009	1.4	1.1	1.4	1.1
		(1.2)	(1.0)	(1.3)	(1.4)
Median SPF	8/14/2009	1.2	1.2	1.3	1.4
		(1.2)	(1.2)	(1.3)	(1.4)
Macro Advisers	9/8/2009	1.2	0.9	1.3	0.9
		(1.4)	(0.9)	(1.5)	(0.7)

CPI Inflation

	Release Date	2009Q3	2009Q4	2009 Q4/Q4	2010 Q4/Q4
FRBNY	9/16/2009	3.7	1.4	1.0	1.5
		(6.6)	(1.6)	(1.7)	(1.6)
Blue Chip	9/10/2009	2.7	1.8	0.8	1.8
		(2.5)	(1.6)	(0.7)	(1.9)
Median SPF	8/14/2009	1.6	1.8	0.4	1.8
		(1.6)	(1.8)	(0.4)	(1.8)
Macro Advisers	9/8/2009	3.4	1.4	0.9	1.1
		(3.8)	(1.0)	(0.8)	(1.1)

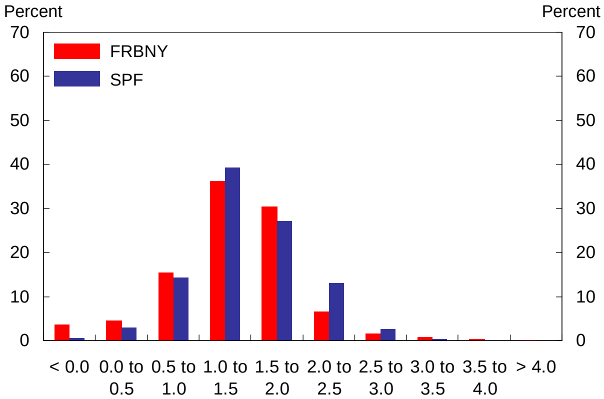
Core CPI Inflation

	Release Date	2009Q3	2009Q4	2009 Q4/Q4	2010 Q4/Q4
FRBNY	9/16/2009	1.5	1.2	1.6	1.3
		(1.8)	(1.5)	(1.8)	(1.4)
Median SPF	8/14/2009	1.3	1.3	1.3	1.4
		(1.3)	(1.3)	(1.3)	(1.4)
Macro Advisers	9/8/2009	1.4	0.9	1.6	0.9
		(1.3)	(0.8)	(1.5)	(1.0)

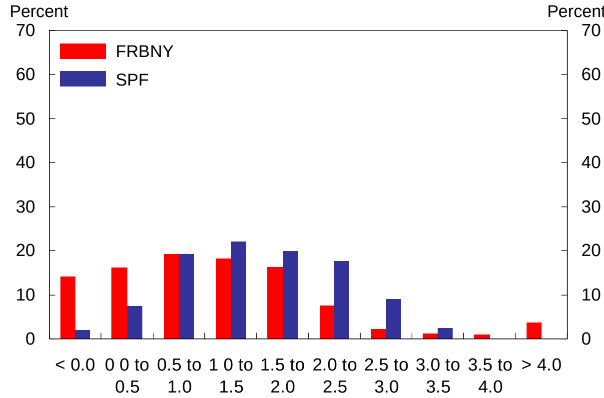
B. FRBNY Forecast Details

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

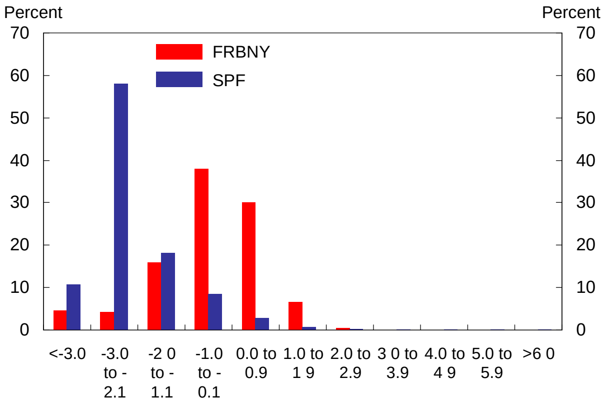
2009Q4/Q4 Core PCE Inflation Probabilities



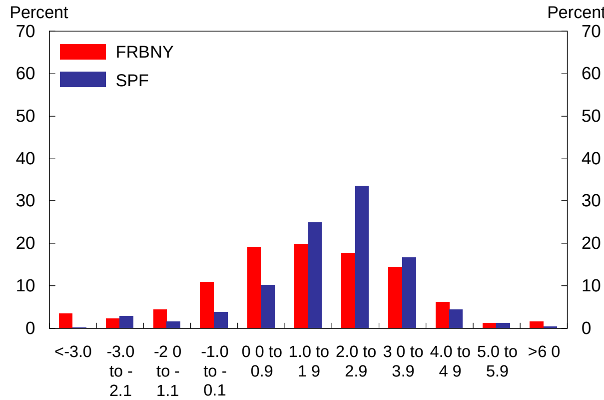
2010Q4/Q4 Core PCE Inflation Probabilities



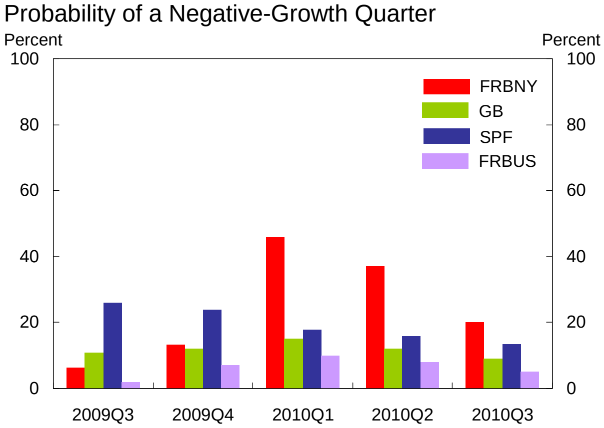
2009/2008 Real GDP Growth Probabilities



2010/2009 Real GDP Growth Probabilities



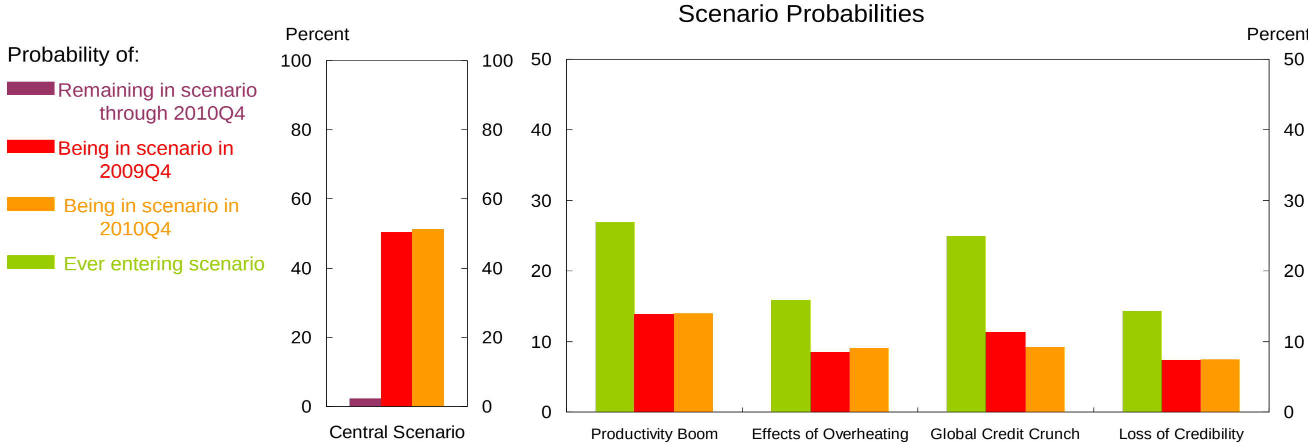
Probability of a Negative-Growth Quarter



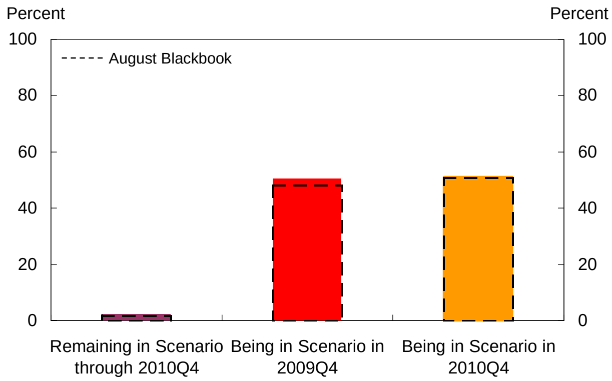
C. FRBNY Forecast Distributions

Exhibit C-1: Risks

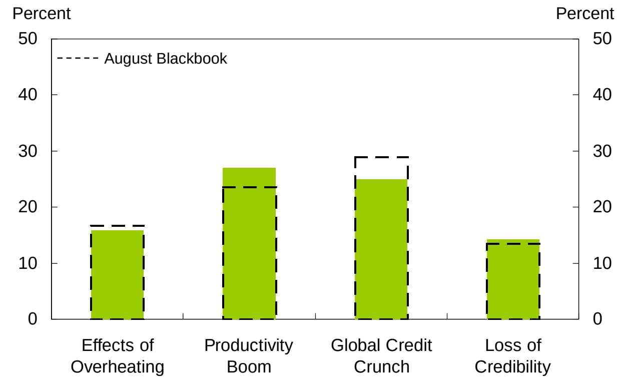
Scenario Probabilities



Change in Central Scenario Probabilities



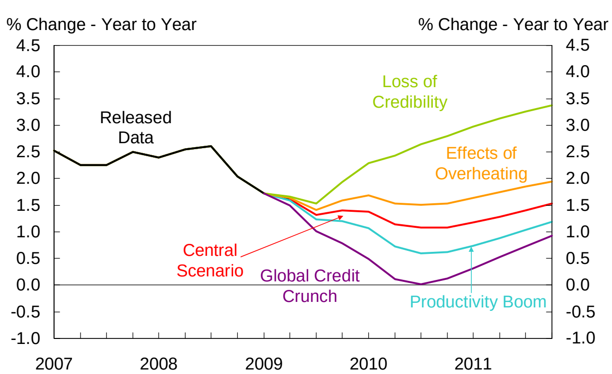
Change in Alternative Scenario Probabilities*



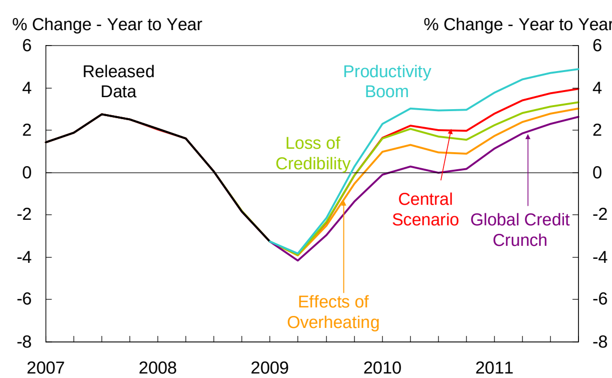
*Probability of ever reaching scenario

Exhibit C-2: Projections under Alternative Scenarios

Core PCE Inflation under Alternative Scenarios



Real GDP Growth under Alternative Scenarios

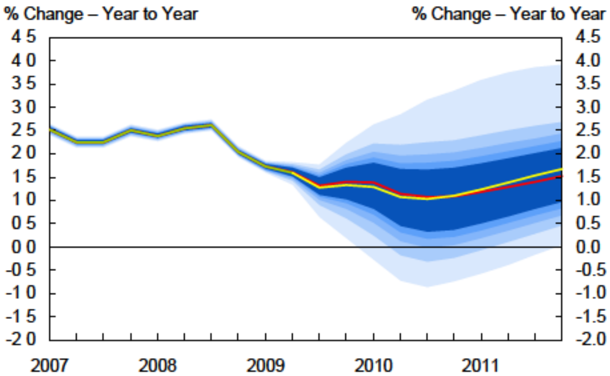


Source: MMS Function (FRBNY)

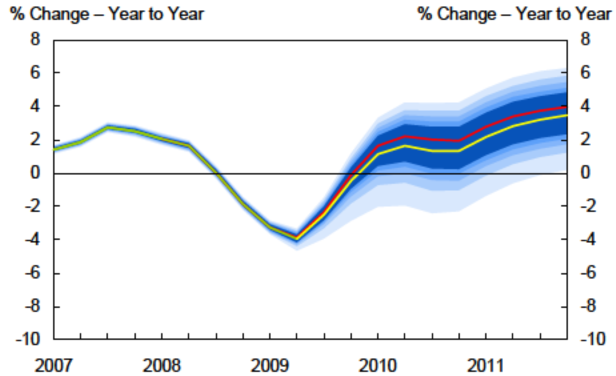
C. FRBNY Forecast Distributions

Exhibit C-3: Inflation and Output Forecast Distributions

Core PCE Inflation Forecast Distribution

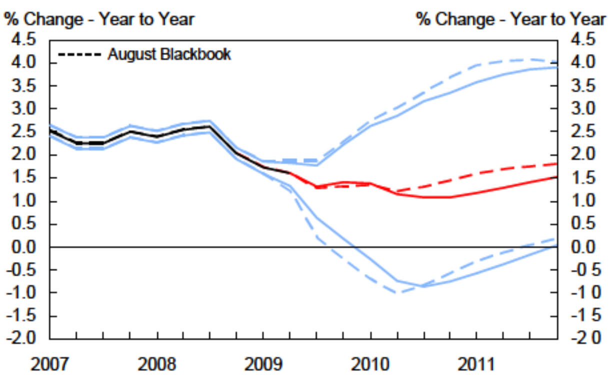


Real GDP Growth Forecast Distribution

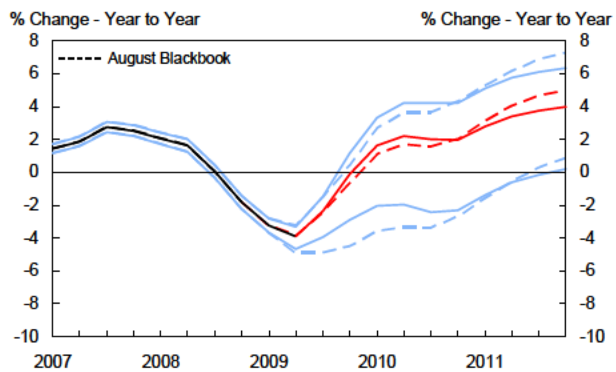


The yellow line is the expected value of the forecast distribution, the red line is the central scenario projection, and the green line is released data. The shading represents the 50, 60, 70, 80, and 90 percent chance that the four-quarter change will be within the respective range.

Change in Core PCE Inflation Forecast Distribution

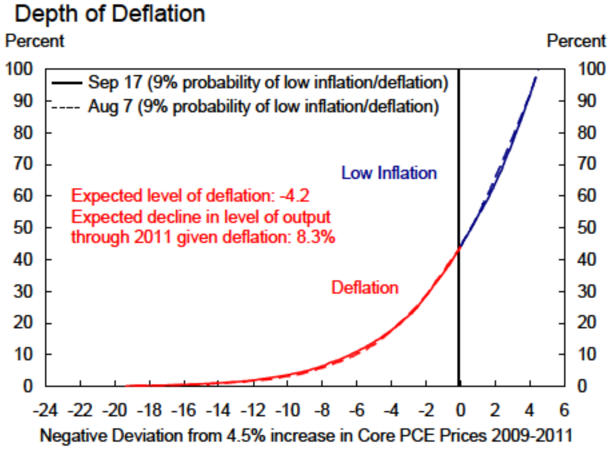


Change in Real GDP Growth Forecast Distribution

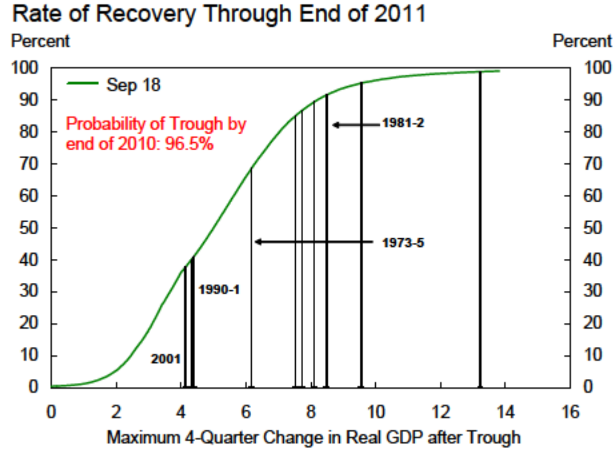


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from previous Blackbook.

Depth of Deflation



Rate of Recovery Through End of 2011

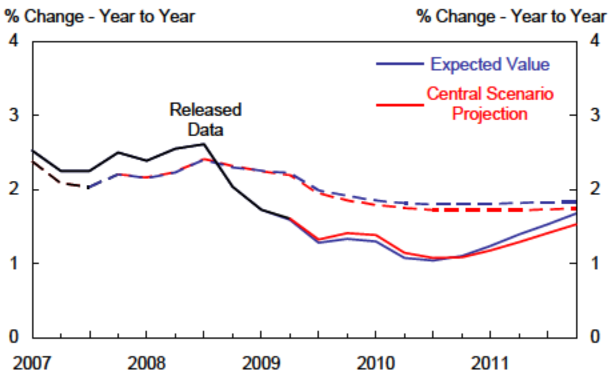


Source: MMS Function (FRBNY)

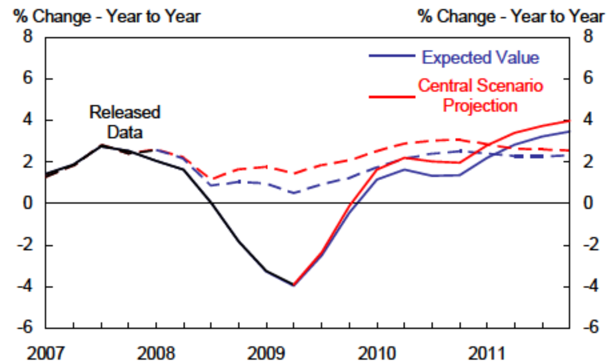
C. FRBNY Forecast Distributions

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

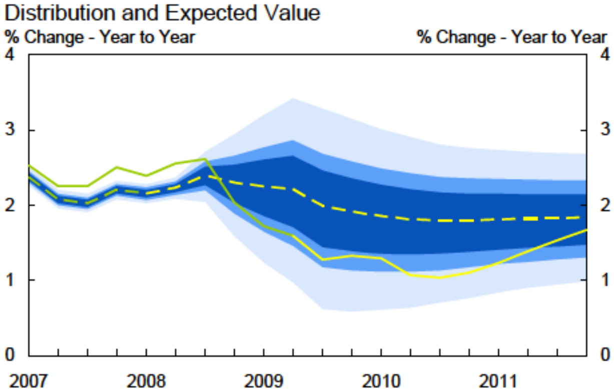
One-Year Comparison of Core PCE Inflation Forecast



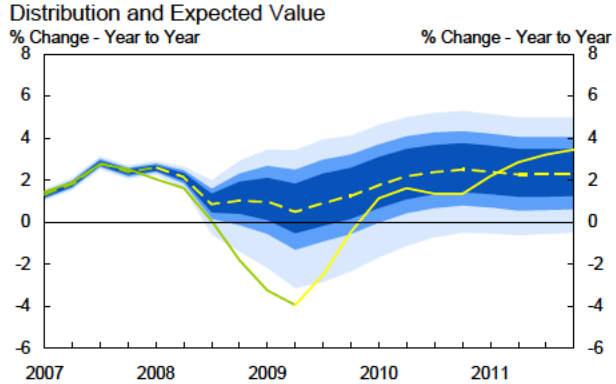
One-Year Comparison of Real GDP Growth Forecast



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



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



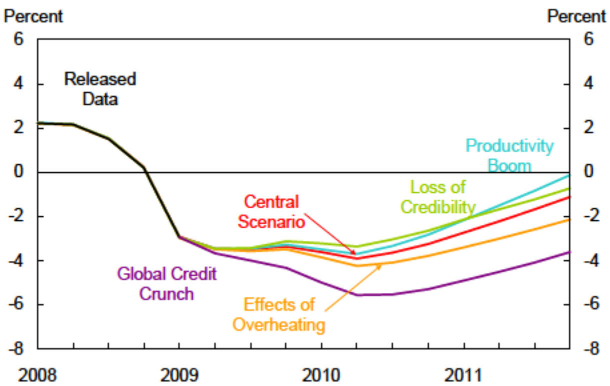
The solid yellow line is the **current** expected value of the forecast distribution, while the dashed yellow line is the **September 2008** expected value. The shading represents the 50, 70 and 90 percent probability intervals from the **September 2008** forecast. The green lines are released data.

Source: MMS Function (FRBNY)

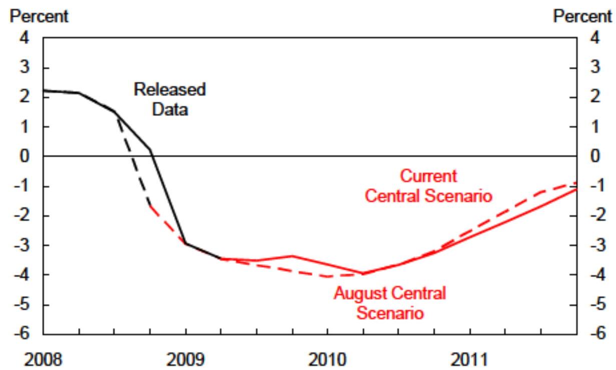
D. FRBNY Fed Funds Rate Projections

Exhibit D-1: *Baseline* Policy Rule Analysis

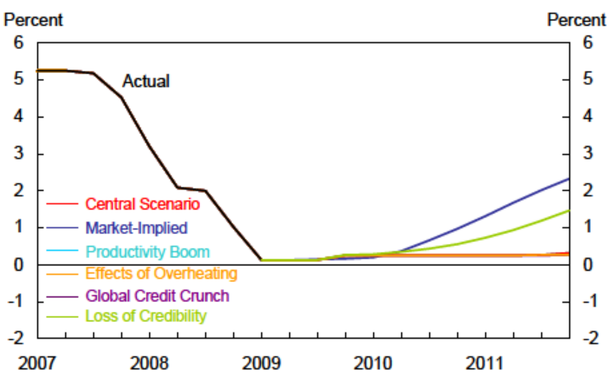
Real FFR under Alternative Scenarios



Change in Central Scenario Real FFR



Nominal FFR under Alternative Scenarios



Change in Central Scenario and Market-Implied Nominal FFR

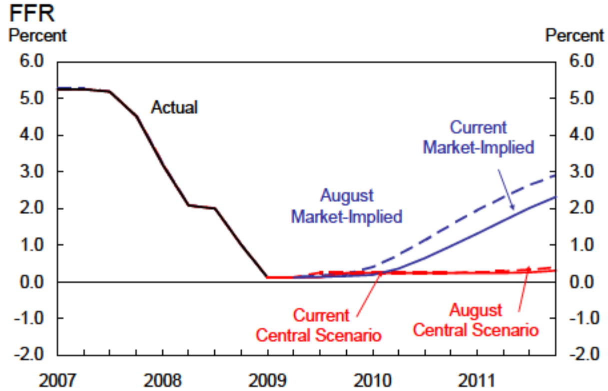
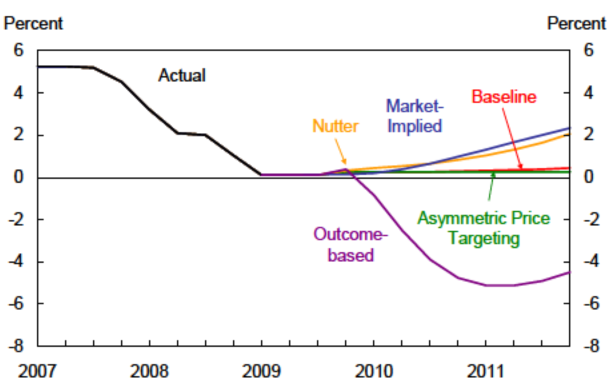


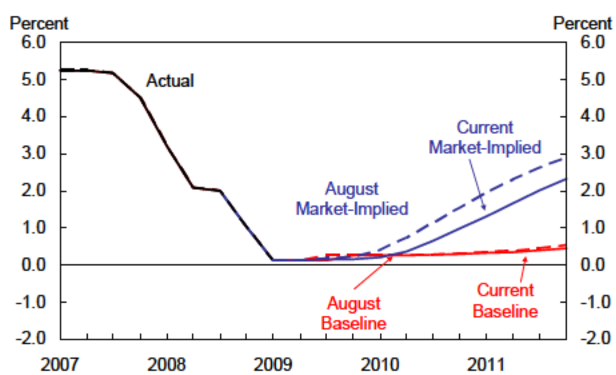
Exhibit D-2: Alternative Policy Rules under Expected Value of Forecast Distribution

Nominal FFR using Alternative Policy Rules*



*Evaluated using yellow line from C-3

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



*Evaluated using yellow line from C-3

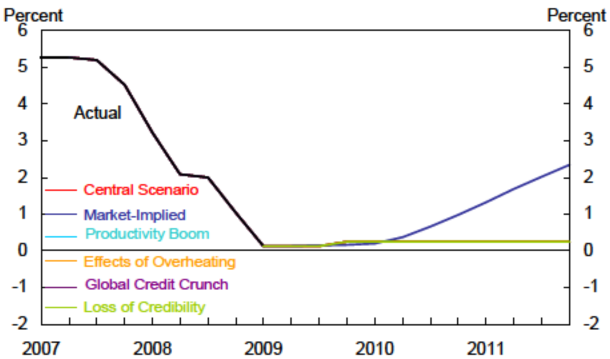
Source: MMS Function (FRBNY)

D. FRBNY Fed Funds Rate Projections

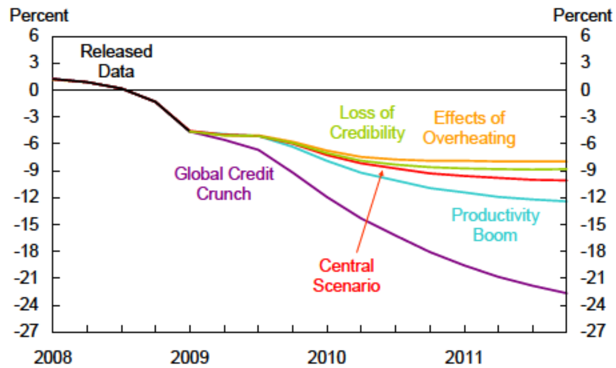
Exhibit D-3: Alternative Policy Rule Analysis

Policy Rule: *Asymmetric Price Targeting*

Nominal FFR under Alternative Scenarios

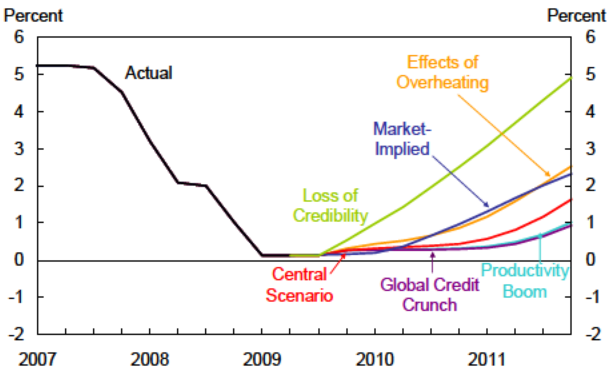


Real FFR under Alternative Scenarios

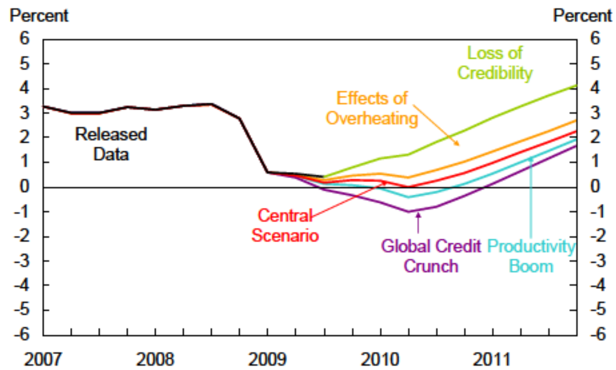


Policy Rule: *Nutter*

Nominal FFR under Alternative Scenarios

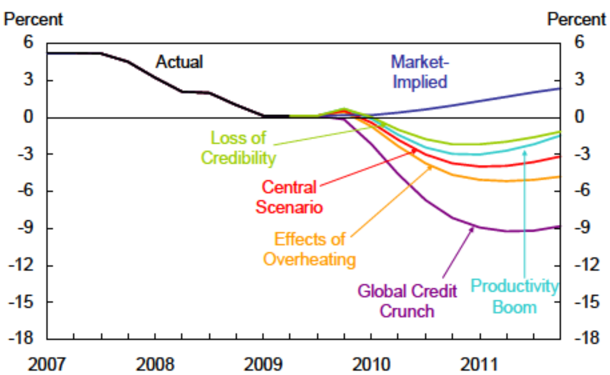


Real FFR under Alternative Scenarios

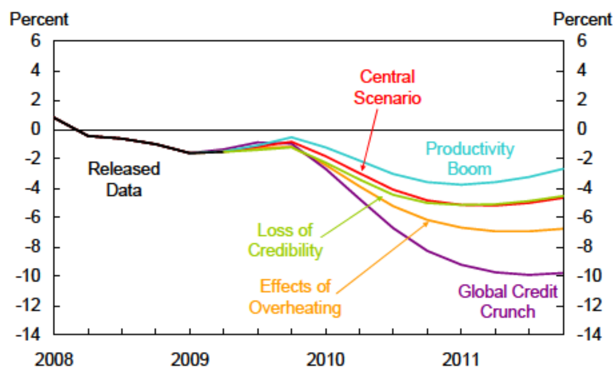


Policy Rule: *Outcome-based*

Nominal FFR under Alternative Scenarios



Real FFR under Alternative Scenarios



Source: MMS Function (FRBNY)

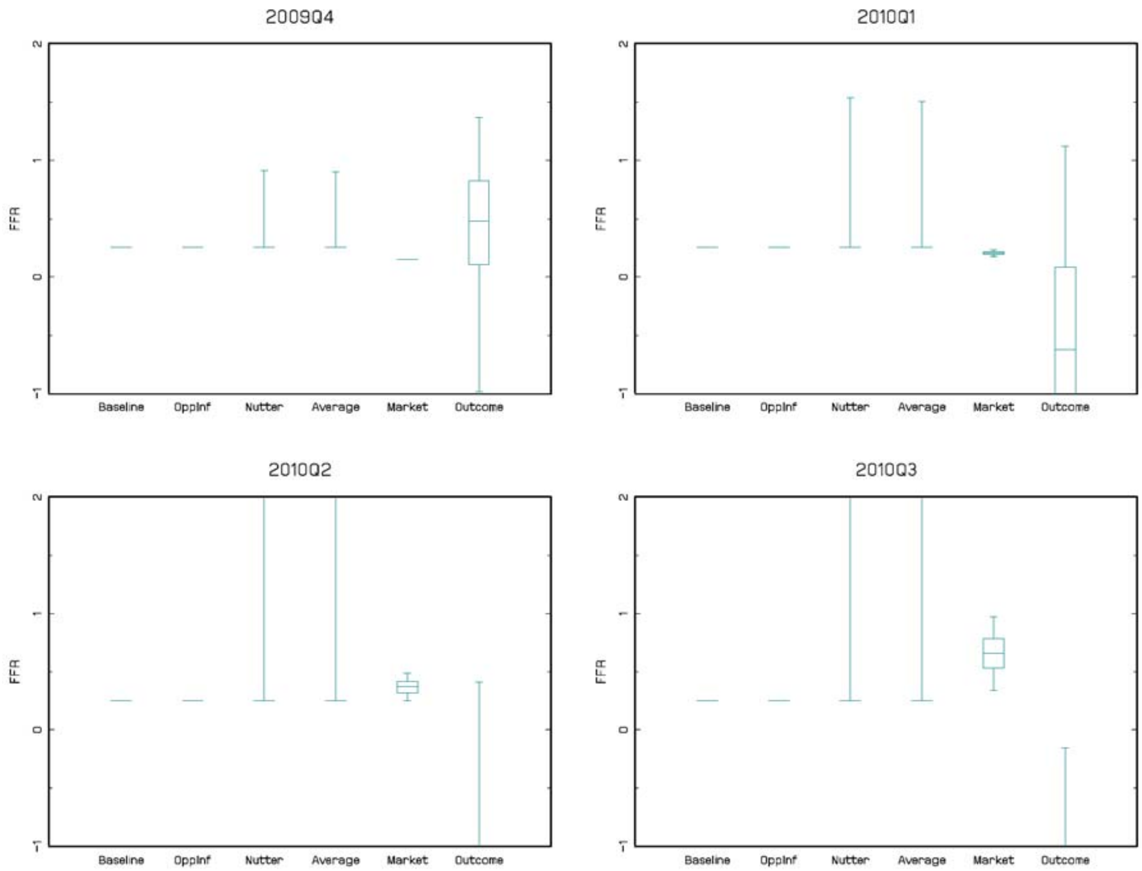
D. FRBNY Fed Funds Rate Projections

Exhibit D-4: Comparison between Market and Policy Rule FFR Expectations: 2009Q3

"Average" Weights:

Rule	Current	Aug Blackbook
Baseline	0.01	**0.01**
Opportunistic Disinflation	0.01	**0.01**
Nutter	0.98	**0.98**

Exhibit D-5: FFR Distributions



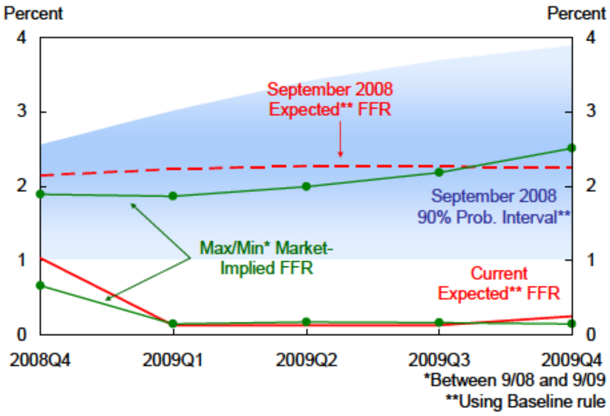
Note: The box represents the 50% probability interval, the line in the box the median, and the tails the 90% probability interval.

Source: MMS Function (FRBNY)

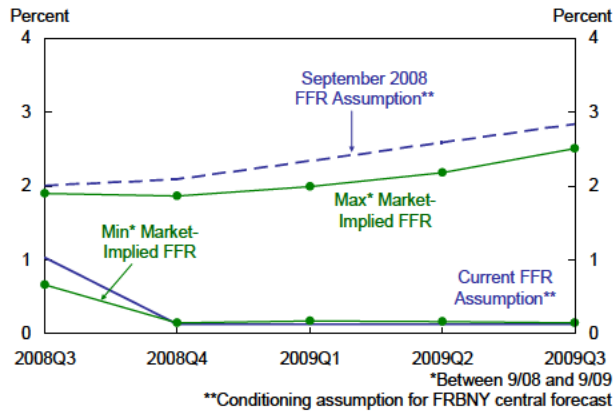
D. FRBNY Fed Funds Rate Projections

Exhibit D-6: Evolution of FFR Expectations and Assumption

FFR Forecast Distribution and Market-Implied FFR



FFR Conditioning Assumption and Market-Implied FFR



Source: MMS Function (FRBNY)

Alternative Scenario Descriptions

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

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

Alternative 1: *Productivity Boom*

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

Alternative 2: *Productivity Slump*

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

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

Alternative 3: *Effects of Overheating*

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

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

Alternative 4: *Global Credit Crunch*

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

Alternative 5: *Loss of Credibility*

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

Alternative 6: *Global Deflation*

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

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

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

Policy Rule Descriptions

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

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

Policy Rule – Baseline Specification:

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

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

The two variants of the *Baseline* rule that we use are the *Asymmetric Price Targeting* and *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.[2] In each quarter over the forecast horizon, the rule reacts to the cumulative gap between a 1.5% price level path and the actual path on the downside; the rule is asymmetric because price-level targeting is only implemented on the downside. When the cumulative gap in inflation is greater than 1.5% per year, the policy rule reverts to targeting the gap between four-quarter changes in inflation and the inflation objective, just as in the *Baseline* rule.

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

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)[3].

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

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