FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

January 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

January 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Compared to the December *Blackbook,* we have lowered our modal forecast and added additional downside risk to the outlook. Under these conditions we recommend no change in the stance of monetary policy at the January FOMC meeting. Moreover, if economic and financial developments unfold as in our central outlook, we would recommend forgoing further monetary tightening at the March FOMC meeting as well. Going forward, we continue to advocate only a gradual pace of policy normalization, specifically at most two 25bps hikes by the end of 2016 and 3-4 additional 25bps hikes by the end of 2017 under our modal forecast. As the January meeting routinely includes a discussion of potential changes to the language of the consensus statement, we also suggest a number of changes to the structure of Federal Reserve communications that could facilitate a better understanding of the FOMC's reaction function.

The data released over the intermeeting period provided mixed signals on the U.S. economy. Our macro nowcast for 2015Q4 fell slightly, but that for 2016Q1 declined substantially. Turning to our judgmental forecast, we now expect that real GDP grew only 0.9% (annual rate) in 2015Q4, well below our estimate of its potential rate. The reduction in our projected growth rate for Q4 was driven primarily by weaker growth in personal consumption expenditures and business fixed investment, reflecting disappointing releases for those sectors. In addition, news throughout the intermeeting period about the manufacturing sector pointed to continued weakness; most notable was the decline of the ISM manufacturing index. This index was below its breakeven value of 50 for a second straight month and is at its lowest level since the end of the recession. By contrast, the labor market continued to display relative strength, with an increase in the nonfarm payrolls in December of 292,000 and upward revisions to the corresponding number for October and November.

All that said, the intermeeting period was dominated by external market developments that had a sizable influence on domestic financial conditions. In particular, extreme volatility reemerged in Chinese financial markets and translated into tighter global financial conditions. Since year-end, the S&P 500 index has fallen by approximately 8% and the yield curve has flattened notably. In addition, commodity prices have continued to fall and the dollar has strengthened further.

Against this backdrop, inflation has remained stable, but stubbornly below the FOMC's longer-run objective, with year-over-year core PCE inflation rate at 1.3% for the eleventh straight month. Survey measures of household medium- and longer-term inflation expectations rose slightly but remain at low levels by historical standards. Meanwhile, longer term forward breakeven inflation rates declined sharply, reaching historical lows and providing further evidence of market participants' concerns with weak output growth/low inflation risks.

In terms of the outlook, we have lowered our modal forecast for real GDP growth in 2016 and 2017. We now expect real GDP to rise by 2.0% and 1.7% in 2016 and 2017 (Q4/Q4), respectively, as compared to 2.3% and 1.9% in the December *Blackbook*. The changes in the forecast are driven mostly by a reduction in the expected pace of business fixed investment growth, offset somewhat by a reduced drag from trade due to weaker expected domestic demand. We continue to expect labor market conditions to improve gradually, with the unemployment rate projected to be near our 4¾% estimate of the longer-run natural rate of unemployment by mid-2016 and to remain around that level over the rest of the forecast horizon. With resource slack continuing to dissipate both overall and core PCE inflation are forecast to rise gradually from the currently low levels toward the FOMC's longer-run objective by end-2018 albeit at a pace slower than anticipated in the December *Blackbook*.

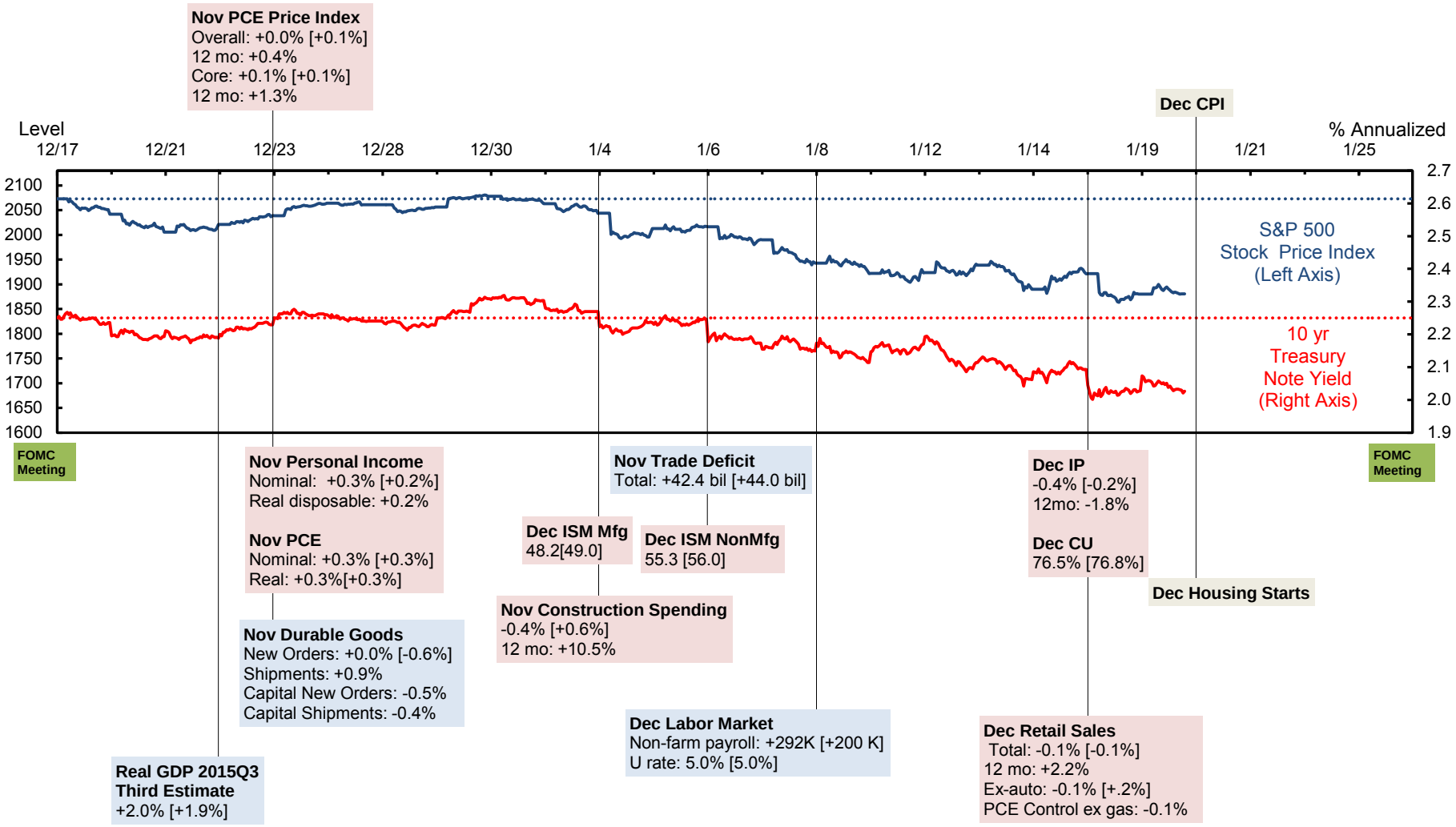
We continue to see the balance of risks as tilted to the downside for both real activity and inflation, and have interpreted recent developments as increasing this downside risk. This judgment reflects our concerns about the persistence of the weakness in the manufacturing sector, the drag on inflation exerted by commodity price declines and dollar appreciation, the tightening in financial market conditions, and tentative evidence that the credit cycle for C&I loans has begun to turn.

Given the changes in our modal outlook and the balance of risks we recommend no change in the current stance of monetary policy at the January FOMC meeting. A press conference follows the March meeting, and for this reason the next step in policy normalization would be more appropriate at that meeting than at the January meeting, provided economic and financial fundamentals improve considerably. However, in our opinion the changes to the forecast and the

risk assessment since the December *Blackbook* support the view that the threshold for further monetary tightening at the March meeting should be high. We judge that there are no net benefits of removing accommodation in March, particularly if global uncertainties persist; furthermore, we do not see compelling evidence of the wage and price acceleration necessary to escape the current lowflation deadlock. This high threshold is consistent with the overall patient approach toward normalization that we see as appropriate.

Effective communication of such a policy is paramount and we judge it to require a number of key ingredients

- A clear and consistent framework to help pin down the formation of expectations. As in the December *Blackbook* we believe that communication organized around the notion of 'neutral' (or 'natural') real short-term interest rate (r*) would be most effective. Recent Federal Reserve staff estimates show that *r**, after a prolonged period in negative territory, is still only slightly above zero and is projected to rise only very slowly toward its longer-run level, which appears to be below its pre-crisis levels. The level of the 'neutral' rate would provide a benchmark for the FOMC to communicate the setting of the policy stance it deems appropriate. Ideally the current estimates of r* could be reported by FOMC participants in the SEP: this would have a mutually reinforcing effect on the formation of public expectations.
- Greater transparency about the degree of uncertainty surrounding FOMC participants' projections for macroeconomic variables, the policy rate and, if possible, the estimated value of r*. If changes were made to the SEP in this vein, it is critical that any reported quantitative measure of uncertainty be based on participants' *forward-looking* assessments so as to minimize the possibility that this information is misinterpreted by the public or deemed irrelevant for the FOMC's decisions.
- An explicit, public acknowledgement that the long-run inflation goal is *centered* around 2%—this could be best achieved by a revision to the consensus statement. A statement that the 2% objective is not a *ceiling* for inflation would provide some insurance from inflation expectations becoming unanchored to the downside and, more generally, would help ensure that longer-run inflation expectations are not biased downward.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

Data released since the December Blackbook have led us to lower our projection of growth of real GDP in 2015Q4 from 1.8% (AR) to 0.9%. The inventory investment growth contribution has been lowered by 0.1 percentage points to -0.9. Projected growth of both exports and imports for the fourth quarter have been lowered based on the November trade data, resulting in a 0.1 percentage point increase in the net export growth contribution to -0.3. Thus, the bulk of the downward adjustment is in final sales to domestic purchases, which is now projected to increase 2.1% versus 3.0% in the December forecast. Projected growth in virtually every expenditure category within final sales to domestic purchasers has been lowered.

Our projection for growth of real PCE in the fourth quarter has been lowered to 1.9% (AR) from 2.4% in December and 3.0% in October. Sales of light weight motor vehicles fell to 17.3 million units (SAAR) in December after averaging 18.2 million over the preceding three months. Non-auto retail sales fell by 0.1% in December, though we believe they increased modestly in real terms. Gasoline prices fell by 3.6% (monthly rate) in December, and we suspect that prices for apparel and furniture also continued to decline. It should be noted that there was a quite large decline in nominal spending on apparel, which may have been due at least in part to the fact that December was the warmest on record within the contiguous 48 states. In addition to dampening winter apparel sales, the unseasonably warm weather of the fourth quarter resulted in a nearly 12% (AR) decline in household spending on utilities. These are clearly transitory developments which will fade now that the weather has returned to more normal conditions.

The projected growth rate for real residential investment in the fourth quarter has been marked down to 5% from 7.7% in December. Single-family and multi-family starts and permits rose somewhat more than expected in November, and purchase mortgage applications increased about 7% in December. The third quarter data on housing vacancies indicated that household formation slowed somewhat further but remained at around 1.45 million (year-over-year change), well above the level of the third quarter of 2014. More than offsetting these

developments, which would have led to a boost in our projection of growth of residential investment, sales of existing homes declined in both October and November, resulting in a decline in brokers' commissions for the quarter. Industry sources report that there is still strong interest in home buying, but a lack of supply and tight underwriting standards are holding down the number of completed transactions.

The incoming data have also forced us to scale back projections of business investment in both equipment and nonresidential structures. A three-month moving average of shipments of nondefense capital goods is now flat to slightly declining, as are new orders. Part of this is due to declining exports of capital goods, but it should be noted that imports of capital goods are also declining. The only thing keeping projected growth of business investment in new equipment positive is that prices of capital goods are now declining. In addition, private nonresidential construction decreased 0.7% in November and there were modest downward revisions to the level of nonresidential construction for September and October. After strong increases earlier in the year, nonresidential construction spending has been little changed over the past six months. To top it off, oil and gas drilling activity, which is included in the nonresidential structures category of expenditures, declined at a nearly 40% annual rate in the fourth quarter, more than double the rate of decline of the third quarter.

Finally, we have lowered projected growth of real consumption and gross investment at the state and local level to essentially zero for the fourth quarter following average growth of 3.5% over the second and third quarters. Employment in the sector declined slightly in the fourth quarter, while data through November suggest that construction spending by state and local governments declined at a 8 ½% annual rate following relatively strong growth in the second and third quarters. The Chief Economist of the Associated General Contractors of America said that he doubts the fourth quarter weakness had anything to do with the delay in passage of the transportation funding bill. Rather, it is just a noisy series that appears to be on a pretty solid uptrend at this point in time. Real spending at the federal level looks to have increased at a solid pace in the fourth quarter following several quarters over which it was essentially unchanged.

The recent supply side data have been quite mixed. The December employment report was a major upside surprise, with nonfarm payrolls rising by 292,000 and the November and October employment gains revised up by a combined 50,000. This brought the average monthly gain in nonfarm payroll employment to 284,000 for the fourth quarter, up from 174,000 in the third quarter. Unseasonably warm weather may have played a role in the relatively strong fourth quarter employment gains, but it is unlikely to have contributed an average of 100,000 per month. Aggregate hours rose at a healthy 0.3% in December following a 0.1% decline in November. For the fourth quarter as a whole, hours rose at a 2% annual rate while average hourly earnings rose at a 2 ½% annual rate, indicating that growth of nominal wage and salary income remained relatively strong. If our projection for Q4 growth of real GDP turns out to be roughly correct, it would suggest that productivity growth was negative in Q4 after two quarters of impressive gains. For 2015 as a whole we project productivity growth of about 1% (Q4/Q4), up from zero in 2014.

Despite this strength in the labor market data, most other supply side data have been disappointing. The December ISM non-manufacturing composite index fell 0.6 percentage points to 55.3. In July of 2015 it had been 60.3. The ISM manufacturing composite index continued its downward trend, edging down 0.4 point to 48.2 in December—its lowest level since the end of the recession. The employment and new orders sub components were below 50. Our own Empire State Manufacturing Survey general business conditions index plunged to -19.4 in January after improving somewhat in the fourth quarter. Manufacturing output fell in both November and December and was up at just a 0.5% annual rate for the entire fourth quarter. This manufacturing sector data is consistent with the fact that, while the pace of inventory accumulation slowed in the fourth quarter, it only slowed enough to keep the inventory sales ratio from rising further. In absolute terms, that ratio remains relatively high.

The core PCE deflator rose 0.1% in November following essentially no change in October. The November increase was in line with our expectations, keeping our Q4 annualized increase at a relatively low 1.2%. The 12-month change of the core PCE deflator was 1.3% in November, about where it was during all of 2015. Due to larger than expected declines in energy price in November and December, the fourth quarter change of the total PCE deflator in now projected at

0.1% (AR), down from 0.4% in December. The 12-month change of that index was 0.4% in November, up from 0.2% in the previous two months, as the 0.14% decline of that index in November of 2014 fell out of the calculation. Ongoing declines in energy prices thus far in 2016 suggest that the rate of increase of the total PCE deflator could be around zero again in the first quarter. But the 12-month change is expected to increase to 1.0% for January, again due to base effects. Based on the FRBNY Survey of Consumer Expectations for December, median inflation expectations remained essentially flat at 2.5 percent at the one-year ahead horizon, tying November's series low. At the three-year ahead horizon, median expected inflation rose by 0.1 percentage point from last month's series low, to 2.8 percent.

The Outlook

Since the middle of 2015 we have expected growth in 2015 to be about 2% (Q4/Q4), but then to increase in 2016 to the 2 ¼% to 2 ½% range. The logic underlying that forecast can be summarized as follows:

1. An improving labor market combined with lower energy prices would keep growth of real PCE on a solid footing.
2. Tight supply in housing markets combined with a gradual easing of mortgage underwriting standards would keep housing construction on an upward trajectory.
3. Contraction of spending at the federal level would be relatively modest while spending at the state and local government sector would continue to recover as those governments financial condition strengthened.
4. The drags to the economy from the steep decline of oil and gas drilling activity and from the appreciation of the dollar would be largely over.
5. With the manufacturing sector beginning to rebound, business investment spending, particularly in new equipment, would begin to provide a more substantial growth contribution.

Associated with this growth outlook was the decline of the unemployment rate to around our estimate of NAIRU by the end of 2016 and a gradual movement upward of underlying inflation. While incoming data had been generally consistent with that forecast, we recognized that the risks to the forecast for growth and inflation were skewed to the downside due to global events,

particularly strains in emerging market economies, with the possibility of additional appreciation of the dollar.

Over the intermeeting period many of those concerns have been realized. Oil and other commodity prices have fallen further, with the Goldman Sachs Commodity Price Index down over 9% since the end of December. Equity prices within several economies have also declined over this period, with the S&P500 down around 6 ¼%. The dollar has continued to appreciate, and the mood has turned gloomy, with increased fear that the US economy may fall into recession.

We assign a relatively small weight to the recession scenario. Many of the positive developments we listed above, particularly those pertaining to the consumer, housing, and government, remain in place. Indeed, employment gains strengthened in 2016Q4 and the more recent decline of energy prices likely gives an additional $50 billion boost to household disposable income. However, the risks to our 2016 forecast have become even more skewed to the downside, and some real side developments have not unfolded as expected. In particular, the manufacturing sector of the US economy remains mired in an "industrial recession". As mentioned above, the pace of inventory accumulation slowed in the fourth quarter but only enough to cause the elevated level of the inventory sales ration to stop rising. Moreover, the assumed path of the exchange value of the dollar has been raised in this cycle, with the expected net export drag in 2016 rising to 1.2 percentage points from the assumed 1.0 percentage points of the December Blackbook. These developments, combined with a tightening of lending standards for C&I loans, have led us to scale back the growth contribution from business investment in new equipment. Overall, we have lowered our projected growth for 2016 to 2.0%. For 2017, our assumption had been that growth would slow to just under 2% due to a combination of aging of the business cycle and the gradual tightening of financial conditions generated by our assumed upward path for the federal funds rate. In this Blackbook we have lowered projected growth in 2017 to 1.7%, due primarily to higher path of the dollar which increases net export drag by 0.2 percentage points to a total of 0.7 percentage points.

With somewhat lower projected growth in 2016 and 2017 and no change in our estimate of potential growth, we have raised modestly our path for the unemployment rate. It is now projected to decline to 4.8% by 2016Q4, not 4.7%, and then stay at 4.8% through the end of 2017. The assumed change in the unemployment rate is damped by assuming somewhat lower growth of productivity and somewhat less of an increase of the labor force participation rate.

With the unemployment rate reaching our estimate of NAIRU by the end of 2016, we continue to expect underlying inflation to gradually move towards the FOMCs target over the forecast horizon. But with a higher assumed path for the exchange value of the dollar, we now expect the core PCE deflator to rise 1.4% in 2016 and 1.7% in 2017, both 0.1 percentage point lower than in December. Overall inflation in 2016 is reduced even more, to 1.3% from 1.6% in December, due to the lower path of oil prices (down an average of $9.50 per barrel in 2016 and nearly $9.00 per barrel in 2017). For 2017 it then rises to 1.8% versus 1.9% in December.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Dec	Jan	Dec	Jan	Dec	Jan	Dec	Jan
2015								
Q1	*1.0*	*1.0*	*0.6*	*0.6*	*5.6*	*5.6*	*0-0.25*	*0-0.25*
Q2	*1.9*	*1.9*	*3.9*	*3.9*	*5.4*	*5.4*	*0-0.25*	*0-0.25*
Q3	*1.4*	*1.4*	*2.1*	*2.0*	*5.2*	*5.2*	*0-0.25*	*0-0.25*
Q4	1.2	1.2	1.8	0.9	5.0	5.0	0.38	0.38
2016								
Q1	1.4	1.3	2.3	2.1	4.9	4.9	0.50	0.38
Q2	1.5	1.3	2.5	2.1	4.8	4.9	0.63	0.55
Q3	1.6	1.4	2.2	1.9	4.7	4.8	0.75	0.71
Q4	1.7	1.5	2.1	1.9	4.7	4.8	0.88	0.88
2017								
Q1	1.8	1.6	1.9	1.5	4.8	4.8	1.1	1.13
Q2	1.8	1.7	2.1	1.8	4.8	4.8	1.4	1.38
Q3	1.9	1.7	1.9	1.6	4.8	4.8	1.6	1.63
Q4	1.9	1.8	1.9	1.9	4.8	4.8	1.9	1.88
Q4/Q4								
2014	1.4	1.4	2.5	2.5	-1.3	-1.2	0-0.25	0-0.25
2015	1.3	1.4	2.1	1.9	-0.7	-0.7	0.38	0.38
2016	1.6	1.4	2.3	2.0	-0.3	-0.2	0.88	0.88
2017	1.9	1.7	1.9	1.7	0.1	0.0	1.9	1.88

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

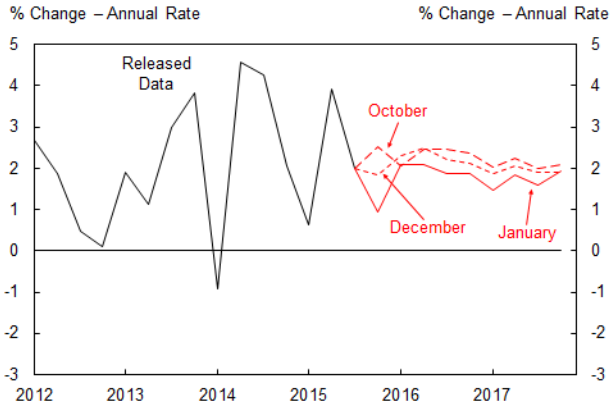
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

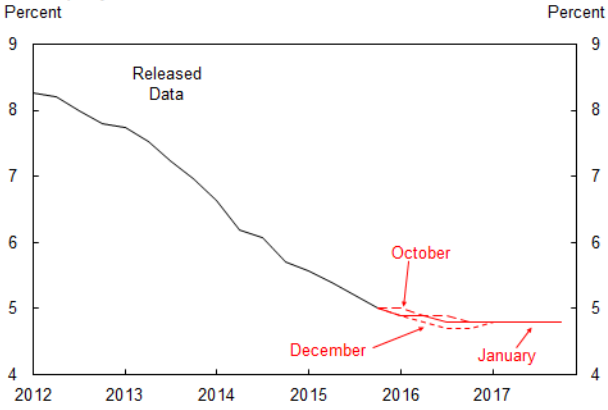
2-2: Evolution of Projected Quarterly Paths

Key Indicators

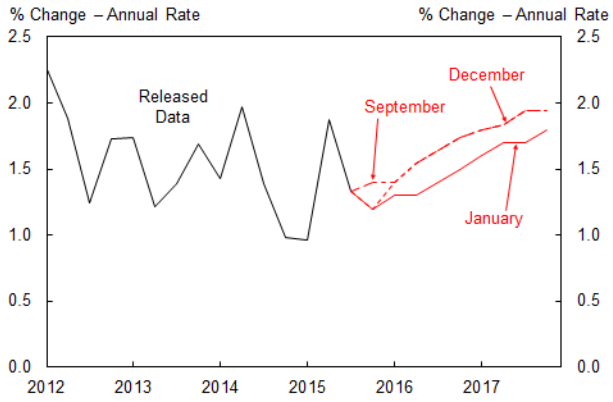
Real GDP Growth



Unemployment Rate

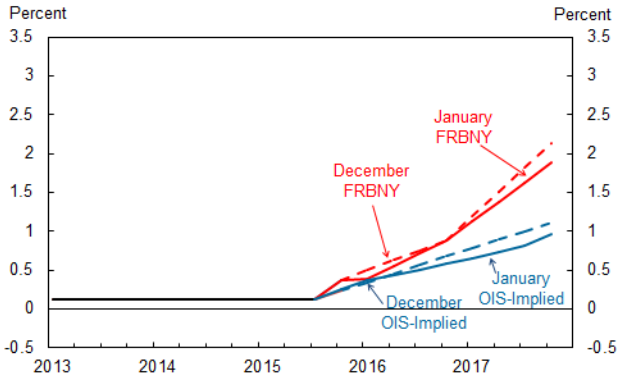


Core PCE Inflation

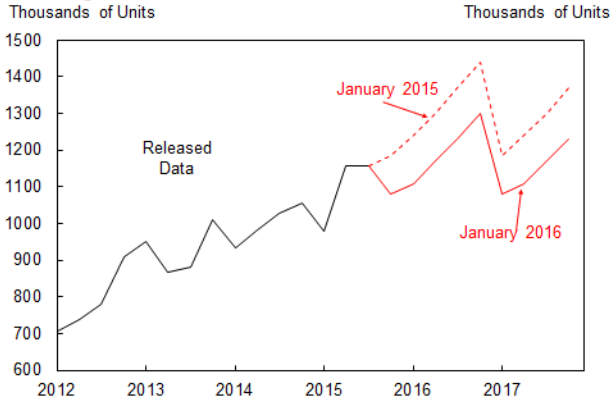


Forecast Assumptions

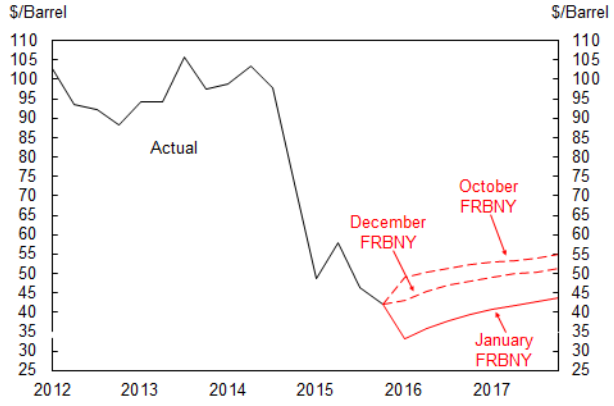
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2015Q4	2016Q1	2016Q2	2015Q4	2016Q1	2016Q2
OUTPUT						
Real GDP	0.9	2.1	2.1	0.9	2.1	2.1
	(1.8)	(2.3)	(2.5)	(1.8)	(2.3)	(2.5)
Final Sales to Domestic Purchasers	2.1	3.4	3.1	2.1	3.5	3.2
	(3.0)	(3.6)	(3.4)	(3.4)	(3.6)	(3.5)
Consumption	1.9	2.7	2.6	1.3	1.8	1.8
	(2.4)	(2.8)	(2.7)	(1.6)	(1.9)	(1.8)
BFI: Equipment	3.5	6.0	6.0	0.2	0.4	0.4
	(8.0)	(10.0)	(10.0)	(0.5)	(0.6)	(0.6)
BFI: Nonresidential Structures	-4.0	4.0	4.0	-0.1	0.1	0.1
	(0.0)	(8.0)	(7.0)	(0.0)	(0.2)	(0.2)
BFI: Intellectual Property Products	6.0	6.0	6.0	0.2	0.2	0.3
	(6.0)	(7.0)	(7.0)	(0.2)	(0.3)	(0.3)
Residential Investment	5.0	20.8	12.9	0.2	0.6	0.4
	(7.7)	(16.4)	(14.4)	(0.2)	(0.5)	(0.5)
Government: Federal	5.0	2.0	2.0	0.3	0.1	0.1
	(5.0)	(-0.5)	(-0.5)	(0.3)	(0.0)	(0.0)
Government: State and Local	0.1	1.4	1.4	0.0	0.2	0.2
	(1.1)	(1.4)	(1.4)	(0.1)	(0.2)	(0.2)
Inventory Investment	--	--	--	-0.9	-0.2	0.1
	--	--	--	(-0.8)	(-0.3)	(0.0)
Net Exports	--	--	--	-0.3	-1.1	-1.2
	--	--	--	(-0.4)	(-1.0)	(-1.0)
INFLATION						
Total PCE Deflator	0.1	0.0	1.6			
	(0.4)	(1.5)	(1.6)			
Core PCE Deflator	1.2	1.3	1.3			
	(1.2)	(1.4)	(1.5)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	-1.0	1.0	1.3			
	(0.5)	(1.1)	(1.6)			
Compensation per Hour	2.9	3.0	3.2			
	(3.1)	(3.2)	(3.4)			
Unit Labor Costs	3.9	2.0	1.9			
	(2.6)	(2.2)	(1.5)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2015	2016	2017	2015	2016	2017
OUTPUT						
Real GDP	1.9	2.0	1.7	1.9	2.0	1.7
	(2.1)	(2.3)	(2.1)	(2.1)	(2.3)	(1.9)
Final Sales to Domestic Purchasers	2.6	3.1	2.3	2.6	3.2	2.4
	(2.8)	(3.3)	(2.3)	(2.8)	(3.3)	(2.4)
Consumption	2.6	2.5	2.2	1.7	1.7	1.5
	(2.7)	(2.6)	(2.2)	(1.8)	(1.8)	(1.5)
BFI: Equipment	4.0	5.7	3.5	0.2	0.3	0.2
	(5.0)	(8.5)	(3.5)	(0.3)	(0.5)	(0.2)
BFI: Nonresidential Structures	-3.2	4.0	3.5	-0.1	0.1	0.1
	(-2.2)	(6.5)	(3.5)	(-0.1)	(0.2)	(0.1)
BFI: Intellectual Property Products	5.2	5.7	3.5	0.2	0.2	0.2
	(5.2)	(6.2)	(3.5)	(0.2)	(0.3)	(0.2)
Residential Investment	8.1	13.4	9.1	0.3	0.4	0.3
	(8.6)	(13.7)	(9.4)	(0.3)	(0.4)	(0.3)
Government: Federal	1.6	2.0	-0.5	0.1	0.1	0.0
	(1.5)	(-0.5)	(-0.5)	(0.1)	(0.0)	(0.0)
Government: State and Local	1.6	1.4	0.7	0.2	0.2	0.1
	(1.8)	(1.4)	(0.7)	(0.2)	(0.2)	(0.1)
Inventory Investment	--	--	--	-0.2	0.0	0.0
	--	--	--	(-0.1)	(-0.1)	(0.0)
Net Exports	--	--	--	-0.6	-1.1	-0.7
	--	--	--	(-0.6)	(-1.0)	(-0.5)
INFLATION						
Total PCE Deflator	0.4	1.3	1.8			
	(0.5)	(1.7)	(1.9)			
Core PCE Deflator	1.4	1.4	1.7			
	(1.3)	(1.6)	(1.9)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.9	1.0	1.0			
	(1.3)	(1.3)	(1.3)			
Compensation per Hour	3.5	3.3	3.7			
	(3.5)	(3.6)	(4.1)			
Unit Labor Costs	2.6	2.3	2.7			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2015Q4	2016Q1	2015 Q4/Q4	2016 Q4/Q4
FRBNY	1/15/2015	0.9	2.1	1.9	2.0
		(1.8)	(2.3)	(2.1)	(2.3)
Blue Chip	1/10/2016	1.9	2.5	2.5	2.5
		(2.2)	(2.5)	(2.2)	(2.6)
Median SPF	11/13/2015	2.6	2.5	2.4	2.6
		(2.6)	(2.5)	(2.4)	(2.6)
Macro Advisers	1/11/2016	0.5	2.7	1.7	2.4
		(2.7)	(2.7)	(2.3)	(2.5)
FRBNY-DSGE	1/15/2016	0.9	1.6	1.8	1.8
		(2.1)	(1.9)	(2.2)	(1.9)

Core PCE Inflation

	Release Date	2015Q4	2016Q1	2015 Q4/Q4	2016 Q4/Q4
FRBNY	1/15/2015	1.2	1.3	1.4	1.4
		(1.2)	(1.4)	(1.3)	(1.6)
Median SPF	11/13/2015	1.5	1.5	1.4	1.6
		(1.5)	(1.5)	(1.4)	(1.6)
Macro Advisers	1/11/2016	1.2	1.4	1.3	1.6
		(1.6)	(1.6)	(1.4)	(1.7)
FRBNY-DSGE	1/15/2016	1.2	1.1	1.4	1.1
		(1.2)	(1.0)	(1.3)	(1.0)

CPI Inflation

	Release Date	2015Q4	2016Q1	2015 Q4/Q4	2016 Q4/Q4
FRBNY	1/15/2015	0.5	0.3	0.5	1.5
		(0.7)	(1.9)	(0.5)	(2.0)
Blue Chip	1/10/2016	0.4	1.2	0.2	1.6
		(0.6)	(1.6)	(0.5)	(2.1)
Median SPF	11/13/2015	0.9	1.8	0.6	2.0
		(0.9)	(1.8)	(0.6)	(2.0)
Macro Advisers	1/11/2016	0.4	0.9	0.5	2.0
		(-0.1)	(-0.1)	(0.5)	(2.1)

Core CPI Inflation

	Release Date	2015Q4	2016Q1	2015 Q4/Q4	2016 Q4/Q4
FRBNY	1/15/2015	2.2	1.7	2.0	1.8
		(2.2)	(1.8)	(2.0)	(1.9)
Median SPF	11/13/2015	1.8	1.9	1.9	2.0
		(1.8)	(1.9)	(1.9)	(2.0)
Macro Advisers	1/11/2016	2.2	1.8	2.0	1.9
		(1.8)	(1.8)	(1.9)	(1.9)

*Note: Numbers in gray are from the previous Blackbook

3. Uncertainty & Risks

Developments during the intermeeting period, including movements in financial markets as well as some weak spending and production indicators, indicate somewhat greater uncertainty around our central economic outlook. These developments led us to add additional downside risks to the already significant downside risks in the December *Blackbook*. Based on the difference between the modal central forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the forecast distributions [Exhibit 3-3], the balance of risks for real GDP growth are to the downside at almost all horizons. For core PCE inflation, the risks are roughly balanced over near-term horizons, but are skewed to the downside at longer horizons. The widths of the probability intervals are somewhat wider. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is slightly above its historical norms.

Overall, the data on U.S. real economic activity were mixed. Manufacturing indicators continued to be weak, probably reflecting the continuing impact of dollar appreciation and slower growth in emerging markets. Indicators of consumer spending and investment were generally disappointing. In contrast, the December labor market report indicated that the pace of labor market improvement remained solid at the end of 2015. Core PCE inflation was little changed in November and is well below the FOMC objective. Alternative underlying inflation measures behaved similarly. Longer-term inflation compensation measures in the U.S. fell to new historical lows. Some U.S. survey measures of inflation expectations, including the FRBNY SCE 3-year ahead median, rose slightly in this intermeeting period, but remain at relatively low levels. Outside of the U.S., there were indications of continued softness in emerging market economies but not of a more abrupt deterioration, even though there were continuing concerns about the state of the Chinese economy.

Financial markets provided signals of concerns about a weaker global economy. Equity prices in developed economies and emerging markets fell considerably over the period, and measures of implied volatility rose to fairly high levels. Oil and commodity prices fell further to near multi-year lows. Long-term nominal and real yields in the U.S. declined considerably over the period

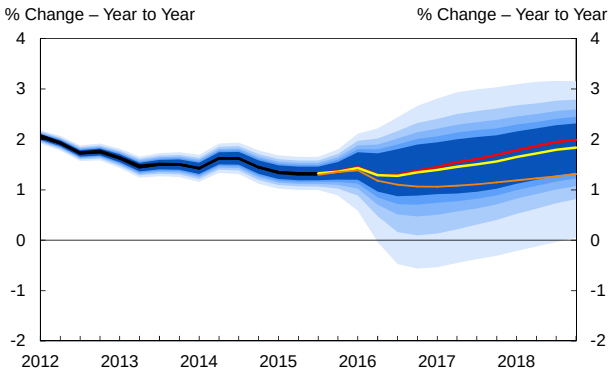
even with policy lift-off at the December FOMC meeting, leading to some flattening in the yield curve. Yields in the euro area Japan also fell over the period. The trade-weighted dollar index appreciated, even though the dollar depreciated against the Japanese yen and was little changed against the euro, reflecting the impact of safe haven flows in the period.

We interpreted these developments as indicating somewhat greater uncertainty and more downside risks around the U.S. outlook, leading to some changes in the probabilities of our scenarios [Exhibit 3-2]. We increased moderately the probabilities of the negative *Fiscal Consolidation* and *Global Credit Crunch* scenarios, as we assess greater chances of downside risks materializing for global economy with spillovers to the U.S. Consistent with this assessment, there was a slight reduction in probability of the positive *Faster Growth* scenario and a larger cutback in the *Productivity Boom* scenario's probability; the latter reflects indications of another very weak productivity number for 2015Q4. Overall, these changes led to some widening of the 90 percent probability intervals for real GDP growth and core PCE inflation [Exhibit 3.3]. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is now a bit wider than its norms. The real GDP growth forecast distributions reflect that the risks to real activity are skewed to the downside through most of the forecast horizon, while the risks to inflation are to the downside in 2017-18 [Exhibit 3-1].

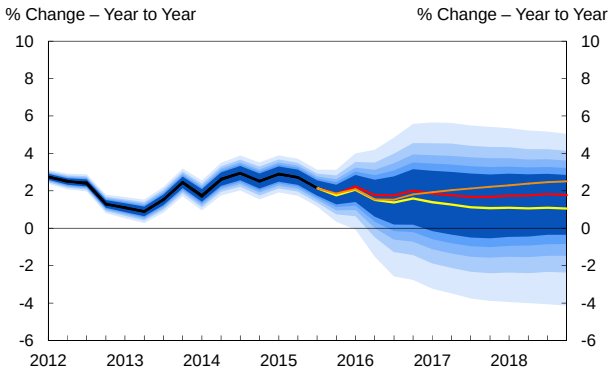
Comparing the recent data and our current expected forecast to the forecast distribution from a year earlier, the current projection for inflation generally runs somewhat below the year-ago expectation for most of 2017 and 2018. This reflects the continued low inflation data as measured by the 4-quarter change, an inflation forecast that is modestly below the 2 percent objective through 2017, and some more downside risks to the inflation outlook [Exhibit 3-3]. Real GDP growth so far in 2015 has been in the lower part of the year-ago distribution, as the expected rebound in growth failed to materialize. Going forward, the current real GDP growth expectation is moderately below the year-ago expectation over the forecast horizon, reflecting the subdued path for real GDP growth and the downside risks in our outlook. These patterns indicate deterioration in our outlook for both inflation and real activity over the past year.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



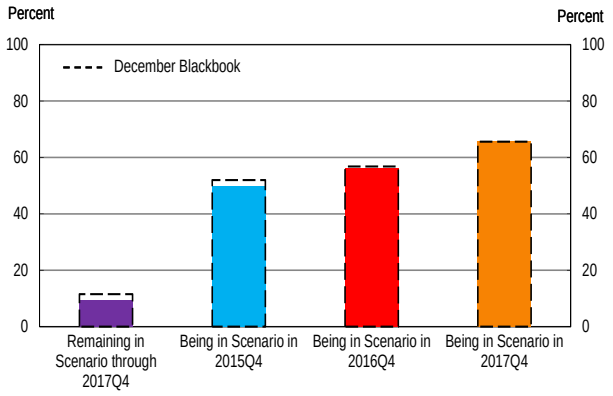
Real GDP Growth Forecast Distribution



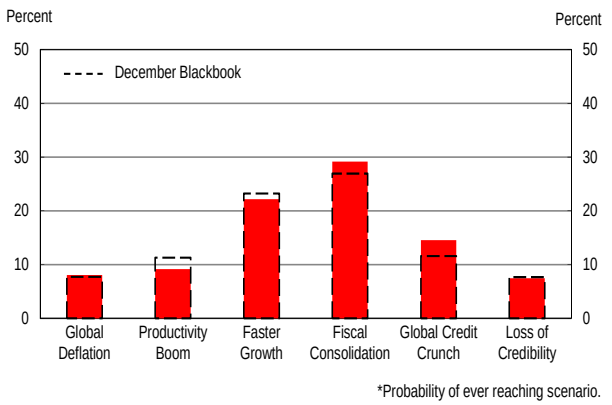
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



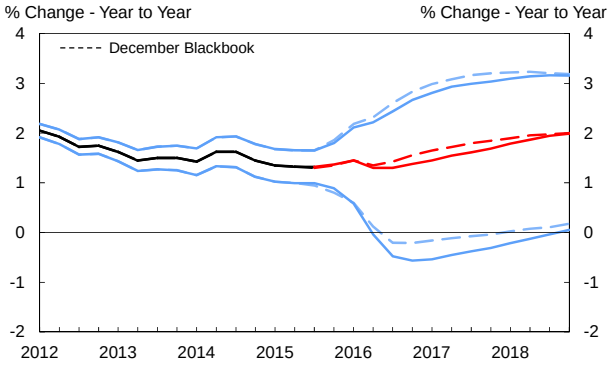
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

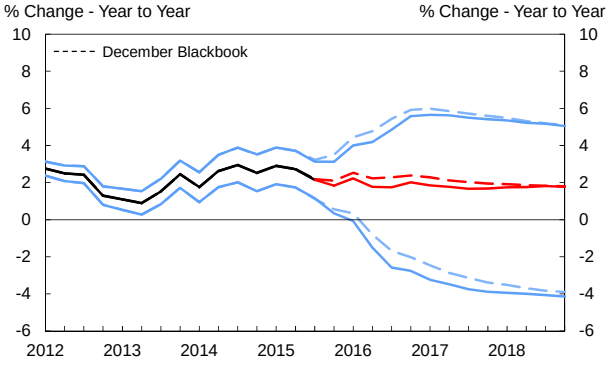
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

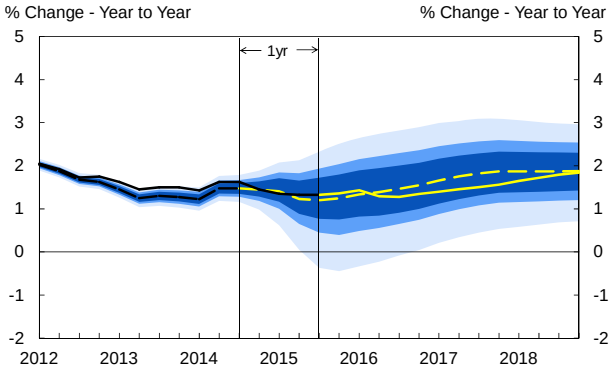


Change in Real GDP Growth Forecast Distribution

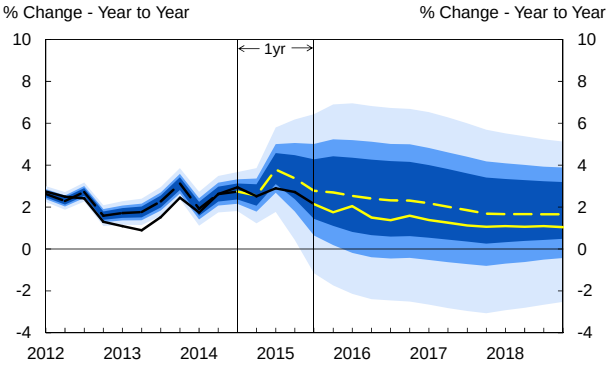


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

March 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

March 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Although financial and economic conditions have improved somewhat over the intermeeting period, we judge that the state of the economy has not yet reached the threshold to warrant further monetary tightening. We thus recommend no change in the stance of monetary policy at the March FOMC meeting. Going forward, if the economy evolves according to our forecast, some modest tightening of the policy stance over the course of 2016 and a relatively shallow path of tightening thereafter would be appropriate. At the March press conference, we believe it would be appropriate to communicate in some detail the criteria by which the FOMC will proceed with further monetary tightening in the medium term.

The data released over the intermeeting period generally signaled less downside risks around the U.S. economic outlook, but little change to the outlook. Our judgmental forecast for GDP growth in 2016Q1 is 1.8% (annual rate), near our estimate of potential growth rate and below our Q1 forecast in the January *Blackbook*. In contrast, the projection of our nowcast model rose over the intermeeting period to 1.3%. The reduction in the judgmental projection for Q1 was driven primarily downward revisions to inventory accumulation and nonresidential fixed investment, while consumer spending growth is projected to rebound to about 3¼%. Although the recent manufacturing data have been somewhat better, conditions in the sector remain soft with the ISM manufacturing index marginally below its breakeven value of 50. Labor market conditions generally continued to improve: growth in nonfarm payrolls was solid in February, bringing the 3-month average gain to 228,000, in line with the average gain of 229,000 for 2015, and the labor force participation rate and the employment-population ratio rebounded. Growth in aggregate hours and in hourly earnings weakened somewhat in February in some pullback from the gains in January.

Financial conditions improved over the second half of the intermeeting period. The S&P 500 index recovered substantially from its mid-February trough, but it is still below its 2015 year-end level, while the VIX is a notch below its historical average of 21.6%. Credit spreads narrowed since mid-February but still remain near levels not seen since mid-2012. Over the course of the past year the dollar appreciated in trade-weighted terms, as relative stability against the euro and

the yen occurred alongside dollar appreciation against commodity currencies and the Chinese RMB. However, if continued weakness in economic conditions spurs additional accommodation by the ECB and the BOJ, the monetary divergence between U.S. policy and those of Europe and Japan may lead to further appreciation of the dollar, thus providing potential tightening of U.S. financial conditions.

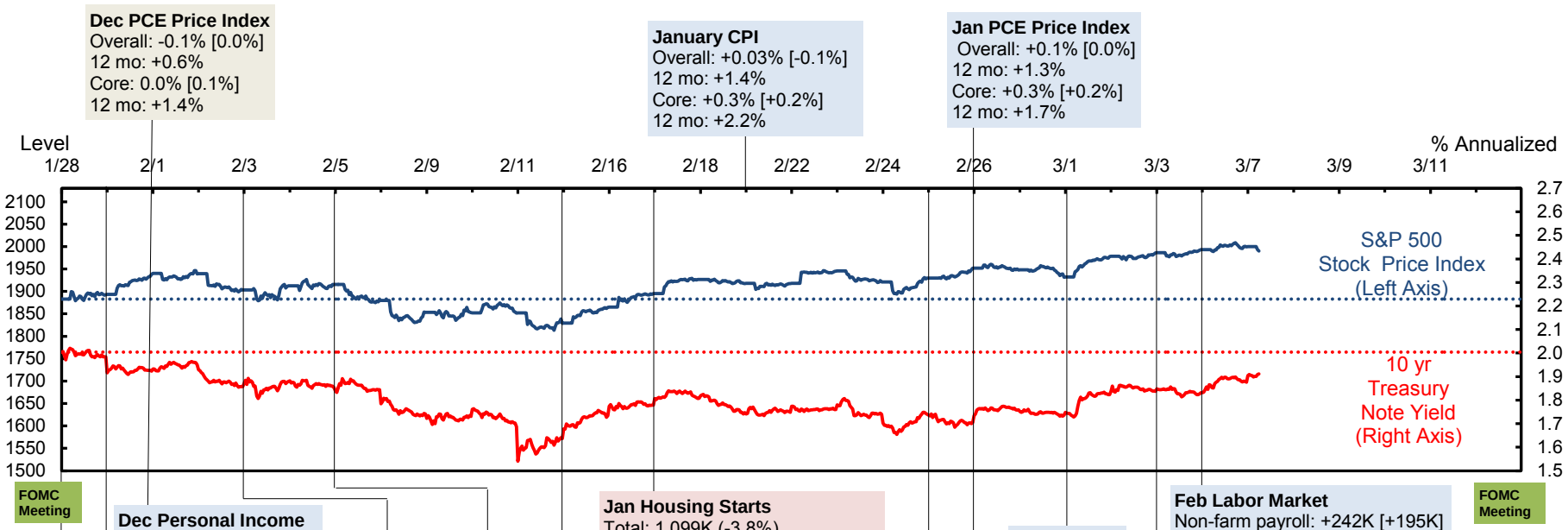
In this environment inflation remained below mandate-consistent levels, but showed tentative signs of firming. The 12-month core PCE inflation rate increased in January to 1.7% from 1.5% in December, the third consecutive increase in this measure of underlying inflation. However, survey measures of household medium- and longer-term inflation expectations declined slightly further and are at historically low levels. Meanwhile, longer-term forward inflation compensation increased since mid-February, but also remain at very low levels, suggesting that market participants continue to be concerned about weak output growth/low inflation risks. Market-based measures of inflation compensation in other countries continued to be very low. Given these developments we judge premature to view the recent positive inflation news as definitive evidence of an imminent return of inflation to the FOMC's inflation objective.

In regard to the medium-term outlook, our growth forecasts for 2016 and 2017 are little changed at 2.1% and 1.7% (Q4/Q4), respectively. The basic contours of the projection also remain the same as in the January *Blackbook*: consumption growth is anticipated to be solid throughout the forecast horizon, nonresidential fixed investment shows some improvement from the weakness over the past year, and net exports are projected to continue to be a drag on real GDP growth. With little change in the real activity outlook, there is little change in our forecast for the unemployment rate, as we expect it to be near our estimate of the longer-run normal rate (4¾%) by the middle of this year and to remain around that level through 2017. For inflation, we see the recent increase as largely transitory and have made only minor upward adjustments to the projection in future quarters. Consequently, inflation still is anticipated to rise slowly toward the FOMC's objective with core PCE inflation of 1.5% in 2016 and 1.8% in 2017.

We continue to see the balance of risks to be to the downside for real activity, but the risks now appear roughly balanced for inflation. While the recent data have had a better tone,

manufacturing and investment remain weak. Financial conditions are still fragile, corporate credit conditions have become tighter and international developments point toward further dollar appreciation. In addition, the policy space to respond to negative shocks continues to be limited, augmenting the downside risks to real activity. All of these factors along with continued low inflation expectations also pose downside risks to inflation; however, the uptick in commodity prices as well as the recent rise in core inflation rates and their sources indicate some offsetting upside risks.

Given our modal outlook and the balance of risks, we recommend no change in the current monetary policy stance at the March FOMC meeting. In terms of communication, it may be helpful at the press conference to provide more information on the criteria underlying adjustments to the policy normalization path. We still see patience in the face of widespread uncertainty and data-dependence as the key underpinnings of the appropriate policy strategy. If the recent rise in inflation proves to be a signal of a faster return toward the FOMC's objective, accelerating interest rate normalization would be in order. In general, though, we would need to see further solid improvement in the real economy (especially in manufacturing) as well as some dissipation in the volatility of the global economic environment before recommending a steeper path for the policy rate. Consequently, we advise retaining a relatively high bar for monetary tightening at the April FOMC meeting. That bar likely should remain high at the other meetings for the rest of the year.



Dec PCE Price Index
Overall: -0.1% [0.0%]
12 mo: +0.6%
Core: 0.0% [0.1%]
12 mo: +1.4%

January CPI
Overall: +0.03% [-0.1%]
12 mo: +1.4%
Core: +0.3% [+0.2%]
12 mo: +2.2%

Jan PCE Price Index
Overall: +0.1% [0.0%]
12 mo: +1.3%
Core: +0.3% [+0.2%]
12 mo: +1.7%

FOMC Meeting

Dec Personal Income
Nominal: +0.3% [+0.2%]
Real disposable: +0.4%

Dec PCE
Nominal: 0.0% [+0.1%]
Real: +0.1%

Jan ISM NonMfg
53.5 [55.1]

Dec Construction Spending
+0.1% [+0.6%]
12 mo: +8.2%

Jan ISM Mfg
48.2 [48.4]

Jan Retail Sales
Total: +0.2% [+0.1%]
12 mo: +3.4%
Ex-auto: +0.1% [+0.1%]
PCE Control ex gas: +0.4%

Jan Housing Starts
Total: 1,099K (-3.8%)
12 mo: +1.8%
Single-family starts: 731K (-3.9%)
Multi-family starts: 368K (-3.7%)

Jan IP
+0.9% [+0.4%]

Jan CU
77.1% [76.7%]

Jan Labor Market
Non-farm payroll: 151K [190K]
U rate: 4.9% [5.0%]

Feb ISM Mfg
49.5 [48.5]

Feb Labor Market
Non-farm payroll: +242K [+195K]
U rate: 4.9% [4.6%]

Jan Trade Deficit
+45.7 bil [+44.0 bil]

Jan Construction Spending
+1.5% [+1.0%]
12 mo: 10.4%

Jan Personal Income
Nominal: +0.5% [+0.3]
Real disposable: +0.4%

Jan PCE
Nominal: +0.5% [+0.3%]
Real: +0.4% [+0.3%]

Feb ISM NonMfg
53.4 [53.1]

Dec Durable Goods
New Orders: -5.1% [-0.7%]
Shipments: -2.2%
Capital New Orders: -4.3%
Capital Shipments: -0.2%

Real GDP 2015Q4 (Advanced)
+0.7% [+0.8%]

Dec Trade Deficit
Total: +43.4 bil [+43.2 bil]

Jan Durable Goods
New Orders: +4.9% [+2.9%]
Shipments: +1.9%
Capital New Orders: +3.9%[+1.0%]
Capital Shipments: -0.4%

Real GDP 2015Q4 (Second Estimate)
+1.0% [+0.4%]

FOMC Meeting

Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

Data released over the intermeeting period have, on balance, come in somewhat weaker than we were anticipating at the time of the last Blackbook, resulting in a slight marking down of projected growth for 2016Q1 to 1.8% from 2.1% in the January Blackbook. That being said, the "tone" of the data has improved; for example, though it remains in negative territory, the Citigroup economic surprise index has moved up sharply in recent weeks. In addition, US equity prices have risen notably, high yield bond spreads have narrowed, commodity prices have increased, and expressed concerns of the US slipping into recession have lessened since mid-February.

Based on the second estimate, real growth GDP in 2015Q4 was 1.0% (annual rate), up from the advance estimate of 0.7%. This was a surprise as the consensus expectation was for a downward revision to 0.4%. A key source of this surprising upward revision was that the growth contribution from inventory investment was revised up from -0.5 percentage point to -0.1 percentage point even though the nominal inventory data over the preceding month had come in below BEA assumptions in the advance estimate. This seeming contradiction was reconciled through an unforeseen steep downward revision of the price deflator for inventories (to -7.3% [annual rate] versus -3.5% in the advance estimate). All else equal, the larger growth contribution from inventory investment in 2015Q4 suggests a smaller one in 2016Q1. Regarding inflation, overall PCE inflation was revised up from 0.1% (annual rate) to 0.4%, due largely to smaller declines in prices of nondurable goods. Core PCE inflation was revised up to 1.3% from the advance estimate of 1.2%.

With the upward revision of growth of real GDP, there was an upward revision of growth of output of the nonfarm business sector to 1.0% (annual rate) from the advance estimate of 0.1%. With a small downward revision to growth of hours worked, productivity growth was revised upward to -2.2% versus the advance estimate of -3.0%. The rate of growth of compensation per hour was revised down modestly, while Q3 compensation growth was revised down by a more

substantial amount. For 2015 as a whole, compensation per hour rose 2.6% (Q4/Q4) versus 2.9% in 2014. Unit labor costs rose at a 3.3% annual rate in 2015Q4, but by 2.1% for 2015 (Q4/Q4) versus 2.8% in 2014.

The available data on consumer spending in January and February have been solid; after rising only 2.0% (annual rate) in 2015Q4, we currently project real PCE growth in 2016Q1 to be 3¼% (annual rate). As expected, there was a sharp rebound in household spending on utilities in January following a 15% (annual rate) decline in the fourth quarter. In addition, the January real PCE data pointed to strong gains in spending on goods. Sales of light-weight motor vehicles declined slightly in February to 17.4 million units (annual rate) from 17.6 million in January. The January-February average of 17.5 million is moderately weaker than the 17.9 million pace of the second half of 2015. Some industry analysts have pointed to low inventories of popular models possibly holding back sales; the upward revisions to vehicle production schedules for the first quarter of 2016 are consistent with this hypothesis.

Despite the ramping up of consumer spending, at this point it looks as though the personal saving rate will increase in the first quarter to around 5.4 percent from 5.1 percent in the fourth quarter. Nominal disposable income is expected to increase at around 4% (annual rate), while nominal PCE is expected to increase at about a 3% annual rate, reflecting an expected decline in the overall PCE deflator.

The January data on the housing sector were mixed, but we continue to believe the sector remains on a gradual uptrend. Total housing starts fell 3.9% in January on the heels of a 2.8% decline in December. Both single-family and multi-family starts declined by comparable percentages. However, housing permits issued were unchanged in January following a sizeable increase in the fourth quarter, so that the three-month moving average continued to rise. Underlying fundamentals remain positive. Household formations increased to roughly 1.2 million in 2015 from 840,000 in 2014. The aggregate rental vacancy rate declined to levels last seen in the mid-1990s and is below our estimated equilibrium value. Rent inflation has moved up to just shy of 4%. The homeowner vacancy rate declined to a relatively low 1.9%. The 12-month change in the CoreLogic home price index remained in the mid-single digits in January

and is only about 7% below the previous peak in April 2006. Finally, interest rates on 30-year fixed rate mortgages dipped below 4%.

Total construction spending rose by 1.5% in January, well above expectations, and the December level was revised upward. Public sector construction rose strongly in December and January, leading to a significant boost in our estimate of growth of state and local government expenditures. Within the private sector, residential construction was essentially unchanged in January, leading to a modest marking down of projected growth of residential investment. Nonresidential construction rose by 1.0% after declining the previous two months. This development alone would suggest decent growth of nonresidential structures investment in the first quarter. However, oil and gas drilling activity in the industrial production data and oil rig counts continued to fall. This suggests another steep decline in oil and gas wells investment that will likely lead nonresidential structures investment to fall again in 2016Q1.

A relatively bright spot of the recent data flow has been information pertaining to manufacturing. Despite generally weak regional Fed survey data, the ISM manufacturing index rose to 49.5 in February. The new orders and production subcomponents moved back above 50. While down in February, hours worked in manufacturing are on track to increase at between 1½% and 2% (annual rate) in 2016Q1, the highest growth since 2014Q4. Manufacturing production posted a healthy increase in January. The Census Bureau data on manufacturers' new orders in January was also upbeat. Total new orders rose 1.6% after declining over the entire second half of 2015. Orders for durable goods rose 4.7%, led by exceptionally large increases in orders for defense and nondefense aircraft. Orders for nondurable goods continued to decline. Manufacturers' inventories fell in January, as has been the case since 2015Q2, and the inventories/shipments ratio appears to have stabilized.

While the increase in new orders was led by aircraft, new orders for nondefense capital goods excluding aircraft rose a robust 3.4% in January, an increase that was broad based. Shipments of nondefense capital goods fell 0.4% in January following a 0.6% increase in December. We anticipate a relatively sluggish increase in real business investment in new equipment in 2016Q1, but stronger growth over the remainder of the year.

Although trade data for January were quite weak, they were somewhat better than our expectations. In real terms, exports of goods declined by 2.2% over the month, roughly in line with expectations, but real imports of goods fell a greater-than-expected 0.4%. We now project the net export growth contribution to be around -0.8 percentage point rather than the -1.1 percentage points expected prior to the January data release. We took some of that improvement back by slightly reducing Q1 inventory investment.

Even though nonfarm payroll employment rose by a more-than-expected 242,000 in February, the establishment survey data for February were mixed, with a decline in hours worked and a fall in average hourly earnings. But combined with the unusually strong January data on hours and wages, the first quarter still appears to be another relatively strong one for the labor market. At this time we expect total hours worked to increase 2.2% (annual rate), down from 3.2% in the fourth quarter but better than the 1.6% (Q4/Q4) increase for all of 2015. Average hourly earnings are likely to rise around 2% (annual rate) in Q1, down from 2.4% in 2015Q4, but on balance wage and salary income growth should remain relatively strong. The downside of all this is that productivity growth in the first quarter is likely to be dismal once again.

The February data from the household survey were strong. The unemployment rate was unchanged at 4.9% despite a 0.2 percentage point increase in the labor force participation rate to 62.9%. The number of persons employed rose robustly over January and February, and the employment to population ratio was up to 59.8% in February, the highest since April 2009.

The total PCE deflator rose 0.1% in January despite a 2.9% decline of energy prices. Prices of food for off-premises consumption fell 0.2% in January, its third consecutive monthly decline. But the core PCE deflator rose 0.3% in January, the largest monthly increase since January 2012. The 12-month change of the core PCE deflator moved up to 1.7%; it had been 1.3% as recently as October 2015. The main contributors to this upturn have been a marked slowing in the rate of decline of a broad range of prices of durable goods and an acceleration of health care prices, particularly physicians' services. The slowing in the rate of decline of consumer durable goods has been associated with smaller declines of import prices for automobiles and non-auto

consumer goods. The firming in the rate of increase of health care price inflation likely reflects the end of some ACA provisions that were restraining government reimbursement rates for physicians.

The Outlook

In this forecast round we have lowered projected growth of real GDP for 2016Q1 by 0.3 percentage point to 1.8%. While growth of real PCE and residential investment appear to be in line with our earlier expectations, we are likely to see lower growth of business fixed investment and inventory investment than was anticipated at the end of January. In particular, oil and gas drilling activity is again falling quite sharply in the first quarter.

Despite the marking down of Q1, projected growth for all of 2016 is unchanged at around 2%. The reasons for this are threefold. First, overall financial conditions have improved since mid-February, making it less likely that we will see negative wealth effects weigh significantly on consumer spending. Second, real disposable income growth is expected to remain relatively strong in Q1, pushing the personal saving rate upward despite a significant rebound of real PCE. As a result, we have boosted growth of real PCE over the rest of the forecast horizon, keeping the personal saving rate essentially flat. Third, data on the manufacturing sector and prices of goods have improved more than we were expecting, so there is less inventory drag over the 2016Q2 through 2016Q4 period (but somewhat more for 2016 on a Q4/Q4 basis). For 2017, we continue to expect growth to slow to around 1¾% due to a combination of aging of the business cycle and the gradual tightening of financial conditions generated by our assumed upward path for the federal funds rate.

With little change in projected growth, the path of the unemployment rate is essentially unchanged in this round. The unemployment rate declines to around 4¾% by the end of 2016 and then stays at that level through the end of 2017. Associated with this flattening of the unemployment rate is a flat participation rate and a return of productivity growth to our assumed longer term trend (1% to 1¼% on a GDP basis).

With our estimate of potential growth and NAIRU unchanged, our projections of real growth and the unemployment rate would imply that the path of the output gap is also little changed. With that, our models of inflation continue to predict gradual firming of inflation over the forecast horizon. Nonetheless, we have boosted core PCE inflation in 2016 to 1.5% from 1.4% and in 2017 to 1.8% from 1.7%. This was prompted by the firming of core inflation over the past few months. If health care inflation and goods prices have truly turned the corner, then there is some upside risk to our inflation forecast.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Jan	Mar	Jan	Mar	Jan	Mar	Jan	Mar
2015								
Q1	*1.0*	*1.0*	*0.6*	*0.6*	*5.6*	*5.6*	*0-0.25*	*0-0.25*
Q2	*1.9*	*1.9*	*3.9*	*3.9*	*5.4*	*5.4*	*0-0.25*	*0-0.25*
Q3	*1.4*	*1.4*	*2.0*	*2.0*	*5.2*	*5.2*	*0-0.25*	*0-0.25*
Q4	*1.2*	*1.3*	*0.9*	*1.0*	*5.0*	*5.0*	*0.38*	*0.38*
2016								
Q1	1.3	1.7	2.1	1.8	4.9	4.9	0.38	0.38
Q2	1.3	1.4	2.1	2.3	4.9	4.8	0.55	0.55
Q3	1.4	1.5	1.9	2.2	4.8	4.8	0.71	0.71
Q4	1.5	1.6	1.9	2.1	4.8	4.7	0.88	0.88
2017								
Q1	1.6	1.7	1.5	1.5	4.8	4.7	1.1	1.13
Q2	1.7	1.8	1.8	1.8	4.8	4.7	1.4	1.38
Q3	1.7	1.8	1.6	1.8	4.8	4.7	1.6	1.63
Q4	1.8	1.9	1.9	1.7	4.8	4.7	1.9	1.88
Q4/Q4								
2014	1.4	1.4	2.5	2.5	-1.2	-1.2	0-0.25	0-0.25
2015	1.4	1.4	1.9	1.9	-0.7	-0.7	0.38	0.38
2016	1.4	1.5	2.0	2.1	-0.2	-0.3	0.88	0.88
2017	1.7	1.8	1.7	1.7	0.0	0.0	1.9	1.88

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

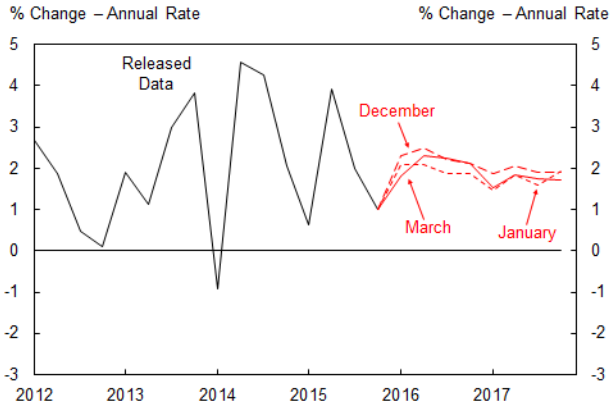
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

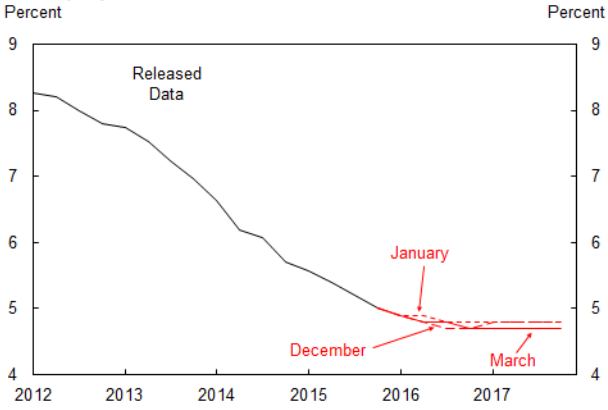
2-2: Evolution of Projected Quarterly Paths

Key Indicators

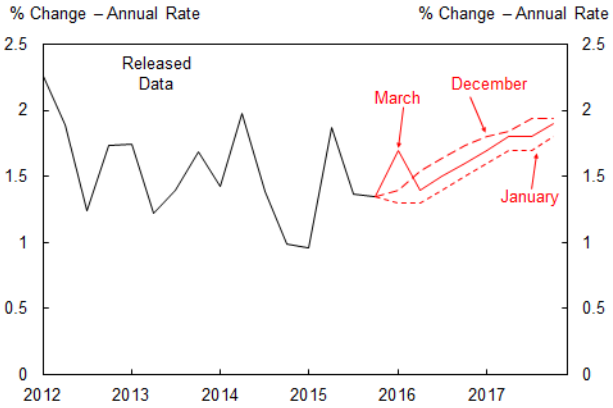
Real GDP Growth



Unemployment Rate

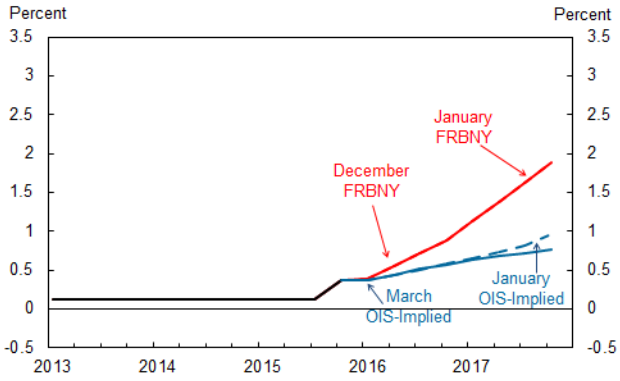


Core PCE Inflation

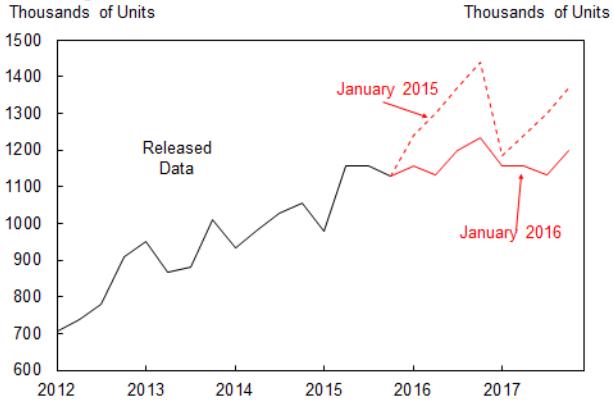


Forecast Assumptions

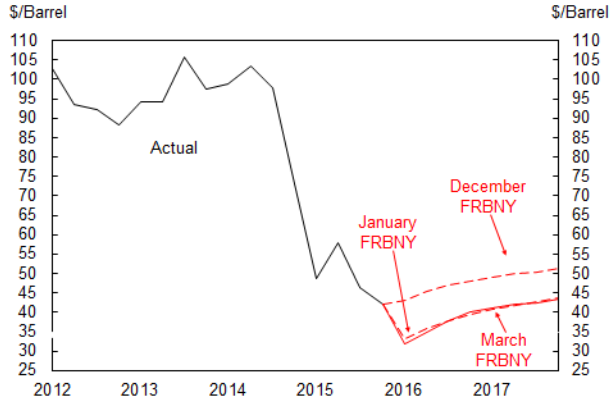
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q1	2016Q2	2016Q3	2016Q1	2016Q2	2016Q3
OUTPUT						
Real GDP	1.8	2.3	2.2	1.8	2.3	2.2
	(2.1)	(2.1)	(1.9)	(2.1)	(2.1)	(1.9)
Final Sales to Domestic Purchasers	3.0	3.5	3.5	3.1	3.5	3.6
	(3.4)	(3.1)	(3.1)	(3.5)	(3.2)	(3.1)
Consumption	3.2	3.0	2.8	2.2	2.0	1.9
	(2.7)	(2.6)	(2.5)	(1.8)	(1.8)	(1.7)
BFI: Equipment	4.0	6.0	8.0	0.2	0.4	0.5
	(6.0)	(6.0)	(6.0)	(0.4)	(0.4)	(0.4)
BFI: Nonresidential Structures	-5.0	4.0	6.0	-0.1	0.1	0.2
	(4.0)	(4.0)	(4.0)	(0.1)	(0.1)	(0.1)
BFI: Intellectual Property Products	6.0	6.0	6.0	0.2	0.2	0.2
	(6.0)	(6.0)	(6.0)	(0.2)	(0.3)	(0.3)
Residential Investment	8.2	14.3	13.4	0.3	0.5	0.5
	(20.8)	(12.9)	(12.6)	(0.6)	(0.4)	(0.4)
Government: Federal	0.0	2.4	2.4	0.0	0.2	0.2
	(2.0)	(2.0)	(2.0)	(0.1)	(0.1)	(0.1)
Government: State and Local	2.5	1.4	1.4	0.3	0.1	0.2
	(1.4)	(1.4)	(1.4)	(0.2)	(0.2)	(0.2)
Inventory Investment	--	--	--	-0.5	-0.1	0.0
	--	--	--	(-0.2)	(0.1)	(0.0)
Net Exports	--	--	--	-0.8	-1.1	-1.3
	--	--	--	(-1.1)	(-1.2)	(-1.3)
INFLATION						
Total PCE Deflator	-0.2	1.1	1.5			
	(0.0)	(1.6)	(1.8)			
Core PCE Deflator	1.7	1.4	1.5			
	(1.3)	(1.3)	(1.4)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.0	1.1	1.1			
	(1.0)	(1.3)	(0.8)			
Compensation per Hour	2.9	3.0	3.3			
	(3.0)	(3.2)	(3.5)			
Unit Labor Costs	2.9	1.9	2.2			
	(2.0)	(1.9)	(2.7)			

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

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2015	2016	2017	2015	2016	2017
OUTPUT						
Real GDP	1.9	2.1	1.7	1.9	2.1	1.7
	(1.9)	(2.0)	(1.7)	(1.9)	(2.0)	(1.7)
Final Sales to Domestic Purchasers	2.4	3.3	2.4	2.5	3.3	2.5
	(2.6)	(3.1)	(2.3)	(2.6)	(3.2)	(2.4)
Consumption	2.6	2.9	2.2	1.8	2.0	1.5
	(2.6)	(2.5)	(2.2)	(1.7)	(1.7)	(1.5)
BFI: Equipment	2.6	6.5	4.0	0.2	0.4	0.2
	(4.0)	(5.7)	(3.5)	(0.2)	(0.3)	(0.2)
BFI: Nonresidential Structures	-3.9	3.1	4.0	-0.1	0.1	0.1
	(-3.2)	(4.0)	(3.5)	(-0.1)	(0.1)	(0.1)
BFI: Intellectual Property Products	4.0	5.7	3.5	0.2	0.2	0.1
	(5.2)	(5.7)	(3.5)	(0.2)	(0.2)	(0.2)
Residential Investment	8.9	10.0	9.8	0.3	0.3	0.4
	(8.1)	(13.4)	(9.1)	(0.3)	(0.4)	(0.3)
Government: Federal	0.9	1.8	-0.5	0.1	0.1	0.0
	(1.6)	(2.0)	(-0.5)	(0.1)	(0.1)	(-0.0)
Government: State and Local	1.2	1.7	0.7	0.1	0.2	0.1
	(1.6)	(1.4)	(0.7)	(0.2)	(0.2)	(0.1)
Inventory Investment	--	--	--	0.0	-0.2	-0.1
	--	--	--	(-0.2)	(-0.0)	(0.0)
Net Exports	--	--	--	-0.6	-1.1	-0.7
	--	--	--	(-0.6)	(-1.1)	(-0.7)
INFLATION						
Total PCE Deflator	0.5	1.0	1.9			
	(0.4)	(1.3)	(1.8)			
Core PCE Deflator	1.4	1.5	1.8			
	(1.4)	(1.4)	(1.7)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.5	0.8	1.1			
	(0.9)	(1.0)	(1.0)			
Compensation per Hour	2.6	3.2	3.3			
	(3.5)	(3.3)	(3.7)			
Unit Labor Costs	2.1	2.3	2.2			
	(2.6)	(2.3)	(2.7)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	3/9/2016	1.8	2.3	2.1	1.7
		(2.1)	(2.1)	(2.0)	(1.7)
Blue Chip	3/10/2016	2.0	2.4	2.1	2.4
		(2.5)	-	(2.5)	-
Median SPF	2/12/2016	2.0	2.5	2.1	2.4
		(2.5)	(2.6)	(2.6)	(2.5)
Macro Advisers	3/3/2016	2.0	2.0	2.1	2.1
		(1.8)	-	(2.1)	-
FRBNY-DSGE	3/7/2016	1.4	1.8	1.8	2.2
		(1.6)	-	(1.8)	-

Core PCE Inflation

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	3/9/2016	1.7	1.4	1.5	1.8
		(1.3)	(1.3)	(1.4)	(1.7)
Median SPF	2/12/2016	1.4	1.5	1.6	1.8
		(1.5)	(1.6)	(1.6)	(1.8)
Macro Advisers	3/3/2016	1.8	1.5	1.6	1.8
		(1.2)	-	(1.4)	-
FRBNY-DSGE	3/7/2016	1.6	1.3	1.3	1.2
		(1.1)	-	(1.1)	-

CPI Inflation

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	3/9/2016	-0.7	2.0	1.4	2.3
		(0.3)	(0.3)	(1.5)	(2.2)
Blue Chip	3/10/2016	0.2	1.9	1.3	2.3
		(1.2)	-	(1.6)	-
Median SPF	2/12/2016	0.4	1.6	1.5	2.2
		(1.8)	(2.1)	(2.0)	(2.3)
Macro Advisers	3/3/2016	-0.4	2.2	1.7	2.2
		(0.9)	-	(2.0)	-

Core CPI Inflation

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	3/9/2016	2.4	2.0	2.1	2.3
		(1.7)	(1.8)	(1.8)	(2.1)
Median SPF	2/12/2016	1.8	2.0	2.0	2.1
		(1.9)	(2.0)	(2.0)	(2.1)
Macro Advisers	3/3/2016	1.7	1.9	1.8	2.0
		(1.8)	-	(1.9)	-

*Note: Numbers in gray are from the previous Blackbook

3. Uncertainty & Risks

Developments during the intermeeting period, including movements in financial markets as well as more encouraging economic activity and inflation indicators, point to a reduction in the considerable downside risks to our economic outlook that we had in the January *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the balance of risks for real GDP growth remain to the downside at almost all horizons. For core PCE inflation, the risks are roughly balanced through 2017, and are skewed slightly to the downside in 2018. The widths of the probability intervals have narrowed since the January *Blackbook*. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close its historical norms.

Overall, the data on U.S. real economic activity over the intermeeting period had a more positive tone. Manufacturing data generally indicated that production was not deteriorating further and perhaps was beginning to improve. Indicators of consumer spending were fairly robust. The January and February labor market reports indicated that the labor market improved further at the beginning of 2016. However, investment indicators remained soft. Based on 12-month changes, core PCE inflation has picked up in recent months, showing progress toward the FOMC objective. Alternative underlying inflation measures behaved similarly. In contrast, longer-term inflation compensation in the U.S. and survey measures of inflation expectations, including the FRBNY SCE 3-year ahead median, continued to be at very low levels. Outside of the U.S., the data generally were on the softer side, but there were no strong signal of a significant further deterioration in the global economic outlook.

Financial markets provided signals of a reduction in downside risks to the global economic outlook. After falling further early in the period, equity prices in developed economies and emerging markets increased substantially over the rest of the period, and measures of implied volatility fell moderately. Oil and commodity prices rebounded from multi-year lows. However, long-term nominal and real yields in the U.S. still declined over the period, leading to some flattening in the yield curve. The market-implied expected policy path also flattened. Long-term

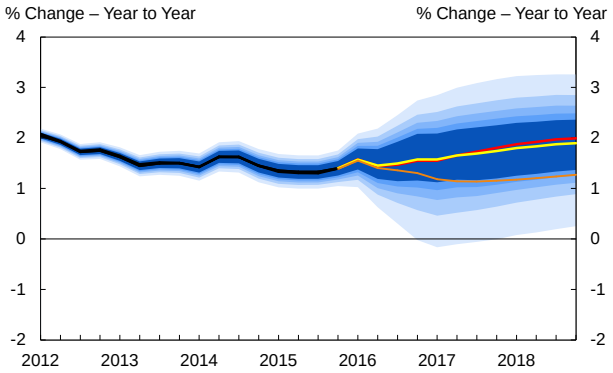
yields in the euro area and Japan fell, particularly after the move to negative rates by the BoJ. The trade-weighted dollar index depreciated: the depreciation was broad based, with the depreciation against the Japanese yen notable given the policy easing in Japan.

We interpreted these developments as indicating a reduction in the downside risks to the U.S. outlook, leading to some changes in the probabilities of our scenarios [Exhibit 3-2]. To reflect the brighter tone of the economic data and the improvement in global financial conditions, we decreased the probabilities of the negative *Fiscal Consolidation* and *Global Credit Crunch* scenarios, as we assess lesser chances of more severe downside risks materializing for global economy with spillovers to the U.S. Consistent with this assessment, there was a small increase in probability of the positive *Faster Growth* scenario. The recent rise in commodity prices led to a reduction in the probability of the *Global Deflation* scenario; however, continued low inflation compensation meant no increase in the probability of the *Loss of Credibility* scenario. Overall, these changes led to a narrowing of the 90 percent probability intervals for real GDP growth and core PCE inflation [Exhibit 3.3]. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is now close to its norms. The real GDP growth forecast distributions reflect that the risks to real activity are skewed to the downside through most of the forecast horizon, while the risks to inflation are roughly balanced in 2016-17 and slightly to the downside in 2018 [Exhibit 3-1].

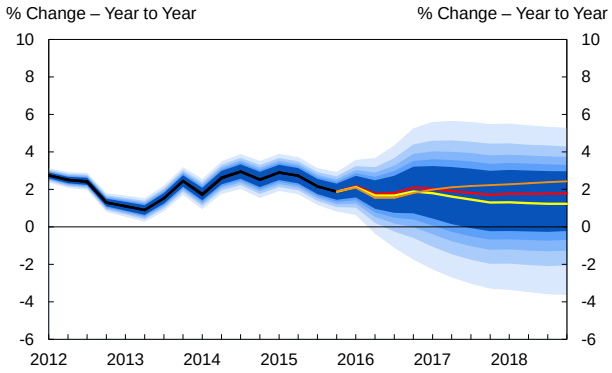
Comparing the recent data and our current expected forecast to the forecast distribution from a year earlier, the current projection for inflation generally runs quite near to the year-ago expectation over the forecast horizon. This reflects the recent rise in data as measured by the 4-quarter change, an inflation forecast that is fairly similar to that of a year ago, and roughly balanced risks to the inflation outlook [Exhibit 3-3]. Real GDP growth in 2015 was in the lower part of the year-ago distribution, as the expected rebound in growth failed to materialize. Going forward, the current real GDP growth expectation is moderately below the year-ago expectation over the forecast horizon, reflecting the subdued path for real GDP growth and the continued downside risks in our outlook. These patterns indicate some deterioration in our outlook for real activity over the past year.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



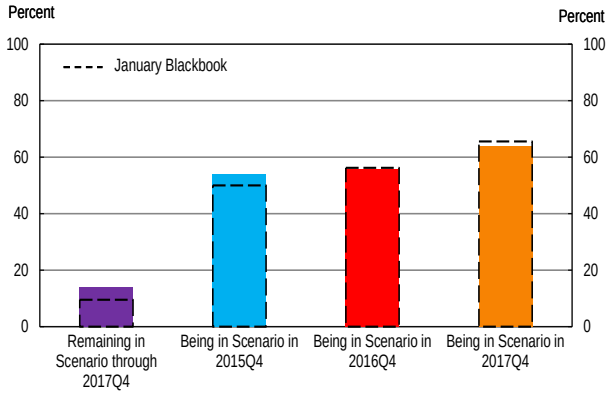
Real GDP Growth Forecast Distribution



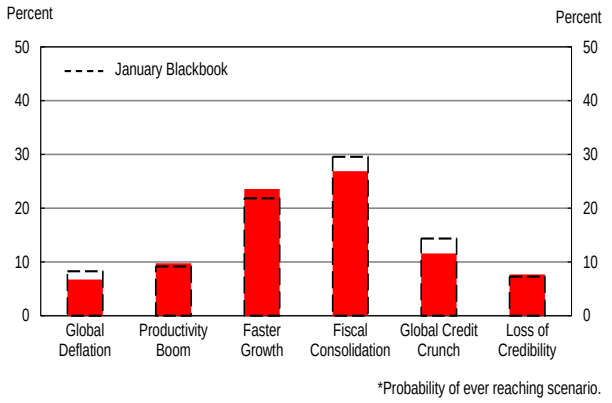
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*

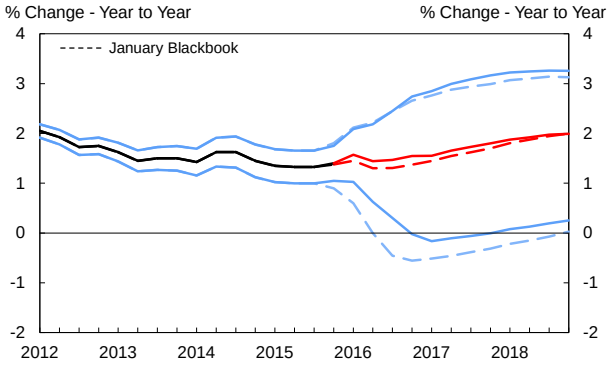


The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

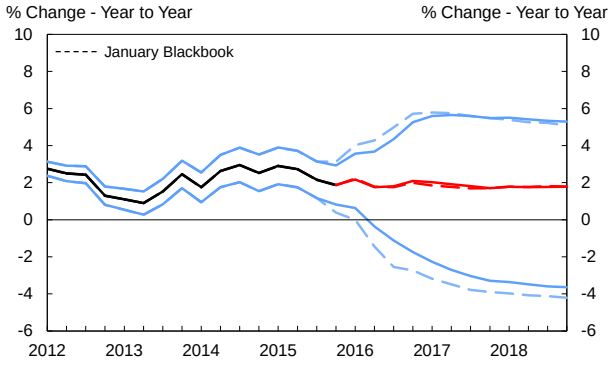
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

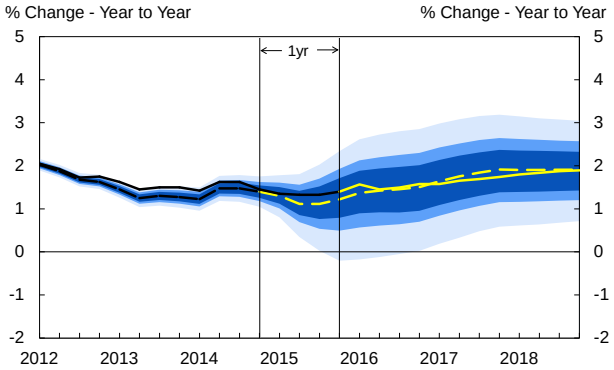


Change in Real GDP Growth Forecast Distribution

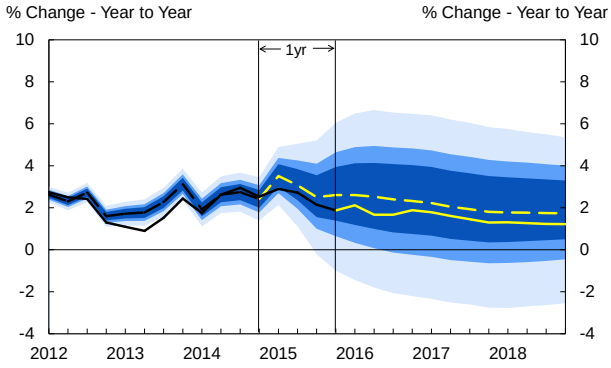


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

April 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

April 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Developments over the intermeeting period do not support a significant change in our central forecast and risk assessment relative to the March *Blackbook*. We thus recommend maintaining the current stance of monetary policy at the April FOMC meeting. If the economy evolves according to our forecast, we recommend some modest tightening of the policy stance over the course of 2016 and a relatively shallow path of the policy rate over the rest of the forecast horizon. Accordingly, a hike in June could still be appropriate, but the bar remains high. Based on current prices, market participants appear to place about 20 percent probability on a June policy rate hike, and we see that probability as consistent with our recommendation. In a context of data-dependency, subsequent positive economic news should lead to an appropriate adjustment in that probability. There is thus no need to "boost" the market-implied probability of a June hike artificially through more hawkish communications.

The data released over the intermeeting period were somewhat disappointing with March retail sales being a preeminent example. As a result, we lowered our forecast for real GDP growth in the first quarter of 2016 to 0.3 percent (annual rate), 1½ percentage points below that in the March *Blackbook*. This downward revision was driven primarily by unexpected weakness in personal consumption expenditures, reflecting not only softer-than-expected March motor vehicle sales and non-auto retail sales but also a significant downward revision to the January consumption data. Business fixed investment was also weaker than we had anticipated at the time of the March *Blackbook*, due to further contraction in oil and gas drilling, continued weakness in capital goods shipments and orders, and ongoing softness in manufacturing activity. With this downward revision, our judgmental projection for Q1 is now below the FRBNY staff nowcast, a flip from the pattern in the March *Blackbook*. Even so, both projections point to a weak pace of growth in the quarter.

That said, we view the revision to the Q1 projection as reflecting transitory factors, and we anticipate a notable rebound to a 2.3 percent growth rate in Q2 (in contrast, based on limited data, the staff nowcast projects growth below one percent in Q2). Based on continued solid income and employment data, improved private balance sheets and a somewhat more stimulative

fiscal policy, consumer spending growth is projected to rebound to about 2.8 percent (annual rate) in Q2, accompanied by the pick-up in business fixed investment. As a consequence, we have made little change to our medium-term outlook. The GDP growth forecast for 2016 now stands at 1.9 percent (Q4/Q4), as compared to 2.1 percent in the March *Blackbook*, and that for 2017 is unchanged at 1.7 percent. Also little changed is our forecast for the unemployment rate, which we expect to be near our 4¾ percent estimate of the longer-run natural rate of unemployment by the end of this year and to remain around that level over the rest of the forecast horizon.

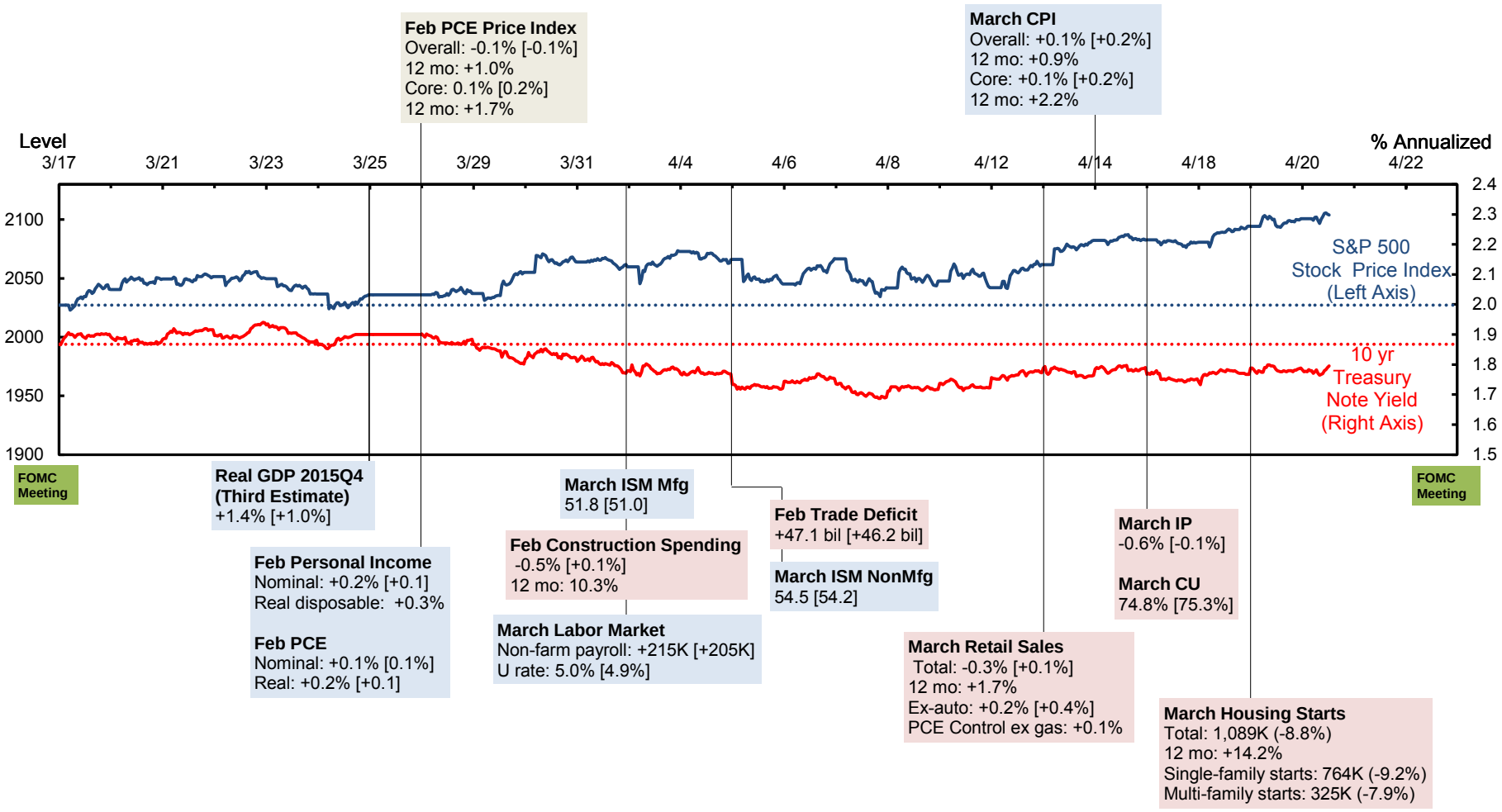
Despite the somewhat negative signals from the real economy, overall financial conditions improved over the intermeeting period. The S&P 500 index rose and it is now above its 2015 year-end level, while the VIX is significantly below its historical average. Credit spreads narrowed modestly since the last FOMC even though they remain at fairly elevated levels. Furthermore, the dollar depreciated against most major currencies. Of note, the improvement in financial conditions has occurred against a backdrop of an appreciable decline in longer-term nominal and real Treasury yields and a shift downward in the market-implied expected path of the federal funds rate.

On inflation, we view the dollar depreciation and the recent stabilization of energy and import prices as consistent with a gradual return of inflation to the FOMC's longer-run objective. At the same time, recent inflation readings suggest that the sharper than anticipated pick-up in inflation observed over the past few months has been partly driven by idiosyncratic factors. Headline PCE inflation over the past 12 months ticked down to 1.0 percent in February, from 1.2 percent in January, and the 12-month core PCE inflation remained at 1.7 percent in February. Moreover, the small reduction in overall and core CPI inflation in March suggests that PCE inflation could moderate further. As a result, we see the earlier pick-up as largely transitory and have made only minor upward adjustments to the projection in future quarters. Reinforcing our views of only a gradual increase in inflation over the forecasting horizon, survey measures of household medium- and longer-term inflation expectations—including the FRBNY SCE measure—remain at or near the bottom of their historical ranges. Market-based measures of inflation

compensation both in the US and other countries also remain at very low levels, reflecting concerns about weak output growth/low inflation risks.

We still see the risks to economic activity as skewed to the downside. Europe and Japan continue to face downside risks to their real activity and inflation outlooks. If these conditions trigger additional monetary stimulus, we should expect renewed appreciation of the dollar, with potentially negative consequences for our growth and inflation outlook. Other international developments such as the upcoming "Brexit" referendum, the still-evolving situation in China and the uncertainties about other major emerging economies—for example, Russia and Brazil—could trigger financial turbulence similar to that observed in early 2016. Under this scenario, the likelihood of a sharp contraction in domestic growth would be fairly high. In addition, the developments over the intermeeting period discussed previously point to additional domestic risk factors. Although we view the recent weakness in consumer expenditures as temporary, low aggregate demand or productivity growth might have a more pervasive impact on the U.S. economy than we have assumed. The above-cited domestic and global factors, along with continued low inflation expectations, also pose downside risks to inflation; however, the uptick in commodity prices and the recent weakness of the dollar indicate potential offsetting upside risks. Overall, we continue to see the risks for inflation as roughly balanced over the next year.

Given our modal outlook and risk assessment, we recommend no change in the current monetary policy stance at the April FOMC meeting. Because the room to respond to negative shocks remains limited, we see patience in the face of considerable uncertainty as the appropriate policy strategy. We also continue to advise retaining a relatively high bar for monetary tightening over this year. A set of conditions that could meet that bar is the following. First, more concrete evidence that inflation is rising toward the FOMC's objective at a pace at least as fast as in our central scenario; for example, further depreciation of the dollar coupled with significant gains in commodity prices. Second, indications that uncertainty from the foreign outlook is dissipating and is leading to an easing of financial conditions. Lastly, consumption begins to rebound from its softness in Q1, in line with our forecast assumptions.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

Data released over the intermeeting period have led us to substantially lower our estimate of growth of real GDP in 2016Q1 to just 0.3% (annual rate) from 1¾% in the March Blackbook. Considerably weaker growth of real PCE is the primary source of this downward revision. However, we have also marked down growth of business fixed investment, such that it is now expected to decline in Q1 for the second consecutive quarter. These declines were partially offset by less drag from inventories and net exports, both based on data through February.

While real PCE grew at a respectable 2.4% annual rate in the month of February, the January data were revised down substantially and now show a modest decline. Then the March data on light-weight vehicle sales surprised to the downside, with sales at 16.6 million (SAAR), down from an average of 17.6 over January and February. Finally, the retail sales data for March were another downside surprise with the BEA control increasing just 0.1% (monthly rate) versus a consensus expectation of a 0.4% increase. At this point we expect growth of real PCE of just 1 ¼% (annual rate) in Q1 versus 3.2% in the last Blackbook.

Looking at consumer spending over a slightly longer period, real spending on goods has slowed sharply since last August. As of February of this year, a six month annualized change of real spending on goods has slowed to essentially zero. This slowing of spending on goods has been broad based, including motor vehicles and parts, other durable goods (such as watches and jewelry), and virtually every category of nondurable goods. In contrast, growth of real spending on services has been moving generally higher since 2012. Since the third quarter of 2015 there have been notable increases in consumer spending on air fares, recreation services, and financial services.

We are at a loss to explain the sharp slowing of growth of real PCE in Q1 or the somewhat longer term slowdown in spending on goods. We estimate that real disposable income grew at about a 3% annual rate in the first quarter, somewhat stronger than over the second half of 2015

when real PCE grew at a 2¾% annual rate. There is some evidence that actual consumer spending was stronger than we estimate due to distortions that have crept into the measurement of the BEA control. That measure is defined as retail sales excluding sales of auto dealers, building supply stores, and gasoline stations. But over time large retailers such as Walmart and Costco have become much more important sources of gasoline sales. There is speculation that the deflator BEA uses to convert the control retail sales measure into real terms has not kept pace with this change in the gasoline distribution network. If true, the January and February levels of real PCE were likely stronger than BEA has reported. However, this argument lost some credibility with the release of the March retail sales data. Gasoline prices rose in March on both a not-seasonally-adjusted and a seasonally-adjusted basis, which should have boosted the BEA control for that month. If this is a meaningful distortion, then the true BEA control grew even less than reported for March.

Yet another hypothesis about the weak Q1 growth of retail sales and real PCE is that, due to lags in the collection of data regarding foreign tourists, too much of retail sales is being allocated to purchases by nonresidents, which are subtracted out of real PCE and included in exports. (The sharp falloff in spending on apparel over the past several months may be evidence of this effect.) This would not affect the growth of real GDP but the allocation between real PCE and real exports.

Similarly, there are a number of theories regarding the relatively weak March vehicle sales data. Easter did fall in March of this year for only the third time in the past decade, complicating seasonal adjustment. In addition, some manufacturers have been cutting back on fleet sales. Finally, it has been reported to us by one large dealership that the manufacturers have been tightening up the terms on leases due to concern that the assumptions on residual values are too aggressive. We are assuming some recovery of vehicle sales in 2016Q2 but believe that this cycle it at or near maturity.

As mentioned above, we have also reduced our already weak estimate of growth of business fixed investment in the first quarter. Both orders and shipments of nondefense capital goods fell sharply in February, with shipments on track to decline at a 10% annual rate in Q1 following a

5% decline in 2015Q4. We now expect real investment in new equipment to decline at a 5.5% annual rate in the first quarter. Similarly, while nominal construction put in place for nonresidential structures likely increased modestly Q1, oil and gas drilling activity declined around 65%, suggesting negative growth of business investment in nonresidential structures for the first three months of 2016.

Both total housing starts and permits for the month of March came in below expectations. Single-family starts fell 9.2% in March, but due to upward revisions to January and February levels, the quarterly average of 792,000 was above our expectations. Multi-family starts fell 7.9% in March, and January and February levels were revised downward modestly. As a result, the quarterly average of 341,000 was well below our expectations and the lowest quarterly average since 2015Q1. The net result was a modest downward revision of our expected growth of real residential investment in the first quarter to 8% (AR). And based upon the starts that are already in the pipeline, combined with strong growth of spending on improvements to existing structures, residential investment is on track to grow at a double digit rate in the second quarter. However, despite the fact that mortgage rates have fallen back below 4%, it does appear that housing starts have lost some of their upward momentum. Homebuilder sentiments regarding current sales and sales six months in the future have both edged down since September-October of 2015.

The February trade data was much better than expected, with our estimate of the net export trade drag in Q1 at -0.5 percentage points versus -0.8 percentage points in the previous Blackbook. Finally, while not a positive in a fundamental sense, the inventory data through February point to stronger inventory investment in Q1 than we had anticipated, particularly for motor vehicles. We now expect inventory drag of just -0.1 percentage point in Q1 versus -0.5 in the March Blackbook. This means that we ended the first quarter with an even higher ratio of inventories over final sales than was the case at the end of 2015Q4.

The March employment report was another relatively strong one, with payroll employment rising by 215,000, hours worked increasing at a 2.3% annual rate, and average hourly earnings rising at a 3.4% annual rate. For the entire first quarter, payroll gains averaged 209,000 per month,

somewhat below the average monthly gain of 229,000 for 2015, and hours worked increased at around a 2% annual rate. From the household survey, employment rose a brisk 246,000 in March, yet the unemployment rate rose to 5.0% from 4.9% over the previous two months. The labor force participation rate rose to 63.0% in March from a recent low of 62.4% last September. This represents the largest six month increase in the participation rate since the early 1990s.

News from the manufacturing sector has been mixed. From a recent low of 48 last December, the ISM manufacturing composite index has risen for three consecutive months, reaching 51.8 in March. The new orders subcomponent increased to 58.3 in March from a recent low of 48.8 last December. For the month of March, the Empire State, Philadelphia, Richmond, and Texas manufacturing indices all increased, with substantial contributions from new orders. In contrast, based on the Industrial Production data, manufacturing output declined 0.3% in March while the February data were revised to show a 0.1% decline rather than a 0.1% increase as first reported. The level of manufacturing output has been essentially unchanged for six months.

Turning to prices, the total CPI rose 0.1% in March following a 0.2% decline in February. Energy prices rose 1% (monthly rate), but for the first quarter as a whole were down at a 28% annual rate. Prices of food for home consumption also fell in March and have now declined for two consecutive quarters. On a year-over-year basis, total CPI inflation was 0.9% in March, down from a recent high of 1.3% in January. The core CPI rose 0.1% in March following 0.3% increases in both January and February. On a 12-month change basis, core CPI inflation slowed to 2.2% in March from 2.3% in February. Core goods prices fell 0.2% in March, led by a 1.1% decline of apparel prices. This puts the year-over-year change of core goods prices back into negative territory (-0.6%), but as recently as last October this year-over-year change was nearly -2%. As of March, nonpetroleum import price were still falling on a year-over-year basis, but the rate of decline has begun to ease. Core services prices rose 0.2% in March, down from 0.3% in each of the previous two months. Prices of hospital services fell in March, and there was a very large decline in the price of lodging away from home. Also noteworthy, rent inflation has eased a bit in the past few months. The 12-month change of core services was 3.0% in March, down from 3.1% in February.

The Outlook

Despite the much weaker than expected growth rate in 2016Q1, our forecast for growth of real GDP in 2016 is little changed at 1.9% (Q4/Q4), modestly lower than the 2.1% projected in the March Blackbook. While we do not completely understand what happened in the first quarter, particularly regarding consumer spending, we see the underlying fundamentals of the economy as generally favorable. Income generation from the labor market has been well maintained thus far in 2016, and with quite low overall inflation, growth of real disposable income was nearly 2¾% (AR) in the first quarter. The personal saving rate rose to around 5¼% in Q1, up from 5% in 2105Q4, and given the rebound in equity prices, looks even further out of line with household net worth. While we have tempered the uptrend in housing starts somewhat in this forecast cycle, we still see a gradual uptrend as the most likely scenario, particularly given the continued low level of starts on a per capita basis. In addition, the bulk of the contraction in oil and gas related investment is likely behind us, and there is some forward momentum evident in the investment data when oil and gas related investment is removed. The nominal broad trade-weighted exchange value of the dollar is down about 5% from its late January peak, prompting us to lower somewhat the exchange value of the dollar over the forecast horizon. As a result, the net export drag on growth in 2016 has been cut nearly in half to around -0.6 percentage points. Indeed, there are some tentative signs that activity in the manufacturing sector may be bottoming out. And thinking in broader terms, household and business balance sheets are in good shape, fiscal policy is slightly stimulative, and monetary policy still very accommodative.

The 1.9% growth predicted for 2016 is slightly above our estimate of the economy's potential growth rate—now estimated at 1¾%—resulting in some additional tightening of the labor market. As a result, the unemployment rate should decline over the year, reaching 4.8% by 2016Q4. This is one tenth higher than in the March Blackbook due to the assumption of a slight upward trend of the labor force participation. Due to declining energy prices over the first half of 2016, the total Personal Consumption Expenditures (PCE) deflator is expected to increase just 1.1% (Q4/Q4) this year. In contrast, due to a higher than expected rate of core PCE inflation in Q1, we expect core inflation of 1.7% (Q4/Q4) this year, up from 1.4% in 2015 and 0.2 percentage points higher than in the March Blackbook.

For 2017 we expect growth of real GDP to slow to around our estimate of potential due to a combination of the aging of the business cycle and the ongoing tightening of financial conditions associated with further movement toward the normalization of monetary policy. The unemployment rate is expected to remain roughly stable. Productivity growth is assumed to increase a bit further but remain below its long term trend of 1% to 1¼%. In addition, the labor force participation rate is expected to increase by another tenth in 2017, reaching 63.2 by the end of the year. Core PCE inflation is expected to edge gradually higher, reaching 1.9% for all of 2017, reflecting reduced slack, relatively stable energy prices, a declining impulse from past dollar appreciation, and well-anchored inflation expectations.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Mar	Apr	Mar	Apr	Mar	Apr	Mar	Apr
2015								
Q1	*1.0*	*1.0*	*0.6*	*0.6*	*5.6*	*5.6*	*0-0.25*	*0-0.25*
Q2	*1.9*	*1.9*	*3.9*	*3.9*	*5.4*	*5.4*	*0-0.25*	*0-0.25*
Q3	*1.4*	*1.4*	*2.0*	*2.0*	*5.2*	*5.2*	*0-0.25*	*0-0.25*
Q4	*1.3*	*1.3*	*1.0*	*1.4*	*5.0*	*5.0*	*0.38*	*0.38*
2016								
Q1	1.7	2.0	1.8	0.3	4.9	4.9	0.38	0.38
Q2	1.4	1.5	2.3	2.3	4.8	5.0	0.55	0.55
Q3	1.5	1.6	2.2	2.3	4.8	4.9	0.71	0.71
Q4	1.6	1.7	2.1	2.8	4.7	4.8	0.88	0.88
2017								
Q1	1.7	1.8	1.5	1.7	4.7	4.8	1.1	1.06
Q2	1.8	1.9	1.8	1.8	4.7	4.8	1.4	1.25
Q3	1.8	2.0	1.8	1.3	4.7	4.8	1.6	1.44
Q4	1.9	2.0	1.7	1.8	4.7	4.8	1.9	1.63
Q4/Q4								
2014	1.4	1.4	2.5	2.5	-1.2	-1.2	0-0.25	0-0.25
2015	1.4	1.4	1.9	2.0	-0.7	-0.7	0.38	0.38
2016	1.5	1.7	2.1	1.9	-0.3	-0.2	0.88	0.88
2017	1.8	1.9	1.7	1.7	0.0	0.0	1.9	1.63

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

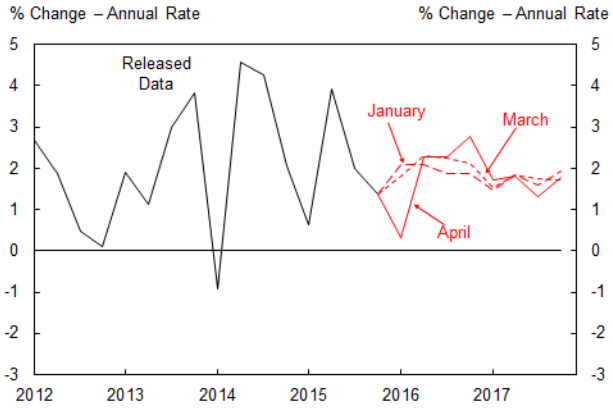
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

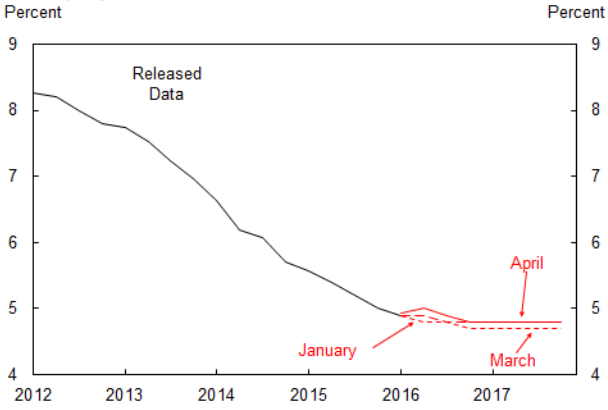
2-2: Evolution of Projected Quarterly Paths

Key Indicators

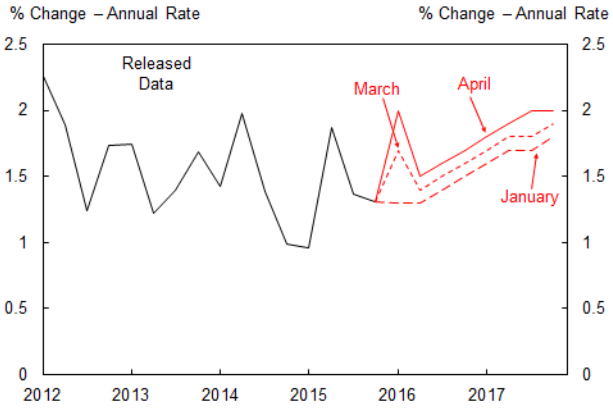
Real GDP Growth



Unemployment Rate

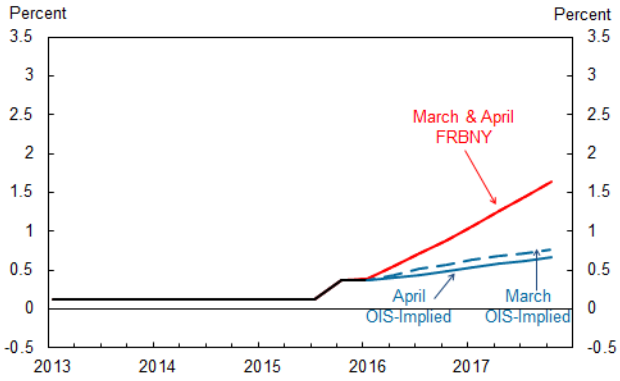


Core PCE Inflation

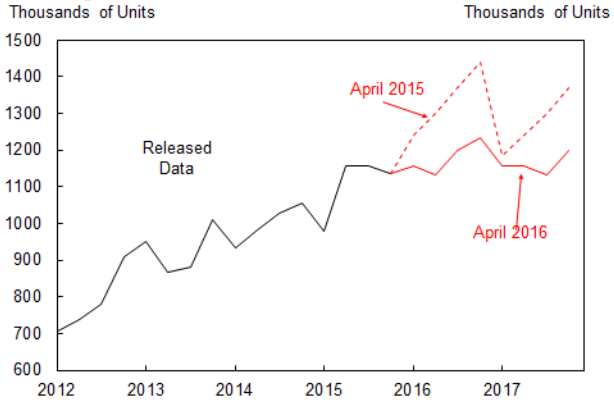


Forecast Assumptions

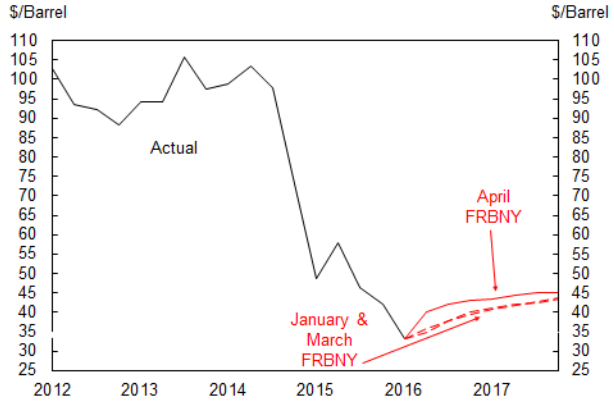
Federal Funds Rate



Housing Starts



Crude Oil



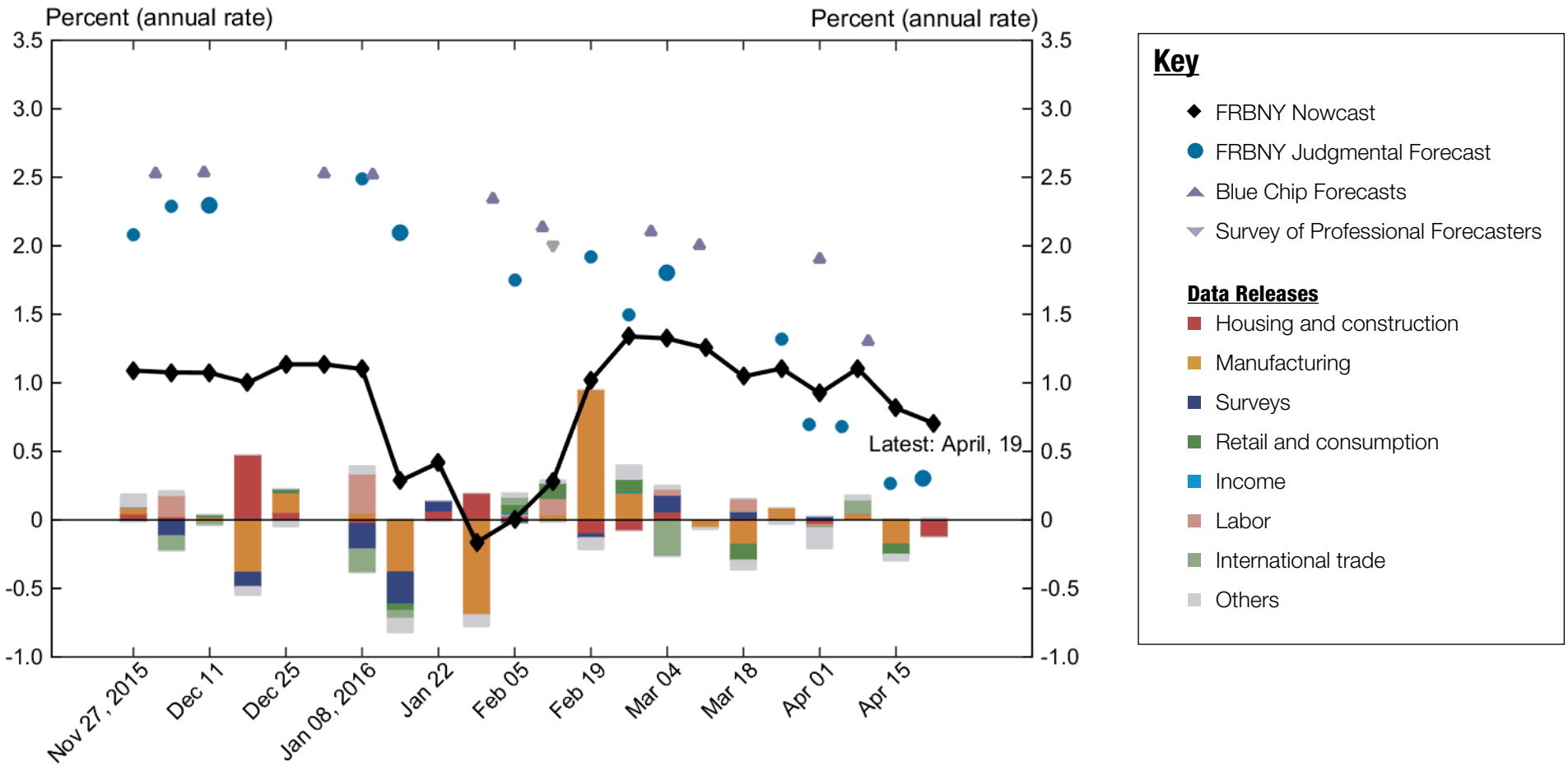
Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q1	2016Q2	2016Q3	2016Q1	2016Q2	2016Q3
OUTPUT						
Real GDP	0.3	2.3	2.3	0.3	2.3	2.3
	(1.8)	(2.3)	(2.2)	(1.8)	(2.3)	(2.2)
Final Sales to Domestic Purchasers	0.9	3.2	3.1	1.0	3.3	3.1
	(3.0)	(3.5)	(3.5)	(3.1)	(3.5)	(3.6)
Consumption	1.2	2.8	2.8	0.8	1.9	1.9
	(3.2)	(3.0)	(2.8)	(2.2)	(2.0)	(1.9)
BFI: Equipment	-5.5	4.0	6.0	-0.3	0.2	0.3
	(4.0)	(6.0)	(8.0)	(0.2)	(0.4)	(0.5)
BFI: Nonresidential Structures	-7.0	2.0	4.0	-0.2	0.1	0.1
	(-5.0)	(4.0)	(6.0)	(-0.1)	(0.1)	(0.2)
BFI: Intellectual Property Products	5.0	6.0	6.0	0.2	0.2	0.2
	(6.0)	(6.0)	(6.0)	(0.2)	(0.2)	(0.2)
Residential Investment	8.3	15.2	5.9	0.3	0.5	0.2
	(8.2)	(14.3)	(13.4)	(0.3)	(0.5)	(0.5)
Government: Federal	-1.5	2.4	2.4	-0.1	0.2	0.2
	(0.0)	(2.4)	(2.4)	(0.0)	(0.2)	(0.2)
Government: State and Local	2.6	1.5	1.5	0.3	0.2	0.2
	(2.5)	(1.4)	(1.4)	(0.3)	(0.1)	(0.2)
Inventory Investment	--	--	--	-0.1	-0.7	0.0
	--	--	--	(-0.5)	(-0.1)	(-0.0)
Net Exports	--	--	--	-0.6	-0.3	-0.9
	--	--	--	(-0.8)	(-1.1)	(-1.3)
INFLATION						
Total PCE Deflator	0.2	0.8	1.6			
	(-0.2)	(1.1)	(1.5)			
Core PCE Deflator	2.0	1.5	1.6			
	(1.7)	(1.4)	(1.5)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	-1.8	1.6	1.0			
	(0.0)	(1.1)	(1.1)			
Compensation per Hour	2.7	2.8	3.1			
	(2.9)	(3.0)	(3.3)			
Unit Labor Costs	4.4	1.2	2.2			
	(2.9)	(1.9)	(2.2)			

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

2016:Q1 GDP Growth: Nowcast vs. Judgmental and Private Forecasts



Sources: Authors' calculations; Blue Chip Economic Indicators and Financial Forecasts; Survey of Professional Forecasters
Notes: Colored bars reflect the relative impact of each data release on the nowcast. Larger FRBNY judgmental forecast icons indicate forecasts entering the BlackBook.

Nowcast Detail

Update	Release Date	Data Series	Reference Period	Units	Forecast	Actual	Weight	Impact	Nowcast GDP Growth
					[a]	[b]	[c]	[c(b − a)]	
Mar 25									**1.11**
	8:30 AM Mar 28	Real disposable personal income	Feb	MoM % chg.	0.163	0.280	0.026	0.003	
	8:30 AM Mar 28	PCE less food and energy: Chain price index	Feb	MoM % chg.	0.120	0.149	0.072	0.002	
	8:30 AM Mar 28	PCE: Chain price index	Feb	MoM % chg.	0.119	-0.106	0.055	-0.012	
	8:30 AM Mar 28	Real personal consumption expenditures	Feb	MoM % chg.	0.213	0.195	0.265	-0.005	
	8:15 AM Mar 30	ADP nonfarm private payroll employment	Mar	Level chg. (thousands)	222.0	200.0	0.494*	-0.011	
	8:30 AM Apr 01	All employees: Total nonfarm	Mar	Level chg. (thousands)	184.6	215.0	0.098*	0.003	
	8:30 AM Apr 01	Civilian unemployment rate	Mar	Ptt. chg.	0.028	0.100	-0.114	-0.008	
	10:00 AM Apr 01	Value of construction put in place	Feb	MoM % chg.	0.844	-0.529	0.025	-0.034	
	10:00 AM Apr 01	ISM mfg.: PMI composite index	Mar	Index	51.4	51.8	0.022	0.010	
	10:00 AM Apr 01	ISM mfg.: Prices index	Mar	Index	40.8	51.5	0.003	0.032	
	10:00 AM Apr 01	ISM mfg.: Employment index	Mar	Index	50.3	48.1	0.007	-0.016	
		Data revisions						-0.045	
		Parameter revisions						-0.099	
Apr 01									**0.92**
	8:30 AM Apr 05	Imports: Goods and services	Feb	MoM % chg.	0.048	1.33	0.042	0.054	
	8:30 AM Apr 05	Exports: Goods and services	Feb	MoM % chg.	0.229	1.01	0.054	0.042	
	10:00 AM Apr 05	ISM nonmanufacturing: NMI composite index	Mar	Index	54.4	54.5	0.002	0.000	
	10:00 AM Apr 05	JOLTS: Job openings: Total	Feb	Level chg. (thousands)	-178.2	-159.0	0.153*	0.003	
	10:00 AM Apr 08	Merchant wholesalers: Inventories: Total	Feb	MoM % chg.	0.082	-0.480	-0.085	0.048	
		Data revisions						0.034	
Apr 08									**1.11**
	8:30 AM Apr 12	Import price index	Mar	MoM % chg.	-0.114	0.171	0.009	0.002	
	8:30 AM Apr 12	Export price index	Mar	MoM % chg.	-0.126	0.000	0.019	0.002	
	8:30 AM Apr 13	Retail sales and food services	Mar	MoM % chg.	0.416	-0.303	0.105	-0.076	
	8:30 AM Apr 13	PPI: Final demand	Mar	MoM % chg.	0.033	-0.091	0.016	-0.002	
	10:00 AM Apr 13	Inventories: Total business	Feb	MoM % chg.	-0.068	-0.093	-0.081	0.002	
	8:30 AM Apr 14	CPI-U: All items	Mar	MoM % chg.	0.038	0.090	0.029	0.002	
	8:30 AM Apr 14	CPI-U: All items less food and energy	Mar	MoM % chg.	0.195	0.069	0.010	-0.001	
	8:30 AM Apr 15	Empire State Mfg. Survey: General business conditions	Apr	Index	3.32	9.56	0.001	0.003	
	9:10 AM Apr 15	Industrial production index	Mar	MoM % chg.	0.098	-0.577	0.146	-0.099	
	9:10 AM Apr 15	Capacity utilization	Mar	Ptt. chg.	-0.013	-0.460	0.179	-0.080	
		Data revisions						-0.044	
Apr 15									**0.82**
	8:30 AM Apr 19	Housing starts	Mar	MoM % chg.	-3.82	-8.79	0.009	-0.047	
	8:30 AM Apr 19	Building permits	Mar	Level chg. (thousands)	-0.765	-91.0	0.001	-0.078	
		Data revisions						0.014	
Apr 19									**0.70**

Housing and construction | Manufacturing | Surveys | Retail and consumption | Income | Labor | International trade | Others

Sources: Authors' calculations.
Notes: MoM % chg. indicates month over month percentage change. QoQ % chg. indicates quarter over quarter percentage change.

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2015	2016	2017	2015	2016	2017
OUTPUT						
Real GDP	2.0	1.9	1.7	2.0	1.9	1.7
	(1.9)	(2.1)	(1.7)	(1.9)	(2.1)	(1.7)
Final Sales to Domestic Purchasers	2.5	2.6	2.4	2.5	2.7	2.4
	(2.4)	(3.3)	(2.4)	(2.5)	(3.3)	(2.5)
Consumption	2.7	2.4	2.3	1.8	1.6	1.6
	(2.6)	(2.9)	(2.2)	(1.8)	(2.0)	(1.5)
BFI: Equipment	2.5	3.0	4.0	0.2	0.2	0.2
	(2.6)	(6.5)	(4.0)	(0.2)	(0.4)	(0.2)
BFI: Nonresidential Structures	-3.5	1.1	4.0	-0.1	0.0	0.1
	(-3.9)	(3.1)	(4.0)	(-0.1)	(0.1)	(0.1)
BFI: Intellectual Property Products	3.6	5.5	3.5	0.1	0.2	0.1
	(4.0)	(5.7)	(3.5)	(0.2)	(0.2)	(0.1)
Residential Investment	9.4	9.0	7.0	0.3	0.3	0.3
	(8.9)	(10.0)	(9.8)	(0.3)	(0.3)	(0.4)
Government: Federal	0.9	1.4	-0.5	0.1	0.1	0.0
	(0.9)	(1.8)	(-0.5)	(0.1)	(0.1)	(-0.0)
Government: State and Local	1.2	1.7	0.8	0.1	0.2	0.1
	(1.2)	(1.7)	(0.7)	(0.1)	(0.2)	(0.1)
Inventory Investment	--	--	--	0.0	-0.2	-0.1
	--	--	--	(0.0)	(-0.2)	(-0.1)
Net Exports	--	--	--	-0.5	-0.6	-0.6
	--	--	--	(-0.6)	(-1.1)	(-0.7)
INFLATION						
Total PCE Deflator	0.5	1.1	1.9			
	(0.5)	(1.0)	(1.9)			
Core PCE Deflator	1.4	1.7	1.9			
	(1.4)	(1.5)	(1.8)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.5	0.6	0.7			
	(0.5)	(0.8)	(1.1)			
Compensation per Hour	2.6	3.0	3.4			
	(2.6)	(3.2)	(3.3)			
Unit Labor Costs	2.1	2.3	2.8			
	(2.1)	(2.3)	(2.2)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	4/18/2016	0.3	2.3	1.9	1.7
		(1.8)	(2.3)	(2.1)	(1.7)
Blue Chip	4/10/2016	1.3	2.3	2.0	2.3
		(2.0)	(2.4)	(2.1)	(2.4)
Median SPF	2/12/2016	2.0	2.5	2.1	2.4
		(2.0)	(2.5)	(2.1)	(2.4)
Macro Advisers	4/8/2016	1.1	2.1	2.0	2.1
		(2.0)	(2.0)	(2.1)	(2.1)
FRBNY-DSGE	4/18/2016	0.2	1.4	1.3	2.3
		(1.4)	(1.8)	(1.8)	(2.2)

Core PCE Inflation

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	4/18/2016	2.0	1.5	1.7	1.9
		(1.7)	(1.4)	(1.5)	(1.8)
Median SPF	2/12/2016	1.4	1.5	1.6	1.8
		(1.4)	(1.5)	(1.6)	(1.8)
Macro Advisers	4/8/2016	2.0	1.6	1.7	1.8
		(1.8)	(1.5)	(1.6)	(1.8)
FRBNY-DSGE	4/18/2016	2.0	1.5	1.5	1.2
		(1.6)	(1.3)	(1.3)	(1.2)

CPI Inflation

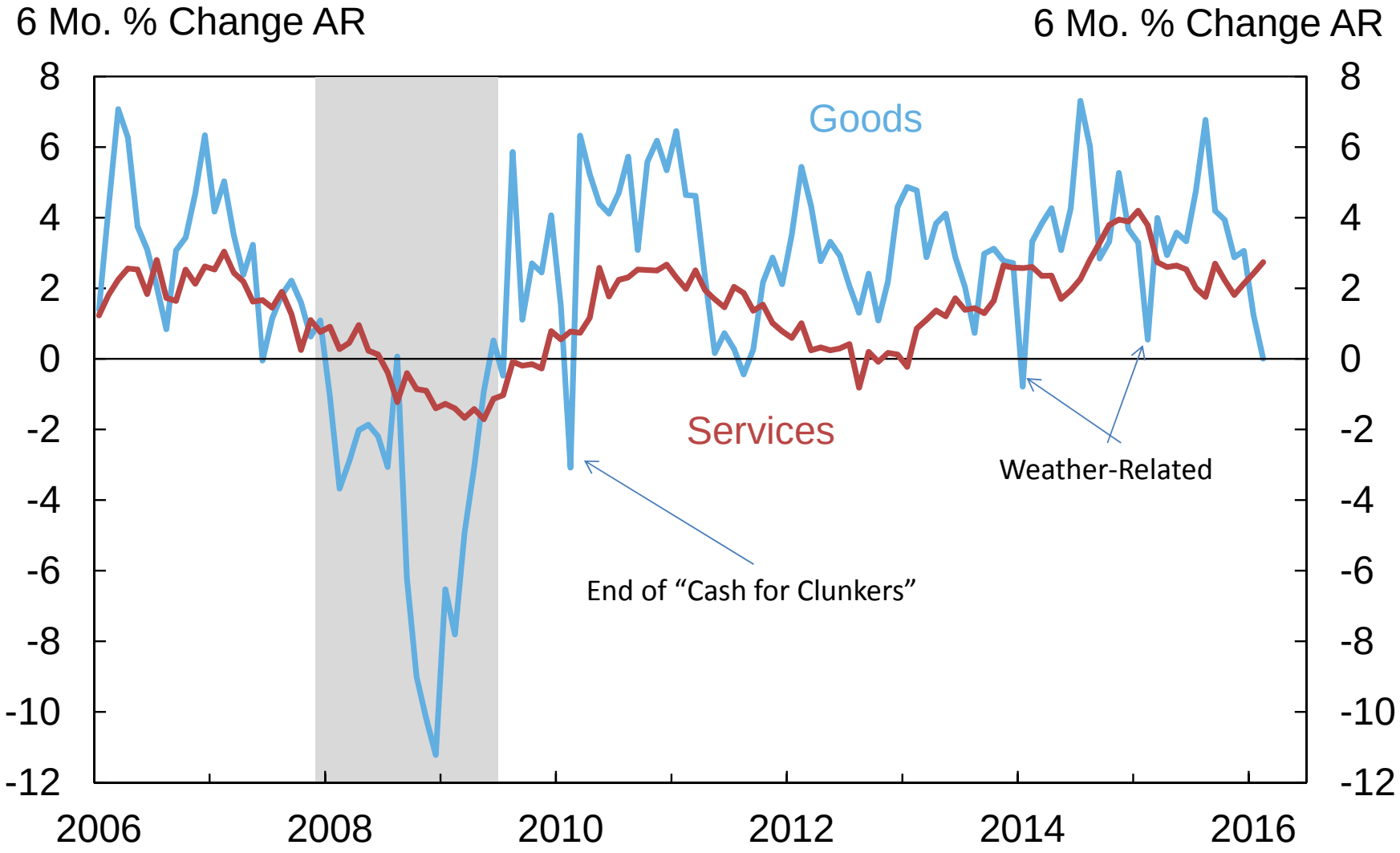
	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	4/18/2016	-0.3	0.9	1.1	2.4
		(-0.7)	(2.0)	(1.4)	(2.3)
Blue Chip	4/10/2016	0.1	2.1	1.3	2.3
		(0.2)	(1.9)	(1.3)	(2.3)
Median SPF	2/12/2016	0.4	1.6	1.5	2.2
		(0.4)	(1.6)	(1.5)	(2.2)
Macro Advisers	4/8/2016	-0.2	2.6	2.0	2.2
		(-0.4)	(2.2)	(1.7)	(2.2)

Core CPI Inflation

	Release Date	2016Q1	2016Q2	2016 Q4/Q4	2017 Q4/Q4
FRBNY	4/18/2016	2.7	2.3	2.3	2.4
		(2.4)	(2.0)	(2.1)	(2.3)
Median SPF	2/12/2016	1.8	2.0	2.0	2.1
		(1.8)	(2.0)	(2.0)	(2.1)
Macro Advisers	4/8/2016	2.8	2.1	2.2	2.1
		(1.7)	(1.9)	(1.8)	(2.0)

*Note: Numbers in gray are from the previous Blackbook

Change in Real Personal Consumption Expenditures



Source: Bureau of Economic Analysis

Note: Shading shows NBER recessions.

3. Uncertainty & Risks

Developments during the intermeeting period, including divergent signals from economic indicators and some further improvement in financial conditions, point to little change in the overall risk assessment from that in the March *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the balance of risks for real GDP growth remain to the downside at almost all horizons. For core PCE inflation, the risks are roughly balanced through 2017, and are skewed slightly to the downside in 2018. The widths of the probability intervals are little changed from those in the March *Blackbook*. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close its historical norms.

The data on U.S. real economic activity over the intermeeting period provided divergent signals. The March labor market report indicated that the labor market continued to improve through the first quarter of the year. Manufacturing production data generally were soft, but the survey indicators generally were more positive. Indicators of consumer spending pointed to sluggish consumption growth in Q1. Investment indicators were weak and suggested a decline in business fixed investment in Q1. Based on 12-month changes, core PCE inflation stabilized in February after picking up in the previous few months, while core CPI inflation ticked down in March. Alternative underlying inflation measures behaved similarly. Longer-term inflation compensation in the U.S. and survey measures of inflation expectations, including the FRBNY SCE 3-year ahead median, continued to be at very low levels. Outside of the U.S., the data generally were mildly better, consistent with stabilization of the global economic outlook.

Financial markets provided signals of some further improvement in financial conditions. Equity prices in most developed economies and emerging markets increased over the period, and measures of implied volatility fell. Although there were sizable swings, oil and commodity prices increased only modestly over the period. Long-term nominal and real yields in the U.S. declined over the period. The market-implied expected policy path flattened in response to

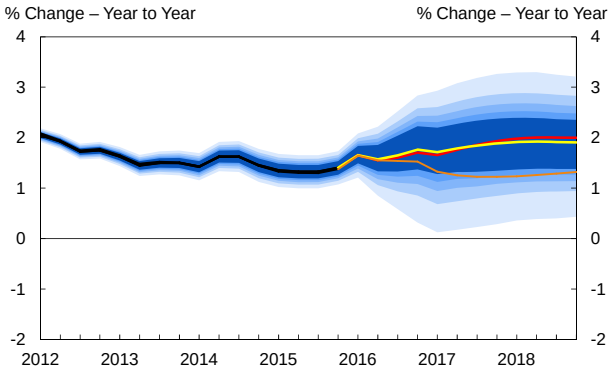
FOMC communications. Long-term yields in the euro area and Japan also fell. The trade-weighted dollar index depreciated: the depreciation was broad based.

We interpreted these contrasting developments as indicating little change in the overall uncertainty and risk assessment, but that the nature of the risks have shifted toward more domestic risks and less foreign risks. We have modified the probabilities across our scenarios accordingly [Exhibit 3-2]. To incorporate the possibility that the Q1 weakness in consumption and investment indicators point to weaker aggregate activity going forward than we anticipate in our central outlook, we increased the probability of the *Fiscal Consolidation* scenario, which incorporates slower productivity growth and weaker aggregate demand. Because of the apparent stabilization in global economic conditions and the improvement in financial conditions, we reduced the probabilities of the *Global Deflation* and *Global Credit Crunch* scenarios. Overall, these changes led to little change in the width of the 90 percent probability interval for real GDP growth and a slight narrowing of the interval for core PCE inflation [Exhibit 3.3]. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is close to its norms. The real GDP growth forecast distribution reflects that the risks to real activity are skewed to the downside through most of the forecast horizon, while the risks to inflation are roughly balanced in 2016-17 and slightly to the downside in 2018 [Exhibit 3-1].

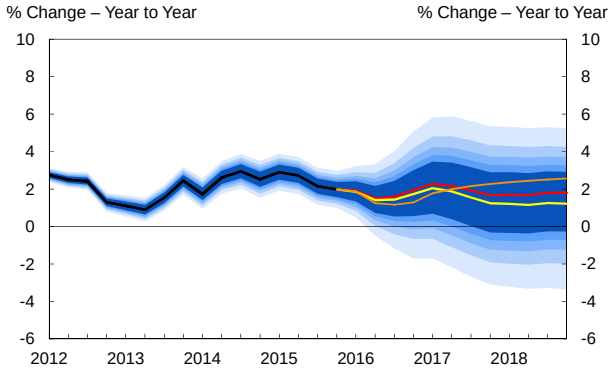
Comparing the recent data and our current expected forecast to the forecast distribution from a year earlier, the current projection for inflation generally runs quite near to the year-ago expectation over the forecast horizon. This reflects the rise in data over recent months as measured by the 4-quarter change, an inflation forecast that is fairly similar to that of a year ago, and roughly balanced risks to the inflation outlook [Exhibit 3-3]. Real GDP growth in 2015 was in the lower part of the year-ago distribution, as the expected rebound in growth failed to materialize. Going forward, the current real GDP growth expectation is moderately below the year-ago expectation over most of the forecast horizon, reflecting the subdued path for real GDP growth and the continued downside risks in our outlook. These patterns indicate some deterioration in our outlook for real activity over the past year.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



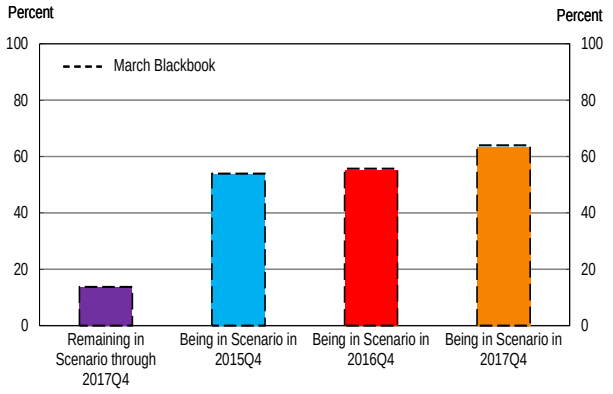
Real GDP Growth Forecast Distribution



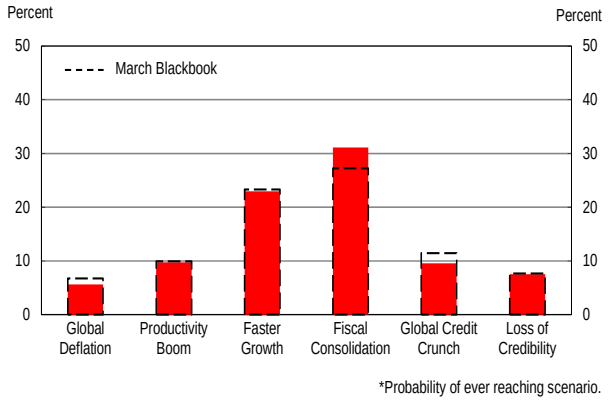
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



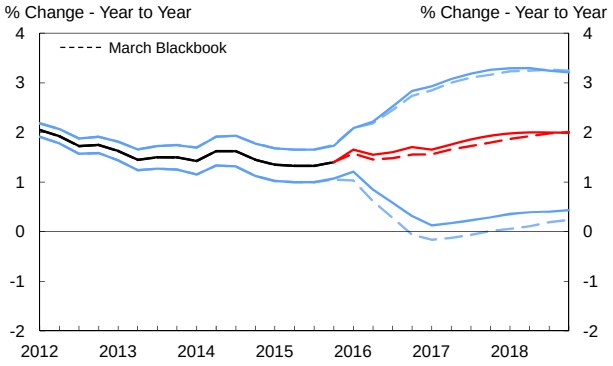
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

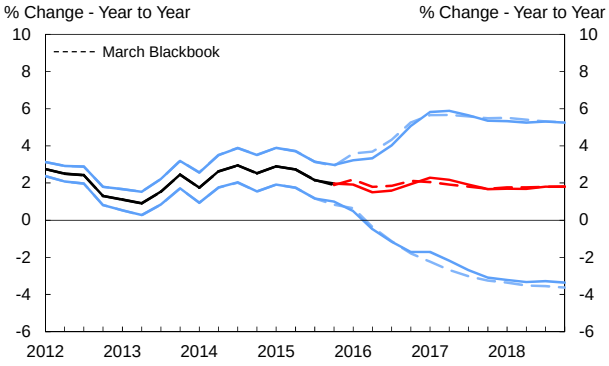
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

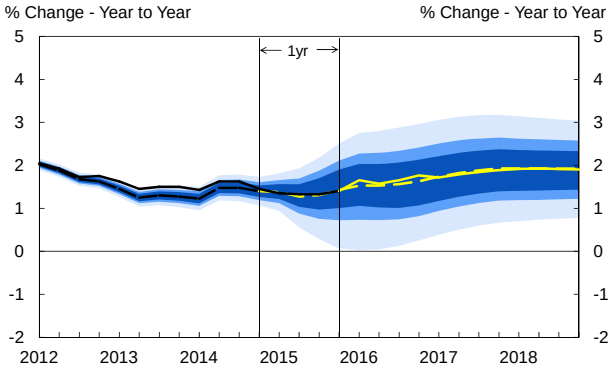


Change in Real GDP Growth Forecast Distribution

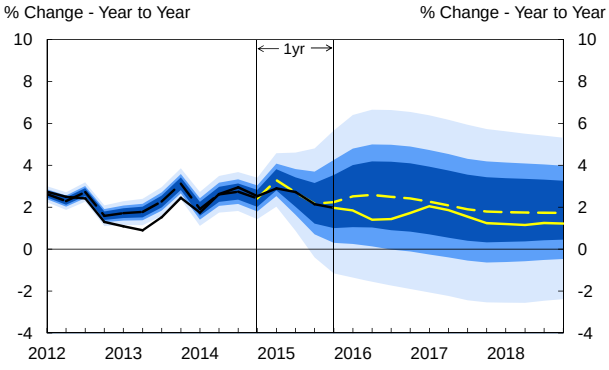


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

June 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

June 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Over the intermeeting period we have received somewhat conflicting news on the real economy. Although the data releases have not led to a significant change in our modal forecast from that in the April *Blackbook*, the uncertainty surrounding our forecast remains considerable, and we view the balance of risks as slightly more skewed to the downside. Risk management considerations thus prompt us to recommend maintaining the current policy stance at the June FOMC meeting: the option value of a "wait and see" posture is significantly higher than any potential costs associated with policy inaction.

Some of the underlying uncertainty could be resolved quickly after the meeting; for example, that associated with the pending referendum on "Brexit." More generally, we may receive more complete information regarding the evolution of labor market conditions after the uncertainty raised by the disappointing (but far from conclusive) May report. If these uncertainties resolve favorably and the economy evolves according to our forecast, our conditioning assumptions suggest some modest tightening of the policy stance over the remainder of 2016 and a relatively shallow path of the policy rate subsequently. Accordingly, a hike in July could still be appropriate, but the bar remains high: there would need to be conclusive evidence that the May labor market report was an aberration, further indications that the underlying state of real activity and inflation was at least as strong as in our modal outlook, and the outcome of the "Brexit" referendum was not having a significant adverse impact on financial conditions. Based on current prices, market participants appear to place a negligible probability on a June hike, and about 25 percent probability on a July policy rate hike. We see these probabilities as roughly consistent with our recommendation. In a context of data-dependency, subsequent developments should lead to an appropriate adjustment in the probability for the July meeting without need for explicit calendar-based communication about the likely timing of policy decisions.

The data released over the intermeeting period were mixed and, on net, slightly disappointing. April retail sales and real PCE signaled a relatively strong rebound in household consumption; however, the ISM indexes for the manufacturing and the non-manufacturing sectors pointed to sluggishness in both sectors, and the business fixed investment indicators remained quite soft.

More importantly, the May labor market report signaled a significant slowdown in payroll growth, which would be consistent with recent data showing a flattening in vacancy rates and in job finding rates. Even though the unemployment rate fell in May, other aspects of the household survey (for example, the participation rate and the U6 unemployment rate) were rather weak. Nevertheless, indicators of job destruction, such as initial claims, have not yet shown signs that are typically associated with a significant deterioration of the labor market. So at this time, we see the May labor market report as consistent with some slowdown in the pace of employment growth as the economy moves closer to potential rather than a turning point in the cycle; however, we will need to monitor future developments closely to confirm this conclusion.

In contrast to the real activity data, the inflation data over the intermeeting period provided relatively consistent signals that, although inflation currently remains somewhat below the FOMC's 2 percent longer-run objective, it appears to be slowly rising toward that objective. Alternative indicators of underlying inflation, including our SiCo and UIG measures, provided similar indications. Longer-term inflation compensation declined and is now only modestly above the historical lows set in mid-February. The median of three-year household inflation expectations in our SCE was little changed in May, and remains relatively low. The Michigan measure of longer-term household inflation expectations remains near its historical low.

Financial conditions did not change markedly over the intermeeting period. Broad U.S. equity indexes rose modestly and implied volatility remained low. Oil prices rose to around $50, near their highest levels of the year. Longer-term nominal and real Treasury yields declined over the period, particularly after the release of the May labor market report. The market-implied expected path of the FFR flattened. Longer-term foreign sovereign yields declined, and foreign equity markets fell moderately. The trade-weighted dollar appreciated some even though it depreciated noticeably against the Japanese yen; however, it remains below the levels seen earlier in the year.

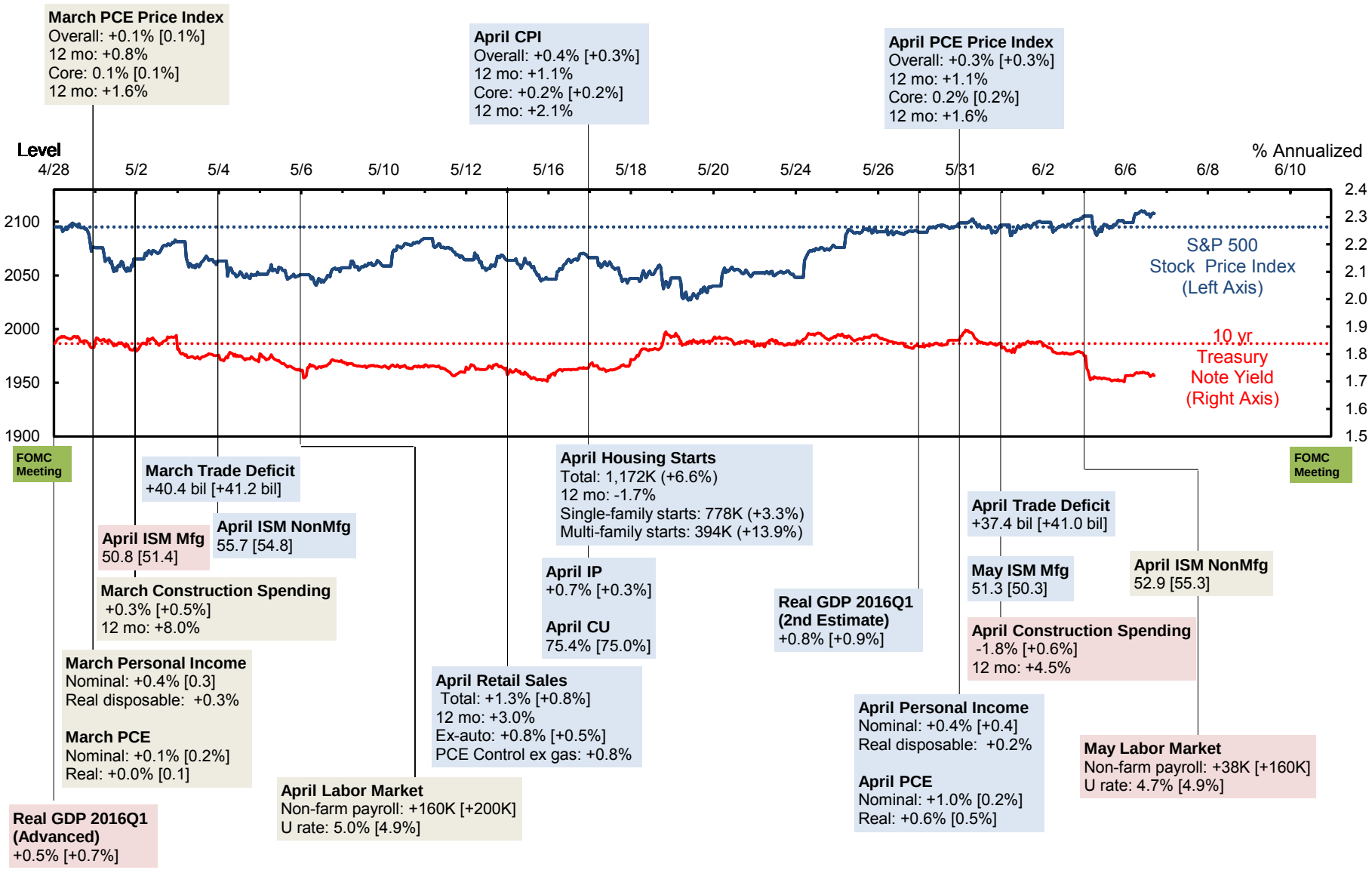
With consumer spending indicators signaling that real PCE growth is picking up in Q2 after a couple of soft quarters, we project real GDP growth to rebound in the second quarter to 2.4 percent (annual rate), roughly similar to the projection in the April *Blackbook*. The second

quarter projection of our nowcast model has moved up significantly over the intermeeting period to be similar to our judgmental forecast. Projected growth over the second half of the year also is similar to the April forecast, as consumption growth remains solid and helps induce a mild rebound in business fixed investment. As a result, real GDP growth in 2016 is now projected to be just above 2 percent (Q4/Q4), slightly above that anticipated in April. With moderate growth of real GDP and an expected rebound in productivity growth, the unemployment rate is projected to remain near the May level of 4.7 percent. Inflation in the first half of this year has been modestly above our April projections, but with indications of some stabilization in the most recent months, our core PCE inflation forecast is little changed at 1.7 percent in 2016 (Q4/Q4) and 1.8 percent in 2017.

While our modal forecast is essentially unchanged, the developments over the intermeeting period have led us to assess the risks to economic activity as slightly more skewed to the downside. The notable slowdown in job growth over the past couple of months shown in the May labor market report suggests that the pace of improvement in the labor market, which was in the FOMC communication a condition to a further step of normalization, may have receded considerably. This slowdown may be a temporary pause after the relatively fast improvement seen in the previous several months, or it could represent a prelude to a more significant deterioration in labor market conditions. Information at this time is not yet able to resolve this uncertainty. The new decline in labor market participation and the rise in involuntary part-time workers, coupled with weakness in business activity surveys and capital spending indicators would support a pessimistic view. The pick-up in aggregate consumption growth and the easing of recent financial headwinds support a more optimistic view. Therefore, while the May labor market report has not substantively changed our modal growth forecast, it has increased uncertainty around it and shifted the balance of risks somewhat more to the downside, in part because the policy space to react to the more pessimistic scenario (as well as other downside scenarios such as “Brexit” and risks associated with fundamental imbalances in China and other major economies) remains constrained.

Given our outlook and risk assessment, we recommend no change in the current monetary policy stance at the June FOMC meeting. Because the room to respond to negative shocks remains

limited, we see patience in the face of considerable uncertainty as the appropriate strategy. Our conditioning assumption regarding the policy path is essentially unchanged from April, and we continue to advise retaining a relatively high bar for monetary tightening over this year. A parsimonious set of conditions that could meet that bar includes: First, solid evidence that labor market conditions are not deteriorating further and that the pace of growth in our forecast can be sustained; second, indications that inflation continues to rise toward the FOMC's objective at a pace at least as fast as in our central scenario; and third, reliable signals that global economic and financial developments are unlikely to worsen appreciably the short-term outlook for real activity and inflation.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

Based on the second estimate, real GDP increased 0.8% (annual rate) in 2016Q1, up from the advance estimate of +0.5%. The primary factors behind this increase were upward revisions to the growth contributions from inventory investment and from net exports. There was also an upward revision to residential investment, now estimated to have increased 17.1% (annual rate) in the quarter, primarily reflecting stronger investment in multifamily structures. Revisions to other major components of expenditures were fairly small. In particular, the growth rate of real personal consumption expenditures (PCE) was little changed at 1.9% (annual rate), as upward revisions to goods expenditures were offset by downward revisions to services expenditures.

On the income side of the accounts, there were significant upward revisions to wage and salary income for both 2015Q4 and 2016Q1. This upward revision reflects the incorporation of the fourth quarter data from the BLS quarterly Census of Employment and Wages. Growth of real disposable income is now estimated at a solid 3.3% annual rate for Q4 and 4.0% annual rate for Q1. The personal saving rate for 2016Q1 was revised upward from 5.2% to 5.7%, the highest this rate has been since 2012Q4.

The second estimate of GDP also provides the first estimate of corporate profits for a calendar quarter. Corporate profits rose 0.3% (quarterly rate) in 2016Q1 whereas we had expected a decline. The profit share was 12.0% of national income, similar to that in the previous quarter but well below the recent peak of 14.5% in 2011Q4.
This decline of the profit share has been most pronounced in the domestic financial sector, followed by net flows from the foreign sector. The upside surprise in profits is due in large part to the fact that the statistical discrepancy declined from $210.8 billion in Q4 to $274.7 billion in Q1. (A negative value indicates that measured income exceeds measured expenditures.) At -1.5% of gross domestic income, the statistical discrepancy is approaching the extreme values seen in 2000, 2001, 2006, and 2012.

The recent data flow has continued to be mixed, but our estimate of growth of real GDP in the second quarter is essentially unchanged at 2.4%. If that turns out to be correct, growth over the entire first half of the year would be 1.6% (annual rate), roughly comparable to that of the second half of 2015. The data on real consumer spending in April was quite a bit stronger than anticipated and suggests that growth of real PCE could be as high as 3 ¾% (annual rate). This robust growth rate would result in only a modest decline of the personal saving rate as growth of real disposable income will likely stay at nearly 3%. Light-weight motor vehicle sales came in at 17.45 million units in May, slightly above the April level but below the 17.9 million pace of the second half of 2015.

In addition to consumption, recent data on housing market activity has been reasonably bright. New home sales rose 16.6% to 619,000 units in April, the highest since January of 2008. Sales of existing homes, which have been quite choppy of late, rose 1.7% in April following a 5.7% increase in March. The April level of existing home sales, at 5.45 million units (SAAR), was near the highest levels of the past two years. Inventories of both new and existing homes, expressed as month's supply at the current sales pace, are quite low by historical standards. The data on both single-family and multi-family housing starts of the past few months suggest some loss of upward momentum. But with the tightness of supply and quite low mortgage interest rates, we anticipate a gradual uptrend over the remainder of 2016.

In contrast, data pertaining to business investment spending remain quite discouraging. New orders for nondefense capital goods excluding aircraft fell 0.6% in April, the fourth monthly decline of the past six months. Both new orders and shipments have been on a relatively steep decline since mid-2014. We do expect growth of real investment in new business equipment to be modestly positive in the second quarter, following declines in the previous two quarters, due to robust growth of imports of capital goods. Private nonresidential construction fell a steep 1.5% in April. While this decline may have been in part a payback for weather-induced strength in the first quarter, smoothing that series does reveal some loss of upward momentum. Oil and gas drilling activity declined another 7% in April, which will weight on the second quarter

investment growth rate. The continued weakness in investment related indicators poses a downside risk to our forecast of stronger growth in the US over the second half of 2016.

Data out of the manufacturing sector has been quite volatile of late. After declining 0.3% in March, manufacturing output rose 0.3% in April. Employment in manufacturing declined by 10,000 in May, but hours worked increased 0.2%, the same as in April. After five consecutive months below 50, the ISM manufacturing index has been slightly above 50 for the three months ending in May. The pace of real private inventory accumulation has slowed, from $111 billion in 2015Q2 to $72 billion in 2016Q1, but that pace still seems too high. The absolute level of the ratio of real inventories over real final sales of goods still seems to us to be above the desired level. But with quite strong demand for goods by consumers in the second quarter combined with sluggish growth of manufacturing output and imports, we expect the inventory correction to be essentially over as we enter the second half of 2016 with manufacturing related data beginning to perk up.

No doubt the biggest surprise of the intermeeting period was the fact that nonfarm payroll employment rose by just 38,000 in May with substantial downward revisions over the previous few months. With these revisions, the three-month moving average employment change as of May was down to 116,000, the lowest since June of 2012.[1] Aggregate hours rose 0.1%, the same as in April, and appear to be on track to increase at just a 0.5% annual rate for the entire second quarter, down from an average of around 2 ½% (annual rate) over the previous two quarter. The slowing of growth in employment and hours was broad-based but most acute in the goods producing sector.

While this certainly introduces additional downside risk to our forecast, we are not changing our modal forecast for growth or inflation. We have for some time been anticipating a slowing of both employment and hours growth in the second quarter. Productivity growth was negative in both 2015Q1 and 2016Q2 at a compound annual rate of -1.2%. It would have been highly unusual to see a third quarter of negative productivity growth, even during a recession. In

[1] We know that the Verizon strike held down employment by around 35,000, which would put the May employment gain at a still well below-expectations 73,000. That strike has since been settled on terms generally interpreted as wage gains of around 4% per year for four years. Part of this increase includes profit sharing.

addition, if this sharp slowing of employment growth were a precursor to a recession rather than just a mid-course correction, we would expect to see some contemporaneous increase in initial claims for unemployment insurance. Finally, to put the recent slowdown in employment growth into perspective, if the economy were growing at potential, productivity growth at its assumed trend, and with no increase in the average workweek, we estimate that nonfarm payroll employment would increase by an average of 100,000 per month.

The total PCE deflator rose 0.3% in April following a 0.06% increase in March. This faster pace of inflation largely reflected a 3.8% (monthly rate) increase in energy prices. The 12-month change in the overall PCE deflator was 1.1% in April, a slight acceleration relative to March (0.8%) and February (1.0%). For 2016Q2 we expect the PCE deflator to increase at a 1.6% annual rate, up from 0.3% over the previous two quarters. The core PCE deflator rose 0.17% in April, up from 0.06% in March. The 12-month change in the core index was 1.6% April, the same as in March and marginally below the readings of February and January. For the second quarter we expect the core PCE deflator to increase at a 1.6% annual rate, down from 2.1% in the first quarter.

According to the final May figures from the University of Michigan survey of households, the median of near-term (one-year ahead) inflation expectations declined by 0.4 percentage points to 2.4%. This is the lowest since September 2010. The median of long-term inflation expectations (five to ten years ahead) remained unchanged at 2.5% in May.

The Outlook

As mentioned above, the May employment report was a deep negative surprise that introduces additional downside risk to our forecast. Nonetheless, we have kept our modal forecast through 2017 essentially unchanged in this Blackbook. In many respects, the underlying fundamentals are improved since April. Growth of real disposable income, at least up to May, has been quite strong and was revised upward over the intermeeting period, as was the personal saving rate. Equity values have nearly returned to the highs seen in May of 2015. None investment grade

bond spreads have narrowed back to levels of last August. The broad trade-weighted dollar is off its peak levels, and the impulse of the dollar appreciation that began in mid-2014 is likely waning. Indeed, we are projecting a modest increase of real exports in 2016Q2 following declines over the past two quarters. In addition to these improved financial conditions, household and business balance sheets are in good shape, fiscal policy is slightly stimulative, and monetary policy still very accommodative.

From around 1.6% (annual rate) over the first half of 2016, we see growth of real GDP rising to around 2 ½% over the second half of the year. This results in growth of 2.1% (Q4/Q4) for 2016, essentially unchanged from the April Blackbook. The main engine of growth will continue to be consumer spending, which we expect to increase at a 2 ¾% annual rate over the second half, essentially the same as the past 1 ½ years. The personal saving rate is expected to remain essentially unchanged around 5 ½%.

Despite the loss of upward momentum over the past six months, we still believe that the most likely scenario for housing starts is a gradual upward trend over the forecast horizon, particularly given the low level of inventories and continued low mortgage interest rates. The National Association of Home Builders Housing Market Index is off its recent high set last October but at 58 for the past four months, it remains relatively high. Also noteworthy, spending on improvements to the existing housing stock has been growing strongly since mid-2015.

We also anticipate some modest growth of business fixed investment over the second half of 2016. Oil prices have firmed to around $50 per barrel (WTI). Some weekly surveys suggest that the active rig count has finally hit bottom recently. In addition, we expect the inventory correction to be over by the second half, which should be associated with some firming of activity in the manufacturing sector and some increase in the capacity utilization rate. The net export growth contribution is expected to remain significantly negative (around -0.5 percentage points), despite resumed growth of exports, due to faster growth of imports as the domestic inventory correction comes to an end.

The roughly 2% growth predicted for 2016 is slightly above our estimate of the economy's potential growth rate—around 1 ¾%--resulting in some additional tightening of the labor market. As a result, the unemployment rate should decline over the year, reaching 4.7% by the second half of 2016. This is one tenth lower than in the April Blackbook, but the same as the March Blackbook, due to recent volatility in the labor force participation rate.

The path of oil prices through the end of 2017 is nearly $7 per barrel higher in this forecast cycle than in April. However, the bulk of that increase is in the very near term with the same gradual increase over the second half of 2016 and all of 2017. As a result, the rate of increase of the total Personal Consumption Expenditures (PCE) deflator has been boosted to 1.4% (Q4/Q4) from 1.1% in April. The expected rate of increase of core PCE deflator inflation is unchanged at 1.7% (Q4/Q4).

For 2017 we expect growth of real GDP to slow to around our estimate of potential due to a combination of the aging of the business cycle and the ongoing tightening of financial conditions associated with further movement toward the normalization of monetary policy. The unemployment rate is expected to rise slightly to 4.8% as we continue to assume a slight upward path of the labor force participation rate. Productivity growth is assumed to remain somewhat below its long term trend of 1% to 1 ¼%, with the compensation share of national income continuing to rise gradually while the corporate profit share declines gradually. Core PCE inflation is expected to edge gradually higher, reaching 1.9% for all of 2017, reflecting reduced slack, relatively stable energy prices, a declining impulse from past dollar appreciation, and well-anchored inflation expectations.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Apr	Jun	Apr	Jun	Apr	Jun	Apr	Jun
2015								
Q1	*1.0*	*1.0*	*0.6*	*0.6*	*5.6*	*5.6*	*0-0.25*	*0-0.25*
Q2	*1.9*	*1.9*	*3.9*	*3.9*	*5.4*	*5.4*	*0-0.25*	*0-0.25*
Q3	*1.4*	*1.4*	*2.0*	*2.0*	*5.2*	*5.2*	*0-0.25*	*0-0.25*
Q4	*1.3*	*1.3*	*1.4*	*1.4*	*5.0*	*5.0*	*0.38*	*0.38*
2016								
Q1	*2.0*	*2.1*	*0.3*	*0.8*	*4.9*	*4.9*	*0.38*	*0.38*
Q2	1.5	1.6	2.3	2.4	5.0	4.8	0.55	0.38
Q3	1.6	1.5	2.3	2.4	4.9	4.7	0.71	0.63
Q4	1.7	1.6	2.8	2.7	4.8	4.7	0.88	0.88
2017								
Q1	1.8	1.7	1.7	1.7	4.8	4.8	1.06	1.06
Q2	1.9	1.8	1.8	1.8	4.8	4.8	1.25	1.25
Q3	2.0	1.9	1.3	1.5	4.8	4.8	1.44	1.44
Q4	2.0	2.0	1.8	1.9	4.8	4.8	1.63	1.63
Q4/Q4								
2014	1.4	1.4	2.5	2.5	-1.2	-1.2	0-0.25	0-0.25
2015	1.4	1.4	2.0	2.0	-0.7	-0.7	0.38	0.38
2016	1.7	1.7	1.9	2.1	-0.2	-0.3	0.88	0.88
2017	1.9	1.9	1.7	1.7	0.0	0.1	1.63	1.63

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

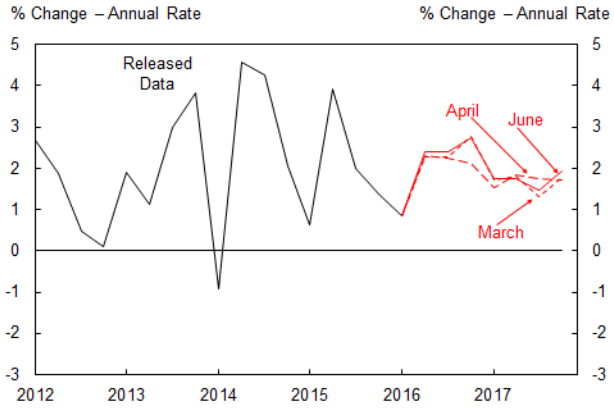
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

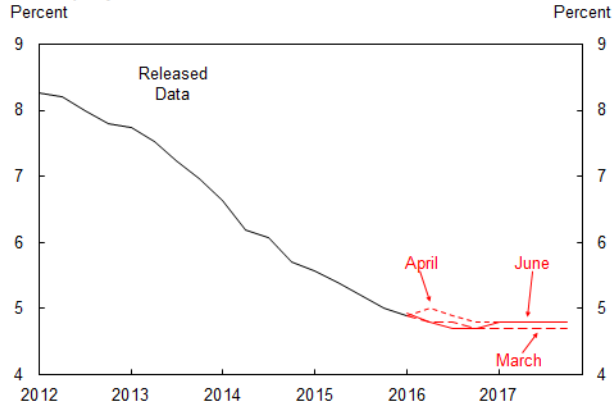
2-2: Evolution of Projected Quarterly Paths

Key Indicators

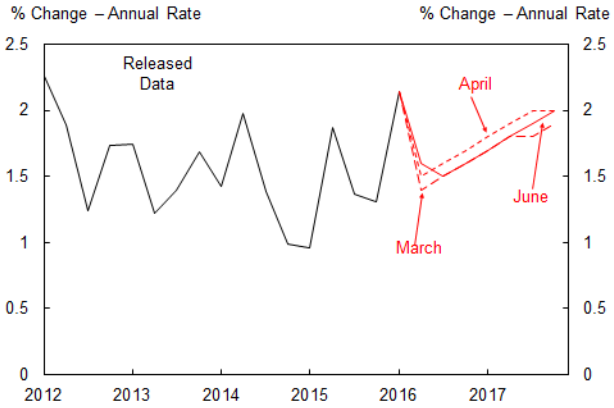
Real GDP Growth



Unemployment Rate

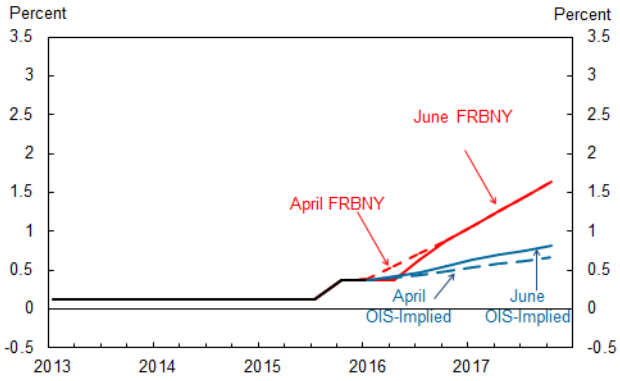


Core PCE Inflation

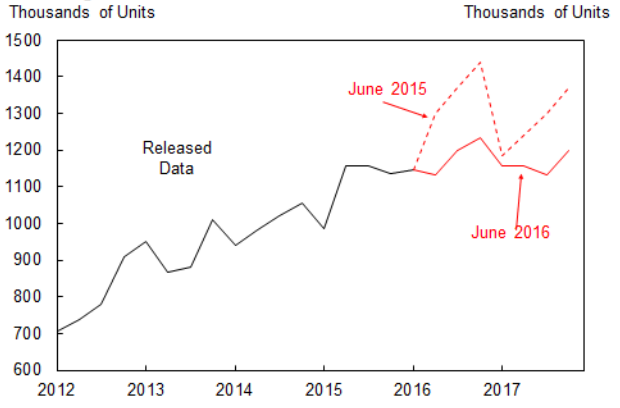


Forecast Assumptions

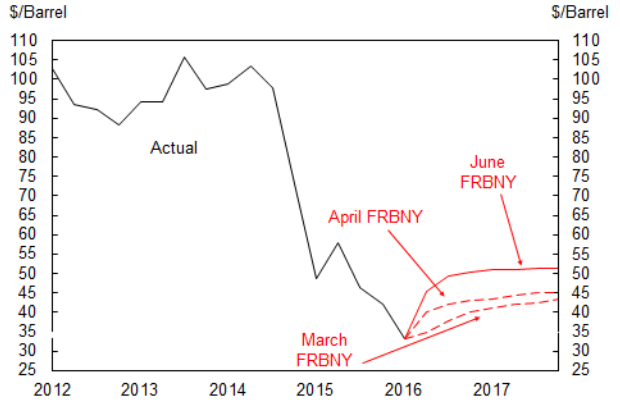
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q2	2016Q3	2016Q4	2016Q2	2016Q3	2016Q4
OUTPUT						
Real GDP	2.4	2.4	2.7	2.4	2.4	2.7
	(2.3)	(2.3)	(2.8)	(2.3)	(2.3)	(2.8)
Final Sales to Domestic Purchasers	2.9	3.1	3.1	3.0	3.1	3.2
	(3.2)	(3.1)	(3.2)	(3.3)	(3.1)	(3.3)
Consumption	3.8	2.8	2.7	2.6	1.9	1.9
	(2.8)	(2.8)	(2.8)	(1.9)	(1.9)	(1.9)
BFI: Equipment	2.0	4.0	6.0	0.1	0.2	0.3
	(4.0)	(6.0)	(8.0)	(0.2)	(0.3)	(0.5)
BFI: Nonresidential Structures	-8.0	0.0	4.0	-0.2	0.0	0.1
	(2.0)	(4.0)	(6.0)	(0.1)	(0.1)	(0.2)
BFI: Intellectual Property Products	4.0	4.0	4.0	0.2	0.2	0.2
	(6.0)	(6.0)	(5.0)	(0.2)	(0.2)	(0.2)
Residential Investment	5.0	15.0	11.5	0.2	0.5	0.4
	(15.2)	(5.9)	(6.8)	(0.5)	(0.2)	(0.2)
Government: Federal	2.0	2.0	2.0	0.1	0.1	0.1
	(2.4)	(2.4)	(2.4)	(0.2)	(0.2)	(0.2)
Government: State and Local	0.0	1.5	1.5	0.0	0.2	0.2
	(1.5)	(1.5)	(1.5)	(0.2)	(0.2)	(0.1)
Inventory Investment	--	--	--	-0.6	0.0	0.0
	--	--	--	(-0.7)	(0.0)	(0.0)
Net Exports	--	--	--	0.0	-0.7	-0.5
	--	--	--	(-0.3)	(-0.9)	(-0.6)
INFLATION						
Total PCE Deflator	1.6	1.7	1.8			
	(0.8)	(1.6)	(1.7)			
Core PCE Deflator	1.6	1.5	1.6			
	(1.5)	(1.6)	(1.7)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	2.4	1.3	1.9			
	(1.6)	(1.0)	(1.8)			
Compensation per Hour	3.1	3.4	3.5			
	(2.8)	(3.1)	(3.2)			
Unit Labor Costs	0.7	2.1	1.6			
	(1.2)	(2.2)	(1.5)			

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

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2015	2016	2017	2015	2016	2017
OUTPUT						
Real GDP	2.0	2.1	1.7	2.0	2.1	1.7
	(2.0)	(1.9)	(1.7)	(2.0)	(1.9)	(1.7)
Final Sales to Domestic Purchasers	2.5	2.6	2.4	2.5	2.6	2.5
	(2.5)	(2.6)	(2.4)	(2.5)	(2.7)	(2.4)
Consumption	2.7	2.8	2.3	1.8	1.9	1.6
	(2.7)	(2.4)	(2.3)	(1.8)	(1.6)	(1.6)
BFI: Equipment	2.5	0.6	4.0	0.2	0.0	0.2
	(2.5)	(3.0)	(4.0)	(0.2)	(0.2)	(0.2)
BFI: Nonresidential Structures	-3.5	-3.4	4.0	-0.1	-0.1	0.1
	(-3.5)	(1.1)	(4.0)	(-0.1)	(0.0)	(0.1)
BFI: Intellectual Property Products	3.6	3.0	3.5	0.1	0.1	0.1
	(3.6)	(5.5)	(3.5)	(0.1)	(0.2)	(0.1)
Residential Investment	9.4	12.1	7.9	0.3	0.4	0.3
	(9.4)	(9.0)	(7.0)	(0.3)	(0.3)	(0.3)
Government: Federal	0.9	1.1	-0.5	0.1	0.1	0.0
	(0.9)	(1.4)	(-0.5)	(0.1)	(0.1)	(-0.0)
Government: State and Local	1.2	1.5	0.8	0.1	0.2	0.1
	(1.2)	(1.7)	(0.8)	(0.1)	(0.2)	(0.1)
Inventory Investment	--	--	--	0.0	-0.2	-0.1
	--	--	--	(-0.0)	(-0.2)	(-0.1)
Net Exports	--	--	--	-0.5	-0.4	-0.6
	--	--	--	(-0.5)	(-0.6)	(-0.6)
INFLATION						
Total PCE Deflator	0.5	1.4	1.9			
	(0.5)	(1.1)	(1.9)			
Core PCE Deflator	1.4	1.7	1.9			
	(1.4)	(1.7)	(1.9)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.6	1.2	1.0			
	(0.5)	(0.6)	(0.7)			
Compensation per Hour	3.2	3.5	3.6			
	(2.6)	(3.0)	(3.4)			
Unit Labor Costs	2.6	2.2	2.6			
	(2.1)	(2.3)	(2.8)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	6/3/2016	2.4	2.4	2.1	1.7
		(2.3)	(2.3)	(1.9)	(1.7)
Blue Chip	6/1/2016	2.3	2.4	1.8	2.3
		(2.3)	-	(2.0)	(2.3)
Median SPF	5/13/2016	2.1	2.4	1.7	2.4
		(2.5)	(2.3)	(2.1)	(2.4)
Macro Advisers	6/2/2016	2.2	2.2	1.9	2.2
		(2.1)	-	(2.0)	(2.1)
FRBNY-DSGE	6/3/2016	1.9	2.0	1.6	2.2
		(1.4)	-	(1.3)	(2.3)

Core PCE Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	6/3/2016	1.6	1.5	1.7	1.9
		(1.5)	(1.6)	(1.7)	(1.9)
Median SPF	5/13/2016	1.5	1.7	1.8	1.9
		(1.5)	(1.7)	(1.6)	(1.8)
Macro Advisers	6/2/2016	1.7	1.7	1.8	1.8
		(1.6)	-	(1.7)	(1.8)
FRBNY-DSGE	6/3/2016	1.5	1.3	1.6	1.2
		(1.5)	-	(1.5)	(1.2)

CPI Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	6/3/2016	2.3	2.0	1.5	2.3
		(0.9)	(2.0)	(1.1)	(2.4)
Blue Chip	6/1/2016	2.2	2.4	1.2	2.3
		(2.1)	-	(1.3)	(2.3)
Median SPF	5/13/2016	1.9	2.0	1.5	2.1
		(1.6)	(2.1)	(1.5)	(2.2)
Macro Advisers	6/2/2016	2.6	3.1	1.7	2.1
		(2.6)	-	(2.0)	(2.2)

Core CPI Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	6/3/2016	2.1	2.2	2.3	2.3
		(2.3)	(2.2)	(2.3)	(2.4)
Median SPF	5/13/2016	2.0	2.0	2.2	2.2
		(2.0)	(2.0)	(2.0)	(2.1)
Macro Advisers	6/2/2016	2.1	2.1	2.2	2.0
		(2.1)	-	(2.2)	(2.1)

*Note: Numbers in gray are from the previous Blackbook

3. Uncertainty & Risks

Developments during the intermeeting period, including divergent signals from economic and financial indicators, point to a slight deterioration in the overall risk assessment from that in the April *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the balance of risks for real GDP growth remain to the downside at almost all horizons. For core PCE inflation, the risks are roughly balanced through 2017, and are skewed slightly to the downside in 2018. The widths of the probability intervals are little changed from those in the April *Blackbook*, even though the recent expenditure and inflation data have been roughly consistent with our central outlook. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close its historical norms.

The data on U.S. real economic activity over the intermeeting period provided divergent signals. The April and May labor market reports indicated an appreciable slowdown in the pace of payroll employment growth; even though the unemployment rate fell, other aspects of the household survey were soft. Manufacturing production data generally were still tepid: Production rose solidly in April, but the May survey indicators were mediocre. Investment indicators were weak and suggested continued weakness in business fixed investment. In contrast, indicators of consumer spending pointed to solid real consumption growth, which was consistent with the anticipated rebound in real GDP growth after a weak Q1. Based on 12-month changes, core PCE inflation has stabilized recently, while core CPI inflation ticked down in April. Alternative underlying inflation measures were consistent with a slow return to the objective. Longer-term inflation compensation and survey measures of inflation expectations continued to be at low levels. Outside of the U.S., the data generally were consistent with a stabilization of the global economic outlook, but the political risk associated with "Brexit" weighed on the outlook for the United Kingdom and increased downside risk in the euro area.

Financial markets also provided mixed signals. Equity prices in the U.S. rose modestly during the period, but they declined to varying degrees in most other markets; measures of implied

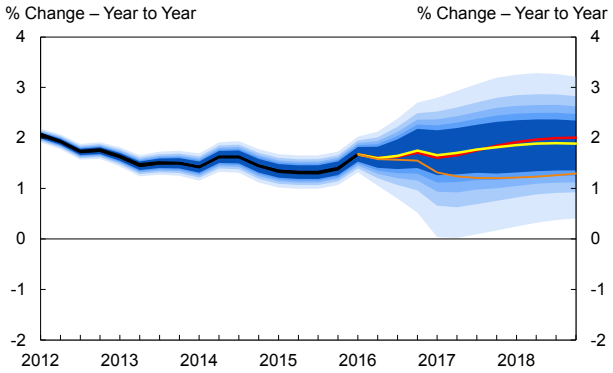
volatility generally remained low. Oil and commodity prices increased over the period. Amid FOMC communications and data-related swings, long-term nominal and real yields in the U.S. declined further over the period. The market-implied expected policy path flattened. Long-term yields in the euro area also fell to very low levels. Despite a broad depreciation following the May labor market report and a significant depreciation against the Japanese yen, the trade-weighted dollar index appreciated on balance over the intermeeting period.

We interpreted these developments as indicating a slight deterioration in our risk assessment [Exhibit 3-2]. To incorporate the possibility that the weakness in the April and May labor market reports points to weaker-than-anticipated future real activity, we increased the probability of the *Fiscal Consolidation* scenario, which incorporates weaker aggregate demand. Because of the apparent increase in the probability of "Brexit," we raised modestly the probability of the *Global Credit Crunch* scenario. These changes led to little change in the width of the 90 percent probability interval for real GDP growth and for core PCE inflation [Exhibit 3.3], even though the recent expenditure and inflation data have been roughly consistent with our outlook, which ordinarily would have led to a narrowing in these widths. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is close to its norms. The real GDP growth forecast distribution reflects that the risks to real activity are skewed to the downside through most of the forecast horizon, while the risks to inflation are roughly balanced in 2016-17 and slightly to the downside in 2018 [Exhibit 3-1].

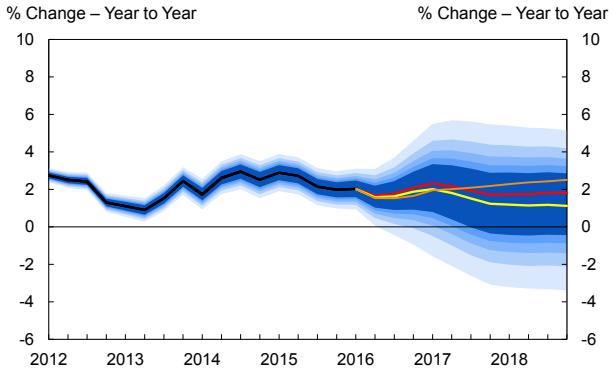
Comparing the recent data and our current expected forecast to the forecast distribution from a year earlier, the current projection for inflation runs modestly below the year-ago expectation over the forecast horizon. This reflects the recent rise in the measured 4-quarter change to near the year-ago forecast, an inflation forecast that is fairly similar to that of a year ago, and roughly balanced risks to the inflation outlook [Exhibit 3-3]. Real GDP growth was somewhat below the year-ago expectation. Going forward, the current real GDP growth expectation is moderately below the year-ago expectation over the forecast horizon, reflecting the subdued path for real GDP growth (partly because of a lower potential growth estimate) and the continued downside risks in our outlook. These patterns indicate some deterioration in our outlook for real activity over the past year.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



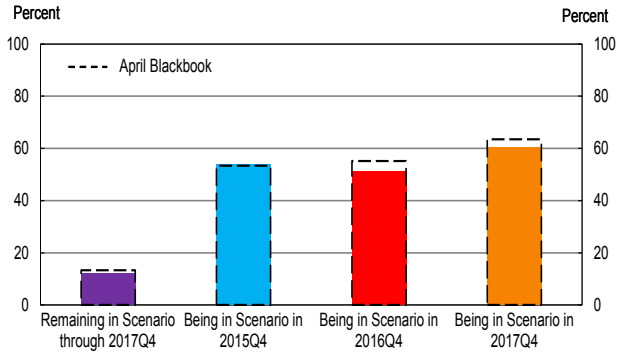
Real GDP Growth Forecast Distribution



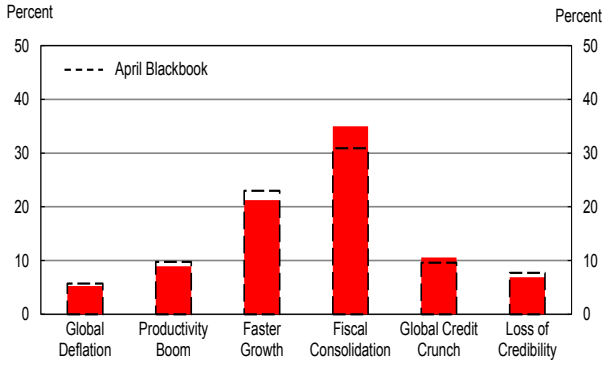
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



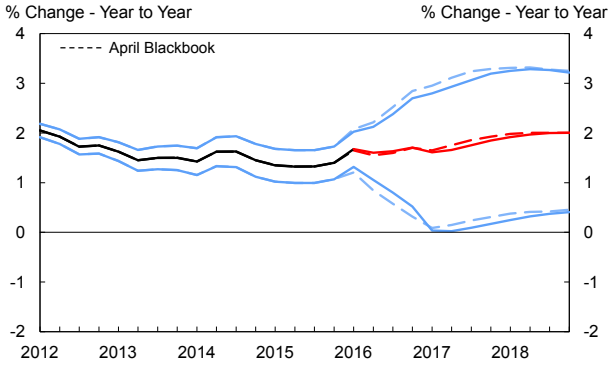
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

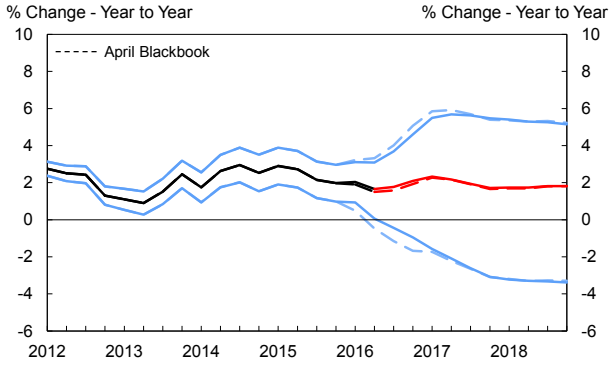
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

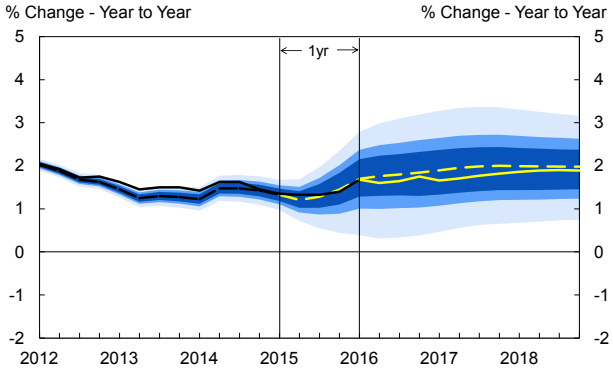


Change in Real GDP Growth Forecast Distribution

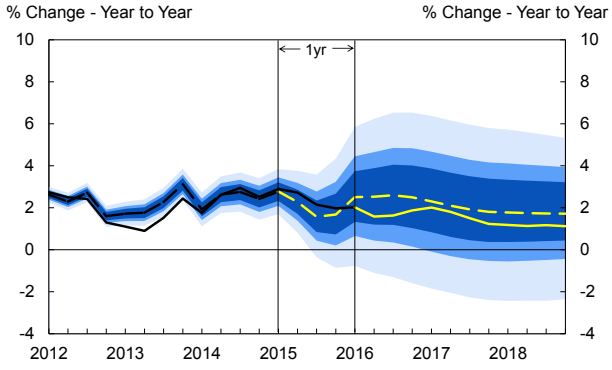


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

July 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

July 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Economic developments over the intermeeting period have been moderately positive on balance, but not enough to prompt a material change in our modal forecast from that in the June *Blackbook*. At this time, it remains uncertain whether Brexit will have a substantial effect on global economic conditions. Yet, the uncertainty surrounding our forecast remains considerable and the balance of risks to real activity continues to be somewhat skewed to the downside. Accordingly, our policy recommendation remains centered on a gradual removal of accommodation over the medium term. The timing and total amount of rate increases over the second half of the year should be based on evolving information about macroeconomic fundamentals and financial conditions: Over this period, we currently anticipate a range of potential cumulative FFR adjustments of between 0 and 50 bps. Recent communications have relied on somewhat explicit calendar-based policy guidance, only to be frustrated when incoming data and the associated risk assessments have not supported the modal policy projections. We continue to believe that this approach is inappropriate and prone to reputational losses, and we reiterate our stance that policy communication should focus on guidance about the Committee's reaction function in a context of data dependency.

The latest consumption indicators suggest that consumer spending maintained its momentum. The ISM indexes for the manufacturing and the non-manufacturing sectors also pointed to some improvement in both sectors, but the business fixed investment indicators remained soft. The June labor market report showed a strong reversal of May's weak payroll growth; however, average payroll gains appeared to have slowed down in the past few months. We currently judge this moderation in employment growth as more consistent with the economy moving closer to its potential rather than representing a turning point in the cycle. The CPI data, our UIG index, and SiCo all indicate some stabilization of underlying inflation over recent months. Longer-term inflation compensation remains very low. The median of three-year household inflation expectations in our SCE increased in June, as it rebounded further from its decline in 2015H2 and early 2016, but it is still slightly below the levels that prevailed in 2015H1. The Michigan measure of longer-term household inflation expectations ticked up but remains near the bottom of its historical range.

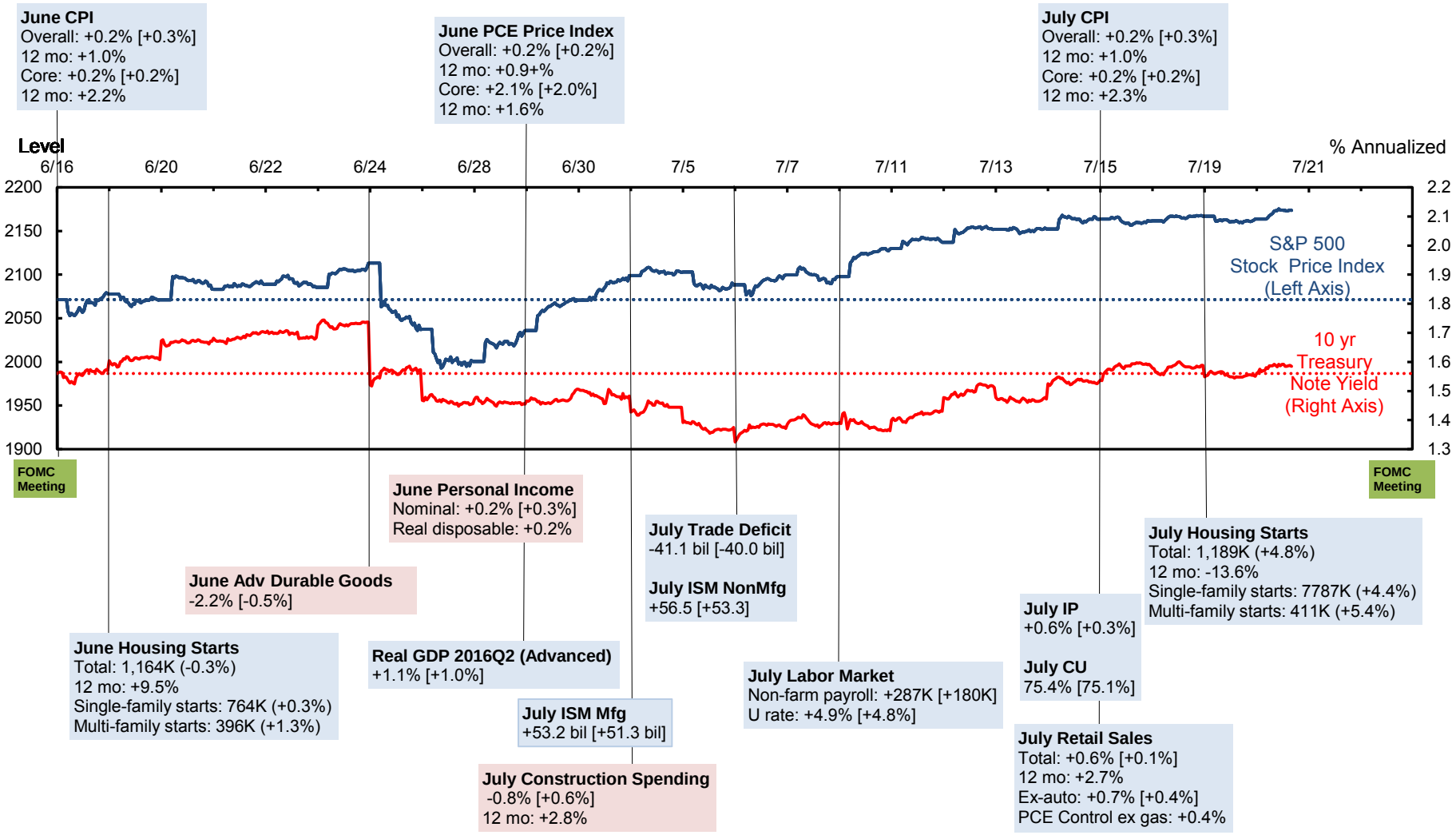
Despite the declines immediately following the U.K. referendum result to leave the EU, broad U.S. equity indexes subsequently rose, registering new highs. Implied volatility fell over the period to below its historical median value. Oil prices fell over the course of the intermeeting period, with prices currently around $45. Longer-term nominal and real Treasury yields declined modestly over the period, remaining at low levels. The market-implied expected path of the FFR flattened. Despite some notable moves in bilateral exchange rates—for instance, the British pound depreciated 9 percent against the dollar—the nominal broad dollar index was little changed.

With real PCE growth anticipated to be robust, we project real GDP growth to rebound in the second quarter to 2.6 percent (annual rate), slightly above the projection in the June *Blackbook*. The predictions of our nowcasting model are broadly in line with the judgmental forecast: The Q2 projection has been stable at a little above 2 percent over the intermeeting period while the Q3 projection has increased by half a percentage point to slightly above 2.5 percent. In our judgmental forecast, projected growth over the second half of the year is modestly below the June forecast; in this forecast, Brexit effects are anticipated to be quite modest. We anticipate fairly solid consumption growth, stronger residential investment growth, and a mild rebound in business fixed investment. As a result, real GDP growth in 2016 is projected to be about 2 percent (Q4/Q4), the same we anticipated in June. With moderate growth of real GDP and an expected rebound in productivity growth, the unemployment rate is projected to end the year at 4.8 percent, near our estimate of its longer-run normal rate, and then remain at that level in 2017. Finally, our core PCE inflation forecast is little changed at 1.8 percent in 2016 (Q4/Q4) and 1.9 percent in 2017.

Turning to the risks to the forecast, we assess these to be still skewed to the downside for real activity and medium-term inflation and roughly balanced for near-term inflation, as the scope for policy to react to negative scenarios remains limited. Uncertainty around the projections, particularly for real activity, remains elevated, importantly reflecting uncertainty about the state and outlook of the global economy and how it could affect the domestic outlook.

In our June recommendation, we set a number of conditions that needed to be met before considering monetary tightening over the course of this year: Solid evidence that labor market conditions were not deteriorating further, increased confidence that inflation was progressing towards the FOMC's objective at the anticipated pace, and reliable signals that global and financial developments were not likely to worsen the outlook drastically. Intermeeting developments brought somewhat reassuring news on the strength of the labor market and the inflation outlook. Moreover, despite some volatility in the first few days after the Brexit vote, financial markets seem thus far to have absorbed the Brexit shock, and financial conditions were little changed to modestly improved over the intermeeting period. Consequently, one to two rate increases in 2016 could still be appropriate.

More generally, we believe that a gradually rising path of the policy rate is appropriate over the medium term. Estimates of the real natural rate of interest, such as from the FRBNY DSGE model, are around zero, and are moving up only slowly towards its longer-term level; moreover, the longer-term level itself is projected to be significantly below its historical estimate of about 2 percent. Accordingly, the current monetary policy stance is not particularly accommodative, which underscores that a gradual removal of accommodation is appropriate. Further support for a gradual pace comes from the medium-term risks associated with the evolution of global economic conditions, particularly in Europe. Brexit will involve complex and lengthy political negotiations between the EU and the U.K. that are likely to engender further uncertainty. At the same time, the European banking system has displayed continued stress that could weaken the EU outlook. These and other developments could lead to more accommodative policies in a number of advanced economies. A change in the relative stance of U.S. monetary policy versus that abroad may result in an undue tightening of U.S. financial conditions, if monetary policy divergences result in significant dollar appreciation. Finally, a risk management perspective suggests that a gradual pace of policy tightening over the forecast horizon would be appropriate. The limited scope for policy to react to deterioration in the outlook suggests that a premature or unduly fast pace of tightening would be quite costly relative to a modest overshoot in inflation. Consequently, we assess that it would be better to err on the side of a too gradual path rather than to err on the side of raising policy rates too quickly.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

US economic indicators have continued to be mixed over the intermeeting period. Our forecast for growth of real GDP in the second quarter—2 ½% (annual rate)—is essentially unchanged from both the June and April Blackbooks. In this cycle, growth contributions from final sales to domestic purchasers, inventory accumulation, and net exports are all essentially unchanged from June. If our projection turns out to be correct, growth over the entire first half of 2016 would be 1 ¾% (annual rate), the same as over the second half of 2015. (Interestingly, the unemployment rate was little changed over that period, consistent with our estimate of potential growth of around 1 ¾%.) Looking forward, some very recent indicators have been consistent with the view that growth will firm somewhat over the second half of 2016. Data coming out of the manufacturing sector has begun to look somewhat brighter. And rather than tightening as feared, financial conditions are essentially unchanged, if not somewhat easier, in the wake of the UK decision to leave the EU.

The stand-out development of the second quarter was the surge in growth of real personal consumption expenditures (PCE). Real PCE grew 0.8% in April, the strongest monthly increase since August of 2009 when the Cash for Clunkers program provided a sharp boost to motor vehicle sales. Growth of real PCE slowed to 0.3% in May, still a quite decent pace of growth. Based on available data for June—light-weight vehicle sales, non-auto retail sales, and the CPI--we estimate that real PCE increased 0.1% in June. Given that monthly pattern, real PCE grew at a 4 ¼% (annual rate) in Q2, up from 1.5% in the first quarter. That would put the growth rate of real PCE around 3.0% for the entire first half, somewhat firmer than the 2.7% for all of 2015. We estimate that real disposable income increased around 3% (annual rate) over the first half of 2016, down from 3 ¼% over the second half of 2015. The personal saving rate is expected to have declined from 5.8% in the first quarter to 5.3% in Q2, comparable to the personal saving rate of 2015Q4. Thus, the behavior of real spending and income growth is suggests a delayed reaction to the second phase of energy price reductions that began in mid-2015.

Home sales increased in the April/May period relative to their Q1 averages, with existing home sales up 3.4% to 5.480 million units (annual rate) and new home sales up 8.4% to 568,000 units. Interest rates on 30-year fixed rate mortgages have declined by roughly 30 basis points since the end of 2015, with contract interest rates on 30-year fixed rate mortgages average 3.6% in June. The month's supply of existing homes listed for sale continues to be relatively low, with anecdotal reports of bidding wars in some very desirable areas, particularly in the mid-price range. In contrast, activity in the high and low ends of the housing market is described as being less robust. Based on the CoreLogic national single-family home price index, home prices are up nearly 6% over the year ending in May, with the absolute level just 6% below the previous peak in April of 2006. Rent inflation continues to edge higher, with the 12-month change of rent of primary residence reaching 3.8% in May and June.

Despite this evidence of shortness of supply, the total housing starts have been essentially flat for five consecutive quarters, with a very gradual uptrend in single-family starts offset by a decline in multi-family starts. For the second quarter we expect a modest increase of real residential investment (around 3% annual rate), down from 15.6% in the first quarter, reflecting a decline in starts in the second quarter and a decline in additions and alteration following quite strong increases over the previous two quarters.

Recent indicators related to business fixed investment (BFI) have continued to be relatively lackluster, but we do anticipate a somewhat stronger showing in Q2 than the declines of real BFI of the previous two quarters. At this writing we expect real investment in nonresidential structures—which as of 2015H2 represented 20% of real BFI—to decline again in 2016Q2, marking the fourth consecutive quarterly contraction. As in the past three quarters, the bulk of this weakness is due to a further steep decline of oil and gas drilling activity. The number of active oil and gas drilling rigs in the US bottomed out over the second half of May and has been rising gradually since then. But the quarterly decline in such activity will be quite large again in the second quarter. Absent that subcomponent, this sector looks to be on a gradual uptrend. Private nonresidential construction put-in-place declined in April and May, but this followed a steep increase in April. For Q2 as a whole it will likely increase at a mid-single digit annual rate.

The Architectural Billings Index has shown some life of late, rising to 53.1 in May, its highest level in seven months.

Real business investment in new equipment (nearly 50% of total BFI) is expected to eke out a modest increase in the second quarter following declines in the two previous quarters. The April-May average level of shipments of nondefense capital goods is up 4 ¼% (annual rate) over the Q1 average level. In addition, based on data for April and May, exports of capital goods declined over the quarter while imports of capital goods increased.

Over this cycle we have marked down the growth contribution from government consumption and gross investment. While state and local construction spending has recovered and appears to be on a gradual upward trend, it has been extremely volatile over the past few quarters—declining at a 13.7% annual rate in 2015Q4, rising at a 17.6% annual rate in 2016Q1, and then falling at about a 13% annual rate in 2016Q2. State and local government employment is now on a gradual uptrend, increasing 0.5% over the four quarters ending in 2016Q2. Based on the Monthly Treasury Statement for April through June, it appears that consumption spending and gross investment at the federal level will be essentially unchanged in the second quarter following a 1.6% decline in the first quarter.

As mentioned above, we have for some time anticipated a relatively large negative growth contribution from inventory investment in 2016Q2, and inventory data available through May have been consistent with that view. At the moment we expect inventory drag of 0.7 percentage points. The pace of real nonfarm inventory accumulation is expected to fall to below $40 billion for the first time since 2014Q1.

The release of the June employment report was accompanied by a collective sigh of relief as nonfarm payrolls rose a strong 287,000. The increase in May, originally reported as a meager 38,000, was revised down to just 11,000, though the April change was revised up by 21,000 to 144,000. The average monthly increase for the second quarter was 147,000, down from 196,000 in the first quarter and 282,000 in the final quarter of 2015. We have anticipated this slowing in growth of payroll employment due to the fact that labor productivity growth was negative in both

the fourth and first quarters. Along with the slowing in employment gains, growth of hours worked by private nonfarm employees slowed to around 3/4ths of a percent (annual rate), less than half the rate of growth over the previous two quarters. At this point we expect labor productivity to have increased at a 2% annual rate in the second quarter. But even with this substantial rebound, the four-quarter change will be down to just 0.4%.

As mentioned above, recent data out of the manufacturing sector has looked somewhat brighter of late. The ISM manufacturing index rose to 53.2 in June, the fourth consecutive month above 50 following five months of readings below 50. The new orders component rose to 57.0 in June and average 56.2 for the entire second quarter, its highest level since 2014Q4.

Manufacturing output increased 0.4% in June following a 0.2% decline in May. However, this increase was dominated by a 5.9% (monthly rate) increase in output of motor vehicles following a 4.3% decline in May. Excluding motor vehicles and parts, manufacturing output fell 0.1% in June following a 0.1% increase in May and is down 0.2% over the past year. On the plus side, the year-over-year declines of this series do appear to have subsided, which of course must happen before we see an actual recover. Production of high-tech products such as computers, communications equipment, and semiconductors has begun to recover, reaching a year-over-year gain of 3.6% in June versus -1.3% last November.

The 2016Q2 inflation data have been somewhat higher than was expected in April and June. We now expect that the core PCE deflator increased at a 1.7% annual rate in Q2. This is up from 1.6% in the June Blackbook and 1.5% in the April Blackbook. After a brief firming in the first quarter, core goods prices fell at a 0.6% rate (year-over-year) in Q2, comparable to the rate of decline in 2015Q4 and consistent with our model predictions based on relative import prices. However, year-over-year increases of non-energy services have moved up more than anticipated. Of particular note, the rate of increase of the PCE health care price index has not slowed in recent months as we had been expecting.

The Outlook

Our projection for growth over all of 2016 is unchanged from the June Blackbook at 2.1% (Q4/Q4), but this reflects somewhat stronger growth over the first half of the year while growth over the second half has been revised down from around 2.6% (annual rate) to 2.4%. We have lowered growth of real PCE over the second half of 2016 to reflect the fact that growth of real PCE actually slowed more over the three months of Q2 than we thought would be the case while growth of real disposable income is expected to be somewhat slower over the second half due to slower growth of hours worked and somewhat higher inflation. We have also lowered the growth of BFI over the second half to reflect the ongoing weakness in the manufacturing sector and declining profit margins in the nonfinancial corporate sector of the economy. Partially offsetting these mark downs is the fact that the net export drag over the second half has been reduced from -0.6 percentage points to -0.45 percentage points due to somewhat slower growth of imports induced by somewhat slower growth of domestic demand. Our projection for total PCE deflator inflation over the second half has been raised by one-tenth (from 1.7% to 1.8%) while core PCE deflator inflation has been raised by two-tenths (from 1.5% to 1.7%). The increase in core inflation is a reflection of the higher than expected value for Q2 as well as the fact that core services prices are rising somewhat faster than previously expected. Total inflation was increased by less than core to reflect the marking down of our path for oil prices over the period through mid- 2017. Despite somewhat above potential growth, the unemployment rate remains essentially flat over the second half of 2016 reflecting positive growth of productivity and modest increases in both average weekly hours and the labor force participation rate.

Our forecast for 2017 is essentially unchanged, with growth of real GDP slowing to 1 ¾% which is our current estimate of the economy's potential growth rate. This slowing of growth from that of the second half of 2016 is due to a combination of the aging of the business cycle and the ongoing tightening of financial conditions associated with further movement toward the normalization of monetary policy. In this environment, growth of consumer spending on durable good slows, as does residential investment. Business investment spending is expected to somewhat firmer, but still would not be regarded as robust. The trade drag increases from that of

2016 reflecting stronger growth of imports due to the dollar appreciation of the past few years and the normalization of domestic inventory-sales ratios.

The unemployment rate is expected to remain unchanged at 4.8%. Productivity growth is assumed to remain somewhat below its long term trend of 1% to 1 ¼%, but we expect a modest further increase in labor force participation and in average weekly hours as the goods producing sector of the economy continues to recover. The compensation share of national income continues to rise gradually while the corporate profit share continues to decline gradually. Total PCE deflator inflation is expected to edge higher, reaching 2% for all of 2017 (Q4/Q4), reflecting reduced slack, relatively stable energy prices, a declining impulse from past dollar appreciation, and well-anchored inflation expectations.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Jun	Jul	Jun	Jul	Jun	Jul	Jun	Jul
2015								
Q1	*1.0*	*1.0*	*0.6*	*0.6*	*5.6*	*5.6*	*0-0.25*	*0-0.25*
Q2	*1.9*	*1.9*	*3.9*	*3.9*	*5.4*	*5.4*	*0-0.25*	*0-0.25*
Q3	*1.4*	*1.4*	*2.0*	*2.0*	*5.2*	*5.2*	*0-0.25*	*0-0.25*
Q4	*1.3*	*1.3*	*1.4*	*1.4*	*5.0*	*5.0*	*0.38*	*0.38*
2016								
Q1	*2.1*	*2.0*	*0.8*	*1.1*	*4.9*	*4.9*	*0.38*	*0.38*
Q2	1.6	1.7	2.4	2.6	4.8	4.9	0.38	0.38
Q3	1.5	1.7	2.4	2.4	4.7	4.8	0.63	0.63
Q4	1.6	1.8	2.7	2.3	4.7	4.8	0.88	0.88
2017								
Q1	1.7	1.8	1.7	1.7	4.8	4.8	1.06	1.00
Q2	1.8	1.9	1.8	1.7	4.8	4.8	1.25	1.13
Q3	1.9	1.9	1.5	1.7	4.8	4.8	1.44	1.25
Q4	2.0	2.0	1.9	1.7	4.8	4.8	1.63	1.38
Q4/Q4								
2015	1.4	1.4	2.0	2.0	-0.7	-0.7	0.38	0.38
2016	1.7	1.8	2.1	2.1	-0.3	-0.2	0.88	0.88
2017	1.8	1.9	1.7	1.7	0.1	0.0	1.63	1.38

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

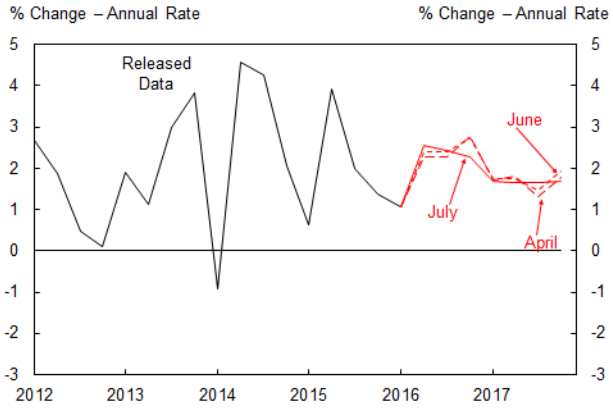
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

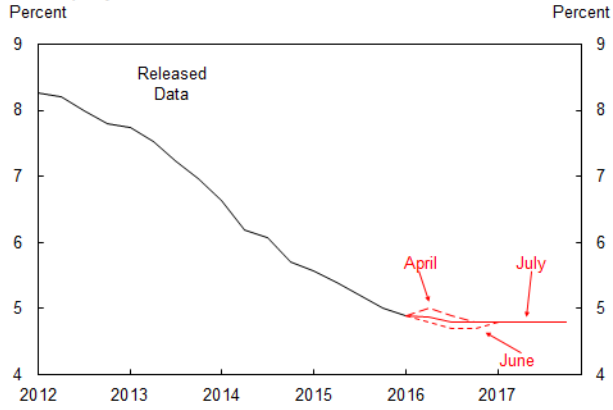
2-2: Evolution of Projected Quarterly Paths

Key Indicators

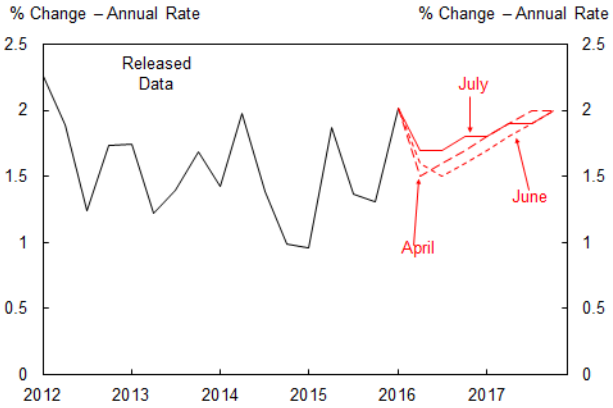
Real GDP Growth



Unemployment Rate

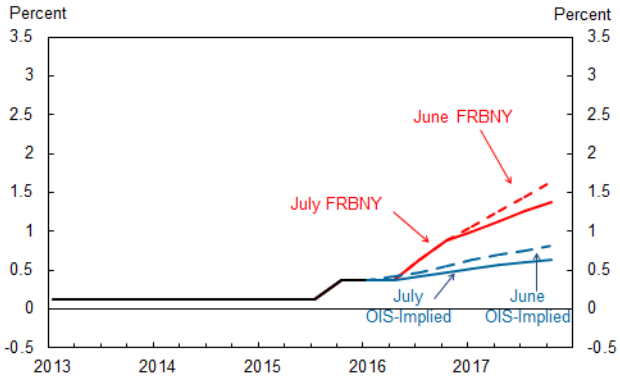


Core PCE Inflation

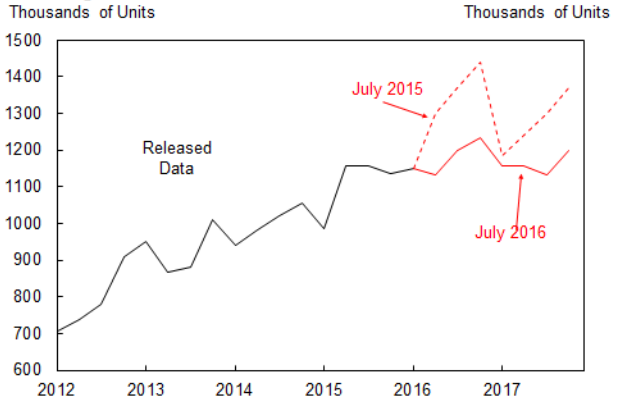


Forecast Assumptions

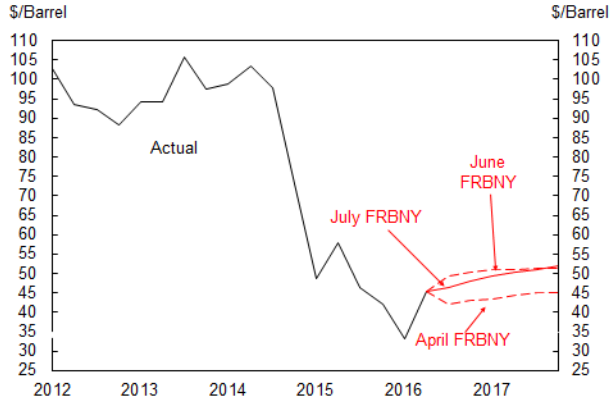
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q2	2016Q3	2016Q4	2016Q2	2016Q3	2016Q4
OUTPUT						
Real GDP	2.6	2.4	2.3	2.6	2.4	2.3
	(2.4)	(2.4)	(2.7)	(2.4)	(2.4)	(2.7)
Final Sales to Domestic Purchasers	3.0	3.0	2.7	3.0	3.0	2.8
	(2.9)	(3.1)	(3.1)	(3.0)	(3.1)	(3.2)
Consumption	4.3	2.7	2.4	2.9	1.9	1.7
	(3.8)	(2.8)	(2.7)	(2.6)	(1.9)	(1.9)
BFI: Equipment	4.0	4.0	4.0	0.2	0.2	0.2
	(2.0)	(4.0)	(6.0)	(0.1)	(0.2)	(0.3)
BFI: Nonresidential Structures	-14.0	0.0	3.0	-0.4	0.0	0.1
	(-8.0)	(0.0)	(4.0)	(-0.2)	(0.0)	(0.1)
BFI: Intellectual Property Products	4.0	3.0	3.0	0.2	0.1	0.1
	(4.0)	(4.0)	(4.0)	(0.2)	(0.2)	(0.2)
Residential Investment	3.0	15.0	12.0	0.1	0.5	0.4
	(5.0)	(15.0)	(11.5)	(0.2)	(0.5)	(0.4)
Government: Federal	0.5	2.0	2.0	0.0	0.1	0.1
	(2.0)	(2.0)	(2.0)	(0.1)	(0.1)	(0.1)
Government: State and Local	-0.5	1.5	1.5	-0.1	0.2	0.2
	(0.0)	(1.5)	(1.5)	(0.0)	(0.2)	(0.2)
Inventory Investment	--	--	--	-0.7	-0.1	-0.1
	--	--	--	(-0.6)	(0.0)	(0.0)
Net Exports	--	--	--	0.2	-0.5	-0.4
	--	--	--	(0.0)	(-0.7)	(-0.5)
INFLATION						
Total PCE Deflator	2.0	1.8	1.9			
	(1.6)	(1.7)	(1.8)			
Core PCE Deflator	1.7	1.7	1.8			
	(1.6)	(1.5)	(1.6)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	2.3	1.4	1.3			
	(2.4)	(1.3)	(1.9)			
Compensation per Hour	3.1	3.4	3.5			
	(3.1)	(3.4)	(3.5)			
Unit Labor Costs	0.8	2.0	2.2			
	(0.7)	(2.1)	(1.6)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2015	2016	2017	2015	2016	2017
OUTPUT						
Real GDP	2.0	2.1	1.7	2.0	2.1	1.7
	(2.0)	(2.1)	(1.7)	(2.0)	(2.1)	(1.7)
Final Sales to Domestic Purchasers	2.5	2.5	2.2	2.5	2.5	2.3
	(2.5)	(2.6)	(2.4)	(2.5)	(2.6)	(2.5)
Consumption	2.7	2.7	2.2	1.8	1.9	1.5
	(2.7)	(2.8)	(2.3)	(1.8)	(1.9)	(1.6)
BFI: Equipment	2.5	0.7	3.5	0.2	0.0	0.2
	(2.5)	(0.6)	(4.0)	(0.2)	(0.0)	(0.2)
BFI: Nonresidential Structures	-3.5	-5.0	3.7	-0.1	-0.1	0.1
	(-3.5)	(-3.4)	(4.0)	(-0.1)	(-0.1)	(0.1)
BFI: Intellectual Property Products	3.6	3.6	3.0	0.1	0.1	0.1
	(3.6)	(3.0)	(3.5)	(0.1)	(0.1)	(0.1)
Residential Investment	9.4	11.3	7.2	0.3	0.4	0.3
	(9.4)	(12.1)	(7.9)	(0.3)	(0.4)	(0.3)
Government: Federal	0.9	0.7	-0.5	0.1	0.0	0.0
	(0.9)	(1.1)	(-0.5)	(0.1)	(0.1)	(-0.0)
Government: State and Local	1.2	1.4	0.8	0.1	0.2	0.1
	(1.2)	(1.5)	(0.8)	(0.1)	(0.2)	(0.1)
Inventory Investment	--	--	--	0.0	-0.3	0.0
	--	--	--	(-0.0)	(-0.2)	(-0.1)
Net Exports	--	--	--	-0.5	-0.1	-0.6
	--	--	--	(-0.5)	(-0.4)	(-0.6)
INFLATION						
Total PCE Deflator	0.5	1.5	2.0			
	(0.5)	(1.4)	(1.9)			
Core PCE Deflator	1.4	1.8	1.9			
	(1.4)	(1.7)	(1.8)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.6	1.1	0.9			
	(0.6)	(1.2)	(1.0)			
Compensation per Hour	3.2	3.5	3.5			
	(3.2)	(3.5)	(3.6)			
Unit Labor Costs	2.6	2.4	2.6			
	(2.6)	(2.2)	(2.6)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	7/18/2016	2.6	2.4	2.1	1.7
		(2.4)	(2.4)	(2.1)	(1.7)
Blue Chip	7/10/2016	2.5	2.2	1.9	2.2
		(2.3)	(2.4)	(1.8)	(2.3)
Median SPF	5/13/2016	2.1	2.4	1.7	2.4
		(2.1)	(2.4)	(1.7)	(2.4)
Macro Advisers	7/14/2016	2.5	2.0	2.0	2.1
		(2.2)	(2.2)	(1.9)	(2.2)
FRBNY-DSGE	7/15/2016	2.2	2.0	1.8	2.1
		(1.9)	(2.0)	(1.6)	(2.2)

Core PCE Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	7/18/2016	1.7	1.7	1.8	1.9
		(1.6)	(1.5)	(1.7)	(1.8)
Median SPF	5/13/2016	1.5	1.7	1.8	1.9
		(1.5)	(1.7)	(1.8)	(1.9)
Macro Advisers	7/14/2016	1.8	2.0	1.9	1.9
		(1.7)	(1.7)	(1.8)	(1.8)
FRBNY-DSGE	7/15/2016	1.7	1.4	1.6	1.3
		(1.5)	(1.3)	(1.6)	(1.2)

CPI Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	7/18/2016	2.5	2.0	1.7	2.4
		(2.3)	(2.0)	(1.5)	(2.3)
Blue Chip	7/10/2016	2.4	2.2	1.3	2.3
		(2.2)	(2.4)	(1.2)	(2.3)
Median SPF	5/13/2016	1.9	2.0	1.5	2.1
		(1.9)	(2.0)	(1.5)	(2.1)
Macro Advisers	7/14/2016	2.7	3.1	1.8	2.3
		(2.6)	(3.1)	(1.7)	(2.1)

Core CPI Inflation

	Release Date	2016Q2	2016Q3	2016 Q4/Q4	2017 Q4/Q4
FRBNY	7/18/2016	2.1	2.2	2.3	2.4
		(2.1)	(2.2)	(2.3)	(2.3)
Median SPF	5/13/2016	2.0	2.0	2.2	2.2
		(2.0)	(2.0)	(2.2)	(2.2)
Macro Advisers	7/14/2016	2.2	2.2	2.3	2.2
		(2.1)	(2.1)	(2.2)	(2.0)

*Note: Numbers in gray are from the previous Blackbook

3. Uncertainty & Risks

Developments during the intermeeting period, including financial market reactions to the "Brexit" vote, indicate only modest changes in the risk assessment from that in the June *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the balance of risks for real GDP growth remains to the downside at most horizons. For core PCE inflation, the risks are roughly balanced through 2017 and skewed slightly to the downside in 2018. The widths of the probability intervals are slightly wider than those in the June *Blackbook*. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close its historical norms.

The data on U.S. real economic activity over the intermeeting period were roughly consistent with our central outlook. The June labor market report indicated a rebound in payroll growth from a very soft May. Nevertheless, the recent labor market reports signal a slower pace of labor market improvement from that of 2015 and early 2016. Manufacturing production data generally were still tepid: Even after a solid increase in June, production has been flat since December 2014. Investment indicators were weak and suggested continued weakness in business fixed investment. In contrast, indicators of consumer spending pointed to robust real consumption growth in Q2, consistent with the anticipated rebound in real GDP growth. Based on 12-month changes, core PCE inflation and core CPI inflation have stabilized over the past few months. Alternative underlying inflation measures were consistent with a slow return to the objective. Longer-term inflation compensation and survey measures of inflation expectations continued to be at low levels. Outside of the U.S., the data generally were consistent with a stabilization of the global economic outlook. At this point, the broader economic impact of the "Brexit" vote remains unclear, although the early indications are that it may be fairly contained.

After deteriorating immediately following the "Brexit" vote, financial conditions rebounded and (depending on the weighting of various components) ended the intermeeting period little changed to somewhat improved. U.S. equity prices increased during the period; measures of implied volatility returned to low levels. Major foreign equity indices generally were flat to

modestly higher over the period; however, equity prices of European banks were down notably. Oil and broad commodity price indices decreased over the period. After dropping sharply after the "Brexit" vote, long-term nominal and real yields in the U.S. ended the period down only modestly at levels that are still quite low. Long-term yields in the advanced economies followed similar patterns, although yields in the U.K. fell more. The market-implied expected policy path in most major economies flattened further. Despite swings during the period, the broad trade-weighted dollar index ended little changed.

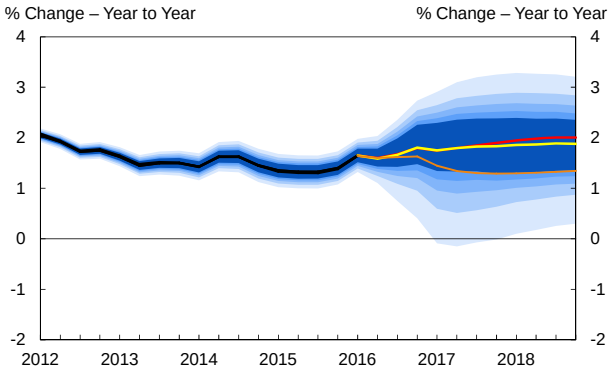
We interpreted these developments as indicating little net change in our risk assessment, although we see a different configuration of risks [Exhibit 3-2]. To incorporate the possibility that the stronger June labor market report and continued fairly robust consumption data point to stronger-than-anticipated future domestic aggregate demand, we decreased the probability of the *Fiscal Consolidation* scenario and increased the probability of the *Faster Growth* scenario. At the same time, the "Brexit" vote and apparent renewed strains in parts of the European banking system indicate greater downside risks from foreign economies, which we incorporated through an increase in the probability of the *Global Credit Crunch* scenario. These changes led to only modest changes in the 90 percent probability intervals for real GDP growth and for core PCE inflation [Exhibit 3.3]. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is close to its norms. The real GDP growth forecast distribution continues to reflect that the risks to real activity are skewed to the downside through most of the forecast horizon, while the risks to inflation are roughly balanced in 2016-17 and slightly to the downside in 2018 [Exhibit 3-1].

In a comparison to the forecast distribution from a year earlier, the current inflation projection runs modestly below the year-ago expectation. The modest difference reflects that the most recent measured 4-quarter change was somewhat below the year-ago forecast, an inflation forecast that reaches the FOMC longer-run objective a little more slowly than that of a year ago, and roughly balanced risks to the inflation outlook [Exhibit 3-3]. Despite the soft Q1 number, 4-quarter real GDP growth was close to the year-ago expectation. Going forward, the current real GDP growth expectation is somewhat below the year-ago expectation over the forecast horizon, reflecting the subdued path for real GDP growth (partly because of a lower potential growth

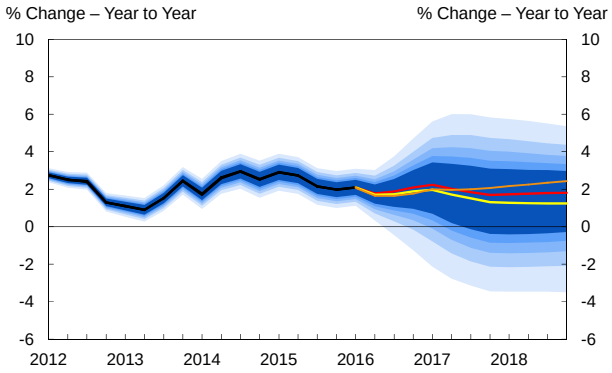
estimate) and the continued downside risks in our outlook. These patterns indicate some deterioration in our outlook for real activity over the past year.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



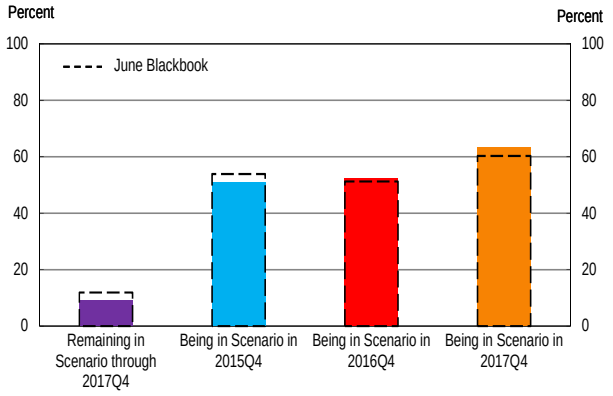
Real GDP Growth Forecast Distribution



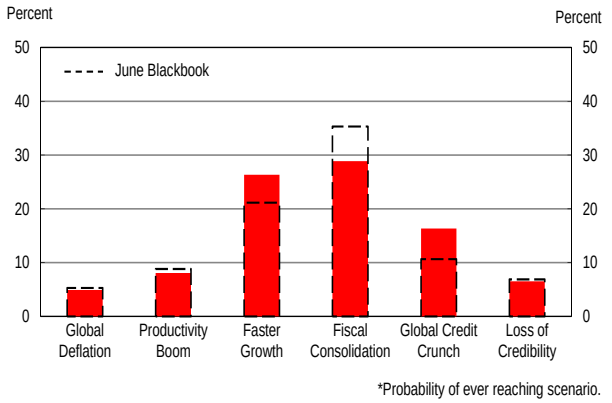
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*

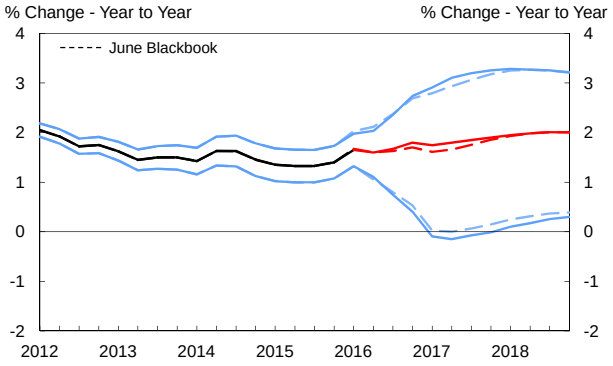


The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

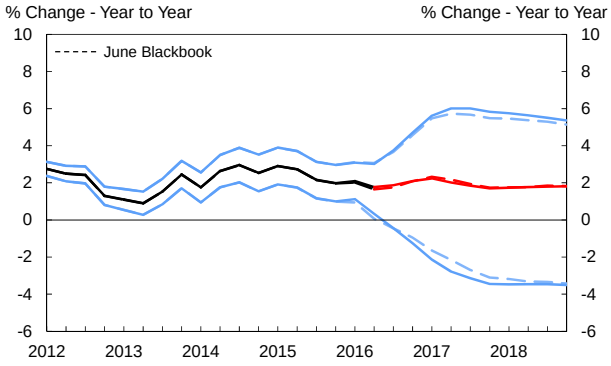
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

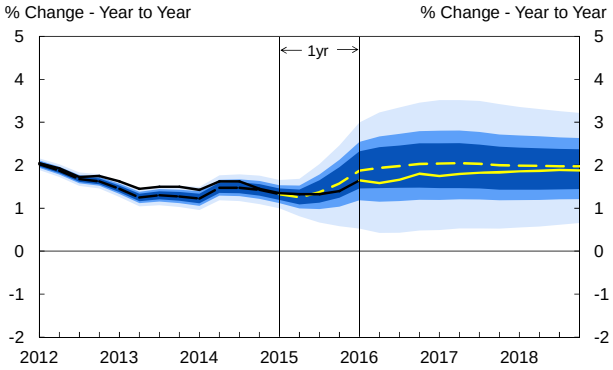


Change in Real GDP Growth Forecast Distribution

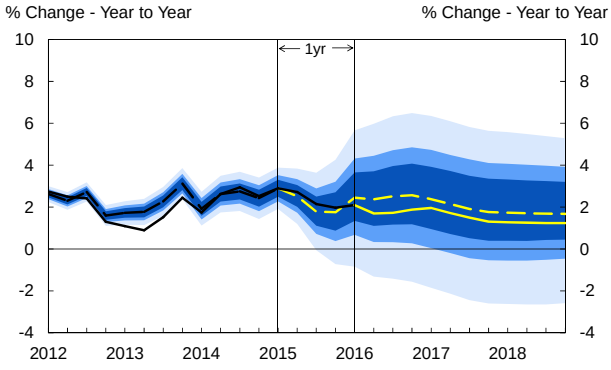


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

September 2016

RESTRICTED (FR)

FRBNY BLACKBOOK

September 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Economic developments over the intermeeting period were mixed. After two consecutive quarters of growth just below 1 percent (annual rate), real GDP growth for the second quarter was a disappointing 1.1 percent, 1.5 percentage points below our projection in the July *Blackbook*. Nevertheless, the higher-frequency data released over the intermeeting period on balance suggest growth will be notably stronger in the second half of the year. As a consequence, our modal forecast for GDP growth in 2016 (Q4/Q4) is little changed at about 2 percent, but there is still significant uncertainty around it due to the recent significant forecast errors. More positively, the balance of risks is less skewed to the downside than in the July *Blackbook*, largely reflecting a sizable dissipation of the near-term risks associated with the Brexit shock. In addition, financial markets have displayed resilience, and post-vote macroeconomic news about the U.K. and the global economy has been reassuring on balance.

We continue to recommend a gradual removal of accommodation over the medium term, to the extent that upcoming developments confirm that the economy is progressing toward the Committee's objectives. The keyword here is "gradual." For this year we now anticipate a range of potential cumulative FFR adjustment of between 0 and 25bps, down from 50bps we considered plausible in prior *Blackbooks*. However, we do not see any urgency to raise the policy rate at this coming meeting, as there are still no material inflationary pressures, inflation expectations remain subdued, and growth prospects are uncertain. Risk-management considerations suggest that the benefit of waiting for some further resolution of uncertainty about the economic outlook outweighs the costs of a possibly premature increase. We are aware that prolonged policy inaction may lead market participants to extrapolate an unwarranted flat path for the policy rate. To counteract this risk, we continue to recommend that policy communication focus on guidance about the Committee's reaction function in the context of data dependency. Specifically, the next hike should be conditional on incoming economic data broadly confirming our projections of a rebound in the second half of the year.

Our near-term growth forecast is mainly driven by the expectation of a turnaround in the inventory investment growth contribution and a smaller net export drag, which are supported by available data on the current quarter. Consumption data show that consumer spending

maintained most of its momentum entering the third quarter, although they raise questions about its sustainability in the fourth quarter. Business fixed investment continued to be soft, but showed some signs of modest improvement. On a cautious note, the latest ISM indexes were weak, especially for the non-manufacturing sector, with notable drops in the new order components; however, this may be less worrisome than initial impressions, as it reflects more a decline in the number of respondents reporting an improvement rather than an increase in the number reporting a worsening. Our nowcasting model has interpreted these developments as indicating little change in its outlook, with its projection of Q3 growth at 2.4 percent, below our judgmental forecast of 3 percent. We expect real growth in subsequent years to be close to or just above our 1¾ percent estimate of potential growth.

The labor market data continued to show signs of strengthening conditions, and we anticipate the unemployment rate to remain near our assumption of its longer-run normal rate (4¾ percent) over the forecast horizon. Price data indicated stable underlying inflation that is moderately below the 2 percent longer-run objective, while inflation expectations remained near the bottom of their historical range. The median of three-year household inflation expectations in our SCE declined in July but rebounded in August. The Michigan measure of longer-term household expectations ticked down in August to match its historical low. We project that inflation will rise further to 2 percent and possibly even slightly above that level.

Until the past week, financial markets were fairly quiet during the intermeeting period. The Treasury yield curve steepened modestly. The market-implied expected path of the federal funds rate remains flat, reaching 1 percent only in mid-2020. On net, the S&P 500 fell modestly, but remains near its record high. Implied volatility picked up recently, but is still modestly below its historical average. Oil prices fluctuated within a fairly narrow range. The nominal broad dollar index depreciated modestly. LIBOR-OIS spreads widened, which appear to reflect some impact from the impending implementation of money market fund reforms, but the widening does not seem to indicate a more general deterioration in financial conditions.

As mentioned previously, the balance of risks is less skewed to the downside than it was in the July *Blackbook*, reflecting the dissipation of near-term Brexit risks, U.S. and global economic

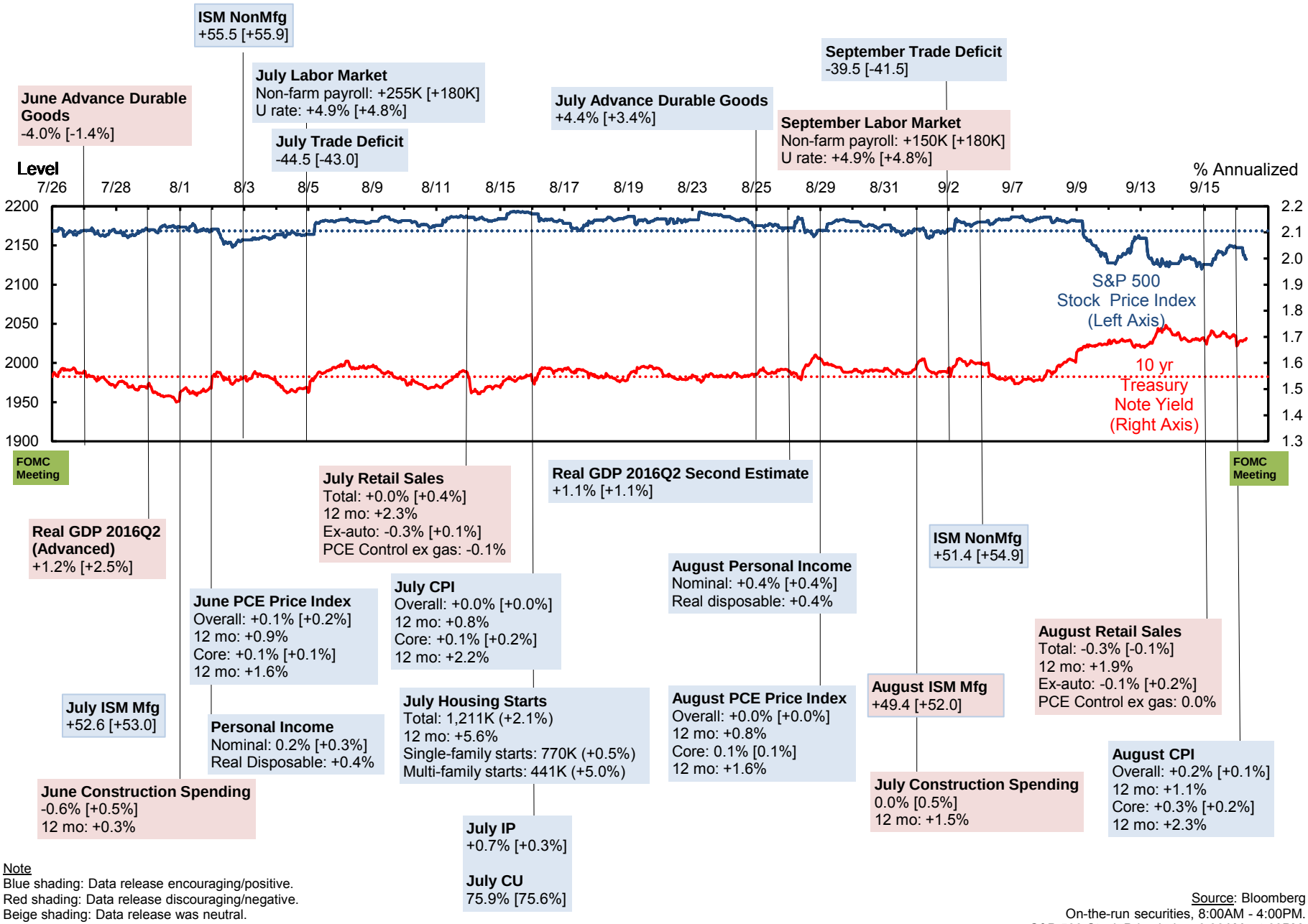
data that were generally consistent with our central forecast, and indications of some improvement in financial conditions. Over the near term, the risks appear to be roughly balanced, but over the medium term, the risks have a modest downside skew. Because of the sizable forecast errors seen in recent years, we see the uncertainty around the forecast to be still unusually high.

Turning to policy, in our July recommendation we anticipated a gradually rising path for the federal funds rate on the basis of an expected strengthening of the labor market and stabilization of inflation, and assessed that one to two rate increases in 2016 would be appropriate. At that time, however, our forecast for 2016Q2 was for a rebound of growth to 2.5 percent, a pace that was anticipated to be maintained into the second half, and inflation data appeared to tick up. Unfortunately, GDP growth for 2016Q2 came below expectations and inflation measures have flattened, implying that significant uncertainty remains around our forecasts. This uncertainty suggests not only that one rate hike in the 2016 now looks more appropriate, but also that it may be prudent to delay further this increase until there is stronger evidence that there is sufficient resilience in the economy to overcome the weak growth in the first half of the year.

We believe the benefits of waiting to raise rates outweigh the potential costs of excessive delay. In particular, if our forecast would again prove too optimistic, the limited scope for policy to react to a deteriorating outlook suggests that a premature tightening would be quite costly relative to a modest overshoot in inflation.

Our policy path is consistent with estimates and projections of the real natural rate of interest, such as those from the FRBNY DSGE model. This estimate is moving into positive territory, and is anticipated to edge up slowly towards its longer-term level, which is projected to be well below its historical estimate of about 2 percent. Our gradual pace of removing accommodation also takes into account the medium-term risks associated with the evolution of global economic conditions, particularly in Europe, where Brexit will involve complex and lengthy political negotiations between the EU and the U.K. that may engender significant uncertainty. Foreign central banks policies will continue to be an important factor in the outlook as divergences

between U.S. and foreign monetary policies may result in significant dollar appreciation and an undue tightening of U.S. financial conditions.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.

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

2. Central Forecast

Intermeeting Developments

Growth of real GDP in the second quarter is now estimated at just 1.1% (annual rate), well below our 2.6% projection in the July Blackbook. While growth of real PCE was in line with our expectations, many other expenditure components came in quite a bit weaker than anticipated. In particular, inventories actually declined over the quarter, resulting in a 1.3 percentage point drag on growth versus our expectation of a -0.7 percentage point contribution. In addition, business investment in new equipment, residential investment, and state and local government consumption and gross investment were all weaker than we thought they would be.

After growing at just a 1% annual rate over the first half of this year, expenditure data released over the intermeeting period point to a substantial increase in GDP growth during the third quarter. Our current projection for 2016Q3 is for growth of 3% (annual rate), then slowing to 2 3/4% in the fourth quarter. This would result in a growth rate of 2.8% for the second half of the year and of 1.9% for all of 2016 (Q4/Q4), a tad slower that what we projected in the previous two Blackbooks. It should be noted, however, that while expenditure data have, on balance, been encouraging, some recent supply side data have been major downside surprises. In particular, aggregate hours declined in August while the gain in average hourly earnings was quite modest, suggesting that aggregate wage and salary income declined over the month. In addition, both the ISM manufacturing and nonmanufacturing composite indices declined in August, led by quite large declines in their new orders subcomponents. Finally, manufacturing output declined by 0.4% in August, with broad-based declines across sectors. For now we regard these as transitory developments but they certainly raise the possibility that the US economy will enter the fourth quarter with less forward momentum that we previously thought.

After growing at a very robust 4.4% in the second quarter, data released over the intermeeting period suggest that growth of real PCE has slowed somewhat in the third quarter but is likely to be a still quite respectable 3.1% (annual rate). Real PCE increased 0.3% in July, down from an average monthly gain of 0.4% in the second quarter. Real disposable personal income rose a strong 0.4% in July, above the average monthly increase of the second quarter, while the personal saving rate rose to 5.7% from 5.5% in June. Sales of light-weight motor vehicles

slipped to 17.0 million (annual rate) in August from 17.9 million in July, apparently due in part to a cutting back on sales incentives by manufacturers. Nonetheless, sales are likely to average around 17 ½ million for the third quarter as a whole, up from an average of 17 ¼ million over the first half of the year. August was an unusually warm month, with cooling degree days 18.5% above the average of the preceding five years, which will boost household spending on electricity. The retail sales data for July were somewhat weaker than expected, with the BEA control essentially unchanged. But we know that gasoline prices declined in August, and the BEA control excluding gasoline rose modestly in August following a moderate decline in July. On balance this information resulted in a modest decline of growth of real PCE for Q3 relative to Q2 but raises questions about what to expect in the final quarter of the year. For now, we anticipate a further slowing to around 2 ½%.

July data on the housing sector were mixed. Total housing starts rose by 2.1% in July following a 5.1% increase in June, putting the July level nearly 5% above the Q2 average. This gain was primarily in the multi-family sector, but single-family starts appear to have resumed a modest uptrend. Indeed, sales of new single-family homes soared in July, rising 12.4% to 654,000 units (seasonally adjusted annual rate), the highest since October of 2007. Nonetheless, the construction-put-in-place data for the single-family category declined in July after declining over much of the first half of 2016. (Construction spending in the multi-family sector declined in June and July but is up 20% on a year-over-year basis.) With the total number of single-family units under construction and completed gradually rising over this period, the decline of value put in place suggests that builders have moved their product mix in the direction of lower priced units. There is some support for this conclusion in that a measure of the real value of new homes sold, derived by dividing the median sales price of new homes sold by a price index for new homes under construction, has declined by around 5% over the past year. The implication is that, despite the likelihood of rising single-family starts over the second half of 2016, the growth of residential investment is likely be weaker than otherwise would have been the case. Finally, the July and August data on sales of building materials, which BEA uses in its estimation of spending on improvement, have come in weaker than expected. The bottom line is that we have penciled in a modest decline in real residential investment for the third quarter.

After declining for three consecutive quarters, recent data suggest that real business fixed investment will expand modestly in the third quarter. Private nonresidential construction put in place increased an average of 1.6% per month over the three months ending in July, and was up 7.1% over the past year. Investment in the lodging, office, commercial, and amusement and recreation categories is up at double-digit rates over the year ending in July. This strength is now able to be seen in the aggregate data since oil and gas drilling activity is now expanding again after declining for seven consecutive quarters. At this time, we have penciled in an 8% annual rate increase in real nonresidential structures for Q3. In contrast, data on orders and shipments of nondefense capital goods, along with exports and imports of capital goods, continue to depict sluggishness in investment in new equipment. New orders for nondefense capital goods rose a strong 10.1% in July, but this follows a 10.9% decline in June. The trend in this new orders series still appears to be downward. Shipments of nondefense capital goods were unchanged in July at a level below the average of the second quarter. At this time we expect essentially no growth of real investment in equipment in Q3 with the possibility of another quarterly decline.

The July trade data came in better than expected. Following a modest gain in the second quarter, real exports of goods rose 3.0% in July with relatively large increases in exports of foods, feeds, and beverages, industrial supplies and materials, and automotive vehicles, parts and engines. This development coincides with indicators suggesting some firming in global economic activity, such as a modest uptrend in the global composite PMI and a renewed uptrend in the Baltic Freight Rate Index. In contrast, real imports of goods fell 1.6% in July with declines in most major categories. At this time we expect a net export growth contribution of -0.02 percentage point in 2016Q3, a notable improvement over the -0.5 percentage point expected in the July Blackbook.

After making essentially a zero growth contribution over the first half of 2016, we expect the government sector to make a very modest positive contribution over the second half of 2016. According to CBO's updated economic and budget projections, real federal government consumption and gross investment is expected to decline 0.8% in 2016 (Q4/Q4), which we have taken on board in our projections. Spending at the state and local level declined at a 2.2% annual rate in 2016Q2 due to a nearly 15% decline in gross investment. Construction spending at the state and local level declined again in July, although state and local employment growth has been

reasonably strong so far this year and strengthened further in July and August. We now expect a modest 0.2% annual rate increase in state and local spending in Q3. Aggregate state and local revenues were flat over the first half of the year. While tax receipts continue to grow, federal grants-in-aid, which represent about 23% of total state and local revenue, declined. Federal grants-in-aid fund state and local infrastructure spending as well as a number of other activities.

Supply side data over the intermeeting period have been mixed. Manufacturing output rose 0.5% in July following a 0.3% increase in June. The June and July gains in manufacturing output were broad based, but the gains in motor vehicle and parts production were particularly strong. But a broad array of data for August depicted unexpected weakness in the supply side of the economy. In the employment report for August, the gain in payroll employment was 151,000, down from an average of around 270,000 over the preceding two months. Aggregate hours in the private sector declined by 0.2% in August following gains of 0.2% in June and July, with hours in the manufacturing sector showing a 0.7% decline. Within manufacturing, aggregate hours in the motor vehicle and parts sector declined 1.5% in August, and there were declines in several other major categories except for computers and electronic products.

In addition to the hours and production data, both the ISM manufacturing and nonmanufacturing indices for August declined sharply, due in large part to unusually large declines in the new orders subcomponents (more than a two standard deviation change). In the case of the manufacturing ISM new orders component, there was an unusually large increase in the percentage of respondents indicating that orders got worse in August with roughly equal percentage point declines in those indicating that orders were better or the same. In the past, most, but not all, instances of such a large increase in the worse response has been associated with recessions. In the case of the nonmanufacturing ISM, the increase in the percentage of respondents indicating that orders got worse was not unusually large. The industrial production report indicated rather large declines in output in several industries, although output of motor vehicles and parts and of IT equipment saw decent gains.

The available price data for Q3 has come in below our projections in the July Blackbook. We now expect the total PCE deflator to increase 1.1% (annual rate) while the core PCE deflator is expected to increase 1.4%. The corresponding projections from July were 1.8% and 1.7%, respectively. After rising in the second quarter, energy prices declined in July and appear to have

declined in August, though they are expected to rise in September. For the quarter as a whole energy prices are likely to be essentially unchanged. In addition, the decline of prices of food for consumption at home has intensified in recent months, with those prices now on track to decline at a 2 ½% annual rate in Q3. Regarding the marking down of core PCE deflator inflation for the third quarter, core goods prices are expected to decline at around a 1.7% annual rate versus 1.4% in Q2. Durable goods prices continue to decline fairly rapidly, while apparel prices are essentially flat. In addition, the rate of increase of core services price is expected to slow from 3.3% in Q2 to around 3% in Q3 reflecting a slowing in the rate of increase of shelter, transportation services (mainly airfares), and recreation services (mainly due to declines in prices of admission to movie theaters and gambling).

The Outlook

As mentioned above, we expect growth of real GDP to rebound to around 2 3/4% (annual rate) over the second half of 2016, resulting in a Q4/Q4 growth rate of 1.9%, slightly below the projections of the last several Blackbooks. Consumer spending is expected to continue to be the main engine of growth, increasing at a 2 3/4% annual rate over the second half of the year, a slightly slower pace than over the first half. The personal saving rate is expected to remain around its recent level of 5 ¾%. Business fixed investment is expected to provide a positive growth contribution, largely due to the end of the decline of oil and gas drilling activity, although we have lowered the growth contribution from this sector due to the continued weakness in equipment investment. Similarly, residential investment is expected to provide a positive growth contribution but we have reduced it due to the downturn in value added per completed unit. In contrast, the net export growth contribution over the second half is expected to less negative than previously expected. In addition, due to the steep decline of inventory investment in Q2, we now expect inventory investment to provide a positive growth contribution over 2016Q2. After declining over the first half of the year, we expect productivity growth to rebound over the second half, which should keep monthly payroll gains below 200,000 (on average) over the remaining months of the year. Nonetheless, payroll growth is expected to be sufficient to reduce the unemployment rate to 4.8% for Q4 even with some movement upward in both the average work week and the participation rate. Core PCE deflator inflation is expected to average around

1 ½% (annual rate) over the second half, down from around 1 ¾% in the July Blackbook, reflecting the recent slowing discussed above.

Our real GDP growth forecast for 2017 has been raised slightly to 1.9%, somewhat above our estimate of the economy's potential growth rate. Growth of consumer spending is projected to slow from 3% in 2016 to around 2 ¼%, led by a continuation of the slowing of growth of spending on durable good and a slowing in the rate of growth of real disposable income. Growth of real residential investment also slows in response to higher interest rates. However, business investment spending is expected to be somewhat firmer, but still would not be regarded as robust. The trade drag increases relative to 2016 reflecting stronger growth of imports due to the dollar appreciation of the past few years and the normalization of domestic inventory-sales ratios. However, trade drag is less than in the June and July Blackbooks due to a somewhat slower growth path for imports.

With growth remaining above potential in 2017, the unemployment rate is expected to decline to 4.6% by the end of the year. Productivity growth is assumed to strengthen somewhat relative to 2016 but remains below its long term trend of 1 ¼%. The compensation share of national income continues to rise gradually, while the corporate profit share continues to decline gradually. Total PCE deflator inflation is expected to move higher, reaching 2.0% for all of 2017 (Q4/Q4), reflecting reduced slack and a declining impulse from past dollar appreciation.

In this Blackbook we have introduced a projection for 2018. We expect growth of real GDP to slow to a pace slightly below potential with a modest uptick in the unemployment rate to 4.7%. This slowing of growth from that of 2017 is due to a combination of the aging of the business cycle and the ongoing tightening of financial conditions associated with further movement toward the normalization of monetary policy. Reflecting the fact that the unemployment rate declined below our estimate of NAIRU in 2017, combined with increasing nonpetroleum import prices, total PCE inflation moves upward to around 2 1/4% (Q4/Q4).

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Jul	Sep	Jul	Sep	Jul	Sep	Jul	Sep
2016								
Q1	*2.0*	*2.0*	*1.1*	*0.8*	*4.9*	*4.9*	*0.38*	*0.38*
Q2	*1.7*	*1.8*	*2.6*	*1.1*	*4.9*	*4.9*	*0.38*	*0.38*
Q3	1.7	1.4	2.4	3.0	4.8	4.9	0.63	0.38
Q4	1.8	1.5	2.3	2.7	4.8	4.8	0.88	0.63
2017								
Q1	1.8	1.8	1.7	1.7	4.8	4.8	1.00	0.63
Q2	1.9	1.9	1.7	1.8	4.8	4.7	1.13	0.63
Q3	1.9	2.0	1.7	1.9	4.8	4.6	1.25	0.88
Q4	2.0	2.1	1.7	2.1	4.8	4.6	1.38	0.88
2018								
Q1	--	2.2	--	1.3	--	4.6	--	0.88
Q2	--	2.3	--	1.8	--	4.6	--	1.13
Q3	--	2.3	--	1.8	--	4.7	--	1.38
Q4	--	2.2	--	2.0	--	4.7	--	1.63
Q4/Q4								
2015	1.4	1.4	2.0	1.9	-0.7	-0.7	0.38	0.38
2016	1.8	1.7	2.1	1.9	-0.2	-0.2	0.88	0.63
2017	1.9	2.0	1.7	1.9	0.0	-0.2	1.38	0.88
2018	--	2.2	--	1.7	--	0.1	--	1.63

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

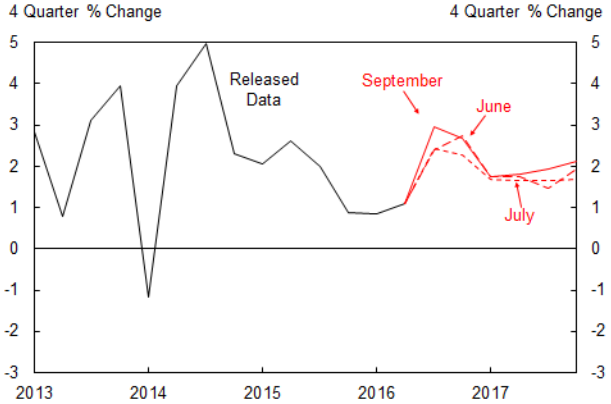
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the previous year and Q4 of the listed year.

**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.

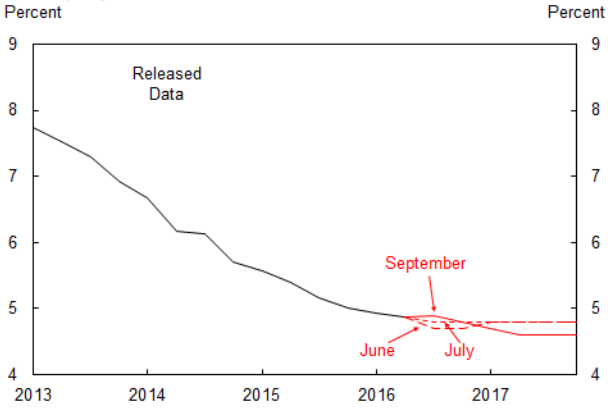
2-2: Evolution of Projected Quarterly Paths

Key Indicators

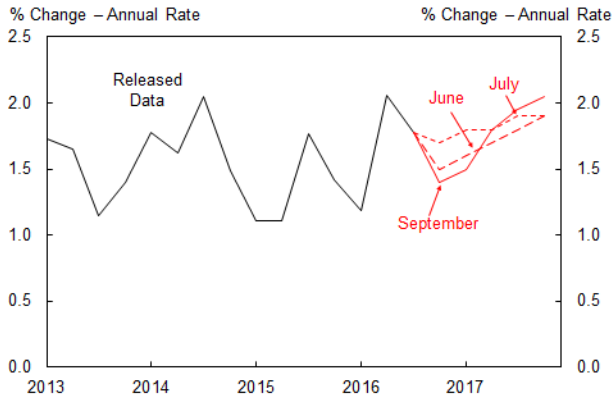
Real GDP Growth



Unemployment Rate

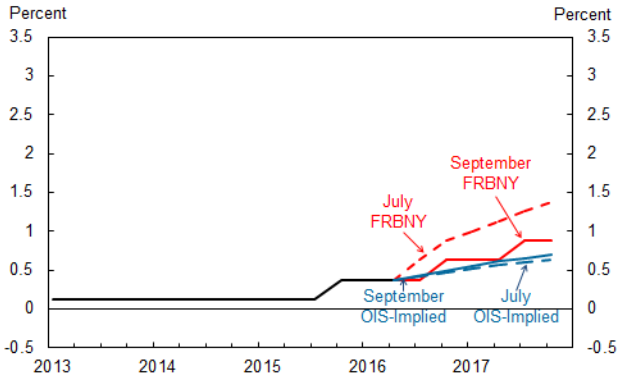


Core PCE Inflation

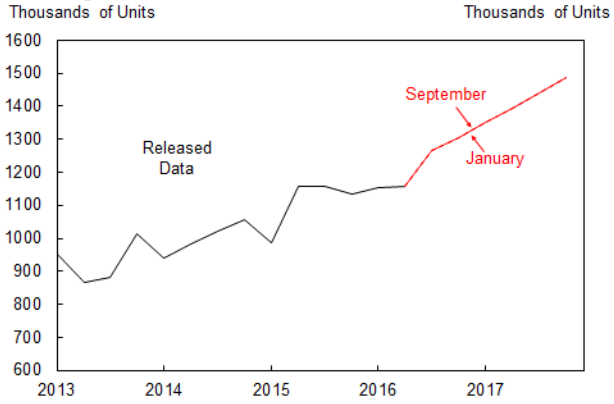


Forecast Assumptions

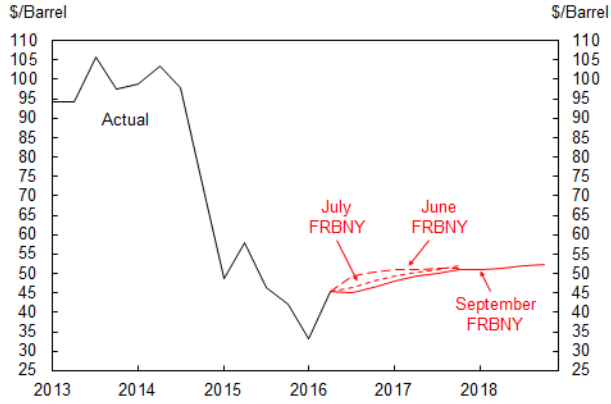
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q3	2016Q4	2017Q1	2016Q3	2016Q4	2017Q1
OUTPUT						
Real GDP	3.0	2.7	1.7	3.0	2.7	1.7
	(2.4)	(2.3)	(1.7)	(2.4)	(2.3)	(1.7)
Final Sales to Domestic Purchasers	2.3	2.3	2.2	2.4	2.4	2.2
	(3.0)	(2.7)	(2.2)	(3.0)	(2.8)	(2.3)
Consumption	3.1	2.4	2.3	2.1	1.6	1.6
	(2.7)	(2.4)	(2.3)	(1.9)	(1.7)	(1.6)
BFI: Equipment	1.0	4.0	4.0	0.1	0.2	0.2
	(4.0)	(4.0)	(4.0)	(0.2)	(0.2)	(0.2)
BFI: Nonresidential Structures	8.0	4.0	5.0	0.2	0.1	0.1
	(0.0)	(3.0)	(5.0)	(0.0)	(0.1)	(0.1)
BFI: Intellectual Property Products	3.0	3.0	3.0	0.1	0.1	0.1
	(3.0)	(3.0)	(3.0)	(0.1)	(0.1)	(0.1)
Residential Investment	-2.0	5.0	2.0	-0.1	0.2	0.1
	(15.0)	(12.0)	(4.0)	(0.5)	(0.4)	(0.2)
Government: Federal	-0.7	-0.7	-0.3	0.0	0.0	0.0
	(2.0)	(2.0)	(-0.5)	(0.1)	(0.1)	(-0.0)
Government: State and Local	0.2	1.2	1.3	0.0	0.1	0.1
	(1.5)	(1.5)	(1.0)	(0.2)	(0.2)	(0.1)
Inventory Investment	--	--	--	0.6	0.5	0.1
	--	--	--	(-0.1)	(-0.1)	(0.1)
Net Exports	--	--	--	0.0	-0.2	-0.6
	--	--	--	(-0.5)	(-0.4)	(-0.7)
INFLATION						
Total PCE Deflator	1.1	1.7	1.9			
	(1.8)	(1.9)	(1.9)			
Core PCE Deflator	1.4	1.5	1.8			
	(1.7)	(1.8)	(1.8)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	2.8	1.0	0.8			
	(1.4)	(1.3)	(0.7)			
Compensation per Hour	117.6	118.5	119.5			
	(3.4)	(3.5)	(3.6)			
Unit Labor Costs	0.3	2.4	2.5			
	(2.0)	(2.2)	(2.9)			

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

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2016	2017	2018	2016	2017	2018
OUTPUT						
Real GDP	1.9	1.9	1.7	1.9	1.9	1.7
	(2.1)	(1.7)	--	(2.1)	(1.7)	--
Final Sales to Domestic Purchasers	2.0	2.3	2.1	2.1	2.3	2.2
	(2.5)	(2.2)	--	(2.5)	(2.3)	--
Consumption	2.9	2.3	2.2	2.0	1.6	1.5
	(2.7)	(2.2)	--	(1.9)	(1.5)	--
BFI: Equipment	-2.2	3.5	2.5	-0.1	0.2	0.1
	(0.7)	(3.5)	--	(0.0)	(0.2)	--
BFI: Nonresidential Structures	0.7	4.0	2.5	0.0	0.1	0.1
	(-5.0)	(3.7)	--	(-0.1)	(0.1)	--
BFI: Intellectual Property Products	4.6	3.0	3.0	0.2	0.1	0.1
	(3.6)	(3.0)	--	(0.1)	(0.1)	--
Residential Investment	0.6	5.4	6.0	0.0	0.2	0.2
	(11.3)	(7.2)	--	(0.4)	(0.3)	--
Government: Federal	-0.8	-0.4	-0.7	-0.1	0.0	0.0
	(0.7)	(-0.5)	--	(0.0)	(-0.0)	--
Government: State and Local	0.6	1.3	1.3	0.1	0.1	0.1
	(1.4)	(0.8)	--	(0.2)	(0.1)	--
Inventory Investment	--	--	--	-0.2	0.0	-0.1
	--	--	--	(-0.3)	(0.0)	--
Net Exports	--	--	--	0.0	-0.5	-0.3
	--	--	--	(-0.1)	(-0.6)	--
INFLATION						
Total PCE Deflator	1.3	2.0	2.2			
	(1.5)	(2.0)	--			
Core PCE Deflator	1.7	2.0	2.2			
	(1.8)	(1.9)	--			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.6	0.8	1.2			
	(1.1)	(0.9)	--			
Compensation per Hour	2.3	3.2	2.9			
	(3.5)	(3.5)	--			
Unit Labor Costs	1.7	2.4	1.7			
	(2.4)	(2.6)	--			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	9/16/2016	3.0	2.7	1.9	1.9
		(2.4)	(2.3)	(2.1)	(1.7)
Blue Chip	9/10/2016	2.9	2.4	1.8	2.2
		(2.2)	(2.2)	(2.0)	(2.2)
Median SPF	8/12/2016	2.6	2.3	1.5	2.3
		(2.4)	(2.3)	(1.7)	(2.4)
Macro Advisers	9/9/2016	3.3	2.4	1.9	2.2
		(2.0)	(2.3)	(2.0)	(2.1)
FRBNY-DSGE	9/13/2016	3.3	2.4	1.9	2.3
		(2.0)	--	(1.8)	(2.1)

Core PCE Inflation

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	9/16/2016	1.4	1.5	1.7	2.0
		(1.7)	(1.8)	(1.8)	(1.9)
Median SPF	8/12/2016	1.6	1.6	1.8	1.9
		(1.7)	(1.6)	(1.8)	(1.9)
Macro Advisers	9/9/2016	1.3	1.8	1.7	1.8
		(2.0)	(1.8)	(1.9)	(1.9)
FRBNY-DSGE	9/13/2016	1.4	1.4	1.6	1.3
		(1.4)	--	(1.6)	(1.3)

CPI Inflation

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	9/16/2016	0.9	2.5	1.4	2.5
		(2.0)	(2.6)	(1.7)	(2.4)
Blue Chip	9/10/2016	1.6	2.4	1.8	2.3
		(2.2)	(2.2)	(1.6)	(2.3)
Median SPF	8/12/2016	2.0	2.2	1.6	2.3
		(2.0)	(2.1)	(1.5)	(2.1)
Macro Advisers	9/9/2016	1.5	3.8	1.9	2.2
		(3.1)	(1.6)	(1.8)	(2.3)

Core CPI Inflation

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	9/16/2016	1.7	2.2	2.2	2.5
		(2.2)	(2.3)	(2.3)	(2.4)
Median SPF	8/12/2016	2.0	2.1	2.2	2.2
		(2.0)	(2.1)	(2.2)	(2.2)
Macro Advisers	9/9/2016	1.8	2.2	2.2	2.1
		(2.2)	(2.0)	(2.3)	(2.2)

*Note: Numbers in gray are from the previous Blackbook

3. Uncertainty & Risks

Developments during the intermeeting period indicate a modest reduction in the downside risks from the assessment in the July *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the risks to real GDP growth are roughly balanced over the near term (through mid-2017), but are skewed to the downside at longer horizons. For core PCE inflation, the risks are roughly balanced through 2017 and skewed slightly to the downside in 2018 – 19. The widths of the probability intervals are somewhat narrower than those in the July *Blackbook*. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close its historical norms.

The data on U.S. real economic activity over the intermeeting period generally were consistent with our central outlook, although the data toward the end of the period were soft. The July and August labor market reports indicated continued solid growth in nonfarm payrolls; however, the unemployment rate has changed little since the beginning of the year. Manufacturing production remained sluggish, changing little over the past two years. Investment indicators suggest modest improvement in business fixed investment after a weak first half of the year. Indicators of consumer spending still pointed to solid real consumption growth in Q3, but raise some questions about the momentum for the fourth quarter. Based on 12-month changes, core PCE inflation and core CPI inflation have stabilized over the past few months. Alternative underlying inflation measures were consistent with a slow return to the objective. Longer-term inflation compensation and survey measures of inflation expectations continued to be at low levels. Outside of the U.S., the data generally were consistent with a stabilization of the global economic outlook.

Until the past week, financial markets were fairly quiet during the intermeeting period. The Treasury yield curve steepened modestly. The market-implied expected path of the federal funds rate remains flat, reaching 1 percent only in mid-2020. Longer-term foreign sovereign yields increased moderately. On net, the S&P 500 fell modestly, but remains near its record high. Implied volatility picked up recently, but is still modestly below its historical average. Major foreign equity indices generally were little changed on net, although many declined recently. Oil

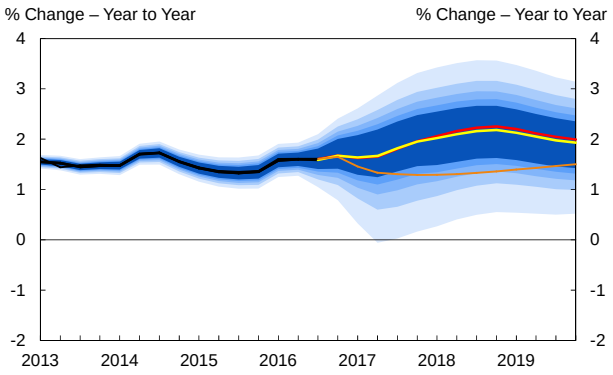
prices and broad commodity indices fluctuated within a fairly narrow range. The nominal broad dollar index depreciated modestly. LIBOR-OIS spreads widened, which appear to reflect some impact from the impending implementation of money market fund reforms, but the widening does not seem to indicate a more general deterioration in financial conditions.

We interpreted these developments as indicating some reduction in the downside risks to the outlook [Exhibit 3-2]. Because the recent developments generally have been fairly consistent with our central outlook, we decreased the probability of the *Fiscal Consolidation* scenario. In addition, the apparent alleviation of the near-term risks associated with the "Brexit" vote and the apparent reduced strains in parts of the European banking system indicate lesser downside risks from foreign economies, which we incorporated through a decrease in the probability of the *Global Credit Crunch* scenario. The recent stabilization in commodity prices and in the global economic outlook also led to a small decrease in the probability of the *Global Deflation* scenario. These changes led to a small narrowing of the 90 percent probability interval for real GDP growth [Exhibit 3.3]. The interval for core PCE inflation also narrowed slightly, but the interval shifted upward, reflecting the small overshoot in the central forecast for inflation. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is close to its norms. The real GDP growth forecast distribution signals that the risks to real activity are roughly balanced through mid-2017 and skewed to the downside thereafter, while the risks to inflation are roughly balanced in 2016 – 17 and slightly skewed to the downside in 2018 – 19 [Exhibit 3-1].

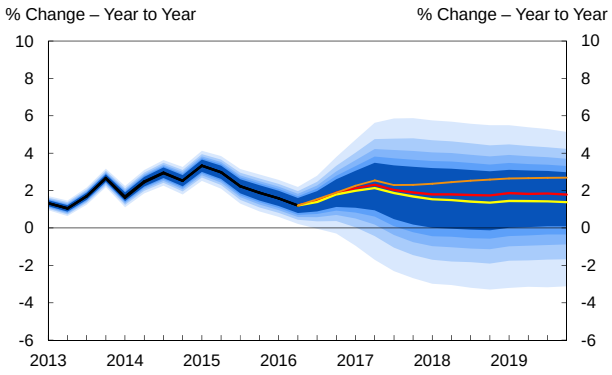
In a comparison to the forecast distribution from a year earlier, the current inflation projection runs somewhat above the year-ago expectation, reflecting the shift-up in the forecast for this *Blackbook* [Exhibit 3-3]. Because of the weak first half of the year, 4-quarter real GDP growth in 2016Q2 was below the year-ago expectation. Nonetheless both realized inflation and GDP growth were well within last year's fifty percent forecast probability intervals. Going forward, the current real GDP growth expectation rises to near the year-ago expectation by mid-2017, and then remains near it over the rest of the forecast horizon. This pattern reflects our continued assessments of a subdued path for real GDP growth and downside risks to our outlook.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



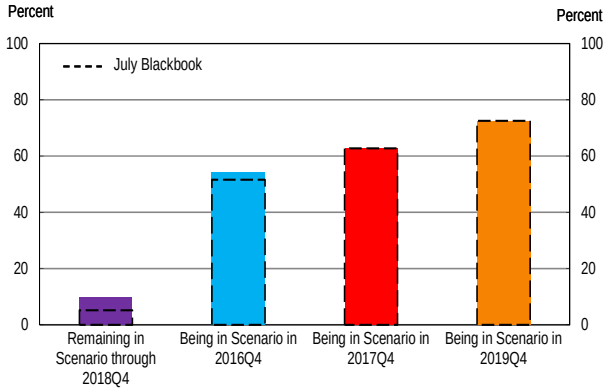
Real GDP Growth Forecast Distribution



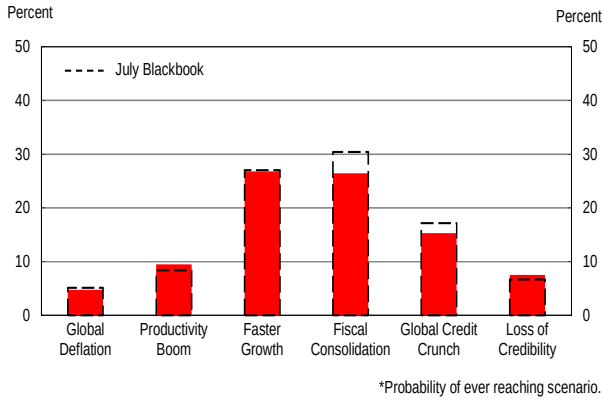
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



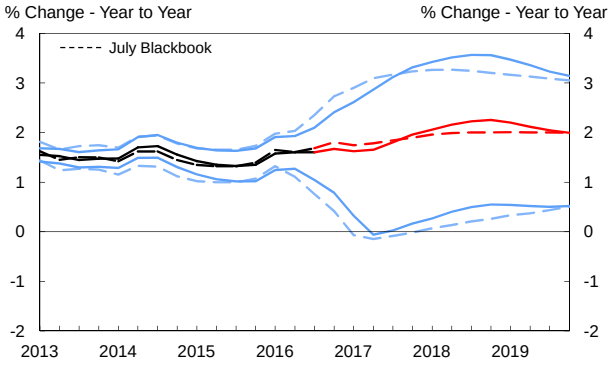
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

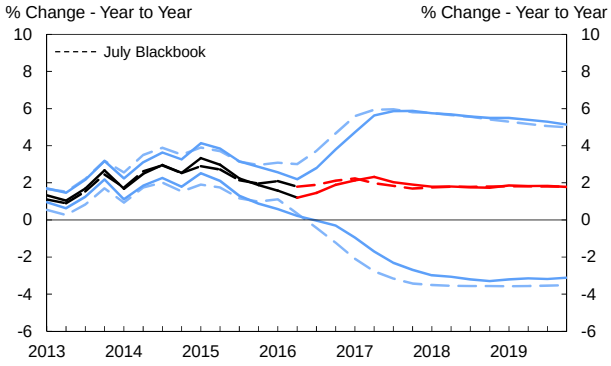
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

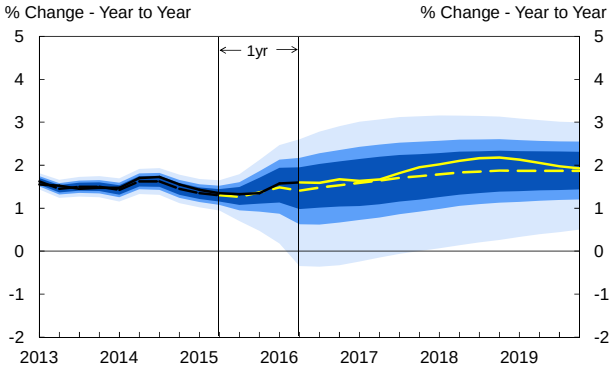


Change in Real GDP Growth Forecast Distribution

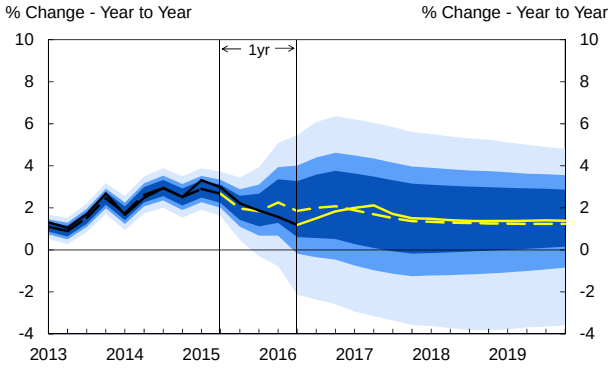


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to construct the forecast distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2, (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario, and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment.
This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

November 2016

CLASS II FOMC - RESTRICTED (FR)

FRBNY BLACKBOOK

November 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Economic developments over the intermeeting period were broadly in line with expectations and did not materially alter our outlook. Our modal projection still has output growth above potential in 2016H2 and near potential thereafter. We continue to anticipate that inflation will gradually return to mandate-consistent levels. As in September, we view the risks to our outlook as slightly skewed to the downside. As the economy appears to be evolving according to our projections, and the downside risks to our forecast are lower than earlier in the year, we view a 25 basis point increase in the federal funds rate range sometime in the near term as appropriate. Yet, we see no urgency to raise the policy rate at this coming meeting, as we assess that there are no material inflationary pressures or clear evidence of an overheated economy, despite strong growth in Q3. Barring negative shocks we believe that this adjustment could take place as early as December, using the Chair's press conference as a platform to provide greater clarity on the FOMC's strategy in the current economic environment.

As Q3 growth was in line with our projections, our growth forecast for 2016H2 is about the same as it was in the September *Blackbook*: a downward revision in the real PCE growth projection was largely offset by an upward revision to net exports. Consumption growth still appears fairly solid, but it has lost a bit of momentum relative to 2016Q2. This moderation is partly due to the fact that the windfall in real disposable income associated with the fall in energy prices appears to be behind us. After declining in 2016H1, business fixed investment in equipment and structures is projected to increase modestly in 2016H2.

The September labor market report showed broad-based employment gains, indicating that labor market conditions continued to improve gradually. Average weekly hours increased, and the 12-month growth in average hourly earnings remained around 2½ percent, which is above the 2 percent that generally prevailed in the expansion until mid-2015. Increases in participation of prime-age workers contributed to increases in both the overall employment-to-population ratio and the unemployment rate. Price data suggest that inflation is slowly reverting to mandate-consistent levels. However, the data do not provide much support of an overheated economy with rising inflationary pressures, especially as core goods prices continued to fall. In addition,

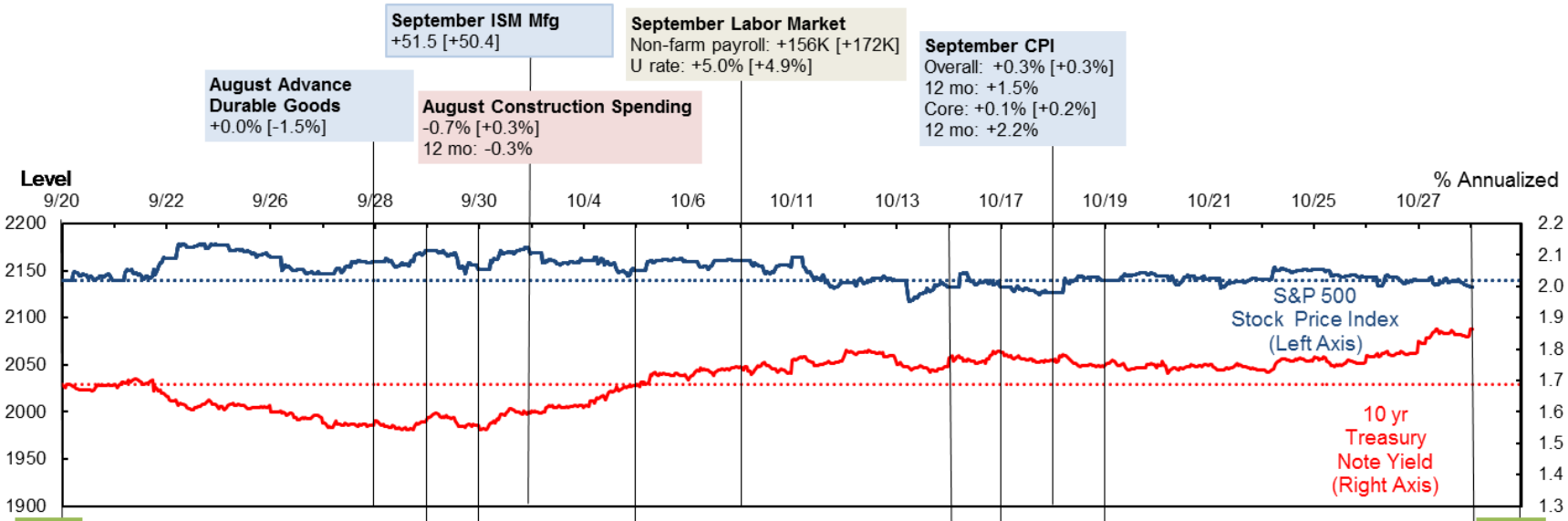
inflation expectations remained near their historical lows, with the median of three-year household inflation expectations in our SCE declining in September and the Michigan measure of longer-term household expectations falling to a new historical low.

Financial markets were fairly quiet during the intermeeting period, except for the rapid depreciation of the British pound—which was a main driver of a moderate appreciation of the nominal broad dollar index—and a more than 10 percent increase in oil prices. The Treasury yield curve steepened modestly. The market-implied expected path of the federal funds rate remains flat, reaching 1 percent only in second half of 2019. The S&P 500 fluctuated narrowly near its record high. Implied volatility generally remained below its historical average. The implementation of money market fund reforms did not lead to significant market disruptions, although LIBOR-OIS spreads were still somewhat elevated. There are no apparent signs of significant financial system imbalances, with the possible exceptions of risks emanating from a sharp increase in long-term yields (which in turn would have widespread effects on asset prices, with possible spillovers to the real economy), and of commercial real estate (CRE). While valuations and risks in the CRE market are rightly attracting supervisory attention, it appears unlikely that a CRE reversal by itself would pose significant risks to the aggregate outlook, as the overall degree of financial sector vulnerability remains low.

Turning to policy, in our September recommendation we argued that one rate hike over the rest of 2016 was consistent with the gradual improvement in fundamentals underlying our medium-term outlook. At the same time, we suggested that risk-management considerations made it prudent to delay an increase until there was stronger evidence of sufficient resilience in the economy. Because (1) inflation appears to be gradually reverting to mandate-consistent levels, (2) the economy is evolving according to our projections, and (3) the downside risks to our forecast are lower than they were earlier in the year, we think that the case for a 25 bps rate hike sometime over the near term has become fairly strong. It is worth noting that the monetary stance—even after such a hike—remains consistent with a projected transitory fall of unemployment below NAIRU over the medium term. This forecast thus accounts for the possibility that a “high pressure” economy, as described by the Chair in her Boston Fed speech, might provide some insurance against supply-side damage stemming from hysteresis in labor and

product markets. At the same time, such a change in the policy rate would be consistent with the gradually rising path of the real natural rate of interest projected by the FRBNY DSGE model.

These considerations notwithstanding, we do not think it would be appropriate to raise rates at this meeting for two reasons. One is the political risks associated with the upcoming election. Second, and more importantly, postponing a decision until a meeting with a press conference would provide the Chair with the best opportunity to explain in some detail the implications of the rate hike in the context of the overall policy strategy in the current economic environment of a low r*, unemployment near estimates of NAIRU, and inflation somewhat below objective. For these reasons, a hike at the December 2016 meeting appears appropriate, if incoming data remain consistent with the modal scenario. Similar to the leadoff of the December 2015 lift-off decision, communication over the next intermeeting period should emphasize greater confidence that the projected improvement in labor market conditions will support the return of inflation to its mandate-consistent level.



September ISM Mfg
+51.5 [+50.4]

September Labor Market
Non-farm payroll: +156K [+172K]
U rate: +5.0% [+4.9%]

September CPI
Overall: +0.3% [+0.3%]
12 mo: +1.5%
Core: +0.1% [+0.2%]
12 mo: +2.2%

August Advance Durable Goods
+0.0% [-1.5%]

August Construction Spending
-0.7% [+0.3%]
12 mo: -0.3%

FOMC Meeting

August Housing Starts
Total: 1,142K (-5.8%)
12 mo: +0.9%
Single-family starts: 722K (-6.0%)
Multi-family starts: 420K (-5.4%)

Real GDP 2016Q2 (3rd Estimate)
+1.4% [+1.3%]

September PCE Price Index
Overall: +0.1% [+0.2%]
12 mo: +1.0%
Core: +0.2% [+0.2%]
12 mo: +1.7%

September Personal Income
Nominal: +0.2% [+0.2%]
Real disposable: +0.1%

September Trade Deficit
-40.7 bil [-39.2]

September ISM NonMfg
+57.1 [+53.0]

September Retail Sales
Total: +0.6% [+0.6%]
12 mo: +2.7%
Ex-auto: +0.5% [+0.5%]
PCE Control ex gas: +0.2%

September IP
+0.1% [+0.1%]

September CU
+75.4% [75.6%]

September Housing Starts
Total: 1,047K (-9.0%)
12 mo: +8.5%
Single-family starts: 783K (+8.1%)
Multi-family starts: 264K (-38%)

FOMC Meeting

Real GDP 2016Q3 (Advanced)
+2.9% [+2.6%]

October Personal Income

October PCE Price Index

Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.
Numbers in parentheses represent changes from the prior month.

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

2. Central Forecast

Intermeeting Developments

Data released over the intermeeting period have given us greater confidence that growth of real GDP is rebounding in the second half of 2016 after an anemic 1.1% (annual rate) growth rate over the first half of the year. Our projection of the second half growth rate is unchanged at 2.8% (annual rate). However, there have been changes in the sources of that growth, with a somewhat lower growth contribution from consumption and fixed investment largely offset by a larger growth contribution from net exports. At the same time we have moved up our projections for both total and core PCE deflator inflation over the second half of the year, from 1.4% to 1.8% for total and from 1.4% to 1.7% for core. Major labor market indicators have been coming in largely as expected and so our projection for the unemployment rate is unchanged.

Growth of real PCE is now expected to be around 2 ½% over 2016H2, a modest markdown from the 2 ¾% expected in September. Sales of light-weight motor vehicles slipped to 17.0 million (annual rate) in August from 17.9 million in July, and so it was expected that growth of real PCE in August would slow but remain positive from the 0.33% increase in July. But in a downside surprise, real PCE declined by 0.1% in August, with widespread weakness in spending on goods. Vehicle sales rebounded in September to a 17.8 million annual rate, bringing the Q3 average to 17.5 million versus 17.25 million over the first half of the year. Nominal retail sales excluding motor vehicles and parts increased 0.5% in September, the first increase since June, but much of that gain reflected price increases, particularly for gasoline which rose 5.8% (monthly rate). In the third quarter, real PCE grew 2.1% (annual rate), and we expect its growth to be between 2¼% to 2½% in the fourth quarter. The personal saving rate is expected to remain essentially unchanged from its Q2 level of 5.7% over the second half of the year. Year-over-year growth of real disposable income is expected slow to around 2 ¼% over the second half of 2016 from 3% at the end of 2015 reflecting a higher rate of overall inflation.

Housing starts fell a steep 9% in September on the heels of a 5.6% decline in August. Most of the recent weakness was in the volatile multi-family sector, where starts fell a cumulative 41.2% from July to September. In contrast, multi-family permits have been on an upward trend since a recent low of 352,000 (seasonally adjusted annual rate) in March of this year, and rose 16.8% in

September to 486,000 units. Accordingly, we are reasonably confident that multi-family starts will rebound in the months ahead. It should be noted, however, that the September level of multi-family permits is not particularly high, even for this cycle. Such permits averaged 483,000 for all of 2015.

Single-family starts rose by 8.2% in September to 783,000. But the Q3 average of 759,000 was only modestly above the Q2 average of 755,000. Single-family permits were essentially unchanged in September at 739,000 and the Q3 average level was not terribly different from the average of 2015Q4. Thus, through September the single-family sector has little to no upward momentum, despite a stronger labor market, low mortgage interest rates, and home price that are rising about 5% to 6% on a year-over-year basis. But sales of new single-family homes are up nearly 30% over the twelve months ending in September, while inventories expressed as month's supply at the current sales pace are relatively low. Thus, we do expect to see some upward movement in single-family starts in the months ahead.

While single-family starts have been pretty flat for over a year, the nominal value of single-family construction put in place fell 1% in August, the sixth consecutive monthly decline. The year-over-year change of this series was -1.5% in September after having increased 20% in 2015. In addition, over the course of 2016 there has been a sharp acceleration in the twelve-month percentage changes in the price index for new single-family homes under construction, from essentially zero in November of 2015 to 5.9% as of August, indicating a significant decline in real construction put in place. Part of this decline stems from a leveling off of the number of single-family units under construction. But in addition, the decline of real value put in place suggests that builders have moved their product mix in the direction of lower priced units. There is some support for this conclusion in that a measure of the real value of new homes sold, derived by dividing the median price of new homes sold by a price index for new homes under construction, has declined by around 5% over the past year. Reflecting these developments, real residential investment declined 6.2% in the third quarter, following a nearly 8% decline in the second quarter. Growth of real residential investment is likely to be positive in the fourth quarter, provided the real value of single-family units stops declining or declines at a much slower pace.

Real business fixed investment in the third quarter increased 1.1% (annual rate), comparable to the increase of the second quarter. The primary source of growth was real investment in nonresidential structures. While private nonresidential construction put in place declined somewhat in August, the third quarter average level is expected to be up about 8% over the Q2 average. Spending on new office buildings continued to expand rapidly in the third quarter, as did investment in education-related buildings. (The national office vacancy rate is down to 13%, only slightly above the low of 12.5% in 2007. The industrial availability index is now below its 2006 low.) In addition, after declining for seven consecutive quarters, oil and gas drilling activity expanded pretty briskly in the third quarter, although from a low base. Overall, real nonresidential structures rose 5.4% in Q3, the strongest since the second quarter of 2014.

In contrast, real business investment in equipment, which represents nearly half of real BFI, declined 2.7% in the third quarter, the fourth consecutive quarterly decline. While shipments of nondefense capital goods rose in September, for Q3 as a whole they declined at a 5% annual rate. Aircraft shipments declined in the third quarter. But shipments of nondefense capital goods excluding aircraft have also declined 4.4% (annual rate). New orders for nondefense capital goods fell 11.8% (annual rate) in the third quarter. The trend in this new orders series still appears to be downward, with the level of new orders below that of shipments.

The trade data for the third quarter were very encouraging. Real exports increased at a 10% annual rate in Q3, with a strong contribution from exports of food, feeds, and beverages, industrial supplies and materials, motor vehicles, and consumer goods. This development coincides with indicators suggesting some stabilization in global economic activity. In contrast, real imports increased just 2.3% (annual rate) in Q3. The net export growth contribution for the third quarter was +0.8 percentage points, above our projections in the September Blackbook. This follows a positive 0.1 percentage point growth contribution over the first half of 2016.

The growth contribution from government consumption and gross investment for the second half of the year will likely be less than we expected, due primarily to ongoing weakness in state and local government construction spending. Such spending has been declining rapidly since February of this year. This appears to be related to a significant decline in state and local revenues from federal grants in aid, and may also have been impacted by the complete shutdown of state-funded construction in New Jersey starting on July 1. In contrast, state and local

government employment rose by 0.3% in the third quarter, the fastest quarterly gain since the third quarter of 2008. Spending at the federal level is turning out to be stronger than expected due to a recent surge in defense outlays. For several years the fourth quarter—first quarter of the fiscal year—saw the strongest growth of defense spending. But that pattern has broken down over the last few years, with Q3 often seeing the spike. Employment at the federal level has been growing for the past six quarters. The growth contribution from the government sector in Q3 was small.

After some weakness in August, supply side data for September rebounded smartly. Aggregate hours rose 0.4% in September following a 0.2% decline in August. For Q3 as a whole, payroll hours rose at a 1.3% annual rate, up from 0.8% in the second quarter. The ISM manufacturing composite index rose above 50 in September—to 51.5—with a notable increase in the new orders subcomponent to 55.1 from 49.1 in August. Manufacturing output rose 0.2% in September following a 0.6% decline in August, and for Q3 as a whole is up 0.2%, the best quarterly performance over the last year. Production of high-tech equipment and motor vehicles and parts led this increase. The ISM nonmanufacturing composite index also rebounded in September, rising to 57.1 from 51.4 in August, also with a large increase in the new orders component.

In this forecast cycle we have raised our projections for inflation for the second half of 2016. Overall PCE inflation was 1.4% (annual rate) and core PCE inflation was 1.7% in Q3, equal to our projections just prior to the advance GDP release.

Even though oil prices have stabilized around $50 per barrel in October, we are likely to see relatively large increases in energy prices in October and November as past oil price increases work their way through the system. We expect energy prices to rise at about a 30% annual rate in Q4. The core PCE deflator is projected to edge up to a 1.8% annual rate, even with monthly changes slowing a bit, while the total PCE deflator increases at around a 2½% annual rate. By December the twelve month change of the total PCE deflator should be up to around 1¾%.

The Outlook

As mentioned above, we expect growth of real GDP to rebound to around 2 ¾% (annual rate) over the second half of 2016, resulting in a Q4/Q4 growth rate of 2%, essentially unchanged

from the projections of the last several Blackbooks. Consumer spending is expected to continue to be the main engine of growth, increasing at a 2 ½% annual rate over the second half of the year, down from nearly 3% over the first half. The personal saving rate is expected to remain around its recent level of 5 ¾%. Business fixed investment is expected to provide a modest positive growth contribution, largely due to the end of the decline of oil and gas drilling activity, although we have lowered the growth contribution from this sector due to the continued weakness in equipment investment. Similarly, residential investment is expected to provide a positive growth contribution but we have reduced it due to the recent flatness of starts and the downturn in value added per completed unit. In contrast, the net export growth contribution over the second half is now expected to be around +0.25 percentage point, up from zero percentage point in the last Blackbook. In addition, due to the steep decline of inventory investment in Q2, we now expect inventory investment to provide a positive growth contribution over 2016H2. In summary, it looks as though the US economy has absorbed the worst of the shocks from the dollar appreciation and lower commodity prices.

After declining over the first half of the year, we expect productivity growth to rebound over the second half. However, with stronger growth of output, monthly payroll gains are expected to average around 200,000 (on average) over the remaining months of the year, comparable to that of the third quarter. While that pace of payroll gains is above that which is consistent with potential growth, modest increases in average weekly hours and the labor force participation rate are likely to limit the decline of the unemployment rate to 4.8% for Q4. Total PCE deflator inflation is expected to average around 2% (annual rate) over the second half, up from around 1 ½% in the September Blackbook, reflecting increases in energy prices and a firmer pace of core inflation.

In this cycle our forecast of real GDP for 2017 is unchanged at 1.9%, somewhat above our estimate of the economy's potential growth rate. Growth of consumer spending slows from 2 3/4% in 2016 (Q4/Q4) to around 2 ¼%, led by a continuation of the slowing of growth of spending on durable goods and a slowing in the rate of growth of real disposable income. Growth of real residential investment and business fixed investment are expected to strengthen in 2017, but neither would be regarded as robust. State and local government spending is projected to make a modest positive growth contribution while the federal sector continues to contract. The

net export growth contribution swings from +0.2 percentage point in 2016 to -0.5 percentage point in 2017 reflecting stronger growth of imports due to the dollar appreciation of the past few years and the normalization of domestic inventory-sales ratios.

With growth remaining above potential in 2017, the unemployment rate is expected to decline to 4.6% by the end of the year. Productivity growth is assumed to strengthen somewhat relative to 2016 but remains below its long term trend of 1 ¼%. The compensation share of national income continues to rise gradually while the corporate profit share continues to decline gradually. Total PCE deflator inflation is expected to move higher, reaching 2.0% for all of 2017 (Q4/Q4), reflecting reduced slack, a declining impulse from past dollar appreciation, and inventories in better balance relative to sales.

In 2018 we expect growth of real GDP to slow to a pace slightly below potential with a modest uptick in the unemployment rate to 4.7%. This slowing of growth from that of 2017 is due to a combination of the aging of the business cycle and the ongoing tightening of financial conditions associated with further movement toward the normalization of monetary policy. Reflecting the fact that the unemployment rate declined below our estimate of NAIRU in 2017, and that the modest dollar appreciation had a limited effect on nonpetroleum import prices, total PCE inflation moves upward to around 2 1/4% (Q4/Q4), over shooting the FOMC's target. This overshoot helps to anchor inflation expectations at a level closer to the target.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Sep	Oct	Sep	Oct	Sep	Oct	Sep	Oct
2016								
Q1	*2.0*	*2.0*	*0.8*	*0.8*	*4.9*	*4.9*	*0.38*	*0.38*
Q2	*1.8*	*1.8*	*1.1*	*1.4*	*4.9*	*4.9*	*0.38*	*0.38*
Q3	*1.4*	*1.7*	*3.0*	*2.9*	*4.9*	*4.9*	*0.38*	*0.38*
Q4	1.5	1.8	2.7	2.7	4.8	4.8	0.63	0.63
2017								
Q1	1.8	1.8	1.7	1.7	4.8	4.8	0.63	0.63
Q2	1.9	1.9	1.8	1.9	4.7	4.7	0.63	0.63
Q3	2.0	2.0	1.9	2.0	4.6	4.6	0.88	0.88
Q4	2.1	2.1	2.1	2.2	4.6	4.6	0.88	0.88
2018								
Q1	2.2	2.2	1.3	1.4	4.6	4.6	0.88	0.88
Q2	2.3	2.3	1.8	2.0	4.6	4.6	1.13	1.13
Q3	2.3	2.3	1.8	1.5	4.7	4.7	1.38	1.38
Q4	2.2	2.2	2.0	2.0	4.7	4.7	1.63	1.63
Q4/Q4								
2015	*1.4*	*1.4*	*1.9*	*1.9*	*-0.7*	*-0.7*	*0.38*	*0.38*
2016	1.7	1.8	1.9	2.0	-0.2	-0.2	0.63	0.63
2017	2.0	2.0	1.9	1.9	-0.2	-0.2	0.88	0.88
2018	2.2	2.2	1.7	1.7	0.1	0.1	1.63	1.63

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

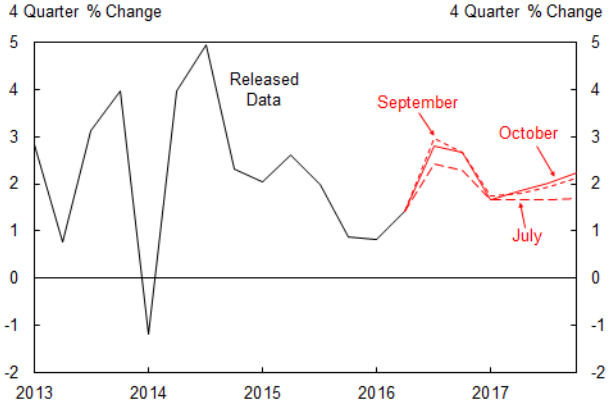
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the listed year and Q4 of the previous year.

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

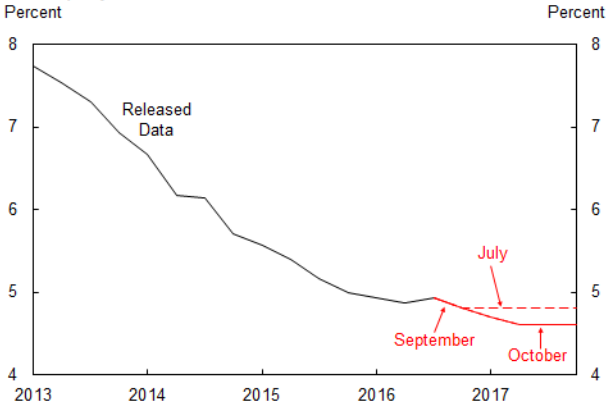
2-2: Evolution of Projected Quarterly Paths

Key Indicators

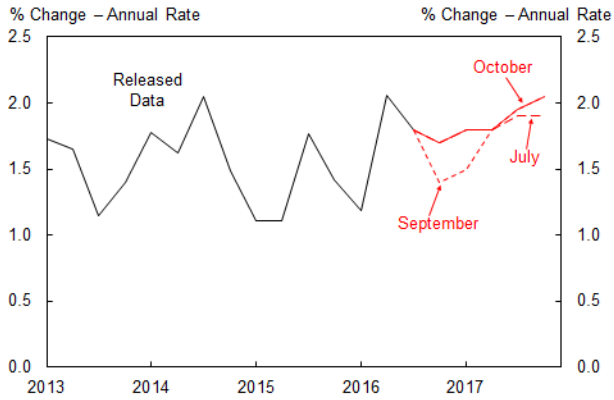
Real GDP Growth



Unemployment Rate

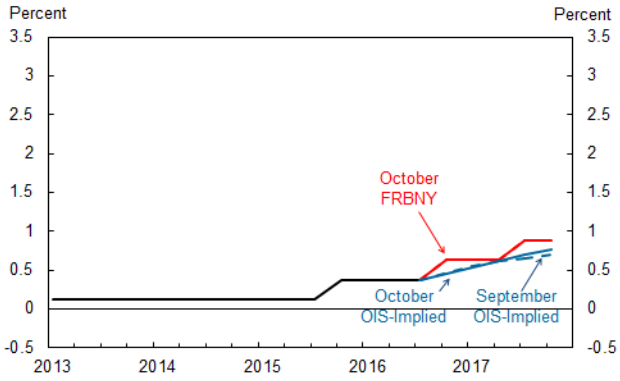


Core PCE Inflation

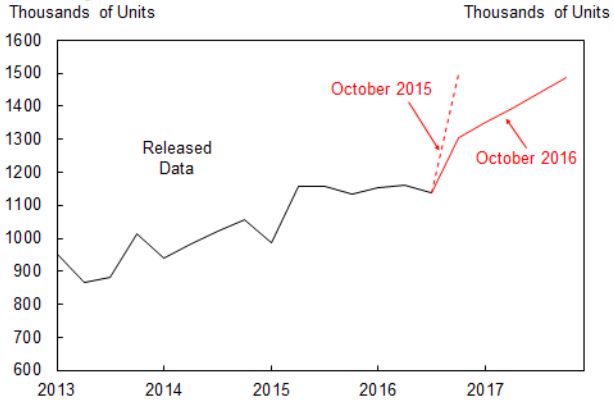


Forecast Assumptions

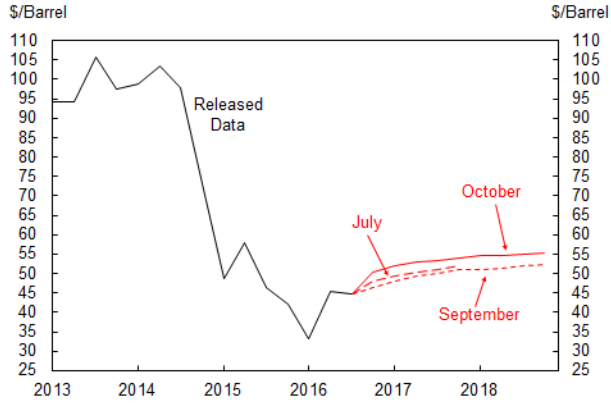
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q3	2016Q4	2017Q1	2016Q3	2016Q4	2017Q1
OUTPUT						
Real GDP	*2.9*	2.7	1.7	*2.9*	2.7	1.7
	(3.0)	(2.7)	(1.7)	(3.0)	(2.7)	(1.7)
Final Sales to Domestic Purchasers	*1.4*	2.2	2.5	*1.5*	2.2	2.6
	(2.3)	(2.3)	(2.2)	(2.4)	(2.4)	(2.2)
Consumption	*2.1*	2.4	2.3	*1.5*	1.6	1.6
	(3.1)	(2.4)	(2.3)	(2.1)	(1.6)	(1.6)
BFI: Equipment	*-2.7*	2.0	3.0	*-0.2*	0.1	0.2
	(1.0)	(4.0)	(4.0)	(0.1)	(0.2)	(0.2)
BFI: Nonresidential Structures	*5.4*	8.0	5.0	*0.1*	0.2	0.1
	(8.0)	(4.0)	(5.0)	(0.2)	(0.1)	(0.1)
BFI: Intellectual Property Products	*4.0*	3.0	3.0	*0.2*	0.1	0.1
	(3.0)	(3.0)	(3.0)	(0.1)	(0.1)	(0.1)
Residential Investment	*-6.2*	6.0	13.3	*-0.2*	0.2	0.5
	(-2.0)	(5.0)	(2.0)	(-0.1)	(0.2)	(0.1)
Government: Federal	*2.5*	-2.2	-0.3	*0.2*	-0.1	0.0
	(-0.7)	(-0.7)	(-0.3)	(-0.0)	(-0.0)	(-0.0)
Government: State and Local	*-0.7*	0.8	1.0	*-0.1*	0.1	0.1
	(0.2)	(1.2)	(1.3)	(0.0)	(0.1)	(0.1)
Inventory Investment	--	--	--	*0.6*	0.5	-0.2
	--	--	--	(0.6)	(0.5)	(0.1)
Net Exports	--	--	--	*0.8*	-0.1	-0.7
	--	--	--	(-0.0)	(-0.2)	(-0.6)
INFLATION						
Total PCE Deflator	*1.4*	2.6	1.9			
	(1.1)	(1.7)	(1.9)			
Core PCE Deflator	*1.7*	1.8	1.8			
	(1.4)	(1.5)	(1.8)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	2.6	1.0	0.8			
	(2.8)	(1.0)	(0.8)			
Compensation per Hour	3.1	3.4	3.3			
	(3.1)	(3.4)	(3.3)			
Unit Labor Costs	0.5	2.4	2.5			
	(0.3)	(2.4)	(2.5)			

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

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2016	2017	2018	2016	2017	2018
OUTPUT						
Real GDP	2.0	1.9	1.7	2.0	1.9	1.7
	(1.9)	(1.9)	(1.7)	(1.9)	(1.9)	(1.7)
Final Sales to Domestic Purchasers	1.9	2.4	2.1	2.0	2.4	2.1
	(2.0)	(2.3)	(2.1)	(2.1)	(2.3)	(2.2)
Consumption	2.7	2.3	2.1	1.9	1.6	1.5
	(2.9)	(2.3)	(2.2)	(2.0)	(1.6)	(1.5)
BFI: Equipment	-3.0	3.2	2.0	-0.2	0.2	0.1
	(-2.2)	(3.5)	(2.5)	(-0.1)	(0.2)	(0.1)
BFI: Nonresidential Structures	2.9	4.0	2.5	0.1	0.1	0.1
	(0.7)	(4.0)	(2.5)	(0.0)	(0.1)	(0.1)
BFI: Intellectual Property Products	4.6	3.0	3.0	0.2	0.1	0.1
	(4.6)	(3.0)	(3.0)	(0.2)	(0.1)	(0.1)
Residential Investment	0.0	9.1	7.0	0.0	0.3	0.3
	(0.6)	(5.4)	(6.0)	(0.0)	(0.2)	(0.2)
Government: Federal	-0.2	-0.4	-0.7	0.0	0.0	0.0
	(-0.8)	(-0.4)	(-0.7)	(-0.1)	(-0.0)	(-0.0)
Government: State and Local	0.2	1.2	1.2	0.0	0.1	0.1
	(0.6)	(1.3)	(1.3)	(0.1)	(0.1)	(0.1)
Inventory Investment	--	--	--	-0.2	0.0	0.0
	--	--	--	(-0.2)	(0.0)	(-0.1)
Net Exports	--	--	--	0.2	-0.5	-0.3
	--	--	--	(-0.0)	(-0.5)	(-0.3)
INFLATION						
Total PCE Deflator	1.6	2.0	2.2			
	(1.3)	(2.0)	(2.2)			
Core PCE Deflator	1.8	2.0	2.2			
	(1.7)	(2.0)	(2.2)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.6	0.8	1.1			
	(0.6)	(0.8)	(1.2)			
Compensation per Hour	2.3	3.2	2.8			
	(2.3)	(3.2)	(2.9)			
Unit Labor Costs	1.7	2.4	1.7			
	(1.7)	(2.4)	(1.7)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	10/26/2016	2.9	2.7	2.0	1.9
		(3.0)	(2.7)	(1.9)	(1.9)
Blue Chip	10/10/2016	2.7	2.3	1.8	2.2
		(2.9)	(2.4)	(1.8)	(2.2)
Median SPF	8/12/2016	2.6	2.3	1.5	2.3
		(2.6)	(2.3)	(1.5)	(2.3)
Macro Advisers	10/21/2016	2.6	1.9	1.7	2.2
		(3.3)	(2.4)	(1.9)	(2.2)
FRBNY-DSGE	10/24/2016	2.7	2.3	1.8	2.2
		(3.3)	(2.4)	(1.9)	(2.3)
Median SPD	10/24/2016	--	--	1.7	2.1
		--	--	(1.8)	(2.1)

Core PCE Inflation

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	10/26/2016	1.7	1.8	1.8	2.0
		(1.4)	(1.5)	(1.7)	(2.0)
Median SPF	8/12/2016	1.6	1.6	1.8	1.9
		(1.6)	(1.6)	(1.8)	(1.9)
Macro Advisers	10/21/2016	1.6	1.9	1.9	1.9
		(1.3)	(1.8)	(1.7)	(1.8)
FRBNY-DSGE	10/24/2016	1.7	1.5	1.8	1.3
		(1.4)	(1.4)	(1.6)	(1.3)
Median SPD	10/24/2016	--	--	1.8	1.9
		--	--	(1.7)	(1.9)

Unemployment*

	Release Date	2016Q3	2016Q4	2016 Q4/Q4	2017 Q4/Q4
FRBNY	10/26/2016	4.9	4.8	-0.2	-0.2
		(4.9)	(4.8)	(-0.2)	(-0.2)
Blue Chip	10/10/2016	4.9	4.8	-0.2	-0.2
		(4.8)	(4.8)	(-0.2)	(-0.3)
Median SPF	8/12/2016	4.8	4.7	-0.3	-0.1
		(4.8)	(4.7)	(-0.3)	(-0.1)
Macro Advisers	10/21/2016	4.8	4.7	-0.2	-0.3
		(4.7)	(4.7)	(-0.3)	(-0.5)
Median SPD	10/24/2016		4.9	-0.2	-0.3
		--	--	(-0.2)	(-0.3)

*Note: Numbers in gray are from the previous Blackbook

*Yearly values are the difference between Q4 of the listed year and Q4 of the previous year.

2-6: Tealbook Comparison

	FRBNY (Q4/Q4)			Tealbook (Q4/Q4)		
	2016	2017	2018	2016	2017	2018
OUTPUT						
Real GDP Growth	2.0	1.9	1.7	1.7	2.2	1.9
	(1.9)	(1.9)	(1.7)	(1.8)	(2.4)	(2.0)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	2.0	2.4	2.1	1.8	2.4	2.1
	(2.1)	(2.3)	(2.2)	(2.0)	(2.5)	(2.1)
Consumption	1.9	1.6	1.5	1.7	1.8	1.7
	(2.0)	(1.6)	(1.5)	(1.9)	(1.8)	(1.7)
BFI	0.1	0.4	0.3	0.1	0.3	0.3
	(0.1)	(0.4)	(0.3)	(0.1)	(0.3)	(0.3)
Residential Investment	0.0	0.3	0.3	-0.1	0.3	0.2
	(0.0)	(0.2)	(0.2)	(-0.1)	(0.3)	(0.2)
Government	0.0	0.1	0.1	0.1	0.3	0.1
	(0.0)	(0.1)	(0.1)	(0.2)	(0.3)	(0.1)
Inventory Investment	-0.2	0.0	0.0	-0.3	0.0	0.0
	(-0.2)	(0.0)	(-0.1)	(-0.3)	(0.1)	(0.0)
Net Exports	0.2	-0.5	-0.3	0.0	-0.4	-0.3
	(-0.0)	(-0.5)	(-0.4)	(-0.1)	(-0.4)	(-0.2)
INFLATION						
Total PCE Deflator	1.6	2.0	2.2	1.5	1.7	1.9
	(1.3)	(2.0)	(2.2)	(1.2)	(1.6)	(1.8)
Core PCE Deflator	1.8	2.0	2.2	1.7	1.7	1.8
	(1.7)	(2.0)	(2.3)	(1.6)	(1.6)	(1.8)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	4.8	4.6	4.7	4.9	4.6	4.4
	(4.8)	(4.6)	(4.7)	(4.9)	(4.5)	(4.3)
Participation Rate (Avg. Q4 Level)	62.9	62.9	62.9	62.8	62.6	62.2
	(62.8)	(62.8)	(62.8)	(62.7)	(62.5)	(62.2)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	192	147	94	177	168	132
	(177)	(137)	(93)	(182)	(186)	(145)
SAVING						
Personal Saving Rate (Avg. Q4 Level)	5.7	5.7	5.7	5.8	5.5	5.3
	(5.9)	(5.8)	(5.7)	(5.7)	(5.6)	(5.4)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	1305	1485	--	1200	1300	1400
	(1305)	(1485)	--	(1200)	(1300)	(1400)
INTREST RATE ASSUMPTION						
Fed Funds Rate*	0.63	0.88	1.63	0.56	1.46	2.36
	(0.63)	(0.88)	(1.63)	(0.64)	(1.50)	(2.49)

Note: Numbers in parentheses are from the previous Blackbook and Tealbook.

* FRBNY numbers indicate end of year Federal Funds Rate, Tealbook numbers indicate average of Q4 Federal Funds Rate.

3. Uncertainty & Risks

Developments during the intermeeting period indicate a small reduction in uncertainty from the assessment in the September *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the risks to real GDP growth are roughly balanced over the near term (through mid-2017) and skewed to the downside at longer horizons. For core PCE inflation, the risks are roughly balanced into 2018 and skewed slightly to the downside thereafter. The widths of the probability intervals are slightly narrower than those in the September *Blackbook*. The uncertainty around the real GDP growth projection remains greater than historical norms while the uncertainty around the inflation projection is fairly close to its historical norms.

Although near-term consumption looks a little softer, the data on U.S. real economic activity over the intermeeting period generally were consistent with our central outlook. Indicators of consumer spending point to softer real PCE growth in Q3 than we previously thought, and suggest weaker momentum for the fourth quarter. The September labor market report indicated continued solid growth in nonfarm payrolls; however, the unemployment rate has changed little over the past year. Manufacturing production remained sluggish, changing little over the past two years. Indicators suggest modest improvement in business fixed investment after a weak 2016H1. Based on 12-month changes, core PCE inflation and core CPI inflation have been fairly stable since the beginning of the year. Alternative underlying inflation measures were consistent with a slow return to the objective. Longer-term inflation compensation rose moderately in the period, but remained at a low level. Survey measures of inflation expectations continued to be at low levels. Outside of the U.S., the data generally were consistent with a stabilization of the global economic outlook.

Financial markets were fairly quiet during the intermeeting period, despite some volatility associated with Deutsche Bank and the U.K. pound exchange rate. The Treasury yield curve steepened modestly on net. The market-implied expected path of the federal funds rate moved up but remains flat, reaching 1 percent only at end-2019. Longer-term sovereign yields in the U.K. rose appreciably, but changes in other major foreign economies were fairly modest. On net, the S&P 500 was flat, but remains near its record high. Implied volatility continued to be

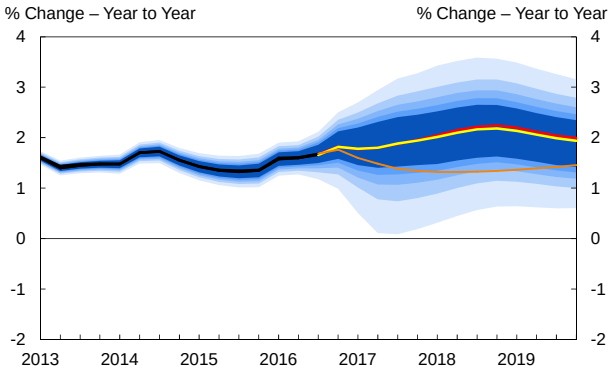
below its historical average. Major foreign equity indices generally increased. Oil prices rose, but broad non-energy commodity indices were little changed. The nominal broad dollar index appreciated modestly. The implementation of money market fund reforms proceeded without major disruptions, although the flows out of prime funds and into government funds probably contributed to a higher take-up on the ON RRP facility.

We interpreted these developments as indicating a small reduction in uncertainty and the downside risks to the outlook [Exhibit 3-2]. Because the recent developments generally have been consistent with our central outlook of near-potential growth, we decreased the probability of the *Faster Growth* scenario. The recent rise in oil prices as well as the continued stabilization in commodity prices and in the global economic outlook led to a further small decrease in the probability of the *Global Deflation* scenario. These changes led to a small narrowing of the 90 percent probability intervals for real GDP growth and core PCE inflation, as the lower boundaries shifted up slightly [Exhibit 3.3]. The interval for real GDP growth remains wider than historical norms based on realized forecast errors, while that for core PCE inflation is close to its norms. The real GDP growth forecast distribution signals that the risks to real activity are roughly balanced through mid-2017 and skewed to the downside thereafter, while the risks to inflation are roughly balanced in 2016 – 2018H2 and slightly skewed to the downside in 2019 [Exhibit 3-1].

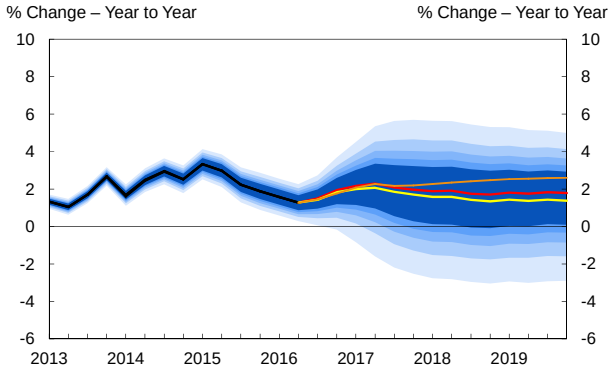
In a comparison to the forecast distribution from a year earlier, the current inflation projection runs somewhat above the year-ago expectation, reflecting the shift-up in the forecast in recent months [Exhibit 3-3]. Because of the weak first half of the year, 4-quarter real GDP growth in 2016Q2 was below the year-ago expectation. Nonetheless, both realized inflation and GDP growth were still well within last year's fifty percent forecast probability intervals. Going forward, the current real GDP growth expectation rises to near the year-ago expectation by mid-2017, and remains near it over the rest of the forecast horizon. This pattern reflects our continued assessments of a fairly subdued path for real GDP growth and downside risks to our outlook.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



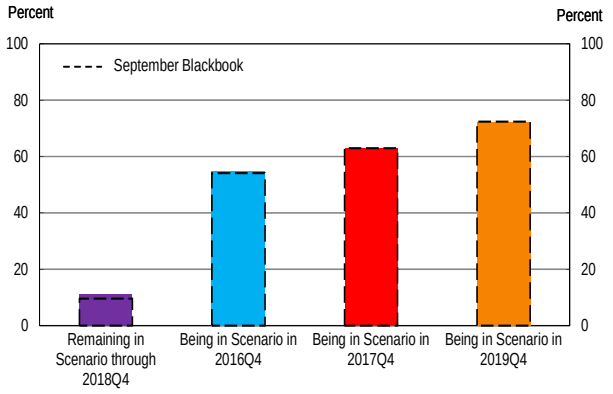
Real GDP Growth Forecast Distribution



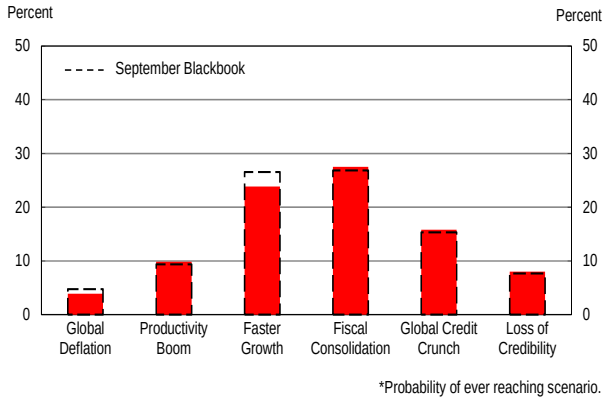
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



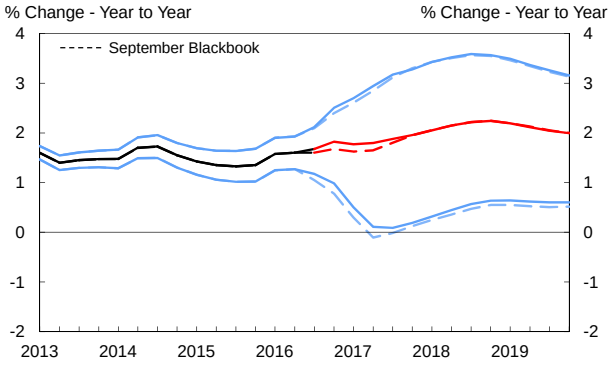
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

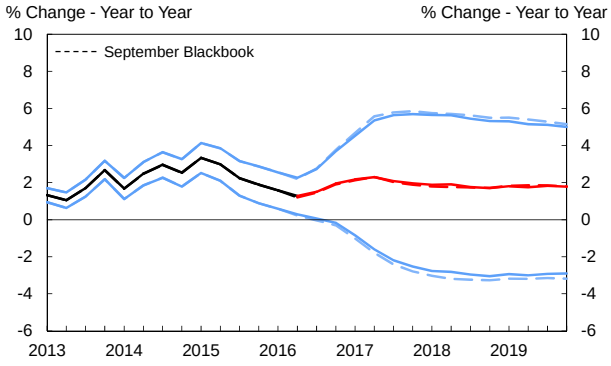
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

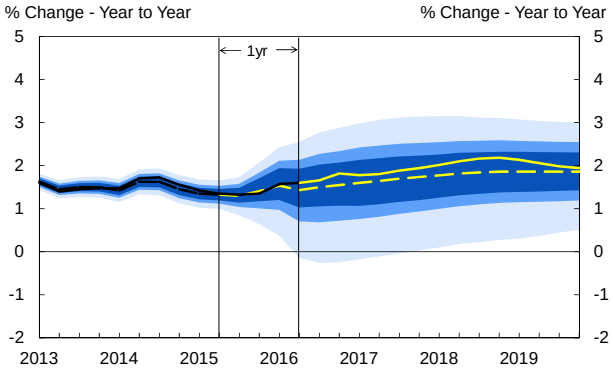


Change in Real GDP Growth Forecast Distribution

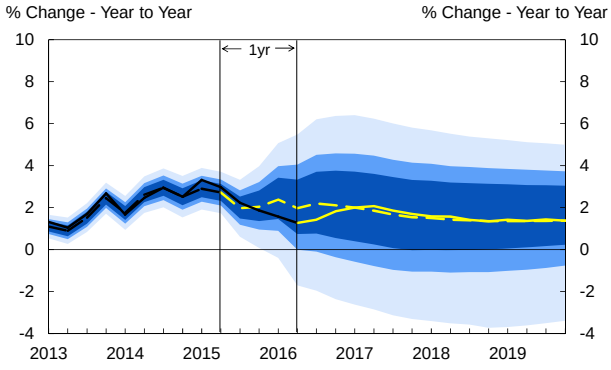


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to Construct the Forecast Distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2; (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario; and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment. This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.

FOMC BACKGROUND MATERIAL

RESEARCH AND STATISTICS GROUP

FRBNY Blackbook

December 2016

CLASS II FOMC - RESTRICTED (FR)

FRBNY BLACKBOOK

December 2016

CONTENTS

APPENDIX

1. Policy Recommendation and Rationale

Even though political developments could potentially affect the outlook in the future, the economic developments over the intermeeting period were broadly in line with or somewhat better than our expectations and did not materially alter our outlook for now. Our modal projection still has output growth above potential in 2016H2 and near potential thereafter. We continue to anticipate that inflation will gradually return to mandate-consistent levels over the medium term. Compared to November, we see greater uncertainty around the outlook; however, the risks appear roughly balanced. As the economy appears to be evolving according to our projections and risks are broadly balanced, we view a 25 basis point increase in the federal funds rate range at the upcoming FOMC meeting as appropriate. Afterward, our modal projections remain conditioned on a gradual increase of the policy rate towards its longer-term natural rate of around 2.50-2.75 percent.

Over the intermeeting period much attention has been devoted to the upside risk to growth associated with the potential fiscal stimulus planned by the new administration. However, we also see some possible downside risks to the U.S. economy under the new administration. One medium-term downside risk is that policies could have little effect on potential growth: If so, fiscal stimulus may only move forward some activity and result in weaker growth in the medium term. Another risk is that continued weakness in other advanced economies eventually drags down the U.S. economy.

Downside risk also arises from possible future changes in U.S. trade policy. These include possible higher import tariffs on China, renegotiation of NAFTA, and withdrawal from TPP—policies that could be implemented fairly quickly and have immediate bite. They would have direct effects through higher cost of imports and lower exports. Moreover, if the TPP were to go ahead without the participation of the U.S. there can also be trade diversion effects. Potentially large indirect effects associated with lower business confidence and higher uncertainty then could ensue, which would hamper investment. In the longer term, immigration policies also pose a downside risk, particularly if H1B visas are hit.

Data released over the intermeeting period have tended to surprise on the upside, with the Citi U.S. Economic Surprise Index moving from a recent low of -23.8 on October 20 to +30.1 as of December 7. Although our projection for growth of real GDP in Q4 is somewhat lower than in the November *Blackbook*, our confidence that the U.S. economy is back on a somewhat-above-potential growth trajectory has increased. The rate of growth of final sales to domestic purchasers appears to be somewhat higher in Q4 than it was in the third quarter, and the growth of real PCE still looks solid even though real income gains are expected to slow with rising energy prices. In addition, residential investment and business fixed investment are expected to begin to rise again after declines in recent quarters.

Even though there were some divergent movements across the indicators, the November labor market generally indicated continued improvement in labor market conditions. Payroll gains over October and November averaged 160,000, a bit below the 2016 average but above what we would associate with potential GDP growth. Tempering these gains a bit was a decline in the one-month diffusion index and no change in average weekly hours. Still, the unemployment rate fell to 4.6 percent in November, down 0.4 percentage point from September. Average hourly earnings seesawed in October and November, but the 12-month change in November remained around 2½ percent, which is well above the levels that prevailed through much of this expansion.

Regarding inflation, although financial market movements indicate some lesser concern about low inflation (or deflation), we do not yet see significant inflationary pressures, as core price increases remain moderate. Recent readings of core PCE inflation have come in somewhat below our expectations—0.1 percent in both September and October—but we continue to believe that underlying inflation is moving gradually higher. Measures of longer-term inflation compensation have risen notably in the past month. In contrast, the median of three-year household inflation expectations in our SCE and the Michigan measure of longer-term household expectations both increased only modestly in November, remaining within the narrow ranges of the past year and near their historical lows.

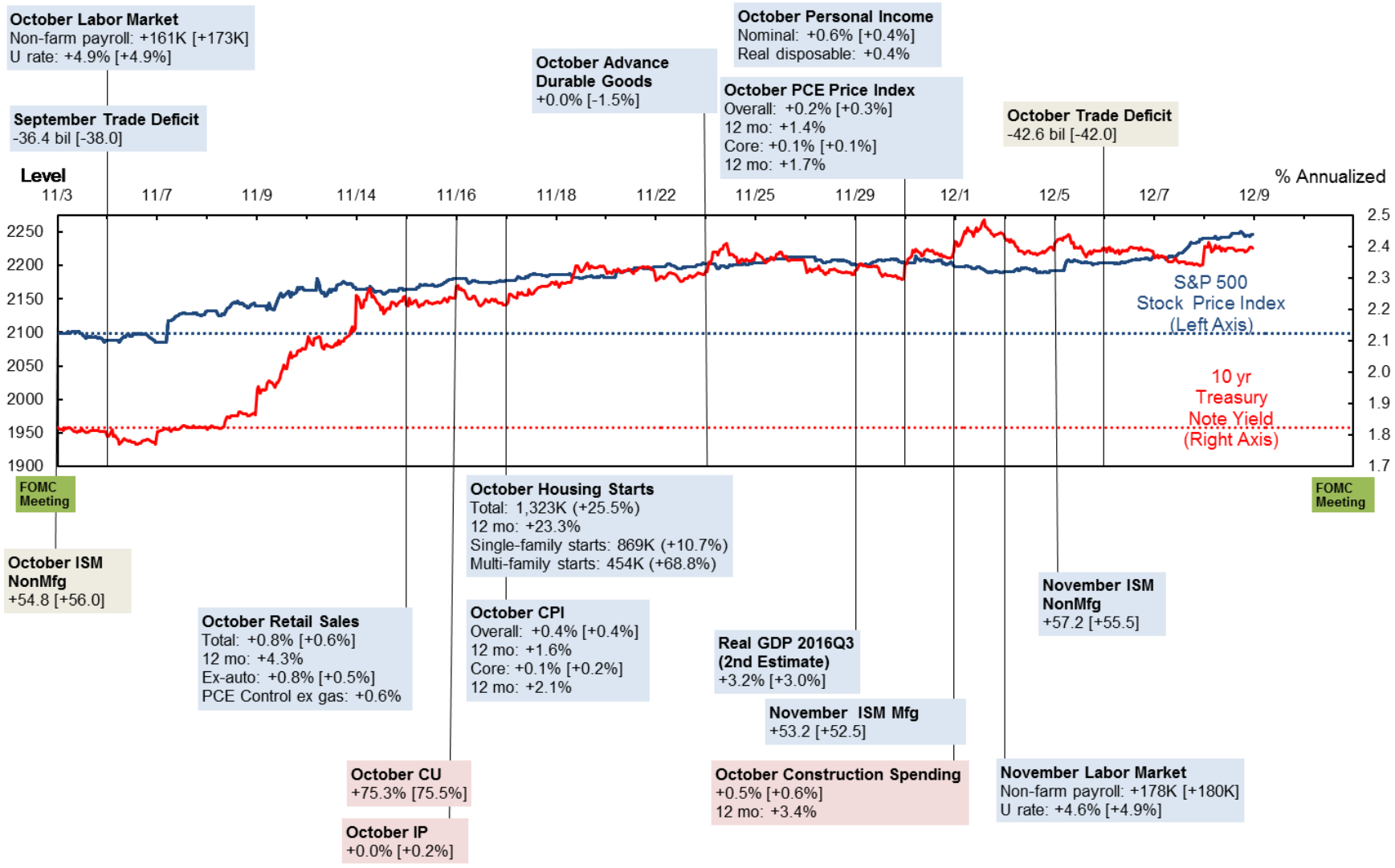
Financial markets moved significantly following the U.S. election results, with appreciation of the U.S. dollar, higher equity prices and a higher 10-year Treasury yield apparently reflecting a

reassessment of the economic outlook. The market-implied expected path of the federal funds rate steepened substantially: The market-implied value for the federal funds rate for the end of 2018 rose from about 0.90 percent at the last FOMC meeting to around 1.50 percent as of December 7. Even so, the latter value is somewhat below the end-2018 FFR assumed in our modal forecast. On net, it appears that financial conditions have become modestly tighter in the intermeeting period with higher equity prices outweighed by a stronger dollar and higher yields.

Turning to policy, we would argue that the case for a 25 basis point rate hike at the upcoming FOMC meeting is strong for a number of reasons: (1) Overall inflation continued to rise as we expected, consistent with a gradual reversion to mandate-consistent levels; (2) the overall economy is evolving according to our projections; and (3) the upside risks to our outlook are higher than they were earlier in the year. It is worth noting that the monetary stance—even after such a hike—remains consistent with a transitory fall of unemployment below NAIRU in the staff forecast. At the same time, such a change in the policy rate would be consistent with the gradually rising path of the real natural rate of interest projected by the FRBNY DSGE model.

As for the future path of policy, we need to maintain its conditionality on the evolution of the economy, the outlook, and risks. While we continue to project a relatively shallow policy path in the medium term, the heightened uncertainty surrounding the outlook suggests that we retain flexibility to adjust the policy rate path to the evolution of economic and financial conditions both domestically and abroad. We recommend clear communication that would provide indication of how policy may respond should certain conditions materialize.

To sum up, we recommend a 25 basis point increase at the upcoming meeting that is also consistent with market expectations. The press conference provides the Chair with the opportunity to explain in some detail the implications of the rate hike in the context of the overall policy strategy in the current economic environment of a still low r*, unemployment somewhat below the NAIRU, inflation still below objective, and greater uncertainty arising from potentially significant changes in government policies. It would also provide an opportunity of delineating how policy might evolve in the near term depending on how different scenarios materialize.



Note
Blue shading: Data release encouraging/positive.
Red shading: Data release discouraging/negative.
Beige shading: Data release was neutral.
Numbers in square brackets are the median of the Bloomberg survey.
Numbers in parentheses represent changes from the prior month.

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

2. Central Forecast

Intermeeting Developments

Data released over the intermeeting period have tended to surprise to the upside, with the Citi US Economic Surprise Index moving from a recent low of -23.8 on October 20 to 18.2 as of December 1. While our projection for growth of real GDP in the fourth quarter is somewhat lower than in the October Blackbook, our confidence that the US is back on a somewhat-above-potential growth trajectory has increased. Recent readings of the change in the core Personal Consumption Expenditures (PCE) deflator have come in somewhat below our expectations—0.1% in both September and October—but we continue to believe that underlying inflation is moving gradually higher.

Growth of real GDP in 2016Q3 has been revised up to 3.2% (annual rate) from the advance estimate of 2.9%. The upward revision to real GDP reflected a fairly substantial upward revision to growth of real PCE—to 2.8% (annual rate) from 2.1%— that was only partially offset by downward revisions to business fixed investment and inventory investment. Despite this significant upward revision to real PCE, the personal saving rate for 2016Q3 was revised upward from 5.7% to 5.9% due to upward revisions to wage and salary income for Q2 and Q3. Corporate profits rose in 2016Q3, with the four-quarter change at +2.8%, the first positive four-quarter change since 2015Q1. The profit share was 13.2% of national income, above that of the previous three quarters, but below the recent peak of 14.5% in 2011Q4.

While there is still a lot of relevant data yet to be released, at this point we project growth of real GDP in 2016Q4 to be 1.8% (annual rate). The rate of growth of final sales to domestic purchasers is expected to be around 2 ¼%, up from 1 ¾% in the third quarter. In contrast to Q3, however, we expect a very modest growth contribution from inventory investment while the growth contribution from net exports is expected to move to around -0.6 percentage points from +0.9 percentage points in the third quarter.

Real PCE rose just 0.1% (0.05% to two digits) in October, a significant retreat from the September increase of 0.5%. However, October growth of real PCE was held down by a very steep decline in spending on electricity and natural gas as the month was much warmer than usual. November was also warmer than usual, but less so than October (in percentage terms), so

a snap back in spending on electricity and natural gas is expected. Aside from that, the real PCE data for October were somewhat stronger than we were anticipating, which, along with the upward revision for Q3, led us to boost modestly our estimate of Q4 growth of real consumer spending to 2 ½% (annual rate). Consumer sentiment, as measured by both the Conference Board and the University of Michigan, improved significantly in November. Light-weight motor vehicle sales came in at 17.87 million units (annual rate) in November, down only slightly from 18.02 million units in October. The Q4 average pace of light-weight vehicle sales is on track to come in notably above the Q3 average of 17.5 million units.

Recent housing-related data have been positive. Total housing starts rose 25.5% in October after declining the previous two months. Multi-family starts accounted for the bulk of the increase, rising 68.8% (monthly rate). But single-family starts also increased, rising 10.7% to 869,000 units, the highest level since October of 2007. After smoothing by taking a three-month moving average, single-family starts appear to have resumed a very gradual uptrend while multi-family starts are running at a rate comparable to 2015. (It should be noted that the October data on construction put-in-place suggests that the real value per single-family completion continues to decline, though the rate of decline does appear to have slowed. Thus, while single-family completions are expected to increase significantly in the fourth quarter, the growth rate of real residential investment is expected to be in the mid-single digits.) Sales of existing single-family homes have also begun moving higher, with the October level up 6.6% from a year ago. Inventories of existing homes for sale continue to be very lean. Sales of new single-family homes fell slightly in October but remained 17.8% above year-ago levels.

What is unclear, however, is how durable these uptrends in the housing market will turn out to be given the recent increases in mortgage interest rates. As of the last week of November, the contract interest rate on a 30-year fixed rate loan was up to 4 ¼%, a nearly 75 basis point increase since late September. Applications for mortgages to purchase homes have spiked in recent weeks, likely due to people accelerating the process to lock-in before rates go higher. On the other hand, current mortgage rates remain quite low by historical standards and would not necessarily slow the housing market to the extent that the rise in long-term interest rates is driven by an improvement in growth prospects.

Data regarding business fixed investment continue to be mixed. Shipments of nondefense capital goods declined 0.9% in October, but the October level was modestly above the Q3 average. New orders for nondefense capital goods increased 14.4% in October following a 3.9% increase in September. Most of those increases were for nondefense aircraft, for which deliveries will take place well into the future. But excluding aircraft, new orders for nondefense capital goods increased 0.3%. At this point we anticipate a modest 1% to 2% (annual rate) increase in real business investment in equipment in 2016Q4, which would be the first increase since the third quarter of 2015.

Private nonresidential construction put-in-place declined 2.1% in October following a 0.8% decline in September. We have not taken all of that decline on board in our projection of Q4 growth of investment in structures, as underlying fundamentals, such as office vacancy rates, remain positive. In addition, this weakness may be offset to some extent by a very strong increase in oil and gas drilling activity, as indicated by the industrial production data. (It should be noted that the IP data indicated an increase in this activity in the third quarter but the relevant category of the NIPAs continued to decline.) At this point we expect some slowing in the rate of growth of this category of BFI from the 10% annualized rate of growth of Q3.

The rate of growth of employment in the federal government has increased thus far in 2016, with the 12-month change up to around 2% in October and November. However, defense outlays plunged in October following a moderate increase in the third quarter. At this point we anticipate a 1% (annual rate) decline in real spending at the federal level. In contrast, after declining in the second and third quarters, we expect real state and local consumption and gross investment to increase in the 1 ½% to 2% range in the fourth quarter. Employment in the sector was up 0.9% in November on a year-over-year basis. Construction spending in the sector has increased for three consecutive months, with the November increase at a solid 2.3%. This follows declines for most of the period from March through July. Federal grants-in-aid increased sharply in the third quarter, which may explain this increase in construction spending.

Nominal exports fell in 1.8% October, with exports of goods down 2.8% while exports of services rose 0.2%. Exports of food, feeds, and beverages fell 10.8% in in October following a 32.3% increase in the third quarter. But exports excluding food, feeds, and beverages fell 2% over the month, with declines in virtually all major categories. Nominal imports increased 1.3%

in October, comparable to the rate of increase for the entire third quarter. Imports of goods rose 1.5% while imports of services rose 0.5%. Imports of consumer goods rose 3.7% while imports of capital goods rose 2.2%. For the fourth quarter, we now anticipate a net export growth contribution of -0.6 percentage points, a sharp swing from the +0.9 percentage points of the third quarter.

The November labor market report received mixed reviews, with some soft spots such as a decline in average hourly earnings as well as declines in both the labor force participation rate and the one-month diffusion index. But the October-November average monthly gain in payroll employment was 16,000, above what we would associate with potential growth of GDP. In addition, hours worked are on track to increase at about a 2% annual rate in the fourth quarter. Despite the fact that average hourly earnings declined in November, we expect that nominal wage and salary income in the private sector will increase at around a 4% annual rate in Q4, only slightly lower than in Q3.

News out of the manufacturing sector improved in October and November, suggesting the sector may be starting to recover. The ISM (Institute for Supply Management) Manufacturing composite index was up 1.3 points to 53.2 in November. This is the third consecutive month that the PMI has been above the value of 50, indicating expansion in the manufacturing sector. As of October, the real total business inventory-sales ratio has declined for four months. Manufacturers' new orders increased by 2.7% in October, the strongest of four consecutive monthly increases. Inventory data through October suggest little or no growth contribution from inventory investment in the fourth quarter, down from a 0.5 percentage point contribution in the third quarter.

Survey data also suggest that the service sector of the economy is performing a bit better as well. The ISM nonmanufacturing composite index rose to 57.2 in November from 54.8 in October—another upside surprise. This index, while volatile month-to-month, reached a recent peak in mid-2015 and hit a low of 51.4 in August of this year.

The PCE price index increased 0.2% in October for a third month in a row. The 12-month change in the overall PCE deflator was 1.4%, the highest yearly reading since October 2014.

Energy prices surged 3.8%, after a 3.0% increase in September, which followed negative readings in the previous two months. Energy prices rose again in November, and, given the recent increase in crude oil prices, will likely increase in December and January as well. At this point we expect energy prices to increase at about a 30% annual rate in the fourth quarter, boosting the increase in the total PCE deflator to an annual rate of 2.3%, up from 1.4% in the third quarter. The 12-month change of the total PCE deflator will likely move notably higher over the next few months.

The core PCE deflator rose 0.1% in October, below our expectations but comparable to the rate of increase in September. Prices of durable goods were essentially unchanged following five consecutive monthly declines. This is consistent with our expectation of some firming of core goods prices as the effect of dollar appreciation starts to fade and inventories get into better alignment with sales. However, there has been some slowing in the rate of increase of core services inflation. In particular, transportation services prices have fallen for three consecutive months, led by falling prices for motor vehicle leasing. In contrast, rent inflation continues to edge higher, with the 12-month change reaching 3 ½% as of October. For the fourth quarter, we expect the core PCE deflator to increase at a 1.5% annual rate, down from 1.7% in the third quarter. But the quarterly rate of increase in 2015Q4 was just 1.2%. As a result, we expect the 12-month change in the core index to remain around 1.7%, where it has been for the past three months.

The Outlook

With the downgrading of our growth projection for 2016Q4, growth over the second half of 2016 is now expected to be 2.5% (annual rate) versus 2.8% in the October Blackbook. This lowers growth of all of 2016 to 1.8% (q4/Q4), down from 2.0%. Total PCE deflator inflation for 2016 is now projected at 1.5% versus 1.6% in October. The Q4/Q4 increase of the core PCE deflator is now expected to be 1.8%, unchanged from October.

As mentioned above, it appears that over the second half of 2016 the US economy had fully absorbed the shocks of dollar appreciation and commodity price depreciation, with both the manufacturing sector and service sector showing signs of rebounding. That being said, uncertainty, both on the upside and downside, regarding growth prospects for both 2017 and

2018 have increased over the intermeeting period given the results of the US presidential and congressional elections. External events, such as the overwhelming rejection of proposed changes to the Italian constitution, have also contributed to this heightened uncertainty.

For the past few cycles we have expected growth of real GDP of around 1.9% in 2017 then slowing to around 1.7% in 2018, with this slowing driven by a combination of an aging business cycle and a tightening of financial conditions as monetary policy continues to move in the direction of normalization. The unemployment rate has been projected to decline to around 4.6% by the end of 2017 and then edge up to 4.7% by the end of 2018 as productivity growth gradually moves up toward what we regard to be its long-run trend. With the economy operating a full employment and inflation expectations well anchored at the FOMC's objective, we expect total PCE deflator inflation to move up to 2% by the end of 2017 and then to modestly overshoot the objective in 2018, reaching 2.2% by the end of that year. This overshooting of inflation in 2018 reflects the undershooting of the unemployment rate in 2017.

Since the election there have been some significant moves in financial asset prices. The broad trade-weighted exchange value of the dollar is up nearly 4%, the 10-year treasury yield is up about 65 basis points, high yield bond spreads have narrowed by about 25 basis points, and the S&P 500 equity index is up about 5%. The Goldman Sachs Financial Conditions Index has moved up somewhat at a result of these movements, suggesting on balance a tightening in financial conditions. However, the associated narrative of these moves is that they have been prompted by an upgrading of future growth prospects, which in turn stem from the increased likelihood of some significant fiscal stimulus in 2017 in the form of increased infrastructure spending and/or individual tax reductions. There is also discussion of possible corporate tax reform, although as yet it is not known what impact this might have on projected revenues.

At this point we believe that there is insufficient information regarding the nature, magnitude, and timing of future changes in fiscal policy to attempt to incorporate them into our forecast. In addition, it is not at all clear how much stimulus such actions will be able to deliver with the economy at or near full employment while asset prices, particularly the exchange value of the dollar, are completely flexible. That being said, some alternative forecasts will likely incorporate changes in fiscal policy, and so we should keep that in mind when comparing our forecast with others.

2-1: Projections of Key Variables

	Core PCE Inflation		Real GDP Growth		Unemployment Rate*		Fed Funds Rate**	
	Oct	Dec	Oct	Dec	Oct	Dec	Oct	Dec
2016								
Q1	*2.0*	*2.0*	*0.8*	*0.8*	*4.9*	*4.9*	*0.38*	*0.38*
Q2	*1.8*	*1.8*	*1.4*	*1.4*	*4.9*	*4.9*	*0.38*	*0.38*
Q3	*1.7*	*1.7*	*2.9*	*3.2*	*4.9*	*4.9*	*0.38*	*0.38*
Q4	1.8	1.5	2.7	1.8	4.8	4.7	0.63	0.63
2017								
Q1	1.8	1.7	1.7	1.9	4.8	4.7	0.63	0.63
Q2	1.9	1.8	1.9	1.7	4.7	4.7	0.63	0.63
Q3	2.0	1.9	2.0	2.1	4.6	4.6	0.88	0.88
Q4	2.1	2.0	2.2	2.1	4.6	4.6	0.88	0.88
2018								
Q1	2.2	2.2	1.4	1.4	4.6	4.6	0.88	1.13
Q2	2.3	2.3	2.0	1.9	4.6	4.6	1.13	1.38
Q3	2.3	2.2	1.5	1.6	4.7	4.7	1.38	1.38
Q4	2.2	2.1	2.0	1.9	4.7	4.7	1.63	1.63
Q4/Q4								
2015	*1.4*	*1.4*	*1.9*	*1.9*	*-0.7*	*-0.7*	*0.38*	*0.17*
2016	1.8	1.8	2.0	1.8	-0.2	-0.2	0.63	0.63
2017	2.0	1.9	1.9	1.9	-0.2	-0.1	0.88	0.88
2018	2.2	2.2	1.7	1.7	0.1	0.1	1.63	1.63

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

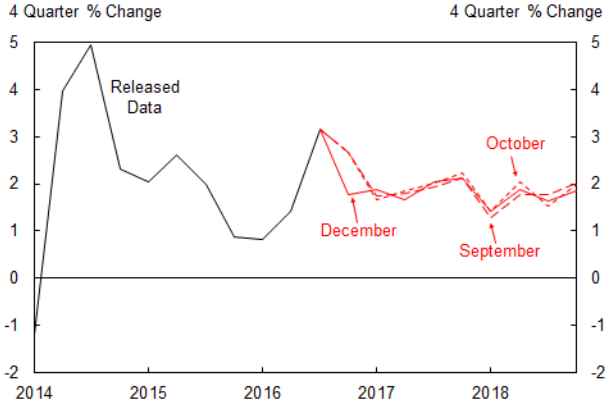
*Quarterly values are the average rate for the quarter. Yearly values are the difference between Q4 of the listed year and Q4 of the previous year.

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

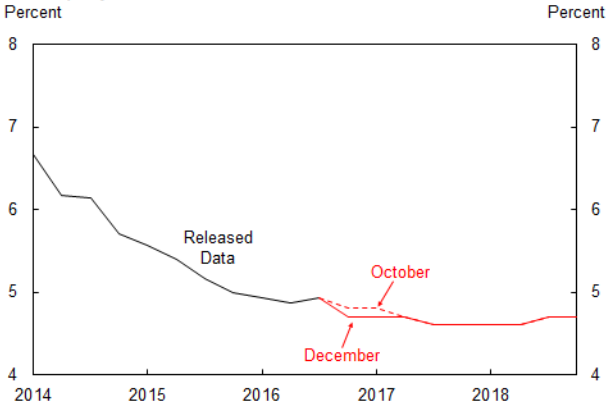
2-2: Evolution of Projected Quarterly Paths

Key Indicators

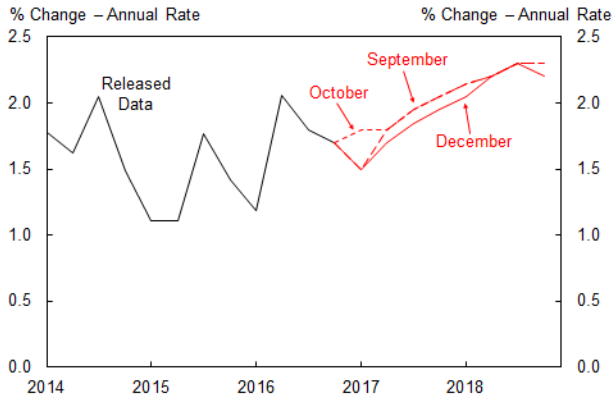
Real GDP Growth



Unemployment Rate

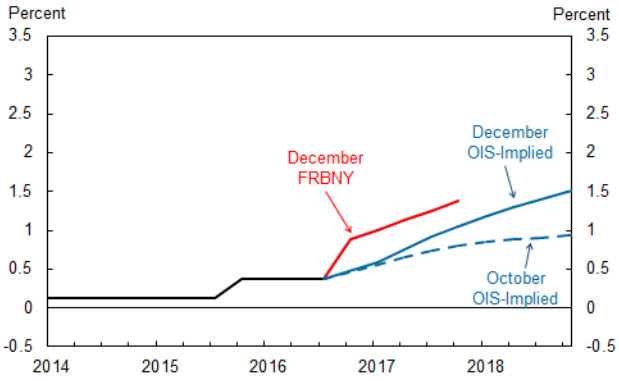


Core PCE Inflation

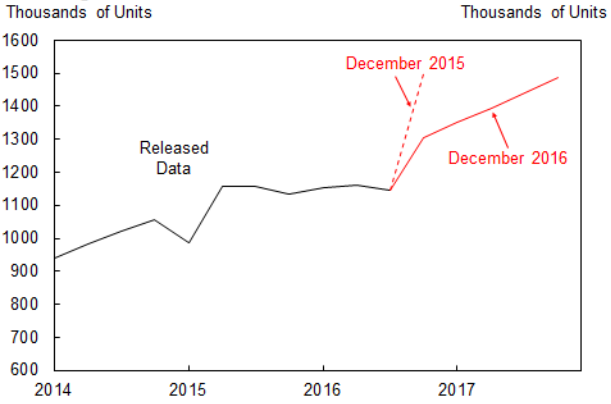


Forecast Assumptions

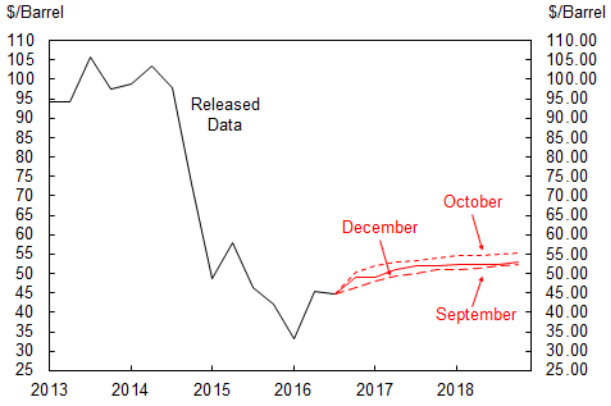
Federal Funds Rate



Housing Starts



Crude Oil



Source: FRBNY (MMS and IR Functions)

2-3: Near-Term Projections

	Growth Rates (AR)			Growth Contributions (AR)		
	2016Q4	2017Q1	2017Q2	2016Q4	2017Q1	2017Q2
OUTPUT						
Real GDP	1.8	1.9	1.7	1.8	1.9	1.7
	(2.7)	(1.7)	(1.9)	(2.7)	(1.7)	(1.9)
Final Sales to Domestic Purchasers	2.3	2.3	2.2	2.3	2.3	2.3
	(2.2)	(2.5)	(2.3)	(2.2)	(2.6)	(2.4)
Consumption	2.5	2.3	2.3	1.7	1.6	1.6
	(2.4)	(2.3)	(2.3)	(1.6)	(1.6)	(1.6)
BFI: Equipment	2.0	4.0	4.0	0.1	0.2	0.2
	(2.0)	(3.0)	(4.0)	(0.1)	(0.2)	(0.2)
BFI: Nonresidential Structures	2.5	4.0	4.0	0.1	0.1	0.1
	(8.0)	(5.0)	(4.0)	(0.2)	(0.1)	(0.1)
BFI: Intellectual Property Products	3.0	3.0	3.0	0.1	0.1	0.1
	(3.0)	(3.0)	(3.0)	(0.1)	(0.1)	(0.1)
Residential Investment	5.2	5.1	3.3	0.2	0.2	0.1
	(6.0)	(13.3)	(6.2)	(0.2)	(0.5)	(0.2)
Government: Federal	-0.8	-0.3	-0.3	-0.1	0.0	0.0
	(-2.2)	(-0.3)	(-0.3)	(-0.1)	(-0.0)	(-0.0)
Government: State and Local	1.8	1.3	1.3	0.2	0.1	0.1
	(0.8)	(1.0)	(1.2)	(0.1)	(0.1)	(0.1)
Inventory Investment	--	--	--	0.0	0.2	0.0
	--	--	--	(0.5)	(-0.2)	(0.0)
Net Exports	--	--	--	-0.6	-0.7	-0.6
	--	--	--	(-0.1)	(-0.7)	(-0.5)
INFLATION						
Total PCE Deflator	2.3	1.9	2.0			
	(2.6)	(1.9)	(2.0)			
Core PCE Deflator	1.5	1.7	1.8			
	(1.8)	(1.8)	(1.9)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.0	0.9	0.7			
	(1.0)	(0.8)	(0.6)			
Compensation per Hour	3.1	3.0	3.1			
	(3.4)	(3.3)	(3.3)			
Unit Labor Costs	3.1	2.1	2.4			
	(2.4)	(2.5)	(2.7)			

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

2-4: Medium-Term Projections

	Q4/Q4 Growth Rates			Q4/Q4 Growth Contributions		
	2016	2017	2018	2016	2017	2018
OUTPUT						
Real GDP	1.8	1.9	1.7	1.8	1.9	1.7
	(2.0)	(1.9)	(1.7)	(2.0)	(1.9)	(1.7)
Final Sales to Domestic Purchasers	1.9	2.3	2.0	1.9	2.4	2.1
	(1.9)	(2.4)	(2.1)	(2.0)	(2.4)	(2.1)
Consumption	2.8	2.3	2.1	1.9	1.6	1.5
	(2.7)	(2.3)	(2.1)	(1.9)	(1.6)	(1.5)
BFI: Equipment	-3.9	3.5	2.0	-0.2	0.2	0.1
	(-3.0)	(3.2)	(2.0)	(-0.2)	(0.2)	(0.1)
BFI: Nonresidential Structures	2.5	3.7	2.5	0.1	0.1	0.1
	(2.9)	(4.0)	(2.5)	(0.1)	(0.1)	(0.1)
BFI: Intellectual Property Products	4.1	3.0	3.0	0.2	0.1	0.1
	(4.6)	(3.0)	(3.0)	(0.2)	(0.1)	(0.1)
Residential Investment	0.0	7.3	6.3	0.0	0.3	0.3
	(0.0)	(9.1)	(7.0)	(0.0)	(0.3)	(0.3)
Government: Federal	-0.1	-0.4	-0.7	0.0	0.0	0.0
	(-0.2)	(-0.4)	(-0.7)	(-0.0)	(-0.0)	(-0.0)
Government: State and Local	0.4	1.3	1.2	0.0	0.1	0.1
	(0.2)	(1.2)	(1.2)	(0.0)	(0.1)	(0.1)
Inventory Investment	--	--	--	-0.3	0.1	0.0
	--	--	--	(-0.2)	(-0.0)	(-0.0)
Net Exports	--	--	--	0.1	-0.5	-0.3
	--	--	--	(0.2)	(-0.5)	(-0.3)
INFLATION						
Total PCE Deflator	1.5	2.0	2.2			
	(1.6)	(2.0)	(2.2)			
Core PCE Deflator	1.8	1.9	2.2			
	(1.8)	(2.0)	(2.2)			
PRODUCTIVITY AND LABOR COSTS*						
Output per Hour	0.6	1.0	1.0			
	(0.6)	(0.8)	(1.1)			
Compensation per Hour	3.0	3.0	3.2			
	(2.3)	(3.2)	(2.8)			
Unit Labor Costs	2.4	2.0	2.3			
	(1.7)	(2.4)	(1.7)			

Note: Numbers in parentheses are from the previous Blackbook.

*Nonfarm business sector.

2-5: Comparison with Other Forecasts

Real GDP Growth

	Release Date	2016Q4	2017Q1	2016 Q4/Q4	2017 Q4/Q4
FRBNY	12/6/2016	1.8	1.9	1.8	1.9
		(2.7)	(1.7)	(2.0)	(1.9)
Blue Chip	11/10/2016	2.1	2.2	1.8	2.2
		(2.3)	(2.2)	(1.8)	(2.2)
Median SPF	11/14/2016	2.2	2.2	1.5	2.2
		(2.3)	(2.3)	(1.5)	(2.3)
Macro Advisers	11/22/2016	1.5	2.1	1.7	2.1
		(1.9)	(2.1)	(1.7)	(2.2)
FRBNY-DSGE	12/6/2016	2.0	1.7	1.8	1.9
		(2.3)	--	(1.8)	(2.2)
Median SPD	10/24/2016	--	--	1.7	2.1
		--	--	(1.7)	(2.1)

Core PCE Inflation

	Release Date	2016Q4	2017Q1	2016 Q4/Q4	2017 Q4/Q4
FRBNY	12/6/2016	1.5	1.7	1.8	1.9
		(1.8)	(1.8)	(1.8)	(2.0)
Median SPF	11/14/2016	1.7	1.8	1.8	1.9
		(1.6)	(1.8)	(1.8)	(1.9)
Macro Advisers	11/22/2016	1.8	1.9	1.8	1.9
		(1.9)	(1.9)	(1.9)	(1.9)
FRBNY-DSGE	12/6/2016	1.6	1.4	1.8	1.4
		(1.5)		(1.8)	(1.3)
Median SPD	10/24/2016	--	--	1.8	1.9
		--	--	(1.8)	(1.9)

Unemployment*

	Release Date	2016Q4	2017Q1	2016 Q4/Q4	2017 Q4/Q4
FRBNY	12/6/2016	4.7	4.7	-0.3	-0.1
		(4.8)	(4.8)	(-0.2)	(-0.2)
Blue Chip	11/10/2016	4.8	4.8	-0.2	-0.2
		(4.8)	(4.7)	(-0.2)	(-0.2)
Median SPF	11/14/2016	4.8	4.8	-0.2	-0.1
		(4.7)	(4.7)	(-0.3)	--
Macro Advisers	11/22/2016	4.8	4.7	-0.2	-0.4
		(4.8)	(4.7)	(-0.3)	(-0.4)
Median SPD	10/24/2016	4.9	--	-0.1	-0.3
		(4.9)	--	(-0.1)	(-0.3)

*Note: Numbers in gray are from the previous Blackbook

*Yearly values are the difference between Q4 of the listed year and Q4 of the previous year.

2-6: Tealbook Comparison

	FRBNY (Q4/Q4)			Tealbook (Q4/Q4)		
	2016	2017	2018	2016	2017	2018
OUTPUT						
Real GDP Growth	1.8	1.9	1.7	1.8	2.2	2.0
	(2.0)	(1.9)	(1.7)	(1.7)	(2.2)	(1.9)
GDP Growth Contributions						
Final Sales to Domestic Purchasers	1.9	2.4	2.1	1.9	2.5	2.4
	(2.0)	(2.4)	(2.1)	(1.8)	(2.4)	(2.1)
Consumption	1.9	1.6	1.5	1.8	2.0	1.9
	(1.9)	(1.6)	(1.5)	(1.7)	(1.8)	(1.7)
BFI	0.0	0.4	0.3	0.0	0.4	0.3
	(0.1)	(0.4)	(0.3)	(0.1)	(0.3)	(0.3)
Residential Investment	0.0	0.3	0.3	0.1	0.1	0.2
	(0.0)	(0.3)	(0.3)	(-0.1)	(0.3)	(0.2)
Government	0.0	0.1	0.1	0.1	0.3	0.1
	(0.0)	(0.1)	(0.1)	(0.1)	(0.3)	(0.1)
Inventory Investment	-0.3	0.1	0.0	-0.3	0.1	0.0
	(-0.2)	(-0.0)	(-0.0)	(-0.3)	(0.0)	(0.0)
Net Exports	0.1	-0.5	-0.3	0.1	-0.6	-0.5
	(0.2)	(-0.5)	(-0.3)	(0.0)	(-0.4)	(-0.3)
INFLATION						
Total PCE Deflator	1.5	2.0	2.2	1.5	1.7	1.8
	(1.6)	(2.0)	(2.2)	(1.5)	(1.7)	(1.9)
Core PCE Deflator	1.8	1.9	2.2	1.7	1.7	1.8
	(1.8)	(2.0)	(2.2)	(1.7)	(1.7)	(1.8)
LABOR MARKET						
Unemployment Rate (Avg. Q4 Level)	4.7	4.6	4.7	4.8	4.5	4.3
	(4.8)	(4.6)	(4.7)	(4.9)	(4.6)	(4.4)
Participation Rate (Avg. Q4 Level)	62.8	62.8	62.9	62.7	62.6	62.3
	(62.9)	(62.9)	(62.9)	(62.8)	(62.6)	(62.2)
Avg. Monthly Nonfarm Payroll Growth (Thous.)	192	136	102	180	181	157
	(192)	(147)	(94)	(177)	(168)	(132)
SAVING						
Personal Saving Rate (Avg. Q4 Level)	6.0	6.0	6.0	5.8	6.6	6.3
	(5.7)	(5.7)	(5.7)	(5.8)	(5.5)	(5.3)
HOUSING						
Housing Starts (Avg. Q4 Level, Thous.)	1305	1485	--	1200	1200	1300
	(1305)	(1485)	--	(1200)	(1300)	(1400)
INTREST RATE ASSUMPTION						
Fed Funds Rate*	0.63	0.88	1.63	0.47	1.49	2.47
	(0.63)	(0.88)	(1.63)	(0.56)	(1.46)	(2.36)

Note: Numbers in parentheses are from the previous Blackbook and Tealbook.

* FRBNY numbers indicate end of year Federal Funds Rate, Tealbook numbers indicate average of Q4 Federal Funds Rate.

3. Uncertainty & Risks

Developments during the intermeeting period indicate an increase in uncertainty around the outlook from the assessment in the November *Blackbook*. Based on the difference between the modal forecast and the expected value from our forecast distributions [Exhibit 3-1], as well as the changes in the distributions [Exhibit 3-3], the risks to real GDP growth are roughly balanced through much of the forecast horizon. For core PCE inflation, the risks are balanced throughout the forecast horizon. The widths of the probability intervals are wider than those in the November *Blackbook*, particularly for inflation. The uncertainties around the real GDP growth projection and around the inflation projection are above their respective historical norms.

The data on U.S. real economic activity over the intermeeting period generally were positive, as the staff nowcast for Q4 real GDP growth increased from 1.55 percent on October 28 to 2.49 percent on December 7. Real PCE growth in Q3 was stronger than originally estimated, although the October data were soft. The October and November labor market reports indicated continued solid growth in nonfarm payrolls. The unemployment rate declined over the two months after being little changed through most of this year. Single-family housing starts and permits rose solidly in October, suggesting a rebound in residential investment after declines in the last two quarters. Manufacturing production rose modestly in September and October, but still has changed little over the past two years. Indicators suggest modest improvement in business fixed investment after weakness over the first three quarters of the year. Based on 12-month changes, core PCE inflation and core CPI inflation have been fairly stable since the beginning of the year. Alternative underlying inflation measures paint a broadly similar picture. Longer-term inflation compensation rose considerably in the period, but it is still at a low level on a longer historical basis. Survey measures of inflation expectations continued to be at low levels. Outside of the U.S., the data generally were fairly solid, with stronger-than-expected Q3 real GDP growth in Japan and Canada.

Financial markets have displayed sizable movements following the U.S. presidential election results. The nominal Treasury yield curve has shifted up and steepened; the real curve also has moved up. Part of the movement in nominal longer-term yields was in term premiums. The market-implied expected path of the federal funds rate also steepened: the expected FFR at end-

2019 was just above 1.8 percent, up more than 80 basis points over the intermeeting period. Longer-term nominal sovereign yields in a number of other advanced economies also rose appreciably. Major U.S. equity indexes rose strongly to record highs. Implied volatility fell to a low level. Corporate credit spreads to Treasuries narrowed. Major equity indices in advanced economies also increased, but a number of those in emerging markets were relatively weak. Oil prices rose, particularly after the OPEC production agreement, but remained within the range that has prevailed this year. Broad non-energy commodity indices also increased. The nominal broad dollar index appreciated significantly.

We interpreted these developments as indicating a fairly significant change in the scenario probabilities [Exhibit 3-2]. The generally positive data, the reduction in term premiums, the increase in equity prices, and the possibility of significant fiscal stimulus have all contributed to lead us to raise the probability of the *Faster Growth* scenario and to reduce the probability of the *Fiscal Consolidation* scenario (the probability of the latter scenario was not reduced further because that scenario encompasses the possibility of negative supply shocks that could still occur depending upon other government policy developments, particularly in trade). To account for the possibility of possible positive supply side effects from government policy changes, we have raised moderately the probability of the *Productivity Boom* scenario. The sizable increase in longer-term inflation compensation and the increase in commodity prices indicate greater inflation risks on the upside and led us to raise the probability on the *Loss of Credibility* scenario. In addition, given the significant uncertainty about prospective policy changes and their economic effects, we see the tail risks as having increased, which we incorporate through assuming fatter tails in some of the scenario distributions.

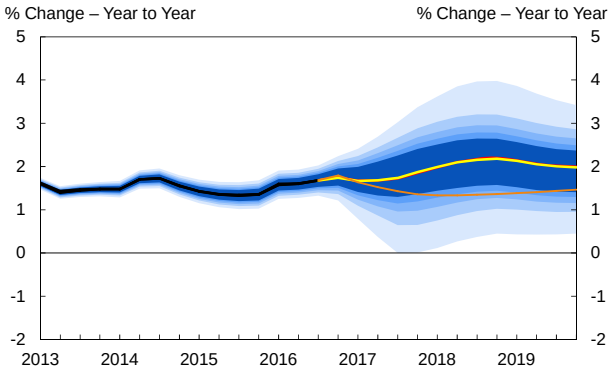
These changes in the scenario probabilities led to a modest widening of the 90 percent probability interval for real GDP growth and a more substantial widening of the corresponding interval for core PCE inflation [Exhibit 3-3]. (With the increase in tail risks, the 99 percent probability intervals for both variables probably are more appreciably wider.) The intervals for real GDP growth and for core PCE inflation are wider than their respective historical norms. Based on the difference between the mode and the mean of the forecast distribution, the real GDP growth forecast distribution signals that the risks to real activity are roughly balanced into

2018 and slightly skewed to the downside thereafter, while the risks to inflation are balanced throughout the forecast horizon [Exhibit 3-1].

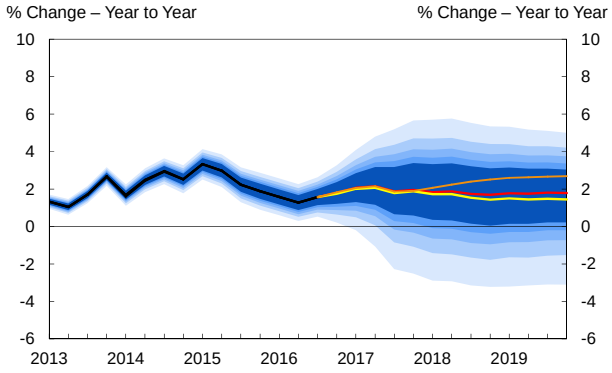
In a comparison to the forecast distribution from a year earlier, the current inflation projection runs somewhat above the year-ago expectation, reflecting the shift-up in the forecast in recent months [Exhibit 3-3]. Because of the weak first half of the year, 4-quarter real GDP growth in 2016Q3 was modestly below the year-ago expectation. Nonetheless, both realized inflation and GDP growth were still well within last year's fifty percent forecast probability intervals. Going forward, the current real GDP growth expectation rises modestly above the year-ago expectation by mid-2017, and remains above it over the rest of the forecast horizon. This pattern reflects our assessment that there has been an increase in the upside risks to our real activity outlook, reflecting the possibility of greater fiscal stimulus than we had previously thought.

3-1: Forecast Distributions

Core PCE Inflation Forecast Distribution



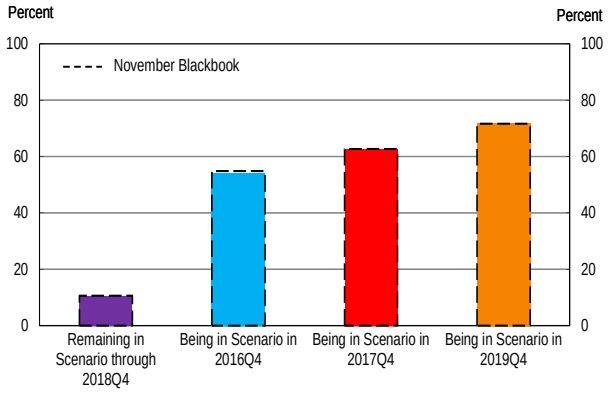
Real GDP Growth Forecast Distribution



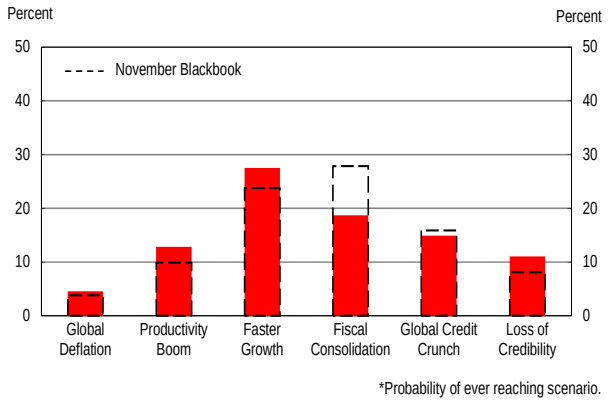
The yellow line is the expected value of the forecast distribution, the red line is the FRBNY central projection, the orange line is the DSGE forecast, and the black line is released data. The shading represents the 50, 60, 70, 80 and 90 percent probability that the four-quarter change will be within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

3-2: Scenario Probabilities

Central Scenario Probabilities



Alternative Scenario Probabilities*



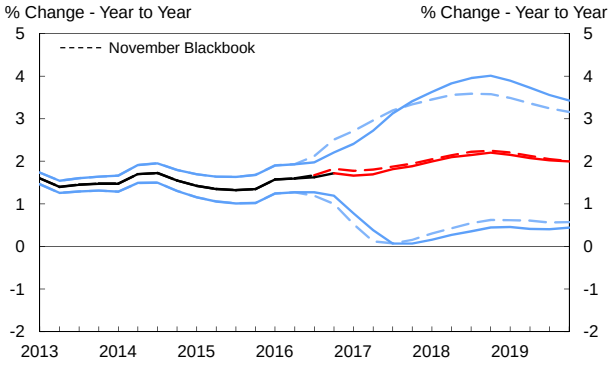
*Probability of ever reaching scenario.

The left chart shows the probability of remaining in the central scenario through the end of the forecast horizon and the probabilities of being in the central scenario at the end of the next three years. The right chart shows the probabilities of ever reaching an alternative scenario over the forecast horizon, an assessment of the overall likelihood of each alternative scenario. A short description of the scenarios and the methodology to perform risk assessment is in the Appendix.

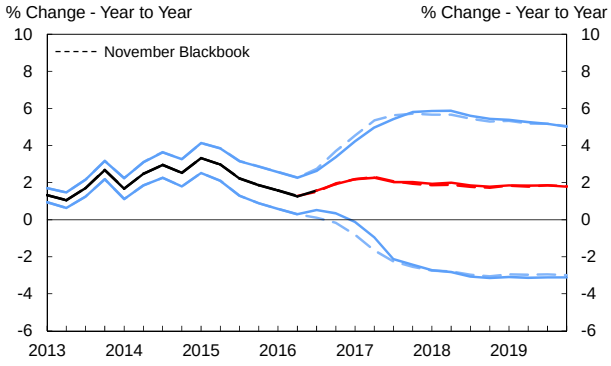
Source: MMS Function (FRBNY)

3-3: Evolution and Performance of Forecast Distributions

Change in Core PCE Inflation Forecast Distribution

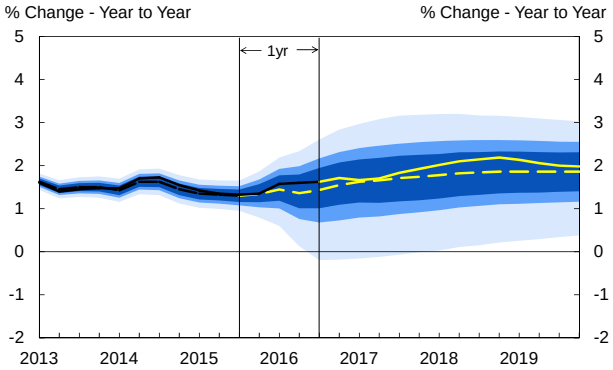


Change in Real GDP Growth Forecast Distribution

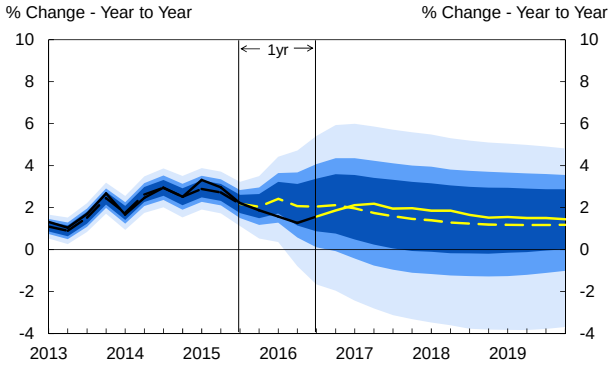


The red lines are the central scenario projections, black lines are released data, and blue lines represent upper and lower 90 percent forecast probability intervals. Dashed lines represent forecasts from the previous Blackbook.

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



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



The solid yellow lines are the current expected values from the forecast distributions and the dashed yellow lines are the year-ago Blackbook expected values. Black lines are released data and the blue shaded areas represent 50 (darkest shade), 70, and 90 (lightest shade) percent forecast probability intervals from the year-ago Blackbook.

Source: MMS Function (FRBNY)

Appendix

In this Appendix, we provide brief descriptions of the alternative scenarios used in this Blackbook [A-1], and of the methodology underlying our risk assessment and forecast distributions [A-2].

A-1. Alternative Scenario Descriptions

Our first alternative scenario considers the impact of productivity growth above our assumed trend of about 1.5% on a nonfarm business sector basis (*Productivity Boom).* The second scenario (*Fiscal Consolidation)* assesses the consequences of below-trend productivity growth. We consider four additional scenarios. In one (*Faster Growth*), "headwinds" subside more quickly than expected, leading to stronger aggregate demand effects from monetary and fiscal policy. In another (*Loss of Credibility*), the public and investors lose confidence in the current stances of monetary and fiscal policy. In the other two (*Global Credit Crunch* and *Global Deflation*), renewed stresses in global financial and economic conditions have an adverse impact on U.S. real economic growth and inflation; the differences between the two mainly reflect differing assessments of the persistence of the negative effects.

A-2. Methodology to Construct the Forecast Distribution

Our approach to producing the FRBNY forecast distributions is a generalization of techniques used at the Bank of England and other central banks to depict the uncertainty and balance of risks around a forecast. It allows for a dynamic balance of risks that is jointly assessed over inflation and output growth.

Three primary components underlie these forecast distributions: (1) a central scenario with modal inflation and output growth characterized by the central forecast described in Section 2; (2) alternative scenarios with specific inflation and output implications that differ from those of the central scenario; and (3) probabilities that the economy will enter those alternative scenarios. This approach to quantifying uncertainty and risks allows us to interpret the forecast distribution

for output growth and inflation, as well as analyze the impact on that distribution of changing the probabilities of the alternative scenarios.

We set the long-run behavior of our central forecast at the FOMC's longer-run inflation goal and our estimate of the potential growth rate. We also assume that, if the economy enters an alternative scenario, it eventually returns to the central scenario and remains in that scenario thereafter.

We conduct a simulation exercise to generate paths for inflation and output growth; we then perform calculations about our forecast distribution that reflect our risk assessment. This exercise consists in generating a large number of indicator series, with each entry in a given series corresponding to a quarter in the forecast horizon; for each of these series, each quarter's value indicates only the prevailing scenario in that quarter. To generate these scenario-indicator series, we set two parameters for each alternative scenario: (1) the probability that the economy will leave the central scenario and enter the alternative scenario—the "initial probability"—and (2) the probability that the economy will remain in the alternative scenario once it enters the scenario—the "persistence."

After creating the indicator series, we generate, for each series, a path for inflation and a path for output growth, with each entry in a given path corresponding to a quarter in the forecast horizon. For a given indicator series and a given quarter, the values of the associated inflation and output growth paths are determined by a draw from the indicated joint distribution of inflation and output growth, based on the scenario the indicator series points to for that quarter. If, for example, the series indicates that the economy is in the central scenario, we draw inflation and output values from a distribution centered at the central forecast. If instead the series indicates the economy is in an alternative scenario, we draw values from a modified version of the central scenario distribution that is consistent with the alternative scenario.