# FRBNY BLACKBOOK UPDATE

## **RESEARCH AND STATISTICS GROUP**

FOMC Background Material

October 2013

**CONFIDENTIAL (FR) Class II FOMC** 

# FRBNY BLACKBOOK UPDATE

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## 1. Policy Recommendation and Rationale

### Summary:

The effects of the partial government shutdown and the debt ceiling negotiations have limited our ability to provide a reliable assessment of economic and financial market developments since the September Blackbook. In light of these events and incoming data that have been mixed, we recommend maintaining the current policy stance, as well as continuing the asset purchase program at the current pace until we are able to judge with confidence that the outlook for the labor market has improved substantially. The FOMC should reaffirm the current state-contingent forward guidance regarding the federal funds rate. We do not recommend introducing additional guidance at this time regarding the post-liftoff range for the FFR, as we are rather skeptical about the credibility and effectiveness of such changes in the eyes of market participants. We favor the continued testing and assessment of potential new tools to improve control of short term rates under conditions of a large Fed balance sheet, and we also recommend a review of the guidance regarding the asset purchase program.

### Background:

• The partial government shutdown and debt ceiling negotiations have hampered our assessment of economic and financial developments over the intermeeting period by delaying key reports on retail sales, inflation and housing for September, as well as by generating some anomalous behavior in financial markets. While data on retail sales and durable goods released early in the intermeeting period as well as readings from the non-manufacturing ISM survey point to a softer near-term outlook, this has been offset by strength in construction spending. The recently released September labor market report showed little significant change in labor market conditions from those of recent months. With regard to the housing sector, it is difficult to judge if the recent leveling off in housing activity indicates a pause or a more substantive slowing in the housing recovery. Finally, although recent data suggest that headwinds from the Euro area and China may have abated, at least

temporarily, data in a number of major emerging market economies remain weak, suggesting that the global economic outlook remains subdued.

- The signal-to-noise ratio in economic data releases could be below normal through at least early December. While much of the collection for the major September data releases was done before the shutdown, suggesting only a delay in release with little impact on quality, October data may be subject to additional issues due to disruptions in the sampling of households and businesses. November data should be collected under normal procedures, but they may remain difficult to interpret because of lingering effects of the shutdown and reopening.
- There are additional concerns about economic effects arising from the conflicts about the U.S. fiscal budget and the debt ceiling. In particular, measures indicating heightened policy uncertainty and ongoing declines in consumer confidence suggest factors that could lower growth of real activity, with their effects potentially persisting due to the temporary nature of the resolution of these conflicts.
- While it is too early to provide a definitive assessment of the impact of recent fiscal developments on our near-term central forecast for real growth, we see modestly greater downside risks to the outlook from fiscal consolidation than we did in September.
- Although it has stabilized, PCE inflation continues to run below the FOMC's 2% longer-run objective. The inflation outlook and risks have not changed substantially.

Our policy recommendation:

1) No reduction at this time in the pace of asset purchases. *Rationale*: The state of the economy and the outlook for 2013Q3 and Q4, as well as additional uncertainty in the outlook due to the absence of key data releases, are not consistent with a reduction in the pace of purchases. Moreover, concerns about renewed conflicts over the U.S. fiscal budget and the debt ceiling in early 2014 suggest that headwinds to the recovery may not abate to the extent we had envisioned. A reduction in the pace of purchases in such circumstances would

be contrary to the state contingency of the policy, possibly raising concerns about the FOMC's commitment to other dimensions of policy (such as forward guidance on the FFR). Even so, it must be recognized that the current pace of the LSAP program is not indefinitely sustainable, as concerns from some FOMC participants and market participants about the ballooning size of the balance sheet will eventually outstrip the ongoing benefits stemming from downward pressure on longer-term rates. We believe that a tapering decision can be postponed for somewhat longer, but probably not beyond the first half of 2014. When this happens, it will be important to have another set of policy tools available to provide a publicly verifiable signal of further policy accommodation if needed. A reduction in the IOER may be one of such tools, as we discuss under 3).

- 2) No change in forward guidance. *Rationale*: Current thresholds and guidelines regarding the FFR are consistent with our view of an appropriate policy stance. The FOMC should reaffirm that the forward guidance on the FFR is not affected by any change in the purchase program. Nevertheless, given the response to the contingent path laid out at the June press conference, the FOMC should be ready to face the possibility that market participants will interpret a tapering decision as a signal of the start of removal of accommodation, prompting tighter financial conditions than warranted. Attempts to "strengthen" the forward guidance, for instance by introducing communication about a patient approach for the post-liftoff path of the interest rate, while attractive theoretically, may lack the effectiveness and credibility necessary to provide policy accommodation.
- 3) The FOMC should continue the testing in size of an overnight reverse repo (RRP) facility, accelerating the pace of introduction of a full allotment facility if the program is deemed satisfactory. *Rationale*: An overnight full allotment RRP facility could reduce some of the perceived costs associated with a large Fed balance sheet, alleviating concerns that could lead to a too-rapid reduction in the balance sheet in a normalization process. Also, by providing a firmer floor on short-term rates, a full implementation of an overnight RRP

facility may reduce concerns associated with a reduction in the IOER, and thus increase the appeal of using IOER for enhancing accommodation in the near future if needed, for instance, to counteract a potential tightening in financial conditions associated with LSAP tapering.

4) The FOMC should undertake a review of its guidance regarding the asset purchase program. Although there has been considerable discussion about the asset purchase program, the movements in market prices in response to the September FOMC decision not to change the pace of purchases and the subsequent shifts in market expectations of the balance sheet path speak to the need to revisit the framework of the program. In particular, the reaction of the market-implied expected FFR path following the June and September FOMC meetings indicate that the FOMC should recognize more fully that the program is part of the overall policy stance and likely cannot be separated from the FFR guidance. Consequently, the FOMC should specify the condition(s) that would be consistent with the qualitative objective of "substantial improvement in labor market conditions." One possibility would be to link the objective to a threshold value in cumulative payroll employment gains during the recovery. This more concrete threshold has the advantage of being indicative of demand factors and overall labor market conditions, while remaining data dependent in nature. We are more skeptical about the need to communicate specific details about the path of the purchase pace based on observed job gains. Any "simple rule" linking tapering mechanically to a narrow measure of the degree of progress in the labor market - such as employment gains or reduced unemployment - may create the impression that the policy stance is on a preset course regardless of economic developments and financial conditions.

# 2. Outlook and Risks Update

## 2.1 Central Forecast

## **Intermeeting Developments**

The normal flow of economic data releases has been delayed due to the partial government shutdown. However, the data that are available have led us to nudge upward our estimate of growth of real GDP in the third quarter to around 2 1/4% (annual rate) from around 1 ½% a few weeks ago. Most of this increase was due to the August release of construction spending, which reported decent increases in nominal spending in August on top of upwardly revised levels of activity in July. This led to some marking up of residential investment, business investment in nonresidential structures, and spending by state and local governments. In addition, inventory investment now looks to have been somewhat stronger than previously expected. But this is likely to be followed by less inventory investment in the fourth quarter.

While this modestly stronger projected growth rate for the third quarter is certainly welcome, it leaves the economy continuing on the same growth trajectory that has been in place for the past two and one half years. Moreover, while there are only a few scattered indicators regarding economic activity in the fourth quarter, what there is suggests that we entered the final three months of 2013 with less forward momentum than we thought would be the case.

We estimate that real PCE grew at just a 1.5% annual rate in the third quarter, down from the 2% pace of the first half of 2013, due mainly to a decline in consumer spending on utilities. While September was somewhat warmer than the average of the preceding five years, the third quarter overall was somewhat cooler than normal. Excluding utilities, real PCE is expected to have increased around 2% in the third quarter, modestly stronger than over the first half of the year. Consumer spending continues to be led by durable goods. Sales of light weight motor vehicles averaged 15.7 million units in the third quarter, up from 15.5 million in the second quarter and up 8.5% over the 2012Q3 pace of 14.5 million

units. Spending on furniture and other household durable has also grown at a strong pace, likely reflecting the pickup in housing market activity. The personal saving rate for the third quarter is projected to be 4.7%, up from 4.3% over the first half of 2013.

Real residential investment is expected to have increased at around an 11 ½% annual rate in the third quarter, modestly slower than the first half growth rate. Total housing starts should come in at about 890,000 units (seasonally-adjusted annual rate) in the third quarter, somewhat below the first half pace of 913,000. Consequently, the growth of construction put-in-place for single- and multi-family units is slowing. This slowing is being partially offset by strong growth of brokers' commissions and improvements. Most available indicators suggest that the level of housing market activity, while not deteriorating any further, has not yet begun to shake off the rise of mortgage rates that occurred earlier this year. For example, the Mortgage Bankers Associations purchase mortgage applications averaged 182.5 over the first three weeks of October, well below the recent high of 218.5 in the third week of April.

Business fixed investment is projected to have increased in the 4% to 5% annual rate range in the third quarter, comparable to the second quarter pace. Business investment in nonresidential structures has rebounded with double digit growth rates in the second and third quarters following a steep decline in the first quarter. Within this broad category, individual sectors experiencing robust growth include lodging, power generation, and petroleum and natural gas exploration and distribution. The Architecture Billings Index, which had fallen below 50 in April of this year, rebounded to 53.8 in August, comparable to its average level for all of 2006. In contrast, high frequency data on shipments of nondefense capital goods suggest that growth of business investment in new equipment remained sluggish in the third quarter following growth of just 2 ½% (annual rate) in the first half of 2013.

Recent trade data suggest that net exports will provide a meaningful boost to growth over the second half of 2013 after having exerted a drag of 0.2 percentage points over the first half of the year. After stalling over the period from 2012Q3 through 2013Q1, growth of exports rebounded in the second quarter and appears to be well maintained in the third quarter. In particular, exports of foods, feeds, and beverages and industrial supplies and materials have rebounded in recent months, perhaps reflecting a firming of global manufacturing activity. After rebounding a bit in the second quarter, growth of imports appears to have slowed again in the third quarter. The only category of imports exhibiting any strength is light vehicles.

Projecting current quarter growth of real federal consumption expenditures and gross investment is always troublesome due to the lack of relevant high frequency data. Nominal defense outlays in July and August were somewhat above the average of the second quarter. But we have penciled in a 4% annual rate decline in federal spending in 2013Q3 following the relatively modest 1.6% decline of the second quarter. We have a somewhat clearer idea of the expected decline for the entire calendar year than for individual quarters based on analysis of the federal budget prepared each year by the BEA. Both employment and construction spending at the state and local level has rebounded in the third quarter, such that growth of around 1 ½% (annual rate) is expected in the third quarter following growth of around ½% in the second quarter. We have not had two consecutive quarters of positive growth in this sector since 2009.

Third quarter data on the labor market showed further slowing of gains in nonfarm payroll employment and in hours worked. Private payrolls increased an average of just 129,000 over the third quarter, down from an average of 190,000 in the second quarter and over 200,000 in the first quarter. Growth of hours worked slowed to 1.2% (annual rate) from 2.1% in the second quarter and 3.6% in the first quarter. With growth of average hourly earnings essentially unchanged at 2%, this slowing in growth of hours worked results in a comparable slowing of growth of wage and salary income.

The unemployment rate declined by another 0.1 percentage point in September, bringing the total decline since June to 0.4 percentage points after being unchanged from March to June. The labor force participation rate was unchanged at 63.5 in September but was 0.3 percentage points below the June level. Over the quarter, the participation rates of those

aged 25 to 54 and those aged 55+ declined while the participation rate of those aged 16 to 24 was relatively stable.

Manufacturing employment was essentially unchanged in the third quarter while hours worked in that sector fell at a 0.5% annual rate. This was the second consecutive quarter of declining employment and hours. The bulk of the weakness has been in the nondurable goods sector, with industries such as basic chemicals, printing, and apparel experiencing significant increases in inventory/shipments ratios over the first half of 2013. Nonetheless, the ISM manufacturing index moved to 56.2 in September, its highest level since April of 2011, hopefully indicating that this inventory cycle has run its course.

The July and August price data suggest that the slowing of both total and core inflation has ended, at least for now, but with both measures below the FOMC's target. We expect the total PCE deflator to increase at a 2% annual rate in the third quarter after declining at a 0.1% annual rate in the second quarter. As of August, the year-over-year change of this index was 1.2%, up from a recent low of 0.9% in April. Energy prices likely increased about 11% (annual rate) in the third quarter after falling at a 12% annual rate in the second quarter. The core PCE deflator is expected to have increased at a 1.6% annual rate in the third quarter following an increase of just 0.6% in the second quarter. The year-over-year change of the core PCE deflator was 1.2% in August, close to where it was in the preceding four months. The slowing of core inflation was due primarily to a protracted slowing in the rate of increase of core goods prices. Such prices were rising in excess of 2% in late 2011 but were falling slightly by the second quarter of 2013. Our models suggest that this pronounced slowing was due to falling import prices over the past year or so.

### The Outlook.

We expect growth of between 2% and 2 ¼% (annual rate) in the fourth quarter of 2013. Growth of real PCE is likely to rise to around 2%, its recent trend rate, which would leave the personal saving rate essentially unchanged. Residential investment is expected to

FRBNY - cleared for release

continue to grow, but at a somewhat slower rate due to the leveling off of housing starts. Business fixed investment appears to be on a somewhat better footing, though it is still likely to experience only a single-digit growth rate. And the net export growth contribution is expected to move up to around ½ percentage point, due in part to residual seasonality in oil imports. On the negative side, we expect the recent partial government shutdown to subtract about ¼ percentage point from the fourth quarter growth rate. While nominal GDP will not be affected since furloughed federal workers will be paid, the deflator for federal government consumption and gross investment will be boosted to reflect the loss of hours worked, thereby lowering real GDP. There should then be ¼ percentage boost to 2014Q1 growth as full output of the federal sector is restored.

Under our assumptions for growth in the fourth quarter, average monthly gains in nonfarm employment should rise to around 175,000, from just below 150,000 in the third quarter, due in part to an assumed slowing of the rate of growth of productivity back toward trend. As has been the case for some time, the path of the unemployment rate will depend in large part on the behavior of the participation rate. We assume that the participation rate will stabilize in the fourth quarter after having declined 0.4 percentage points over the past year. Under this assumption, the unemployment rate will likely average 7.2% in the fourth quarter, down from an average of 7.3% in the third quarter.

Given our projections for the second half of 2013, the Q4/Q4 growth rate for the entire year will come in at 2%, the same as in 2011 and in 2012. Given that the economy continued to grow at this rate in the face of substantial fiscal drag provides some evidence that the private sector has indeed strengthened over the past year. As such, we continue to expect the US economy to move to above potential growth in 2014 and 2015. However, we have lowered those projected growth rates somewhat, to 2.8% from 3.1% for 2014 and to 3% from 3  $\frac{1}{2}$ % for 2015. The primary source of this somewhat lower growth is a flattening of the expected path of housing starts over the forecast horizon given the higher path for long term interest rates.

One can cite several ongoing developments supportive of our expectations of stronger

growth. Key measures of household financial conditions are the best they have been in well over a decade. Household net worth, expressed as a percent of disposable income, has returned to its average of the previous decade, reflecting rising equity and home prices and declining liabilities. Credit standards are beginning to ease somewhat, such that we are now experiencing a fairly typical cyclical recovery of consumer spending on durable goods. Similarly, after five years in which housing production was below what is consistent with underlying demographic trends, it now appears that we have worked off the excess supply of housing built up during the boom years of the last decade. In addition, it appears that the worst of the downturn in economic activity in the Euro Area is behind us, as is the contraction in spending by state and local governments. Federal fiscal drag is likely to reach its maximum in the second half of 2013 and then begin to subside.

As the economy moves into higher gear, the unemployment rate is projected to fall to around 6 ½% by 2014Q4 and then to approach 5 1/2% by the end of 2015. This path of the unemployment rate is based on a gradual uptrend of the labor force participation rate as labor market conditions improve. With the gradual reduction of slack, a decline of the dollar, a firming in global demand, and the upward pull of anchored inflation expectations, inflation as measured by the PCE deflator is expected move back up to the mandate consistent range by the end of 2014 and may exceed 2% temporarily in 2015.

### 2.2 Alternative Scenarios and Risks

The current outlook for growth and inflation is based on limited information due to delays in key data releases resulting from the partial government shutdown. However, the data that are available have led us to mark down the medium-term growth forecast relative to the September Blackbook. The primary source of the somewhat lower growth is a flattening of the expected path of housing starts given the higher-path for longer-term interest rates. Concerns about economic effects arising from the conflicts over the U.S. fiscal budget and the debt ceiling have resulted in a slight shift to greater downside risks to growth, with the balance of risks for real activity skewed to the downside at medium-term horizons. There has been little change to the inflation outlook in terms of the forecasted path and risks, with the risks to inflation roughly balanced at near-term horizons and slightly to the downside at medium-term horizons [Exhibit C-3].

The changes in the overall risk profile reflect a small decline in the likelihood of the *Faster Growth* scenario, which is now associated with a probability of roughly 31%, and increases in the likelihood of the *Fiscal Consolidation* scenario and the *Global Credit Crunch* scenario, which have probabilities of approximately 36% and 14%, respectively [Exhibit C-1]. These adjustments mainly stem from increased fiscal headwinds.

Exhibit C-3 also displays the baseline forecasts from the FRBNY-DSGE model (orange line). The DSGE forecasts for core PCE inflation and real GDP growth are well below the mean and modal forecasts both in the near-term and in 2014-15, confirming the tendency in the September Blackbook. There has been little change in the forecast distribution for both core PCE inflation and real GDP growth.

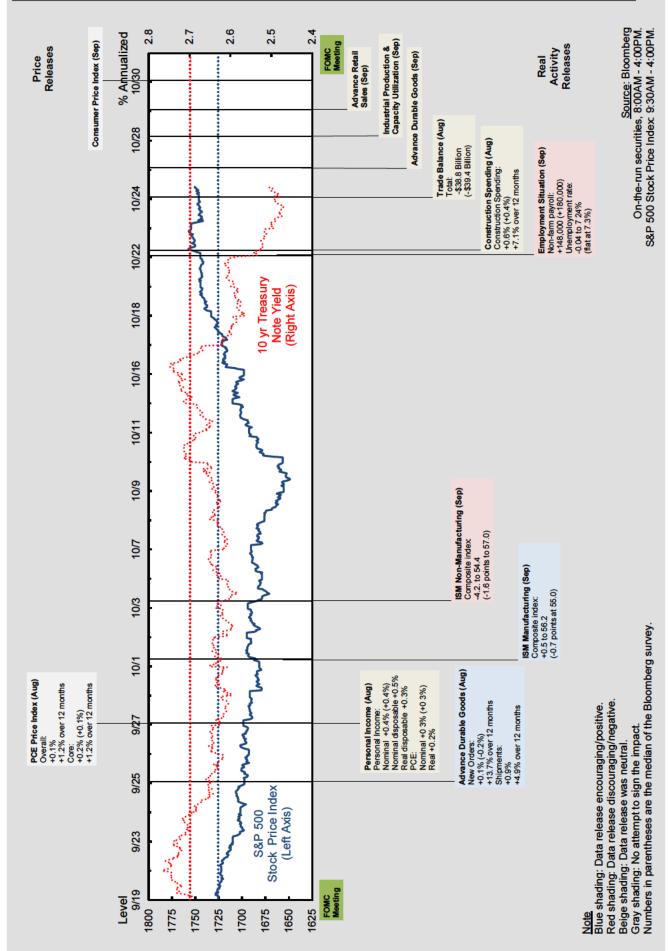
### **Forecast Comparison with the Tealbook**

- *Tealbook policy assumption*: The total size of the asset purchase program has been revised up by \$90 billion to \$1.3 trillion.
- The Tealbook forecast for real GDP growth in 2013 was marked down from 2.3% to 2.0%, while the forecast for 2014 was increased from 3.1% to 3.2%. Our 2013 forecast is also 2.0%, but we project a lower growth rate of 2.8% for 2014, marked down from 3.1%. The growing divergence in 2014 forecasts reflects ongoing differences in the projected paths of some spending components:
  - The largest difference is in residential investment. The Board staff views the decline in mortgage rates since September as reversing drag on single-family home sales and construction, and they have increased the growth rate of residential investment in 2014 from 15.8% to 17.5%. In contrast, we have marked down our 2014 projection from 12.0% to 7.2% to reflect a flattening path of housing starts in response to rising interest rates.
  - While slightly lowering the forecast for consumption expenditure in 2013 and 2014 relative to the September Tealbook, the Board staff continues to anticipate a very strong rebound in 2014, with a growth contribution (Q4/Q4) of 2.3 percentage points. The rebound is supported by wealth effects from rising house and stock market prices and a lower trajectory for interest rates, along with a temporary boost from the reversal of the government shutdown. In contrast, we expect consumption expenditure to remain subdued, with a growth contribution of 1.9 percentage points for 2014, down 0.1 percentage point from September.
  - The difference in the 2014 growth contributions from business fixed investment between the Blackbook and Tealbook remains unchanged from September, with a 1.0 percentage point contribution and a 0.6 percentage point contribution, respectively.
  - Finally, we see a recovery in state and local spending in 2014 with a growth contribution of 0.2 percentage points, while the Tealbook projects no contribution from state and local spending. This difference is offset partially

by a greater drag in Federal spending, with our projection of a -0.4 percentage point contribution versus the Board's projection of -0.3.

- Both the Tealbook and the Blackbook forecasts of 2013 productivity have been reduced. The Board has lowered its projected growth rate from 1.1% to 0.8%, which matches our projection of 0.8%, down from 0.9%. Our staff also projects lower productivity growth in 2014 at 1.3%, down from 1.5% in the September Blackbook. The Tealbook forecast of 2014 productivity growth is unchanged at 1.4%.
- The Board and our staff have nearly identical forecasts for the path of unemployment. While the Tealbook's forecast of a 63.2% participation rate in both 2013 and 2014 is similar to our forecast of 63.3% in 2013 and 63.4% in 2014, they reflect different dynamics: the Board staff maintains a slight downward trend in participation, while we anticipate a cyclical rebound. Both the Tealbook and Blackbook have reduced their 2014 average payroll employment growth since September. The Board staff has reduced its forecast from 192 thousand to 183 thousand, while we have reduced our forecast from 242 thousand to 221 thousand.

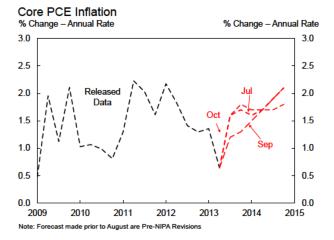
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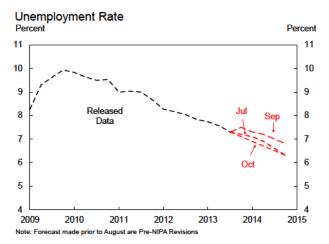


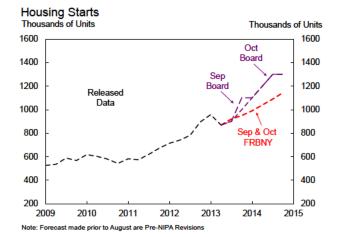
### Exhibit B-2: Evolution of Projected Quarterly Paths

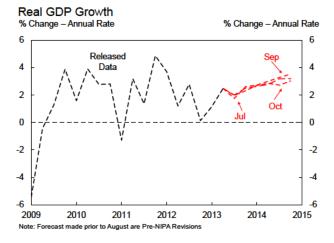
#### **Key Indicators**

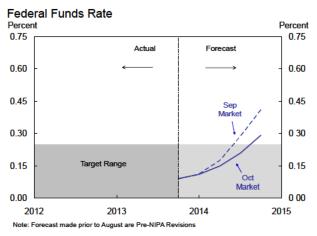
#### **Forecast Assumptions**

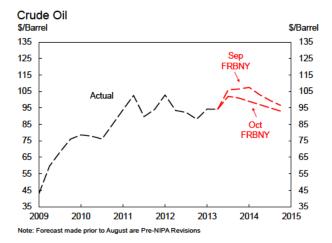












#### Source: MMS and IR Functions (FRBNY) and Federal Reserve Board

## Exhibit B-3: Near-Term Projections

|                                       | Quarter | ly Growth Ra | ites (AR) | Quarterly | Growth Con<br>(AR) | tributions |
|---------------------------------------|---------|--------------|-----------|-----------|--------------------|------------|
|                                       | 2013Q3  | 2013Q4       | 2014Q1    | 2013Q3    | 2013Q4             | 2014Q1     |
| OUTPUT                                |         |              |           |           |                    |            |
| Real GDP                              | 2.3     | 2.1          | 2.7       | 2.3       | 2.1                | 2.7        |
|                                       | (1.8)   | (2.6)        | (2.7)     | (1.8)     | (2.6)              | (2.7)      |
| Final Sales to Domestic Purchasers    | 1.8     | 1.8          | 2.5       | 1.8       | 1.8                | 2.6        |
|                                       | (1.7)   | (2.2)        | (2.7)     | (2.0)     | (2.1)              | (2.5)      |
| Consumption                           | 1.5     | 2.0          | 2.6       | 1.0       | 1.4                | 1.8        |
|                                       | (1.8)   | (2.3)        | (2.6)     | (1.2)     | (1.6)              | (1.8)      |
| BFI: Equipment                        | 2.0     | 6.0          | 8.0       | 0.1       | 0.3                | 0.4        |
|                                       | (2.0)   | (6.0)        | (8.0)     | (0.1)     | (0.3)              | (0.4)      |
| <b>BFI: Nonresidential Structures</b> | 12.0    | 10.0         | 8.0       | 0.3       | 0.3                | 0.2        |
|                                       | (7.0)   | (5.0)        | (6.0)     | (0.2)     | (0.1)              | (0.2)      |
| BFI: Intellectual Property Products   | 4.0     | 4.0          | 4.0       | 0.2       | 0.2                | 0.2        |
|                                       | (4.0)   | (4.0)        | (4.0)     | (0.2)     | (0.2)              | (0.2)      |
| Residential Investment                | 11.4    | 12.6         | 6.7       | 0.3       | 0.4                | 0.2        |
|                                       | (20.0)  | (12.0)       | (12.0)    | (0.6)     | (0.4)              | (0.4)      |
| Government: Federal                   | -4.0    | -10.0        | -4.8      | -0.3      | -0.8               | -0.4       |
|                                       | (-4.0)  | (-6.2)       | (-6.2)    | (-0.3)    | (-0.5)             | (-0.5)     |
| Government: State and Local           | 1.4     | 0.8          | 1.0       | 0.2       | 0.1                | 0.1        |
|                                       | (0.3)   | (0.3)        | (0.5)     | (0.0)     | (0.0)              | (0.1)      |
| Inventory Investment                  |         |              |           | 0.2       | -0.4               | 0.1        |
|                                       |         |              |           | (-0.4)    | (0.0)              | (0.1)      |
| Net Exports                           |         |              | -         | 0.3       | 0.6                | 0.0        |
|                                       |         |              |           | (0.4)     | (0.3)              | (-0.1)     |
| INFLATION                             |         |              |           |           |                    |            |
| Total PCE Deflator                    | 2.1     | 1.8          | 1.6       |           |                    |            |
|                                       | (2.2)   | (1.8)        | (1.7)     |           |                    |            |
| Core PCE Deflator                     | 1.6     | 1.8          | 1.7       |           |                    |            |
|                                       | (1.6)   | (1.7)        | (1.6)     |           |                    |            |
| PRODUCTIVITY AND LABOR COSTS*         | · · ·   |              |           |           |                    |            |
|                                       |         |              |           |           |                    |            |
| Output per Hour                       | 1.8     | 1.3          | 1.3       |           |                    |            |
|                                       | (1.4)   | (1.5)        | (1.5)     |           |                    |            |
| Compensation per Hour                 | 1.8     | 1.6          | 1.8       |           |                    |            |
|                                       | (2.3)   | (2.2)        | (2.4)     |           |                    |            |
| Unit Labor Costs                      | 0.0     | 0.3          | 0.5       |           |                    |            |
|                                       | (0.9)   | (0.7)        | (0.9)     |           |                    |            |

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

## Exhibit B-4: Medium-Term Projections

|                                       | Q4/Q4 Growth Rates |        | Q4/Q4 Growth Contributions |        |        |        |
|---------------------------------------|--------------------|--------|----------------------------|--------|--------|--------|
|                                       | 2012               | 2013   | 2014                       | 2012   | 2013   | 2014   |
| OUTPUT                                |                    |        |                            |        |        |        |
| Real GDP                              | 2.0                | 2.0    | 2.8                        | 2.0    | 2.0    | 2.8    |
|                                       | (2.0)              | (2.0)  | (3.1)                      | (2.0)  | (2.0)  | (3.1)  |
| Final Sales to Domestic Purchasers    | 2.1                | 1.5    | 2.7                        | 2.2    | 1.6    | 2.8    |
|                                       | (2.1)              | (1.6)  | (3.2)                      | (2.2)  | (1.6)  | (3.0)  |
| Consumption                           | 2.0                | 1.9    | 2.7                        | 1.4    | 1.3    | 1.9    |
|                                       | (2.0)              | (2.0)  | (2.7)                      | (1.4)  | (1.4)  | (1.9)  |
| BFI: Equipment                        | 4.5                | 3.2    | 9.5                        | 0.2    | 0.2    | 0.5    |
|                                       | (4.5)              | (3.1)  | (11.0)                     | (0.2)  | (0.2)  | (0.6)  |
| BFI: Nonresidential Structures        | 9.2                | 1.9    | 8.0                        | 0.2    | 0.1    | 0.2    |
|                                       | (9.2)              | (-0.8) | (7.2)                      | (0.2)  | (0.0)  | (0.2)  |
| BFI: Intellectual Property Products   | 2.9                | 2.5    | 4.0                        | 0.1    | 0.1    | 0.2    |
|                                       | (2.9)              | (2.7)  | (4.0)                      | (0.1)  | (0.1)  | (0.2)  |
| Residential Investment                | 15.5               | 12.7   | 7.2                        | 0.4    | 0.4    | 0.2    |
|                                       | (15.5)             | (14.3) | (12.0)                     | (0.4)  | (0.4)  | (0.4)  |
| Government: Federal                   | -2.3               | -6.1   | -5.7                       | -0.2   | -0.5   | -0.4   |
|                                       | (-2.3)             | (-5.1) | (-6.0)                     | (-0.2) | (-0.4) | (-0.4) |
| Government: State and Local           | -0.3               | 0.3    | 1.4                        | 0.0    | 0.0    | 0.2    |
|                                       | (-0.3)             | (-0.3) | (1.2)                      | (-0.0) | (-0.0) | (0.1)  |
| Inventory Investment                  |                    |        |                            | -0.5   | 0.3    | 0.1    |
|                                       |                    |        |                            | (-0.5) | (0.3)  | (0.1)  |
| Net Exports                           |                    |        |                            | 0.3    | 0.1    | -0.1   |
|                                       |                    |        |                            | (0.3)  | (0.1)  | (-0.3) |
| INCOME                                |                    |        |                            |        |        |        |
| Personal Income                       | 5.8                | 1.8    | 4.7                        |        |        |        |
|                                       | (5.8)              | (1.7)  | (4.9)                      |        |        |        |
| Real Disposable Personal Income       | 3.6                | -0.2   | 2.7                        |        |        |        |
|                                       | (3.6)              | (-0.4) | (2.8)                      |        |        |        |
| Personal Saving Rate                  | 6.6                | 4.7    | 4.8                        |        |        |        |
| · · · · · · · · · · · · · · · · · · · | (6.6)              | (4.4)  | (4.6)                      |        |        |        |
| Corporate Profits Before Taxes        | 2.7                | 4.8    | -0.6                       |        |        |        |
|                                       | (2.7)              | (5.1)  | (-0.3)                     |        |        |        |

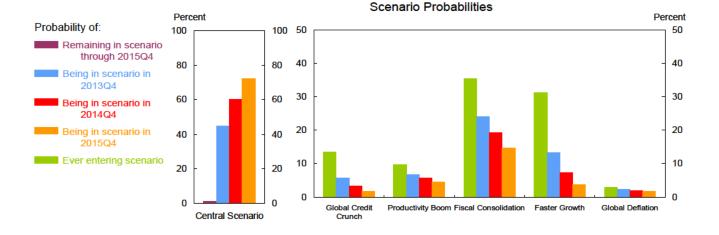
Note: Numbers in parentheses are from the previous Blackbook.

## Exhibit B-5: Medium-Term Projections, Continued

|  | Q4/Q4 Growth Rates |        |         |  |
|--|--------------------|--------|---------|--|
|  | 2012               | 2013   | 2014    |  |
| INFLATION                                    |                    |        |         |  |
| Total PCE Deflator                           | 1.7                | 1.2    | 1.7     |  |
|  | (1.7)              | (1.3)  | (1.9)   |  |
| Core PCE Deflator                            | 1.7                | 1.3    | 1.7     |  |
|  | (1.7)              | (1.4)  | (1.8)   |  |
| Total CPI Inflation                          | 1.9                | 1.5    | 2.1     |  |
|  | (1.9)              | (1.6)  | (2.2)   |  |
| Core CPI Inflation                           | 1.9                | 1.8    | 2.0     |  |
|  | (1.9)              | (1.8)  | (2.1)   |  |
| GDP Deflator                                 | 1.8                | 1.4    | 1.9     |  |
|  | (1.8)              | (1.3)  | (1.8)   |  |
| PRODUCTIVITY AND LABOR COSTS*                |                    |        |         |  |
| Output                                       | 2.8                | 2.3    | 3.3     |  |
|  | (2.8)              | (2.3)  | (3.7)   |  |
| Hours  | 1.9                | 1.3    | 2.0     |  |
|  | (1.9)              | (1.4)  | (2.2)   |  |
| Output per Hour                              | 0.9                | 0.9    | 1.3     |  |
|  | (0.9)              | (0.9)  | (1.5)   |  |
| Compensation per Hour                        | 5.3                | 0.1    | 1.8     |  |
|  | (5.3)              | (0.4)  | (2.4)   |  |
| Unit Labor Costs                             | 4.4                | -0.8   | 0.5     |  |
|  | (4.4)              | (-0.5) | (0.9)   |  |
| LABOR MARKET                                 |                    |        |         |  |
| Unemployment Rate (Avg. Q4 Level)            | 7.8                | 7.3    | 6.6     |  |
|  | (7.8)              | (7.2)  | (6.3)   |  |
| Participation Rate (Avg. Q4 Level)           | 63.7               | 63.3   | 63.4    |  |
|  | (63.7)             | (63.3) | (63.4)  |  |
| Avg. Monthly Nonfarm Payroll Growth (Thous.) | 181                | 171    | 216     |  |
|  | (181)              | (188)  | (242.0) |  |

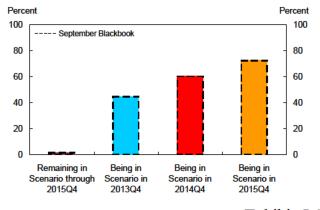
Note: Numbers in parentheses are from the previous Blackbook. \*Nonfarm business sector.

## C. FRBNY Forecast Distributions



### Exhibit C-1: Risks

Change in Central Scenario Probabilities



Change in Alternative Scenario Probabilities\*

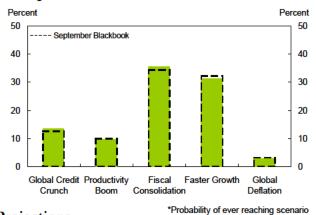
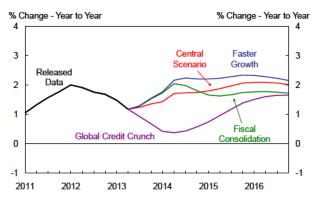


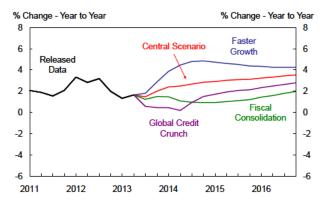
Exhibit C-2: Projections

under Alternative Scenarios

Core PCE Inflation under Alternative Scenarios Selected



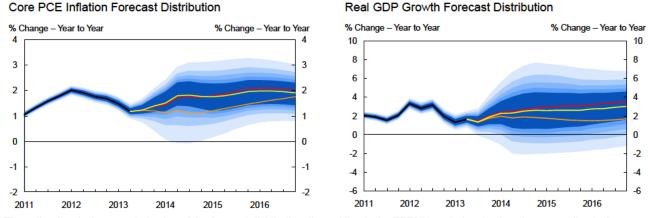
#### Real GDP Growth under Alternative Scenarios Selected



Source: MMS Function (FRBNY)

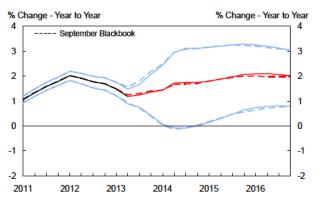
## C. FRBNY Forecast Distributions

#### Exhibit C-3: Inflation and Output Forecast Distributions

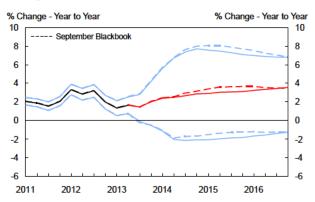


The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the fourquarter change will be within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

#### Change in Core PCE Inflation Forecast Distribution

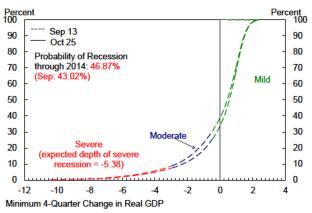


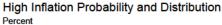
#### Change in Real GDP Growth Forecast Distribution

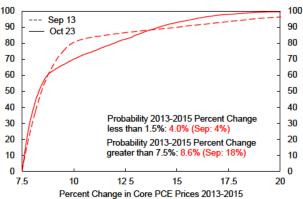


The blue lines are the 90% chance the four-quarter change will be within the lines, the red line is the central scenario projection, and the black line is released data. Dashed lines represent forecasts from the previous Blackbook.









Source: MMS Function (FRBNY)

Percent