Staff GDP Forecast Summary

- Real growth: about 2% (Q4/Q4) in 2017 and 1¾% in 2018.
  - Forecast for 2017 somewhat stronger than presented at April 2016 EAP.
  - Below Blue Chip consensus, particularly for 2018, likely due in part to the fact that we have not incorporated fiscal stimulus.

- Outlook reflects countervailing factors.

  Positives:
  - Adverse effects of past dollar appreciation and commodity price declines are largely behind us.
  - Labor market at or near full employment, generating solid income growth.
  - Household balance sheet is stronger; financial obligations ratio remains low.
  - Housing market continues on gradual uptrend despite somewhat higher mortgage interest rates.

  Negatives:
  - Sustained drag from net exports.
  - Relatively sluggish growth of business fixed investment.

Real GDP Growth Forecasts
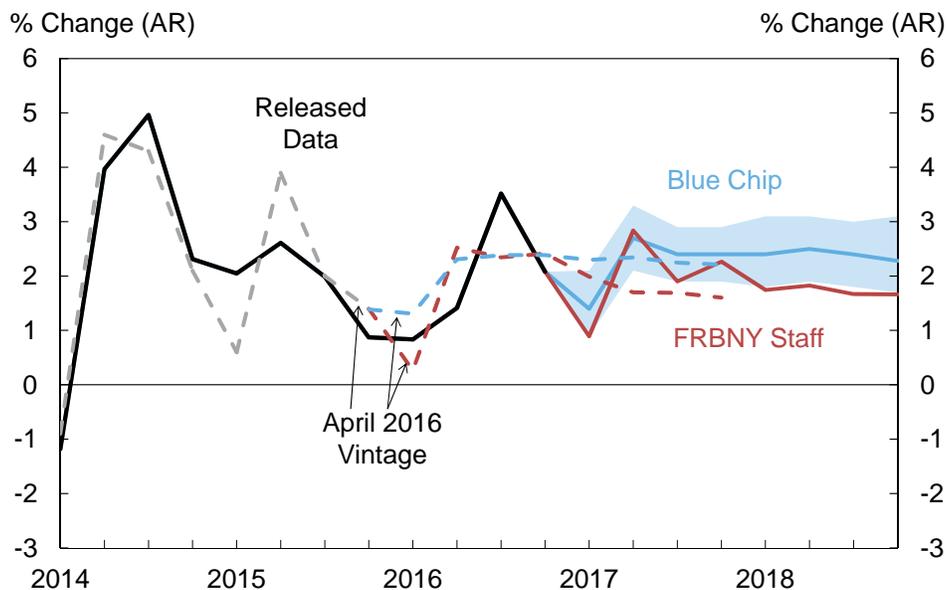
Note: The blue band represents the top 10 and bottom 10 averages of the Blue Chip survey.
Source: FRBNY Staff, BEA, and Blue Chip Economic Indicators

GDP Growth Contributions: 2016-18

Percentage Points · Percentage Points

	2016	2017	2018
Real GDP	2.0	2.0	1.7
Real Final Sales	2.0	2.0	1.8

Legend: ■ 2016 ■ 2017 ■ 2018

PCE: 2.1, 1.5, 1.5
Res. Inv.: 0.0, 0.3, 0.2
BFI: 0.0, 0.5, 0.4
Gov. Exp.: 0.0, 0.1, 0.1
Net Exports: -0.2, -0.5, -0.4
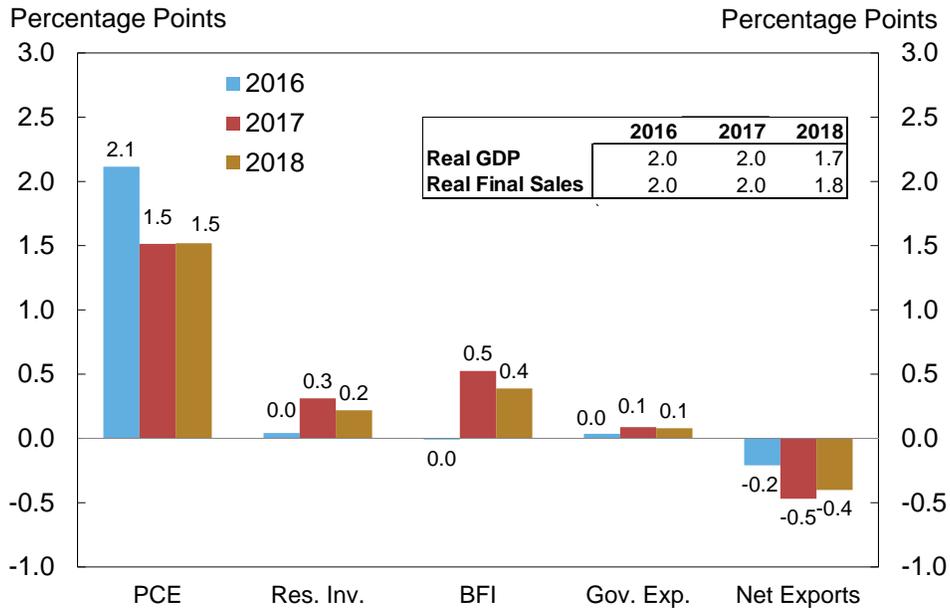
Source: FRBNY Staff and Bureau of Economic Analysis

Real Personal Consumption Expenditures vs Real Disposable Income

% Change Y/Y · % Change Y/Y

Real Disposable Personal Income

March Forecast

Real PCE

2014   2015   2016   2017
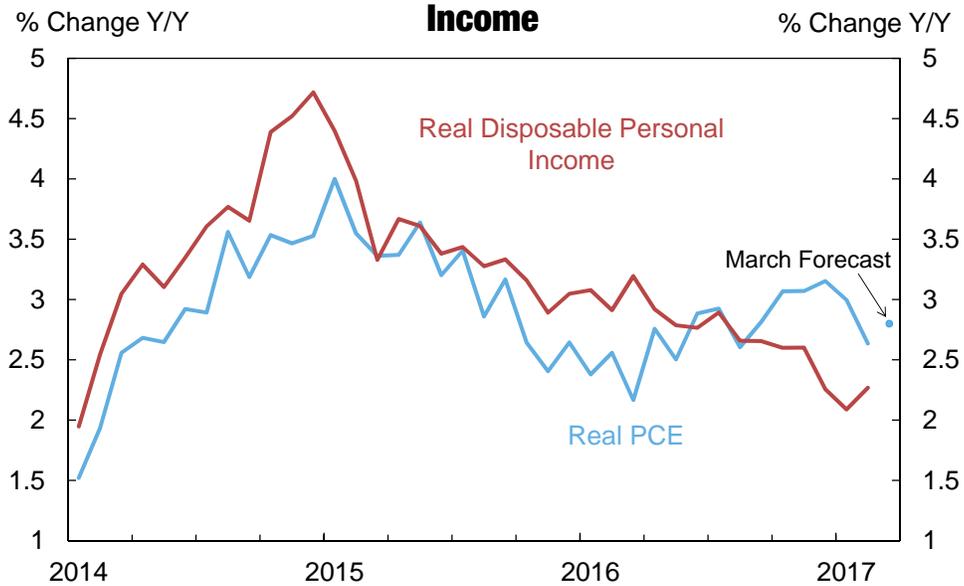
Source: Bureau of Economic Analysis via Haver Analytics

Household Financial Obligations Ratio
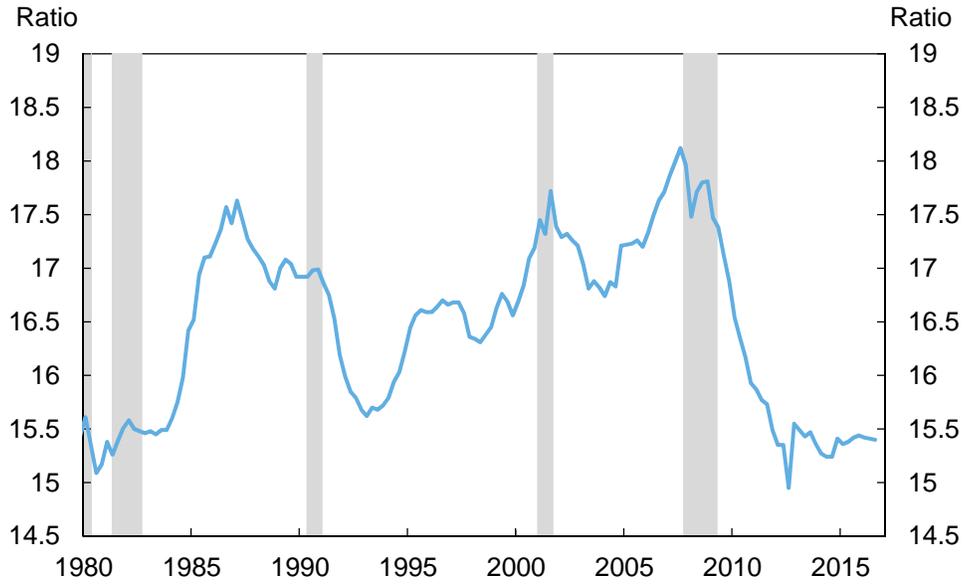
Source: Federal Reserve Board.

Note: Shading shows NBER recessions.

Banks Tightening Lending Standards

*Percent tightening minus percent easing lending standards.

Credit Cards

Auto Loans
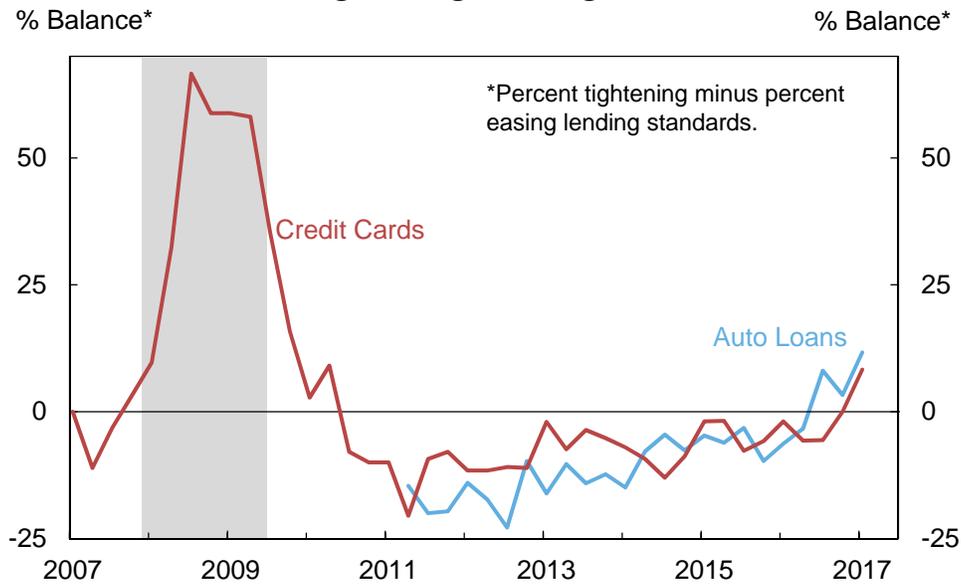
Source: Federal Reserve Board via Haver Analytics

Note: Shading shows NBER recessions.

Single Family Housing Market

12 Month % Change

Months

Single Family House Price Index (Left Axis)

Months' Supply (Right Axis)

"Normal" Range for Months' Supply
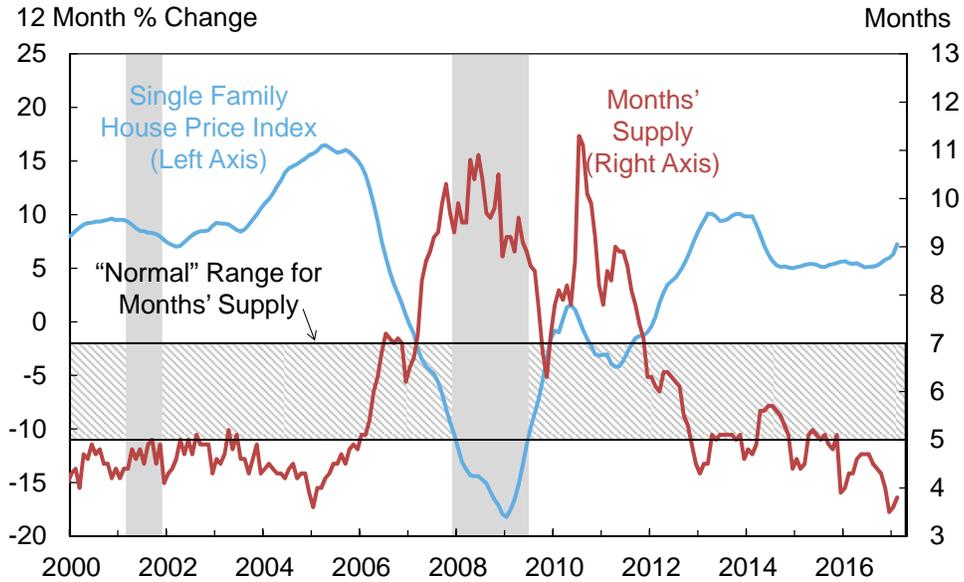
Source: CoreLogic, National Association of Realtors, via Haver Analytics

Note: Shading shows NBER recessions.

Real Private Nonresidential Fixed Investment
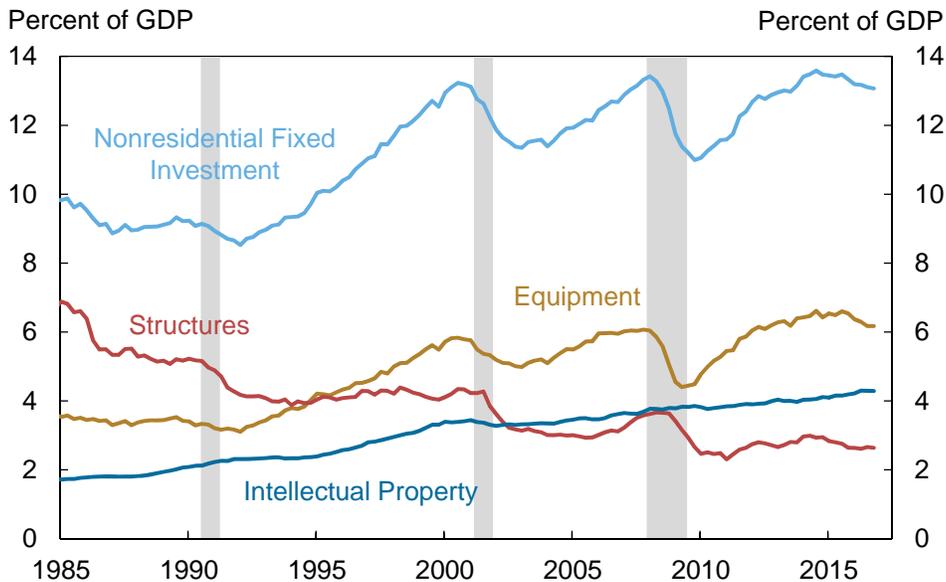
Percent of GDP

Percent of GDP

Nonresidential Fixed Investment

Structures

Equipment

Intellectual Property

Source: Bureau of Economic Analysis via Haver Analytics

Note: Shading shows NBER recessions.

Equipment Investment and Capacity Utilization

Real Business Investment in New Equipment
(% Change – Year to Year)

Real Business Investment in New Equipment
(% Change – Year to Year)

Trendline fitted from 1980Q1 – 2007Q4

2017 Q1: (75.4, 0.0^E)

2016 Q4: (75.1, -3.8)

Manufacturing Capacity Utilization
(Percent of Capacity)
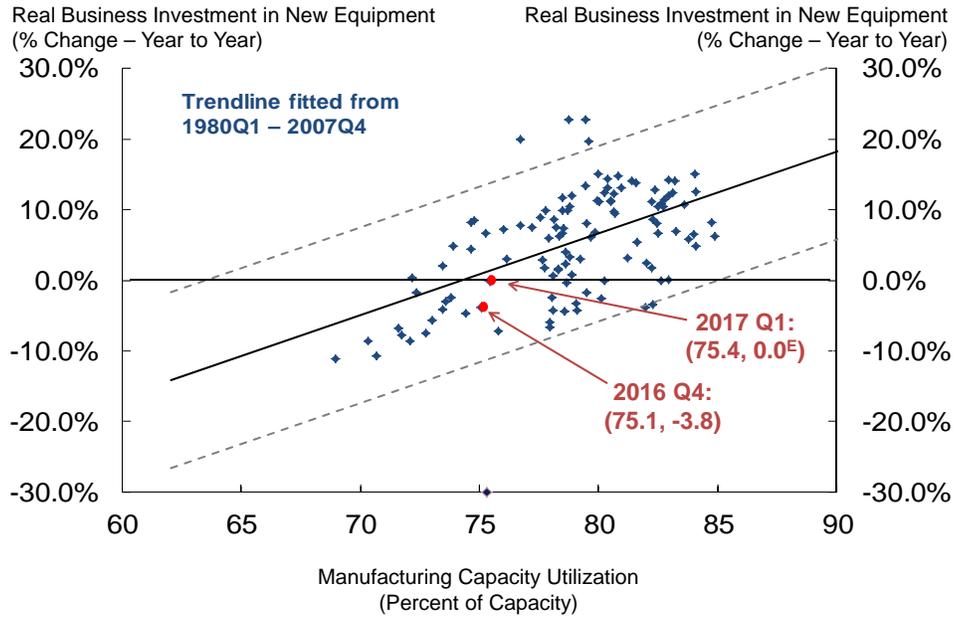
Source: Federal Reserve Board, Bureau of Economic Analysis

Staff Unemployment Rate Forecast Summary

- Near- to modestly above-potential growth leads to unemployment rate of just above 4½% at end-2017 and 4½% at end-2018.
  - Below FRBNY forecast at April 2016 EAP.
  - Higher path for unemployment rate than Blue Chip consensus.

- Factors underlying this forecast.
  - Population growth somewhat under 1%.
  - Productivity growth gradually rising back toward assumed trend rate of 1¼% NFBS-basis (1% GDP-basis).
  - Participation rate rises slightly over 2017 and 2018.
  - Slight uptick in average weekly hours.
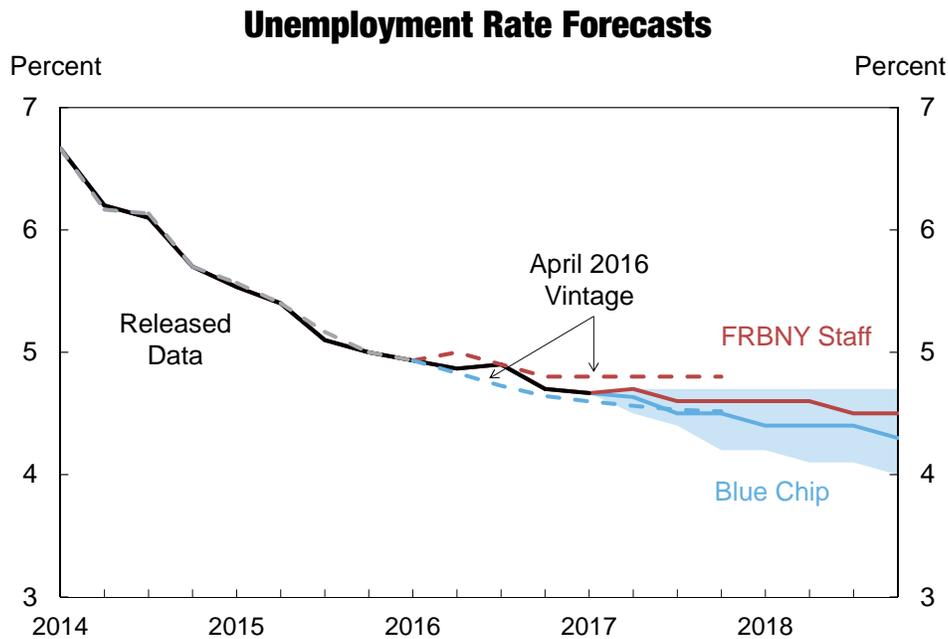
Unemployment Rate Forecasts

Note: The blue band represents the top 10 and bottom 10 averages of the Blue Chip survey.
Source: FRBNY Staff, BEA, and Blue Chip Economic Indicators

LFPR Change from Sep. 2015 to Mar. 2017
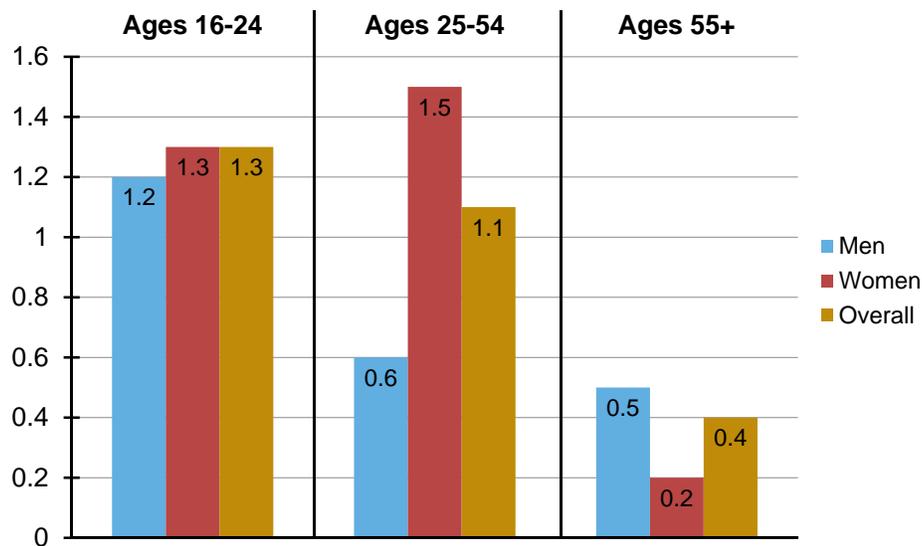
Source: Bureau of Labor Statistics
via Haver Analytics

Labor Force Participation Rate Projections

| Date | FRBNY Projection | Demographics Only, Age-specific Rates Fixed | | Age-specific Rates Rise as 2015-2017 | | |
		2015-2017 average	2017Q1 average	Young	Prime-age	Young & Prime-age
2017 Q1	**62.97**	62.97	62.97	62.97	**62.97**	62.97
2017 Q2	**63.00**	62.54	62.88	62.65	**62.87**	62.97
2017 Q3	**63.03**	62.54	62.88	62.67	**62.95**	63.07
2017 Q4	**63.05**	62.54	62.88	62.69	**63.02**	63.17
2018 Q1	**63.08**	62.40	62.73	62.57	**62.96**	63.12
2018 Q2	**63.10**	62.40	62.73	62.59	**63.04**	63.22
2018 Q3	**63.13**	62.40	62.73	62.61	**63.11**	63.32
2018 Q4	**63.15**	62.40	62.73	62.63	**63.19**	63.42

Source: FRBNY staff calculations.

Employment Cost Index: Private Industry Workers

4 Qtr % Change   4 Qtr % Change
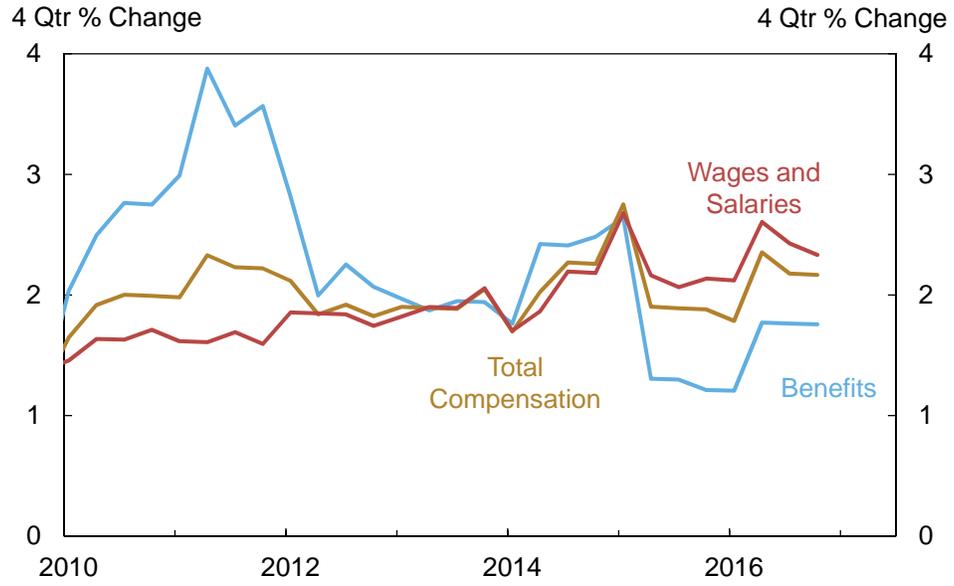
Source: Bureau of Labor Statistics via Haver Analytics

Staff Inflation Forecast Summary

- As energy and import prices stabilize, inflation anticipated to be near FOMC's longer-run goal.
  - Total inflation slightly below core in 2017 due to actual and projected declines in energy prices.
  - Core PCE inflation projected to be about 2% in 2017 and slightly above in 2018.

- Underlying assumptions.
  - Well-anchored longer-run inflation expectations.
  - Downward pressure on goods prices from past dollar appreciation fades over forecast horizon.
  - Firming of global demand.
  - Dissipation of remaining slack by end of 2017.

Overall PCE Inflation Forecasts
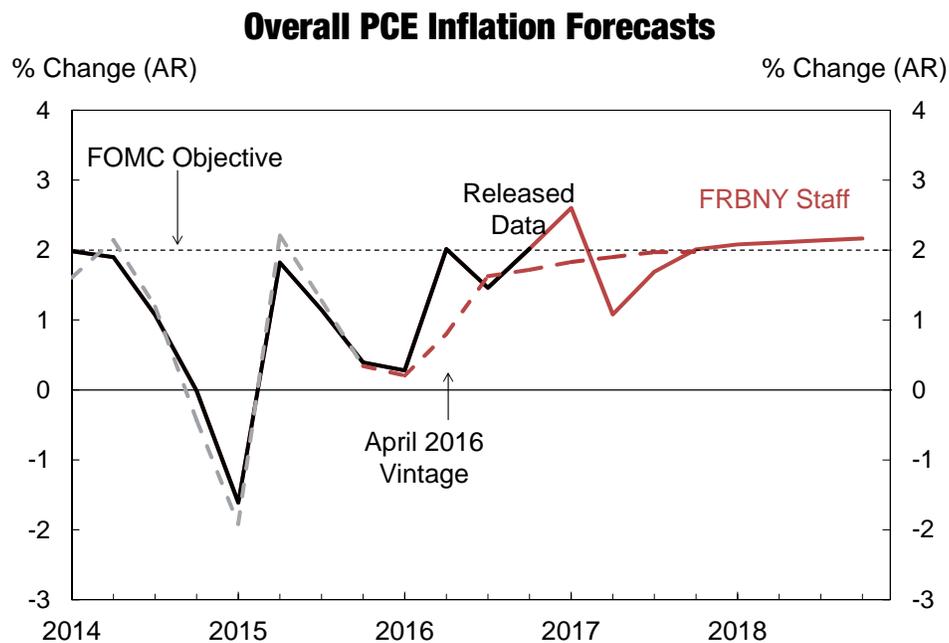
Source: FRBNY Staff and Bureau of Economic Analysis

Core PCE Inflation Forecasts

% Change (AR)   % Change (AR)

FOMC Objective

Released
Data

April 2016
Vintage

FRBNY Staff

2014   2015   2016   2017   2018
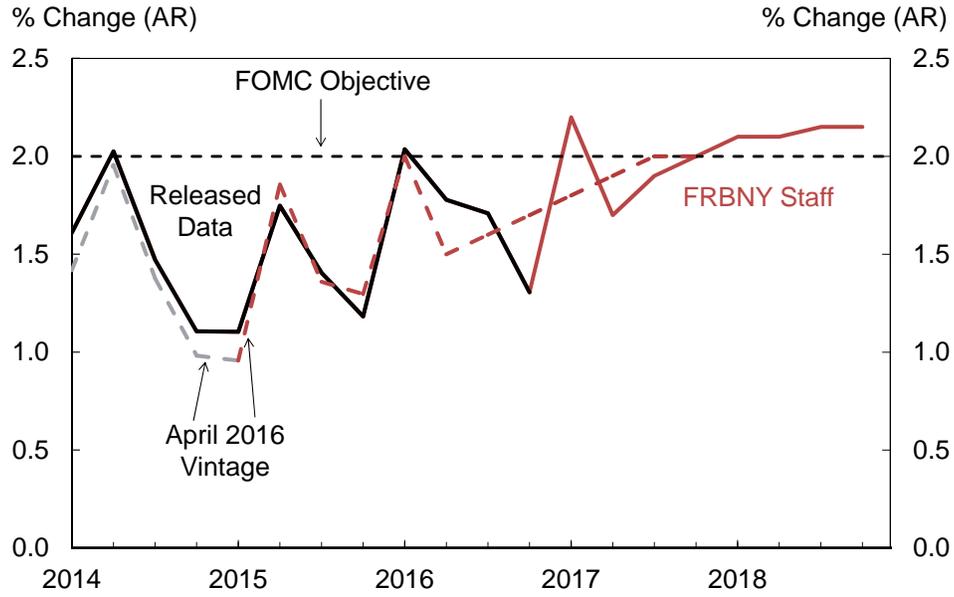
Source: FRBNY Staff and Bureau of Economic Analysis

CPI Core Goods and Core Services Inflation

12 Month % Change   12 Month % Change

Core Services

Core Goods

2000   2002   2004   2006   2008   2010   2012   2014   2016
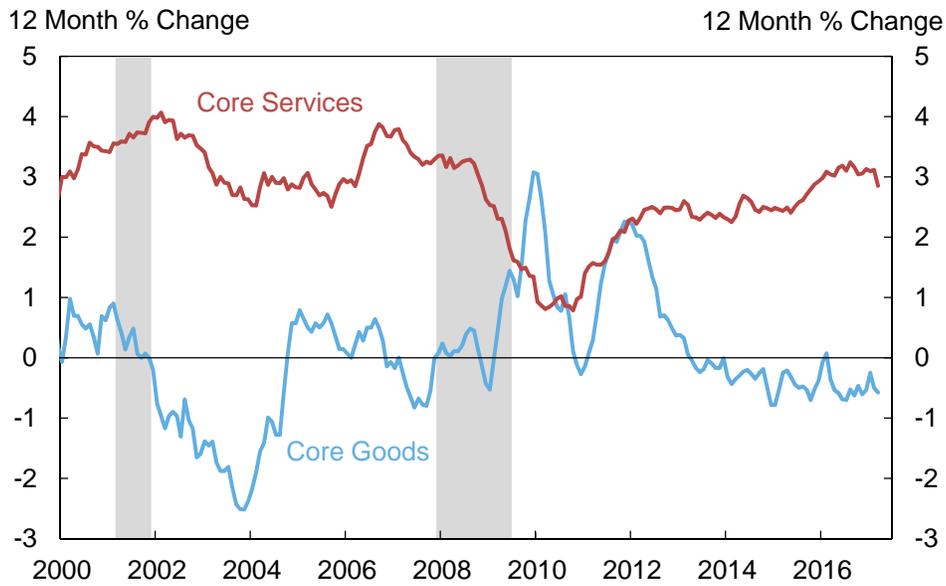
Source: Bureau of Labor Statistics   Note: Shading shows NBER recessions.

Core Goods CPI and Import Price Index
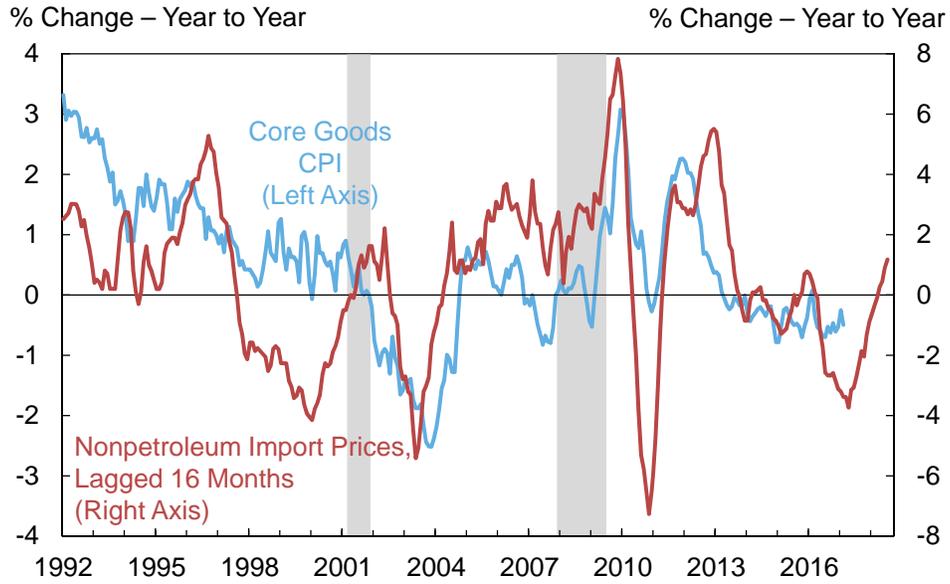
% Change – Year to Year

% Change – Year to Year

Source: Bureau of Labor Statistics via Haver
Analytics

Note: Shading shows NBER recessions.

Risks to FRBNY Staff Real Activity Outlook

- Risks to staff growth forecast are roughly balanced.

  ### Upside:
  - A fiscal package of tax cuts and infrastructure spending is enacted relatively soon.
  - Global growth strengthens more than anticipated, resulting in stronger growth of BFI and exports.

  ### Downside:
  - Policy uncertainty and geopolitical risks remain unresolved, leading to a pullback in private spending.
  - Credit supply restraint leads to weaker spending on consumer durable goods and housing.

Real GDP Growth Forecast Distribution

% Change – Year to Year   % Change – Year to Year

Note: Shading represents the 50, 60, 70, 80, and 90 percent probability that the four-quarter change will be within the respective ranges.
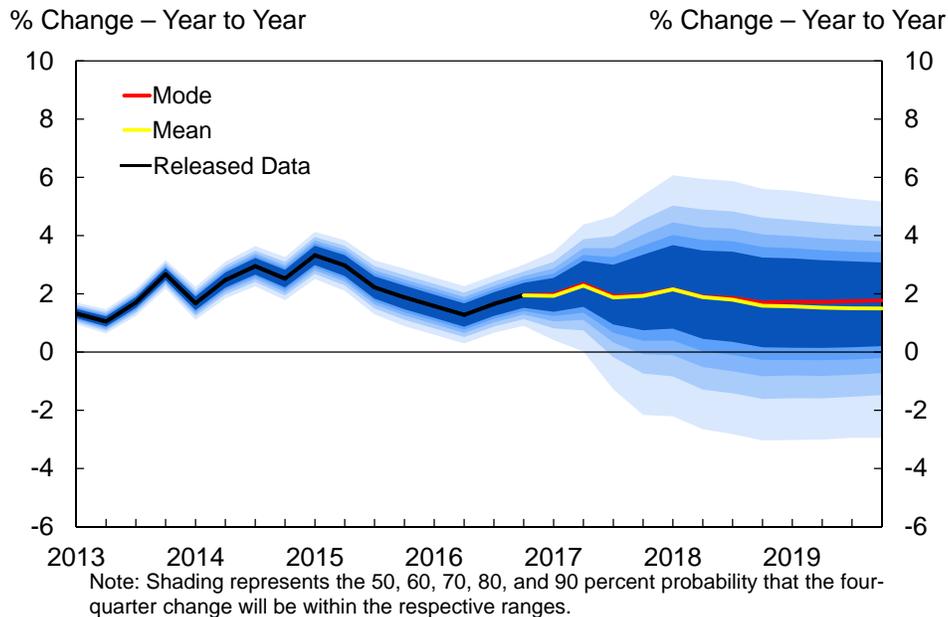
Risks to FRBNY Staff Inflation Outlook

- Risks to staff inflation forecast are roughly balanced.

   ## Upside:
   – Fiscal stimulus boosts demand more than supply over the forecast horizon.
   – The anticipated increase in core goods prices turns out to be stronger that expected.

   ## Downside:
   – Global disinflationary pressures reemerge.
   – Inflation expectations becoming unanchored to the downside because of persistent low inflation.

Core PCE Inflation Forecast Distribution
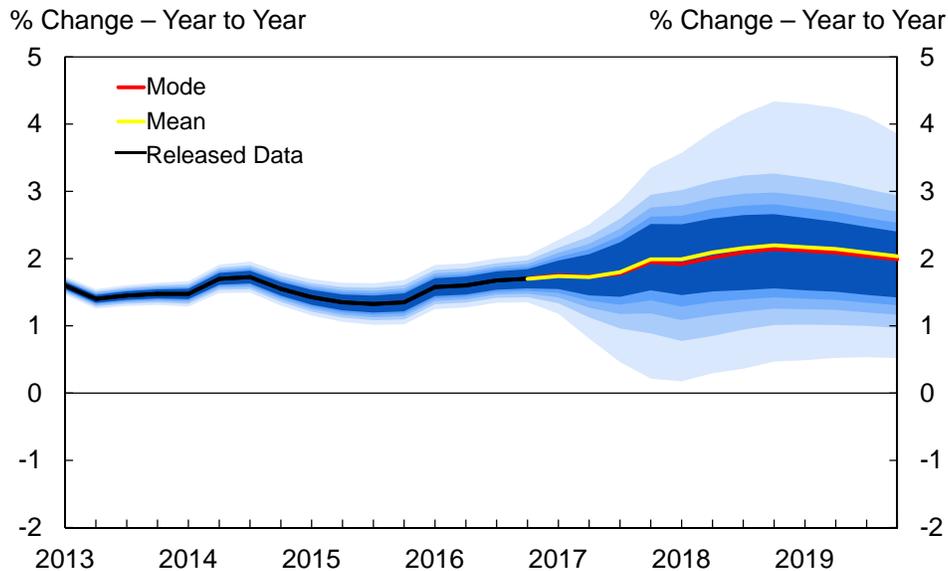
% Change – Year to Year   % Change – Year to Year

Note: Shading represents the 50, 60, 70, 80, and 90 percent probability that the four-quarter change will be within the respective ranges.

REFERENCE SLIDES

Evidence of Residual Seasonality

Average Percentage Point Deviation from Average Quarterly Real GDP Growth Rate

	20-years	15-years	10-years	5- years
Q1	-0.9	-0.8	-1.4	-0.6
Q2	0.6	0.4	0.8	0.1
Q3	0.3	0.5	0.6	0.8
Q4	0.1	-0.1	0.0	-0.2

Source: BEA, FRBNY staff calculations.

Household Liabilities/Disposable Personal Income

Ratio — Ratio
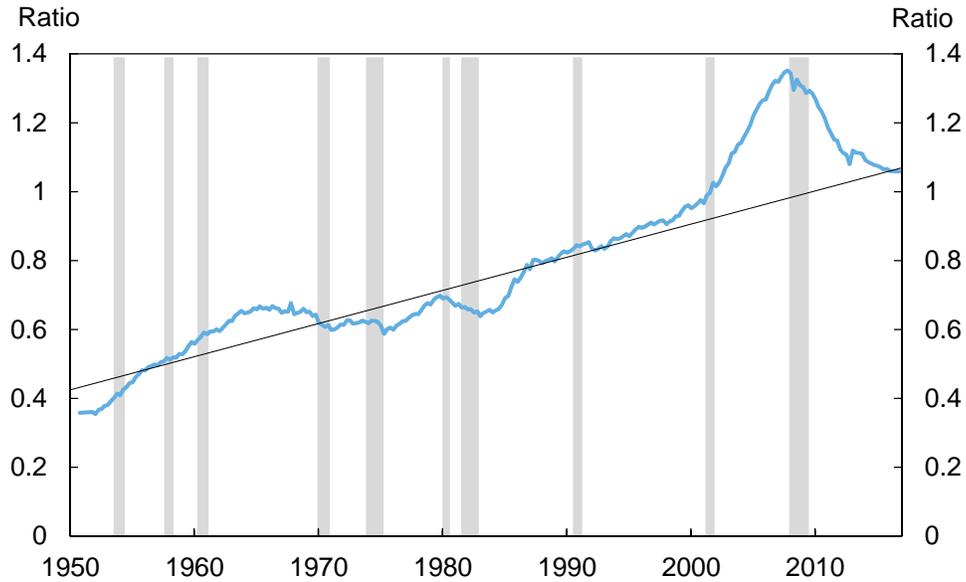
Source: Federal Reserve Board

Note: Trendline estimated from 1950 to 2000.
Shading shows NBER recessions.

Projected vs. Actual 2016 GDP Growth Contributions

Percentage Points — Percentage Points

	Projected	Actual
Real GDP	1.9	2.0
Real Final Sales	2.1	2.0

Legend: ■ Projected ■ Actual

Data by category:
- PCE: Projected 1.7, Actual 2.1
- Res. Inv.: Projected 0.4, Actual 0.0
- BFI: Projected 0.4, Actual 0.0
- Inventory Inv.: Projected -0.2, Actual -0.1
- Gov. Exp.: Projected 0.3, Actual 0.0
- Net Exports: Projected -0.8, Actual -0.2
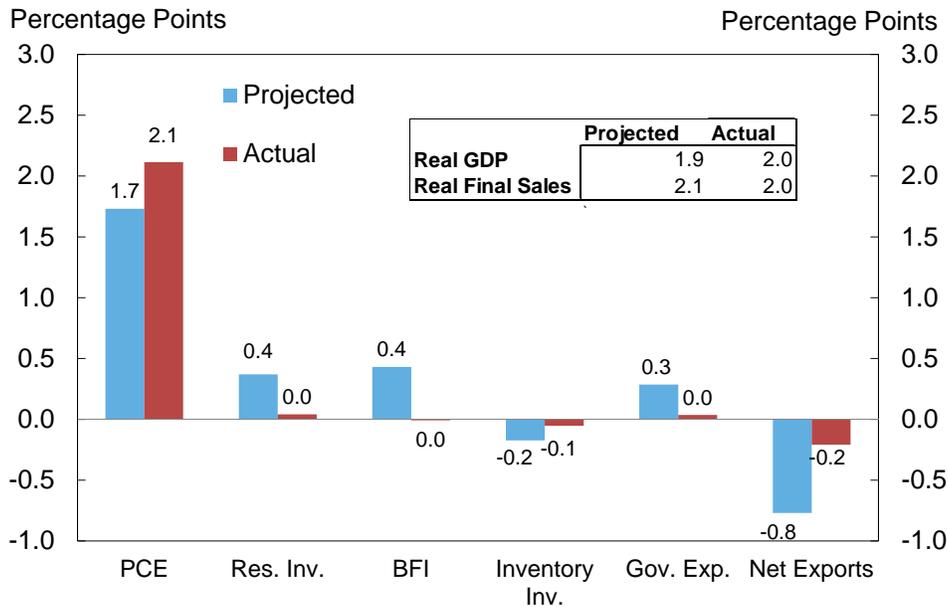
Source: FRBNY Staff and Bureau of Economic Analysis

FRBNY Forecast Details

	2016 Q4	2017 Q1	2017 Q2	2016 Q4/Q4	2017 Q4/Q4	2018 Q4/Q4
Summary	*Actual*	04/18	04/18	*Actual*	04/18	04/18
Real GDP	*2.1*	0.9	2.8	*2.0*	2.0	1.7
Total PCE Deflator	*2.0*	2.6	1.1	*1.4*	1.8	2.1
Core PCE Deflator	*1.3*	2.2	1.7	*1.7*	1.9	2.1
Nonfarm Business Sector						
Output	*2.4*	0.9	3.1	*2.2*	2.2	1.9
Hours	*1.0*	0.9	1.4	*1.2*	1.3	1.0
Productivity Growth	*1.3*	0.0	1.8	*1.0*	0.9	0.9
Compensation	*3.0*	3.0	3.1	*3.0*	3.0	3.4
Unit Labor Costs	*1.7*	3.0	1.3	*2.0*	2.1	2.5
Real GDP Growth Contributions**						
Final Sales to Domestic Purchasers	*2.9*	1.5	3.1	*2.2*	2.4	2.2
Private	*2.9*	1.5	2.9	*2.1*	2.4	2.1
Consumption	*2.4*	0.5	2.2	*2.1*	1.5	1.5
BFI: Equipment	*0.1*	0.4	0.2	*-0.2*	0.2	0.1
BFI: Nonresidential Structures	*-0.1*	0.1	0.1	*0.0*	0.1	0.1
BFI: Intellectual Property Products	*0.1*	0.2	0.2	*0.2*	0.2	0.2
Residential Investment	*0.4*	0.4	0.2	*0.0*	0.3	0.2
Government	*0.0*	0.0	0.1	*0.0*	0.1	0.1
Federal	*-0.1*	0.0	0.0	*0.0*	0.0	0.0
State and Local	*0.1*	0.0	0.1	*0.0*	0.1	0.1
Inventory Investment	*1.0*	-0.4	0.3	*-0.1*	0.0	-0.1
Net Exports	*-1.8*	-0.3	-0.6	*-0.2*	-0.5	-0.4
Exports	*-0.6*	0.1	0.0	*0.2*	0.1	0.2
Imports	*-1.3*	-0.4	-0.6	*-0.4*	-0.6	-0.6
Real GDP Components' Growth Rates						
Final Sales to Domestic Purchasers	*2.8*	1.5	3.0	*2.1*	2.4	2.1
Consumption	*3.5*	0.8	3.2	*3.1*	2.2	2.2
BFI: Equipment	*2.0*	6.5	4.0	*-3.8*	4.1	2.0
BFI: Nonresidential Structures	*-1.9*	3.0	4.0	*1.9*	3.5	2.5
BFI: Intellectual Property Products	*1.3*	5.0	5.0	*4.3*	5.0	5.0
Residential Investment	*9.6*	10.5	5.0	*1.1*	8.1	5.3
Government: Federal	*-1.2*	-0.3	-0.3	*-0.2*	-0.4	-0.7
Government: State and Local	*1.0*	0.2	1.3	*0.4*	1.1	1.2
Inventory Investment	*n/a*	n/a	n/a	*n/a*	n/a	n/a
Net Exports	*n/a*	n/a	n/a	*n/a*	n/a	n/a
Exports	*-4.5*	0.8	0.2	*1.5*	1.0	1.8
Imports	*8.9*	2.6	4.3	*2.6*	4.0	4.2
Labor Market						
Nonfarm Payroll Employment (Average per Month, Thousands)	*170*	184	70	*194*	133	111
Unemployment Rate***	*4.7*	4.7	4.7	*4.7*	4.6	4.5
Income						
Real Disposable Personal Income	*2.0*	1.1	3.2	*2.0*	2.4	2.0
Personal Saving Rate***	*5.5*	5.6	5.6	*5.5*	5.5	5.2

*End-of-period value

**Growth contributions may not sum to total due to rounding.

***Quarterly values are the average rate for the quarter. Yearly values are the average rate for Q4 of the listed ye
Blue and *italic* text indicate released data; darker colors