

Prefatory Note

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Class II FOMC – Restricted (FR)

Report to the FOMC on Economic Conditions and Monetary Policy



Book A Economic and Financial Conditions: Current Situation and Outlook

September 9, 2015

Prepared for the Federal Open Market Committee
by the staff of the Board of Governors of the Federal Reserve System

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Revisions to the Staff Projection since the Previous SEP

The FOMC most recently published its Summary of Economic Projections, or SEP, following the June FOMC meeting. The table below compares the staff's current economic projection with the one we presented in the June Tealbook.

Since the June projection, we have revised up our forecast for real GDP growth this year, as stronger-than-expected data for the first half of the year more than offsets our slightly weaker projection for the second half. Our forecast of real GDP growth for 2016 through 2018 is a little slower than in June, mostly because our projected path for the foreign exchange value of the dollar is higher and the path for equity prices is lower. We also have reduced somewhat our trajectory for potential GDP over the medium term. Altogether, these revisions leave our projection for the GDP gap over the projection period stronger than in the June forecast. The unemployment rate has declined more than we expected in June and is projected to average 5.0 percent in the fourth quarter of this year. The unemployment rate is forecast to gradually decline to 4.7 percent at the end of 2018, below the staff's estimate of its natural rate—which is a bit lower than in the June forecast.

The staff's projection for headline PCE inflation has been revised down in the second half of this year, largely reflecting declines in crude oil prices that are expected to pass through to consumer energy prices; core PCE inflation is expected to be a little softer than in the June projection, as the prices of core imported goods are anticipated to decline at a faster pace than in June with the further appreciation of the dollar. Given our assumptions that longer-run inflation expectations

Staff Economic Projections Compared with the June Tealbook

Variable	2015		2015	2016	2017	2018	Longer run
	H1	H2					
Real GDP ¹ June Tealbook	2.2 1.0	1.9 2.1	2.0 1.6	2.1 2.4	2.0 2.2	1.8 1.9	1.9 1.9
Unemployment rate ² June Tealbook	5.4 5.5	5.0 5.3	5.0 5.3	4.9 5.2	4.8 5.2	4.7 5.1	5.1 5.2
PCE inflation ¹ June Tealbook	.1 -.1	.4 1.3	.3 .6	1.5 1.6	1.7 1.8	1.9 1.9	2.0 2.0
Core PCE inflation ¹ June Tealbook	1.4 1.2	1.2 1.4	1.3 1.3	1.4 1.6	1.7 1.8	1.9 1.9	n.a. n.a.
Federal funds rate ² June Tealbook	.12 .13	.45 .35	.45 .35	1.44 1.26	2.31 2.12	3.00 2.80	3.25 3.50
Memo: Federal funds rate, end of period June Tealbook	.13 .13	.55 .44	.55 .44	1.52 1.33	2.38 2.19	3.05 2.85	3.25 3.50
GDP gap ^{2,3} June Tealbook	-.5 -1.3	-.2 -1.0	-.2 -1.0	.4 -.4	.8 .1	.9 .2	n.a. n.a.

1. Percent change from final quarter of preceding period to final quarter of period indicated.

2. Percent, final quarter of period indicated.

3. Percent difference between actual and potential. A negative number indicates that the economy is operating below potential.

n.a. Not available.

will remain stable over the medium term, the declines in energy prices will be transitory, and core import prices will start to rise by the middle of next year, our forecasts for headline and core inflation in 2016 through 2018 are little changed. We continue to project that inflation will run somewhat below the Committee's 2 percent objective through 2018.

We maintained our assumption that the federal funds rate will lift off from its effective lower bound in the third quarter of this year, but we adjusted down our assumptions about long-run equilibrium interest rates. Specifically, we lowered our assumed longer-run nominal value of the federal funds rate $\frac{1}{4}$ percentage point, to $3\frac{1}{4}$ percent. Even with the downward revision to our assumption for longer-run equilibrium interest rates, the stronger GDP gap in the current forecast, along with an inflation projection that is little changed, leaves the projected path for the federal funds rate a little above the one in the June forecast—around 0.2 percentage point higher at the end of next year and in 2018.

Because FOMC participants are providing additional information about their expectations of the economic conditions that will exist at the time they anticipate it will first become appropriate to increase the target range for the federal funds rate, we include the table below providing quarterly information from the staff projection. In the third quarter of this year—the quarter when our baseline projection assumes liftoff of the federal funds rate will occur—we forecast the unemployment rate to average 5.2 percent and the trailing four-quarter change in real GDP to be 2.1 percent. We project the trailing four-quarter change in core PCE inflation to be 1.3 percent, and the four-quarter change in headline PCE prices to be only 0.2 percent because of decreases in energy prices over the past year.

Staff Economic Projections Compared with the June Tealbook, Quarterly

Variable	2015		2016				2017	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
<i>Four-quarter percent change</i>								
Real GDP June Tealbook	2.1 1.5	2.0 1.6	2.4 2.2	1.9 2.2	1.9 2.4	2.1 2.4	2.0 2.4	2.0 2.4
PCE inflation June Tealbook	.2 .2	.3 .6	1.1 1.5	1.0 1.4	1.0 1.5	1.5 1.6	1.6 1.6	1.7 1.7
Core PCE inflation June Tealbook	1.3 1.2	1.3 1.3	1.4 1.5	1.3 1.5	1.4 1.5	1.4 1.6	1.5 1.6	1.6 1.7
<i>Percent</i>								
Unemployment rate June Tealbook	5.2 5.4	5.0 5.3	5.0 5.3	5.0 5.3	4.9 5.3	4.9 5.2	4.9 5.2	4.8 5.2
Federal funds rate June Tealbook	.16 .15	.45 .35	.74 .59	.98 .82	1.21 1.04	1.44 1.26	1.67 1.48	1.89 1.70
<i>Memo</i>								
Federal funds rate, end of period June Tealbook	.22 .19	.55 .44	.83 .67	1.06 .89	1.29 1.11	1.52 1.33	1.74 1.55	1.96 1.77

Comparing the Staff Projection with Other Forecasts

The staff's projection for real GDP growth is somewhat lower than the most recent Blue Chip Consensus Outlook and the Survey of Professional Forecasters (SPF) median projection. The staff's forecast of the unemployment rate is a little lower this year and a little higher next year relative to those of the outside forecasters; the staff's inflation projection is lower. However, the SPF projection was completed in the first half of August and therefore does not reflect the effects of the recent turbulence in financial markets.

Comparison of Tealbook and Outside Forecasts

	2015	2016
GDP (Q4/Q4 percent change)		
September Tealbook	2.0	2.1
Blue Chip (9/10/15)	2.4	2.7
SPF median (8/14/15)	2.1	n.a.
Unemployment rate (Q4 level)		
September Tealbook	5.0	4.9
Blue Chip (9/10/15)	5.1	4.7
SPF median (8/14/15)	5.1	n.a.
Consumer price inflation (Q4/Q4 percent change)		
September Tealbook	.2	2.0
Blue Chip (9/10/15)	.7	2.2
SPF median (8/14/15)	.8	2.1
PCE price inflation (Q4/Q4 percent change)		
September Tealbook	.3	1.5
SPF median (8/14/15)	.8	1.8
Core PCE price inflation (Q4/Q4 percent change)		
September Tealbook	1.3	1.4
SPF median (8/14/15)	1.5	1.8

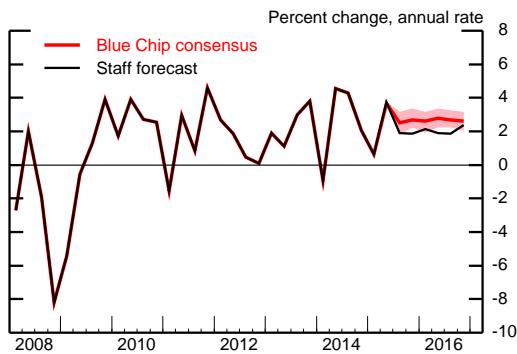
Note: SPF is the Survey of Professional Forecasters. Blue Chip does not provide results for PCE price inflation. The Blue Chip Consensus contains about 50 panelists, and the SPF about 40. Roughly 20 panelists contribute to both surveys.

n.a. Not available.

Source: Blue Chip Economic Indicators; Federal Reserve Bank of Philadelphia.

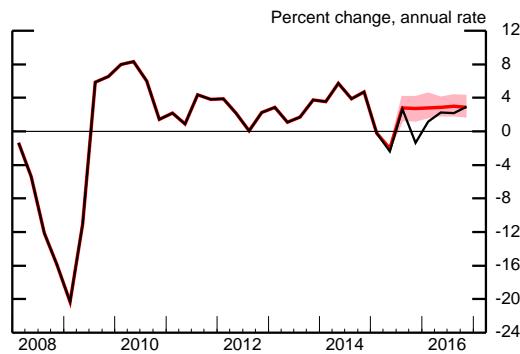
Tealbook Forecast Compared with Blue Chip
 (Blue Chip survey released September 10, 2015)

Real GDP



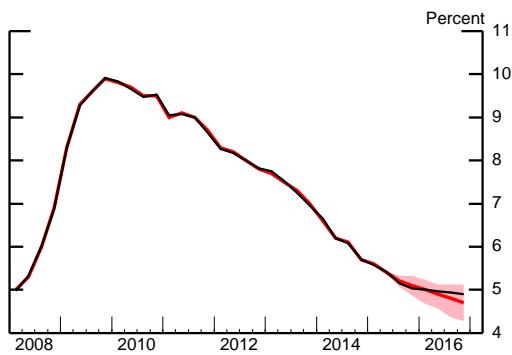
Note: The shaded area represents the area between the Blue Chip top 10 and bottom 10 averages.

Industrial Production

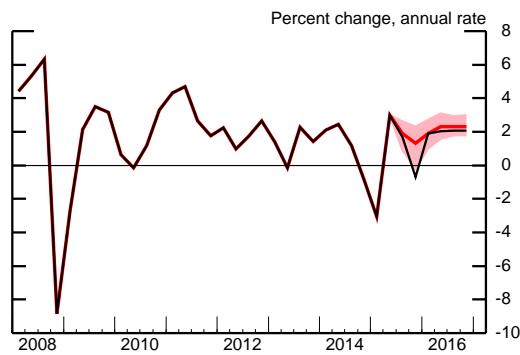


Note: Historical revisions to the IP data were published after the latest Blue Chip survey.

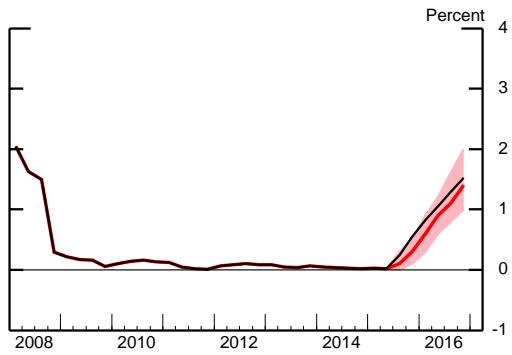
Unemployment Rate



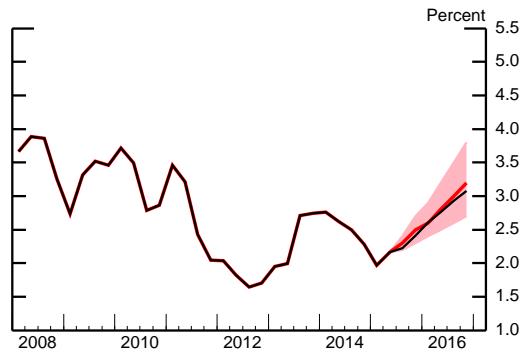
Consumer Price Index



Treasury Bill Rate



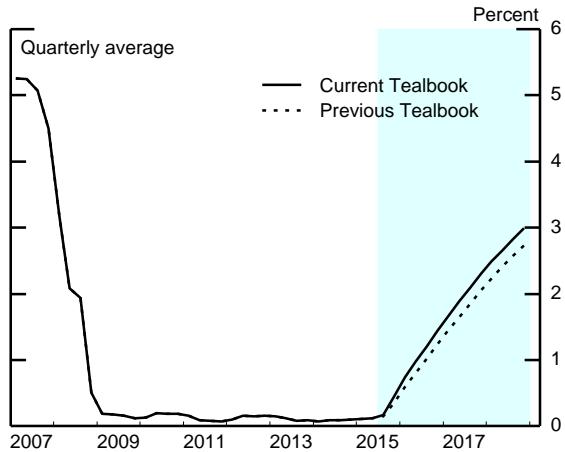
10-Year Treasury Yield



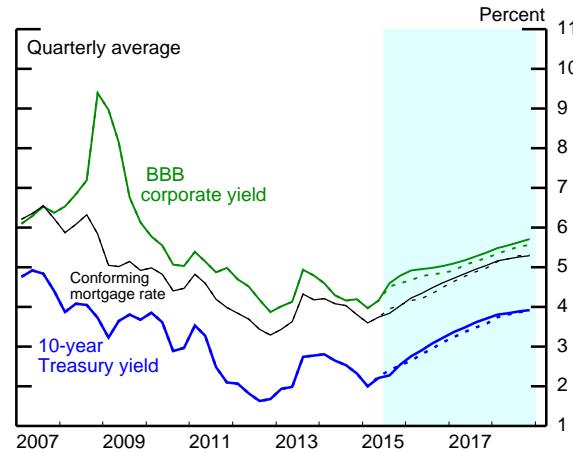
Note: The yield is for on-the-run Treasury securities. Over the forecast period, the staff's projected yield is assumed to be 15 basis points below the off-the-run yield.

Key Background Factors underlying the Baseline Staff Projection

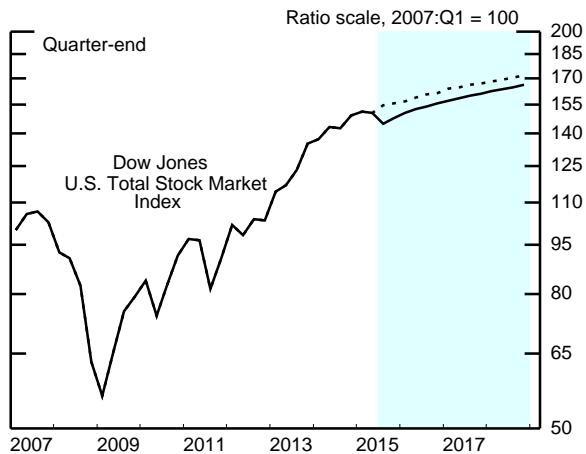
Federal Funds Rate



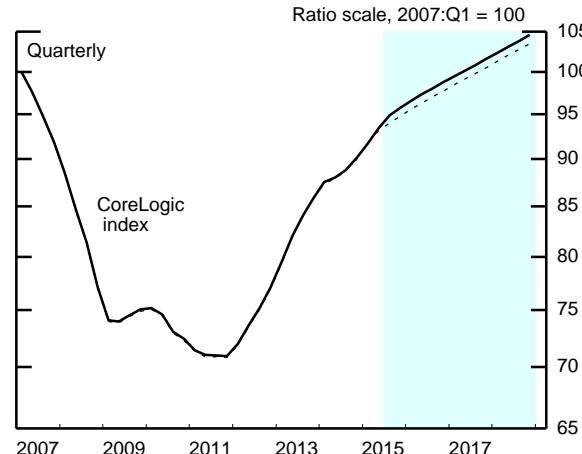
Long-Term Interest Rates



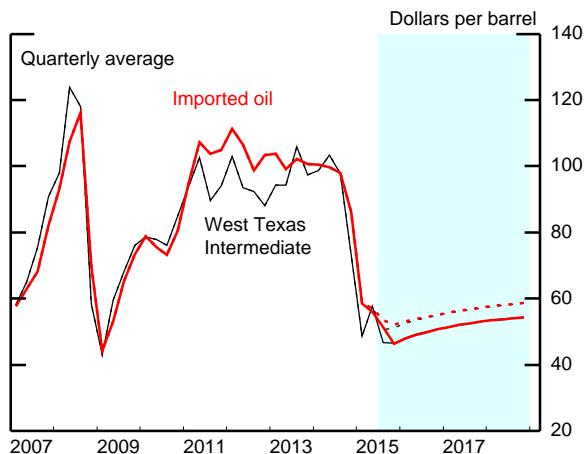
Equity Prices



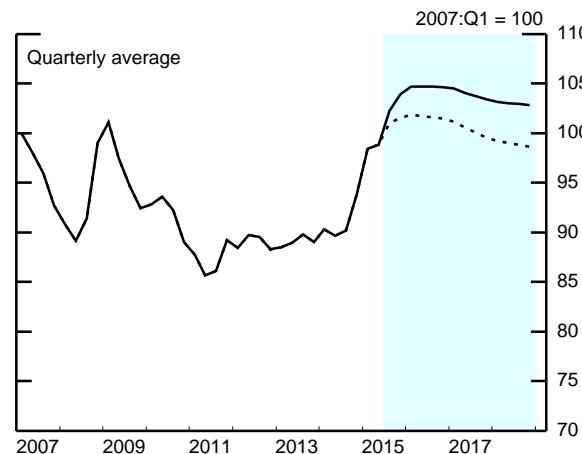
House Prices



Crude Oil Prices



Broad Real Dollar



Summary of the Near-Term Outlook

(Percent change at annual rate except as noted)

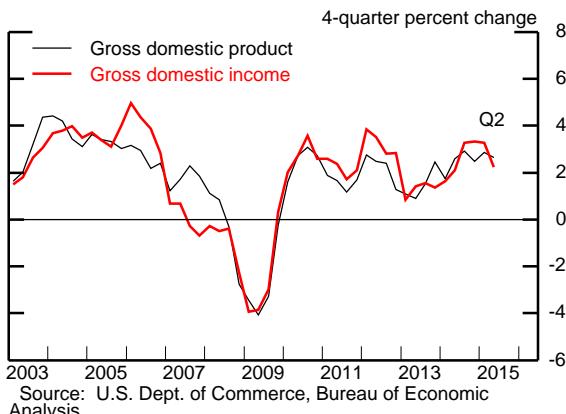
Measure	2015:Q2		2015:Q3		2015:H2	
	Previous Tealbook	Current Tealbook	Previous Tealbook	Current Tealbook	Previous Tealbook	Current Tealbook
Real GDP	2.4	3.7	1.7	1.9	2.0	1.9
Private domestic final purchases	3.0	3.4	3.0	3.3	3.2	3.2
Personal consumption expenditures	2.8	3.1	2.9	2.8	3.1	2.8
Residential investment	8.4	9.2	5.8	7.4	5.4	4.6
Nonres. private fixed investment	2.5	3.6	2.6	5.0	2.9	4.8
Government purchases	1.1	2.7	.2	.0	.4	.0
<i>Contributions to change in real GDP</i>						
Inventory investment ¹	-.1	.2	-.1	-.3	.0	-.2
Net exports ¹	-.2	.2	-.8	-.5	-.7	-.6
Unemployment rate²	5.4	5.4	5.3	5.2	5.2	5.0
PCE chain price index	2.0	2.2	1.2	1.2	.7	.4
Ex. food and energy	1.7	1.8	1.4	1.2	1.4	1.2

1. Percentage points.

2. Percent; 2015:Q4 values are used for 2015:H2.

Recent Nonfinancial Developments (1)

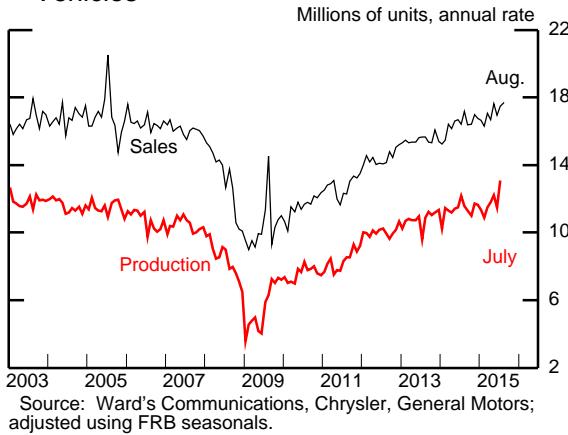
Real GDP and GDI



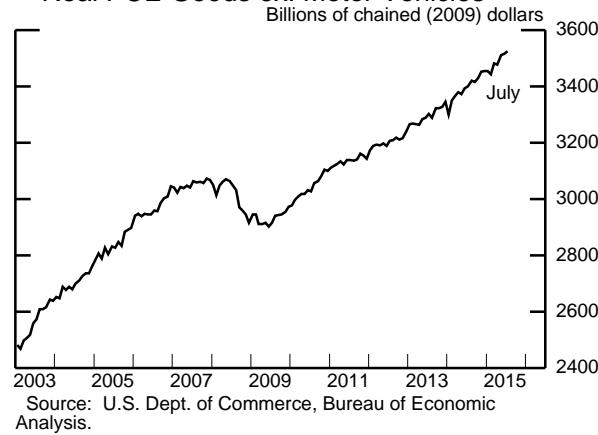
Manufacturing IP ex. Motor Vehicles and Parts



Sales and Production of Light Motor Vehicles



Real PCE Goods ex. Motor Vehicles



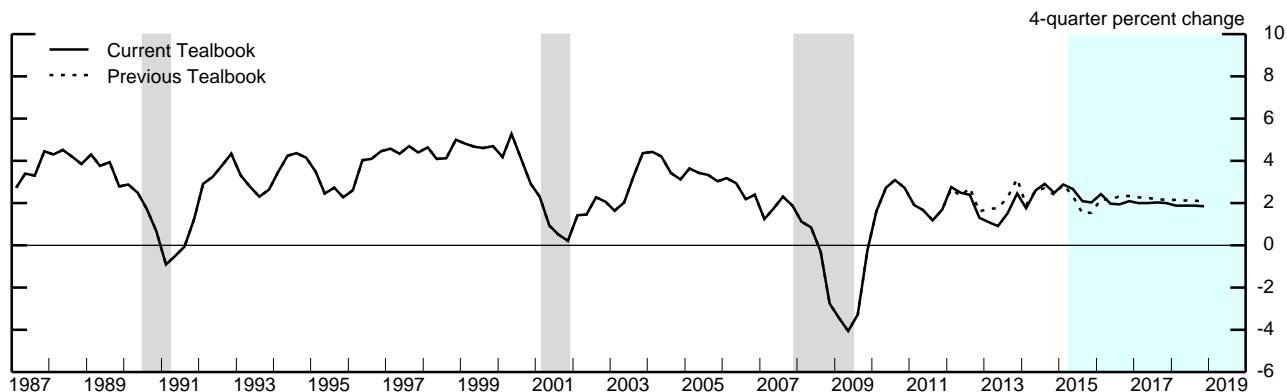
Federal Reserve System Nowcasts of 2015:Q3 Real GDP Growth
 (Percent change at annual rate from previous quarter)

Federal Reserve entity	Type of model	Nowcast as of Sept. 8, 2015
Federal Reserve Bank		
New York	<ul style="list-style-type: none"> • Factor-augmented autoregressions • Factor-augmented autoregressions (financials only) • Dynamic factor model 	2.7 0.7 1.9
Cleveland	<ul style="list-style-type: none"> • Bayesian regressions with stochastic volatility • Tracking model 	2.4 1.8
Atlanta	<ul style="list-style-type: none"> • Tracking model combined with Bayesian vector autoregressions (VARs), dynamic factor models, and factor-augmented autoregressions (known as GDPNow) 	1.4
Chicago	<ul style="list-style-type: none"> • Dynamic factor models • Bayesian VARs 	2.0 1.9
St. Louis	<ul style="list-style-type: none"> • Dynamic factor models • News index model • Let-the-data-decide regressions 	2.3 2.7 2.3
Minneapolis	• Bayesian VARs	2.0
Kansas City	<ul style="list-style-type: none"> • Accounting-based tracking estimate 	2.0
Board of Governors	<ul style="list-style-type: none"> • Board staff's forecast (judgmental tracking model)¹ • Dynamic factor models 	1.9 2.2
Memo: Median of Federal Reserve System nowcasts		2.0

1. The September Tealbook forecast, which incorporates data received after September 8, is also 1.9 percent.

Projections of Real GDP and Related Components
 (Percent change at annual rate from final quarter
 of preceding period except as noted)

Measure	2015	2015		2016	2017	2018
		H1	H2			
Real GDP		2.0	2.2	1.9	2.1	1.8
Previous Tealbook		1.5	1.1	2.0	2.3	2.0
Final sales		1.9	1.7	2.1	2.2	2.3
Previous Tealbook		1.5	.9	2.0	2.4	2.5
Personal consumption expenditures		2.6	2.4	2.8	3.2	2.6
Previous Tealbook		2.8	2.5	3.1	3.3	2.7
Residential investment		7.1	9.7	4.6	10.1	7.3
Previous Tealbook		6.4	7.4	5.4	11.6	6.9
Nonresidential structures		2.2	-1.0	5.5	1.0	1.9
Previous Tealbook		-5.5	-11.8	1.3	.8	1.4
Equipment and intangibles		4.1	3.6	4.6	4.9	3.5
Previous Tealbook		3.6	4.0	3.3	4.2	3.3
Federal purchases		-.6	.6	-1.7	-1.1	-.8
Previous Tealbook		-.8	-.5	-1.0	-1.1	-1.0
State and local purchases		1.4	1.8	1.1	1.5	1.8
Previous Tealbook		1.0	.7	1.3	1.6	1.9
Exports		.5	-.6	1.7	.8	2.0
Previous Tealbook		-.3	-1.5	.9	1.1	3.0
Imports		5.3	5.0	5.6	6.7	4.0
Previous Tealbook		5.5	5.5	5.5	6.0	3.7
Contributions to change in real GDP (percentage points)						
Inventory change		.2	.5	-.2	-.1	-.3
Previous Tealbook		.1	.2	.0	-.1	-.3
Net exports		-.8	-.9	-.6	-.9	-.4
Previous Tealbook		-.9	-1.1	-.7	-.8	-.2

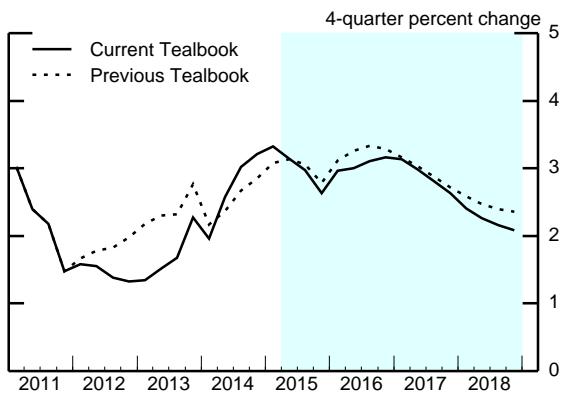
Real GDP

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

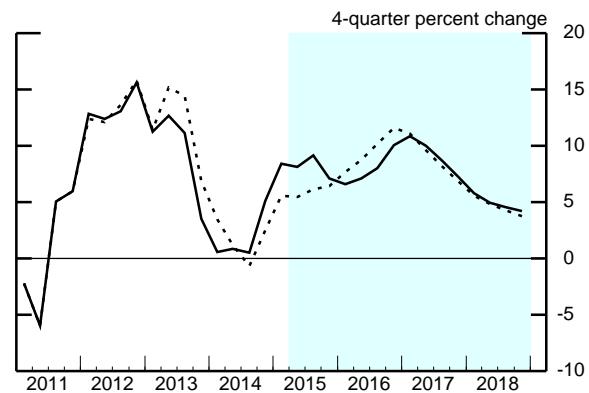
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Components of Final Demand

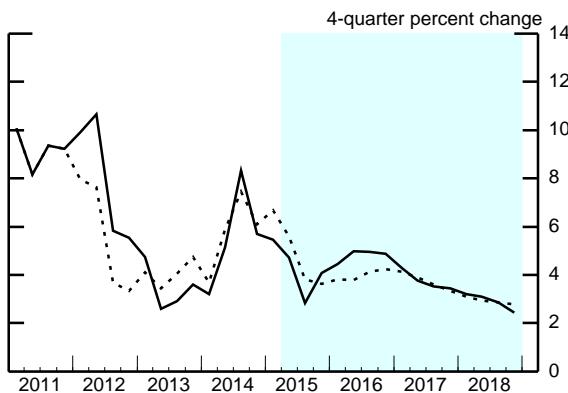
Personal Consumption Expenditures



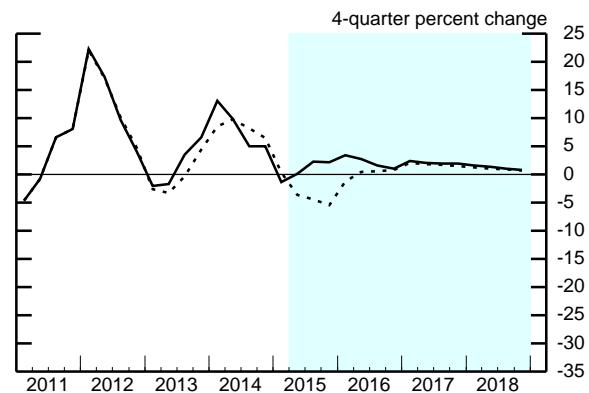
Residential Investment



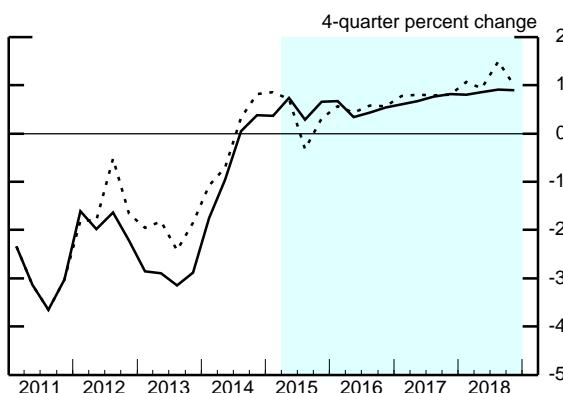
Equipment and Intangibles



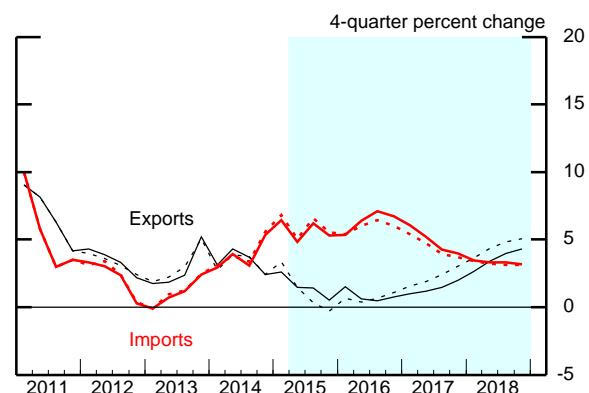
Nonresidential Structures



Government Consumption & Investment



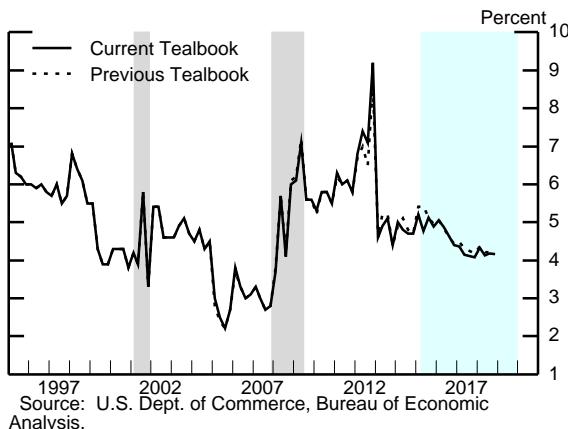
Exports and Imports



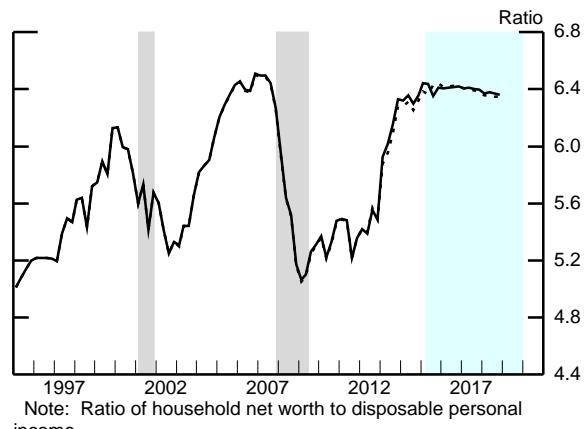
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Aspects of the Medium-Term Projection

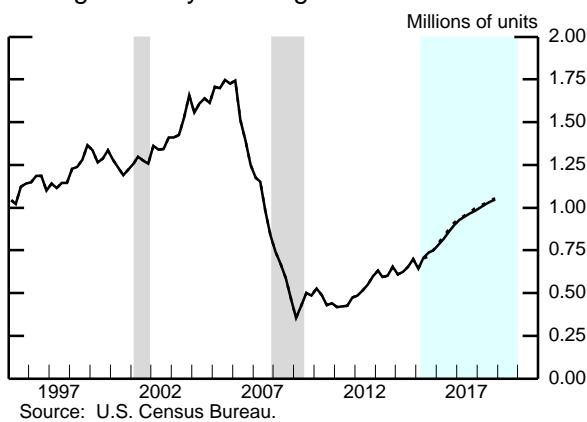
Personal Saving Rate



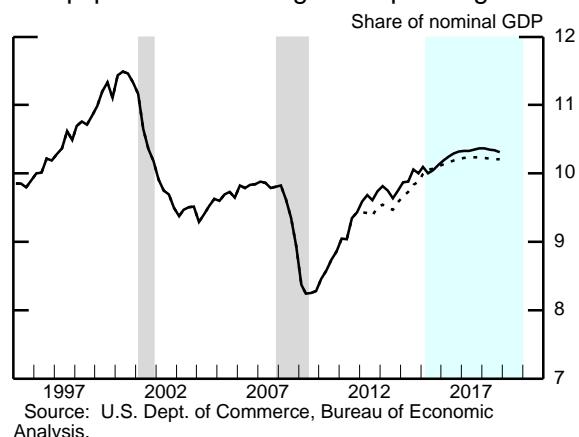
Wealth-to-Income Ratio



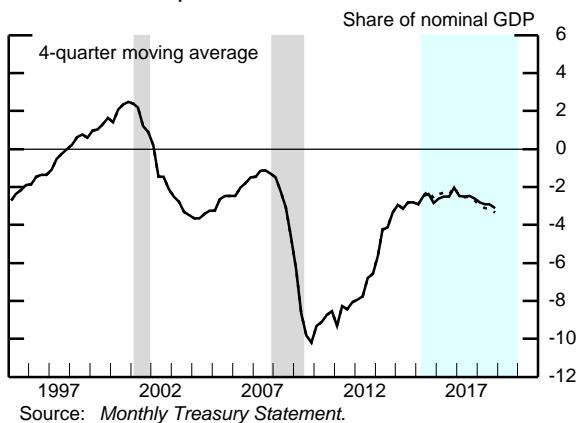
Single-Family Housing Starts



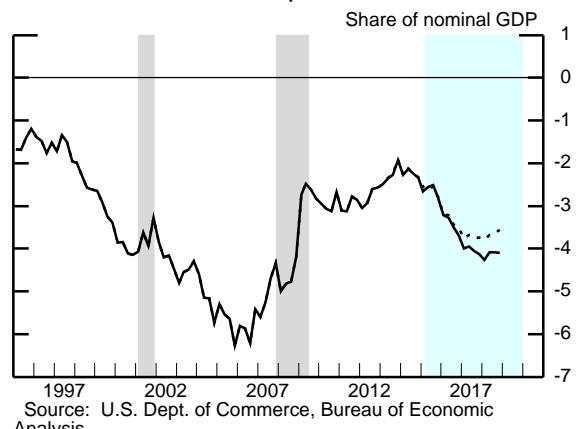
Equipment and Intangibles Spending



Federal Surplus/Deficit



Current Account Surplus/Deficit



Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

Decomposition of Potential GDP

(Percent change, Q4 to Q4, except as noted)

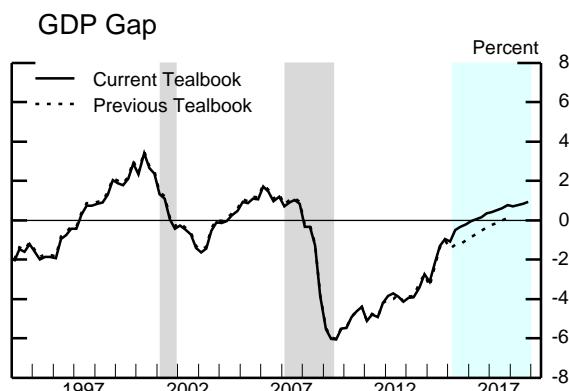
Measure	1974-95	1996-2000	2001-07	2008-10	2011-14	2015	2016	2017	2018
Potential real GDP	3.1	3.4	2.6	1.7	1.1	1.3	1.5	1.6	1.7
Previous Tealbook	3.1	3.4	2.6	1.7	1.3	1.5	1.6	1.6	
<i>Selected contributions</i> ¹									
Structural labor productivity ²	1.6	2.9	2.8	1.5	.8	1.2	1.3	1.4	1.5
Previous Tealbook	1.6	2.9	2.8	1.5	1.0	1.3	1.4	1.4	
Capital deepening	.6	1.5	1.0	.3	.6	.8	.7	.7	.6
Multifactor productivity	.6	1.0	1.5	1.0	.1	.3	.4	.6	.8
Structural hours	1.5	1.0	.7	.2	.7	.4	.4	.4	.3
Previous Tealbook	1.5	1.0	.7	.2	.8	.5	.4	.4	
Labor force participation	.4	.0	-.3	-.4	-.5	-.6	-.5	-.5	-.5
Previous Tealbook	.4	.0	-.3	-.4	-.5	-.5	-.5	-.5	
Memo:									
GDP gap ³	-1.9	2.4	.8	-4.4	-.9	-.2	.4	.8	.9
Previous Tealbook	-1.8	2.5	.9	-4.4	-1.0	-1.0	-.4	.1	

Note: For multiyear periods, the percent change is the annual average from Q4 of the year preceding the first year shown to Q4 of the last year shown.

1. Percentage points.

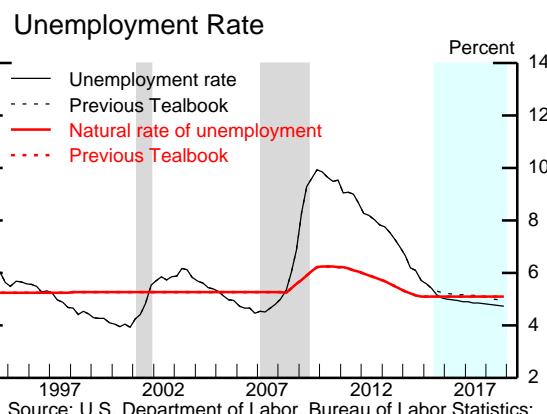
2. Total business sector.

3. Percent difference between actual and potential GDP in the final quarter of the period indicated. A negative number indicates that the economy is operating below potential.



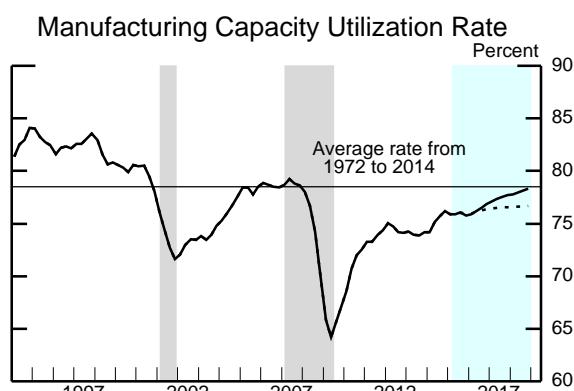
Note: The GDP gap is the percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential.

Source: U.S. Department of Commerce, Bureau of Economic Analysis; staff assumptions.



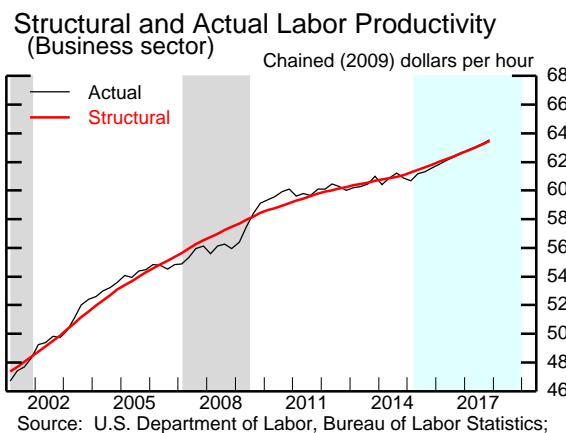
Source: U.S. Department of Labor, Bureau of Labor Statistics;

staff assumptions.



Source: Federal Reserve Board, G.17 Statistical Release, "Industrial Production and Capacity Utilization."

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.



Source: U.S. Department of Labor, Bureau of Labor Statistics; U.S. Department of Commerce, Bureau of Economic Analysis; staff assumptions.

The Outlook for the Labor Market

Measure	2015	2015		2016	2017	2018
		H1	H2			
Output per hour, business ¹ Previous Tealbook		1.2 1.0	1.1 -.1	1.3 2.1	1.6 1.7	1.5 1.7
Nonfarm private employment ² Previous Tealbook		204 205	207 207	201 203	141 160	113 125
Labor force participation rate ³ Previous Tealbook		62.6 62.7	62.8 62.8	62.6 62.7	62.5 62.6	62.3 62.4
Civilian unemployment rate ³ Previous Tealbook		5.0 5.2	5.4 5.4	5.0 5.2	4.9 5.2	4.8 5.1

1. Percent change from final quarter of preceding period at annual rate.

2. Thousands, average monthly changes.

3. Percent, average for the final quarter in the period.

Source: U.S. Department of Labor, Bureau of Labor Statistics; staff assumptions.

Inflation Projections
(Percent change at annual rate from final quarter of preceding period)

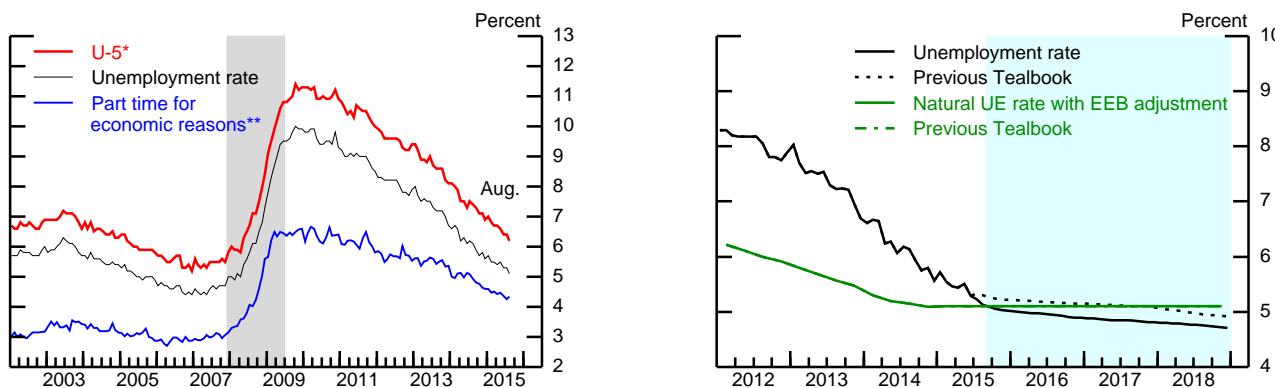
Measure	2015	2015		2016	2017	2018
		H1	H2			
PCE chain-weighted price index Previous Tealbook		.3 .3	.1 .0	.4 .7	1.5 1.6	1.7 1.7
Food and beverages Previous Tealbook		.5 .3	-.7 -.6	1.6 1.2	1.8 1.8	2.0 2.0
Energy Previous Tealbook		-18.3 -16.4	-20.0 -19.9	-16.6 -12.7	2.7 3.3	2.4 2.3
Excluding food and energy Previous Tealbook		1.3 1.3	1.4 1.2	1.2 1.4	1.4 1.5	1.7 1.7
Prices of core goods imports ¹ Previous Tealbook		-2.8 -2.3	-3.8 -3.7	-1.9 -.8	.3 .9	1.3 1.4

1. Core goods imports exclude computers, semiconductors, oil, and natural gas.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Labor Market Developments and Outlook (1)

Measures of Labor Underutilization



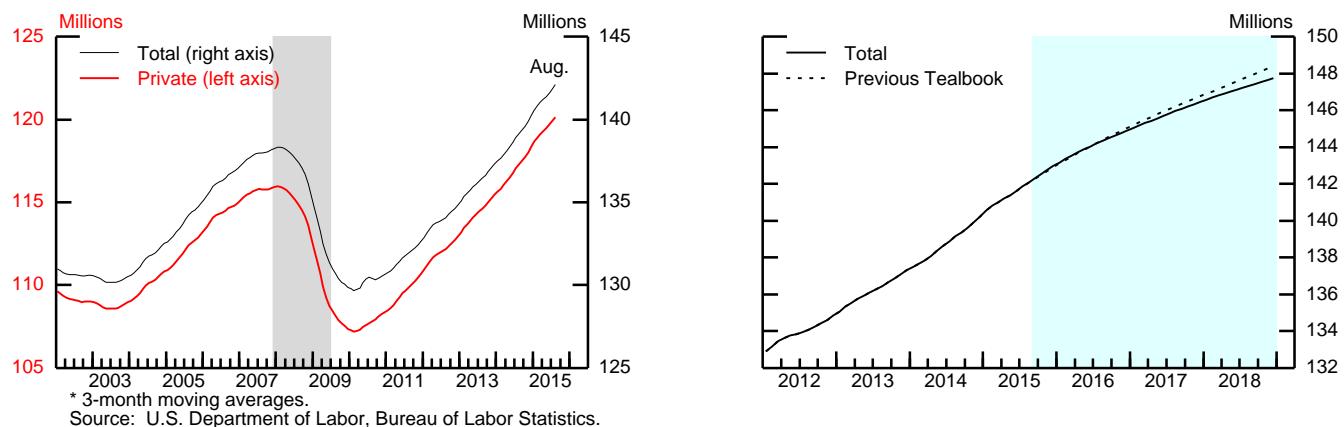
* U-5 measures total unemployed persons plus all marginally attached to the labor force, as a percent of the labor force plus persons marginally attached to the labor force.

** Percent of Current Population Survey employment.

EEB Extended and emergency unemployment benefits.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

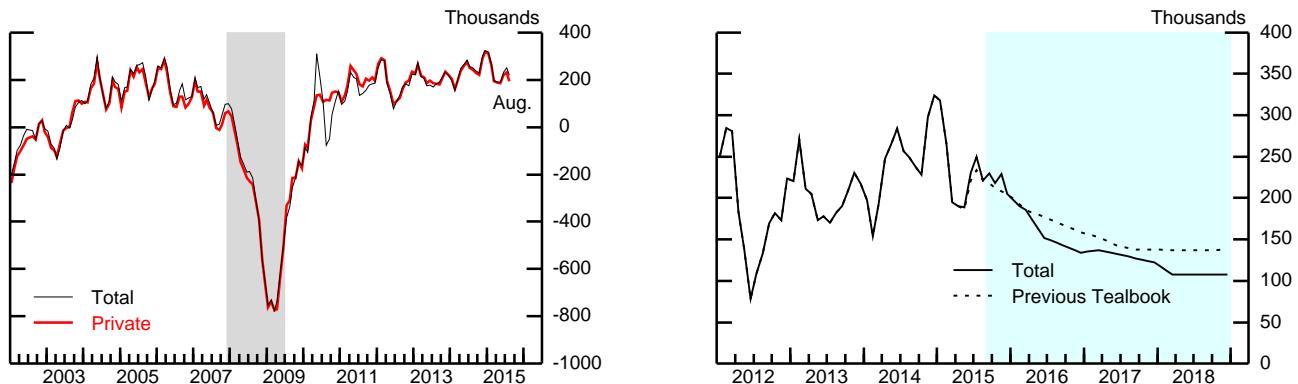
Level of Payroll Employment*



* 3-month moving averages.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Change in Payroll Employment*



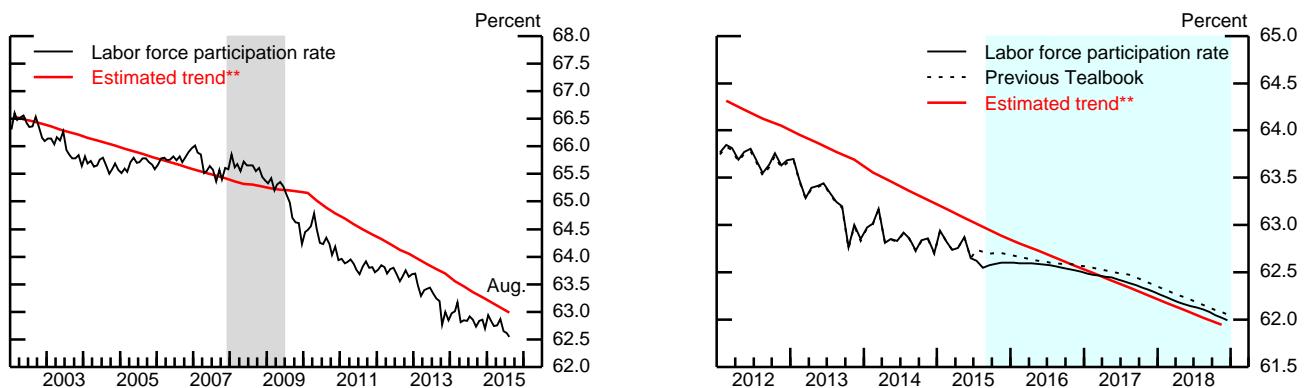
* 3-month moving averages.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

Labor Market Developments and Outlook (2)

Labor Force Participation Rate*

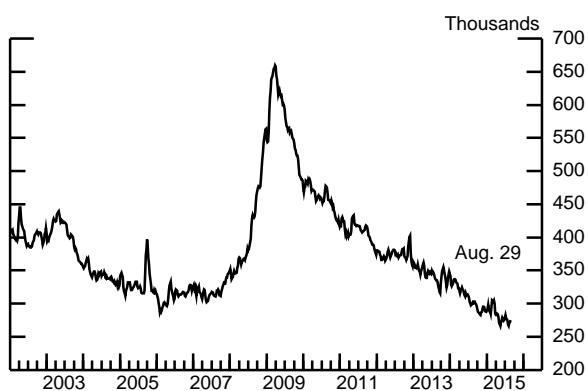


* Published data adjusted by staff to account for changes in population weights.

** Includes staff estimate of the effect of extended and emergency unemployment benefits.

Source: U.S. Department of Labor, Bureau of Labor Statistics; staff assumptions.

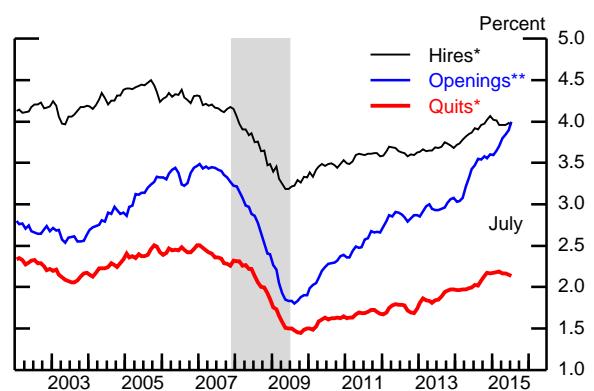
Initial Unemployment Insurance Claims*



* 4-week moving average.

Source: U.S. Department of Labor, Employment and Training Administration.

Private Hires, Quits, and Job Openings

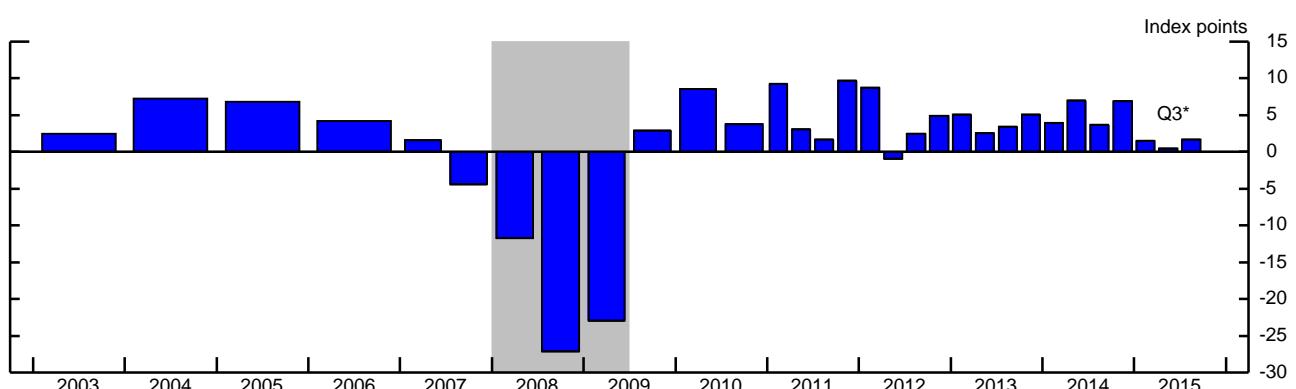


* Percent of private nonfarm payroll employment, 3-month moving average.

** Percent of private nonfarm payroll employment plus unfilled jobs, 3-month moving average.

Source: Job Openings and Labor Turnover Survey.

Average Monthly Change in Labor Market Conditions Index



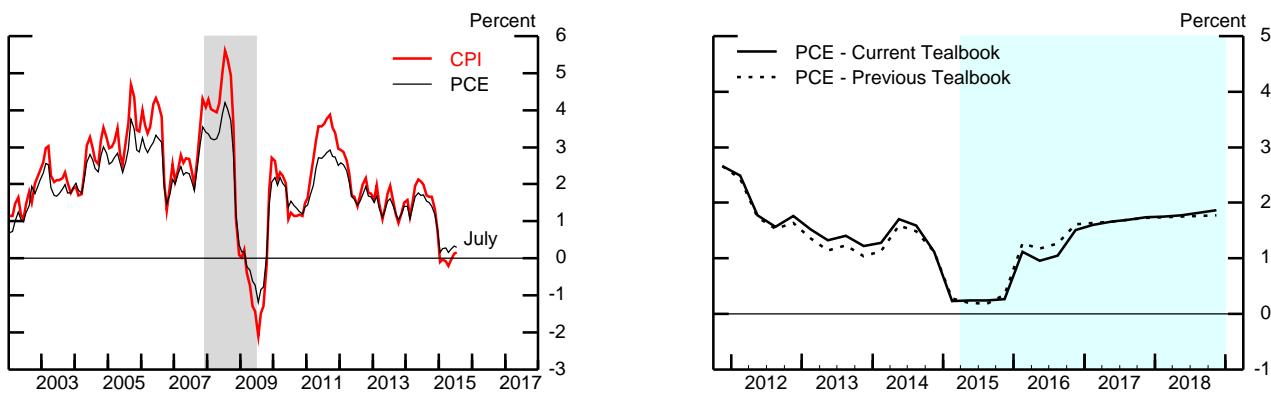
* Value shown for Q3 is an average of August and July data.
Note: Labor market conditions index estimated by staff.

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

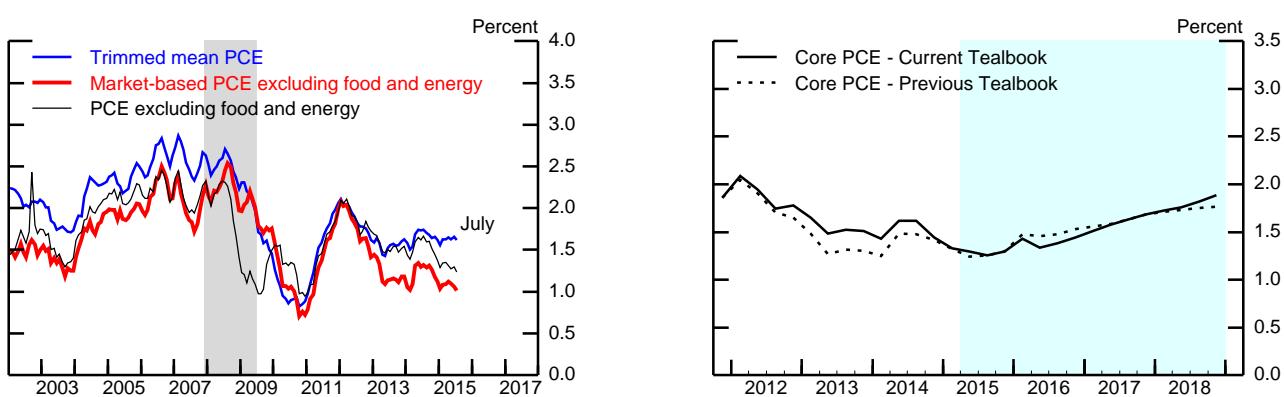
Inflation Developments and Outlook (1)

(Percent change from year-earlier period)

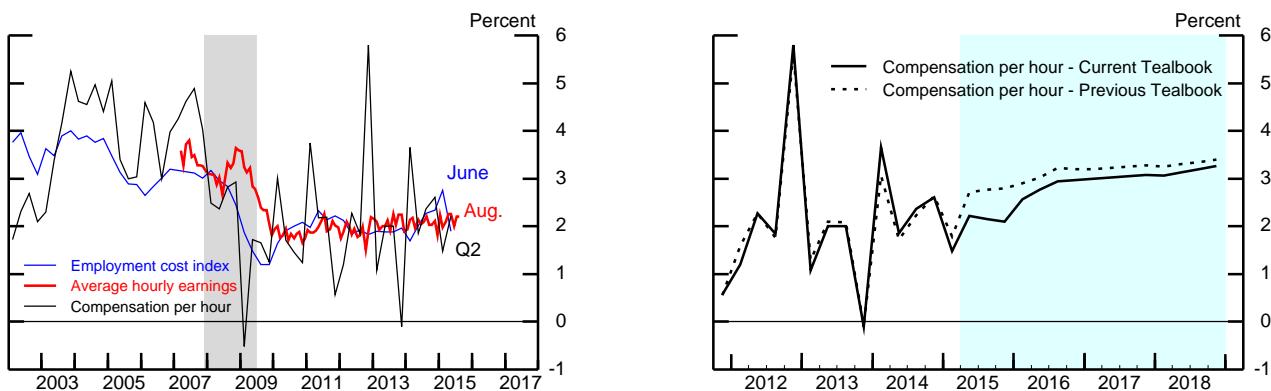
Headline Consumer Price Inflation



Measures of Underlying PCE Price Inflation



Labor Cost Growth



Note: Compensation per hour is for the business sector. Average hourly earnings are for the private nonfarm sector. The employment cost index is for the private sector.

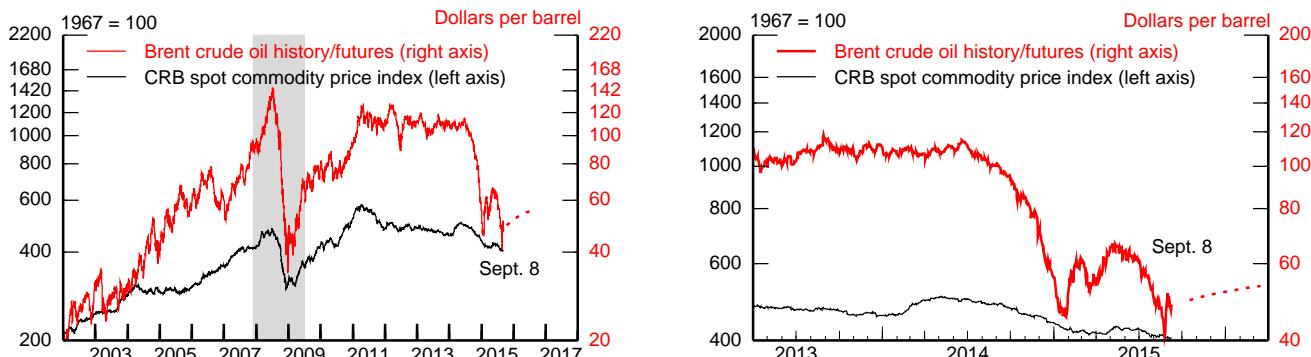
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

Inflation Developments and Outlook (2)

(Percent change from year-earlier period, except as noted)

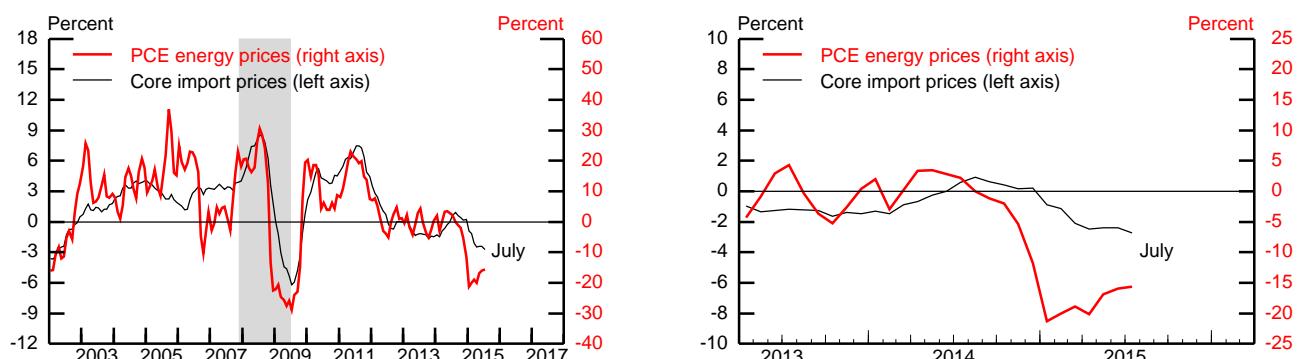
Commodity and Oil Price Levels



Note: Futures prices (dotted lines) are the latest observations on monthly futures contracts.

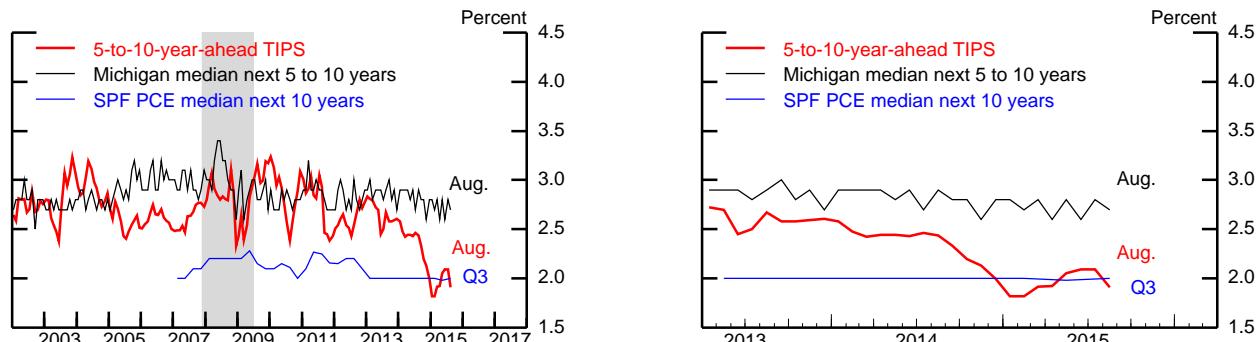
Source: For oil prices, U.S. Department of Energy, Energy Information Agency; for commodity prices, Commodity Research Bureau (CRB).

Energy and Import Price Inflation



Source: For core import prices, U.S. Dept. of Labor, Bureau of Labor Statistics; for PCE, U.S. Dept. of Commerce, Bureau of Economic Analysis.

Long-Term Inflation Expectations



Note: Based on a comparison of an estimated TIPS (Treasury Inflation-Protected Securities) yield curve with an estimated nominal off-the-run Treasury yield curve, with an adjustment for the indexation-lag effect.

SPF Survey of Professional Forecasters.

Source: For Michigan, University of Michigan Surveys of Consumers; for SPF, the Federal Reserve Bank of Philadelphia; for TIPS, Federal Reserve Board staff calculations.

Note: The gray shaded bars indicate a period of business recession as defined by the National Bureau of Economic Research.

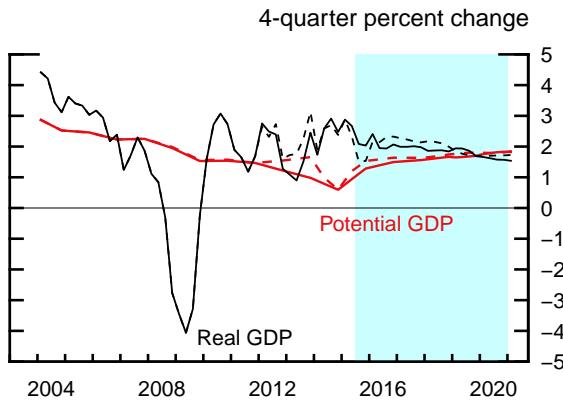
The Long-Term Outlook

(Percent change, Q4 to Q4, except as noted)

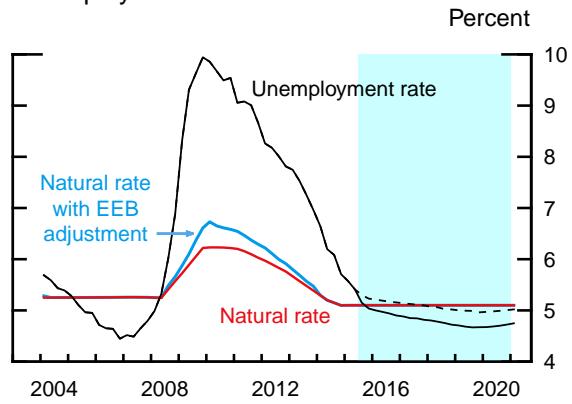
Measure	2015	2016	2017	2018	2019	Longer run
Real GDP Previous Tealbook	2.0 1.5	2.1 2.3	2.0 2.1	1.8 2.0	1.7 1.7	1.9 1.9
Civilian unemployment rate ¹ Previous Tealbook	5.0 5.2	4.9 5.2	4.8 5.1	4.7 5.0	4.7 5.0	5.1 5.1
PCE prices, total Previous Tealbook	.3 .3	1.5 1.6	1.7 1.7	1.9 1.8	1.9 1.9	2.0 2.0
Core PCE prices Previous Tealbook	1.3 1.3	1.4 1.5	1.7 1.7	1.9 1.8	2.0 1.9	2.0 2.0
Federal funds rate ¹ Previous Tealbook	.4 .4	1.4 1.2	2.3 2.1	3.0 2.7	3.5 3.1	3.3 3.5
10-year Treasury yield ¹ Previous Tealbook	2.6 2.5	3.2 3.1	3.7 3.6	3.9 3.9	4.1 4.1	4.1 4.3

1. Percent, average for the final quarter of the period.

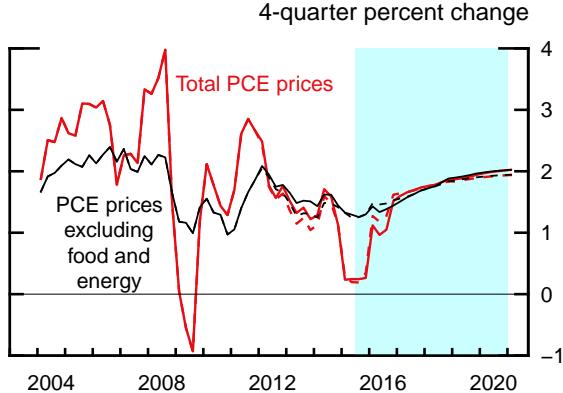
Real GDP



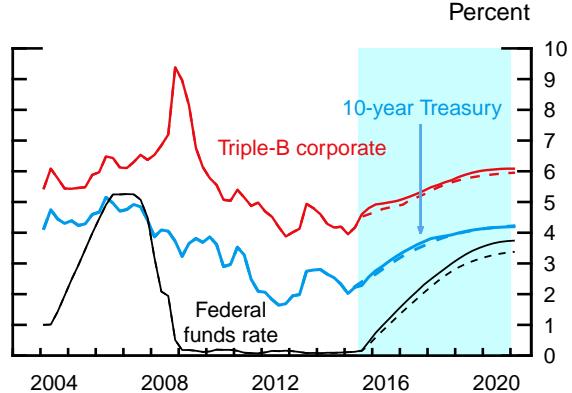
Unemployment Rate



PCE Prices



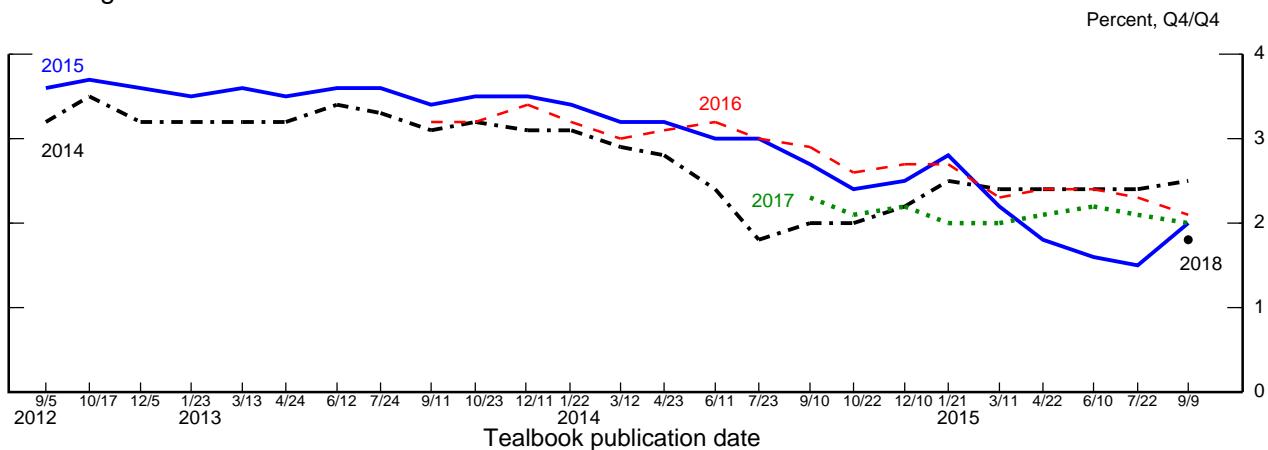
Interest Rates



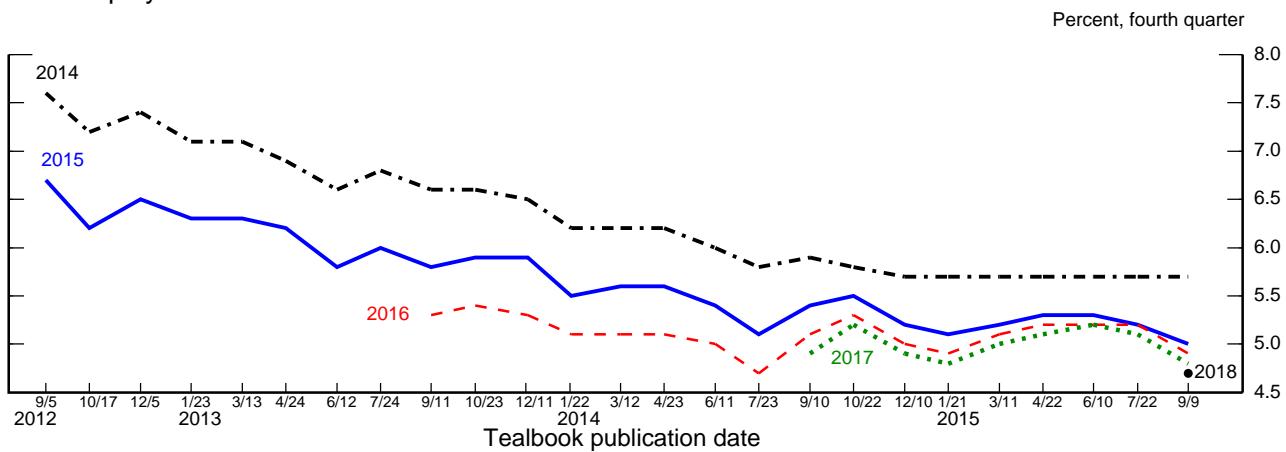
Note: In each panel, shading represents the projection period, and dashed lines are the previous Tealbook.

Evolution of the Staff Forecast

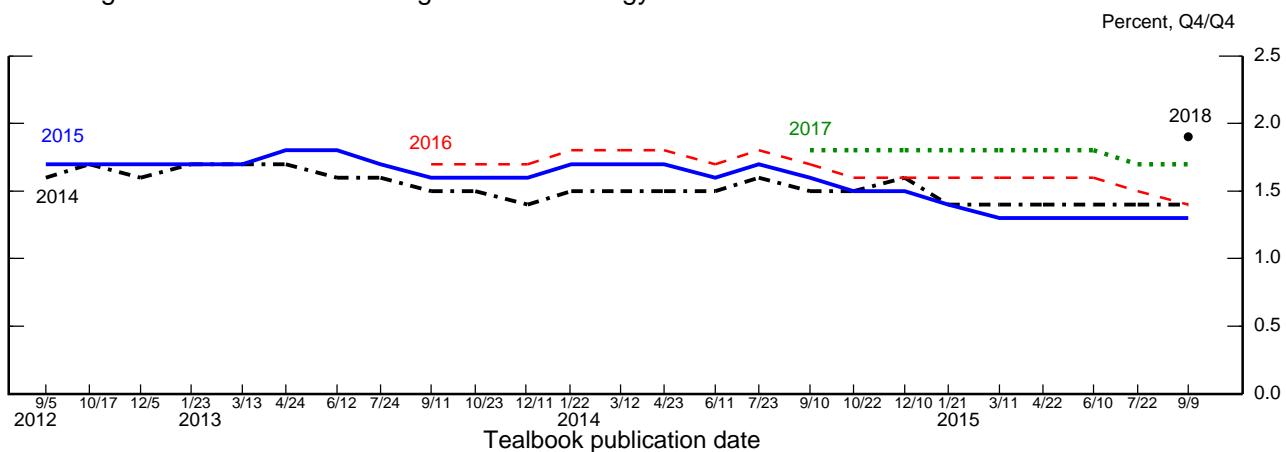
Change in Real GDP



Unemployment Rate



Change in PCE Prices excluding Food and Energy



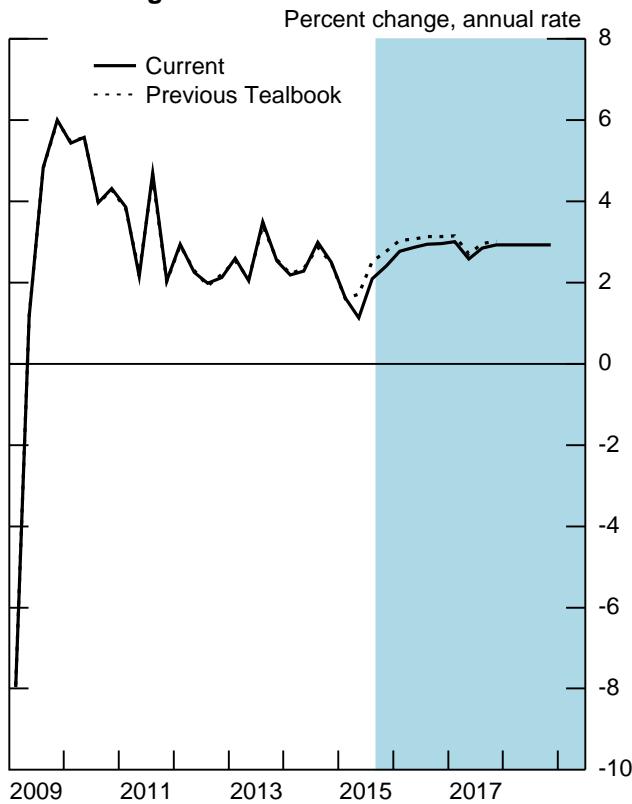
The Foreign GDP Outlook

	Percent change, annual rate									
	2014		2015			2016		2017		2018
		H1	Q3	Q4	H1	H2				
1. Total Foreign	2.5	1.4	2.1	2.4	2.8	3.0	2.8	2.9		
<i>Previous Tealbook</i>	2.5	1.7	2.5	2.8	3.1	3.1	3.0	...		
2. Advanced Foreign Economies	1.7	0.6	1.7	1.8	2.0	2.1	1.8	1.9	1.9	
<i>Previous Tealbook</i>	1.7	0.8	1.8	2.1	2.3	2.3	1.9	...		
3. Canada	2.5	-0.7	1.8	2.0	2.3	2.3	2.0	1.9	1.9	
4. Euro Area	0.9	1.8	1.6	1.6	1.8	2.0	2.0	2.0	2.0	
5. Japan	-0.8	1.6	1.1	0.7	1.0	1.2	-0.4	1.1		
6. United Kingdom	3.4	2.1	2.6	2.5	2.7	2.7	2.4	2.4		
7. Emerging Market Economies	3.2	2.1	2.5	3.0	3.6	3.8	3.8	3.9		
<i>Previous Tealbook</i>	3.2	2.5	3.2	3.5	3.8	4.0	3.9	...		
8. China	7.3	6.5	6.3	6.3	6.2	6.2	6.1	6.0		
9. Emerging Asia ex. China	3.4	2.5	2.9	3.7	4.1	4.2	4.0	4.0		
10. Mexico	2.6	1.9	2.3	2.6	3.0	3.1	3.1	3.3		
11. Brazil	-0.3	-5.1	-3.0	-0.5	0.9	1.3	2.0	2.1		

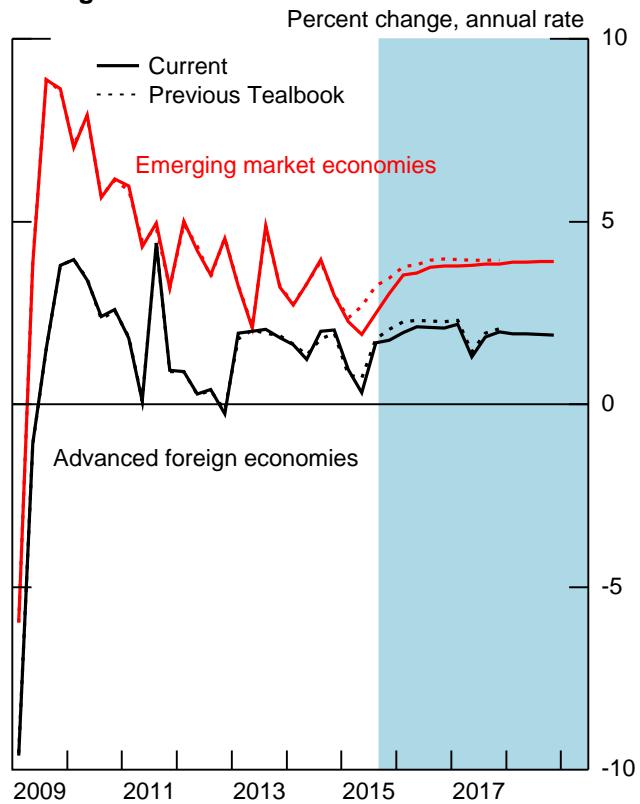
* GDP aggregates weighted by shares of U.S. merchandise exports.

... Not applicable.

Total Foreign GDP



Foreign GDP



The Foreign Inflation Outlook

Consumer Prices*

Percent change, annual rate

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
		H1 Q3 Q4	H1 H2		
1. Total Foreign <i>Previous Tealbook</i>	2.0 2.0	1.2 1.2	2.3 2.2	2.0 2.2	2.3 2.4
					2.4 2.4
2. Advanced Foreign Economies <i>Previous Tealbook</i>	1.2 1.2	0.6 0.5	0.6 1.0	0.9 1.3	1.3 1.4
					1.5 1.6
3. Canada	1.9	1.1	1.2	1.7	1.7
4. Euro Area	0.2	0.4	0.3	0.9	1.3
5. Japan	2.5	0.7	0.0	-0.4	0.7
6. United Kingdom	0.9	-0.3	1.7	1.5	1.7
7. Emerging Market Economies <i>Previous Tealbook</i>	2.6 2.6	1.7 1.8	3.6 3.1	2.9 2.9	3.0 3.1
					3.1 3.1
8. China	1.5	1.1	4.1	2.2	2.5
9. Emerging Asia ex. China	2.2	1.4	2.1	3.0	3.1
10. Mexico	4.2	1.5	3.3	3.3	3.3
11. Brazil	6.5	11.0	10.0	6.6	5.9

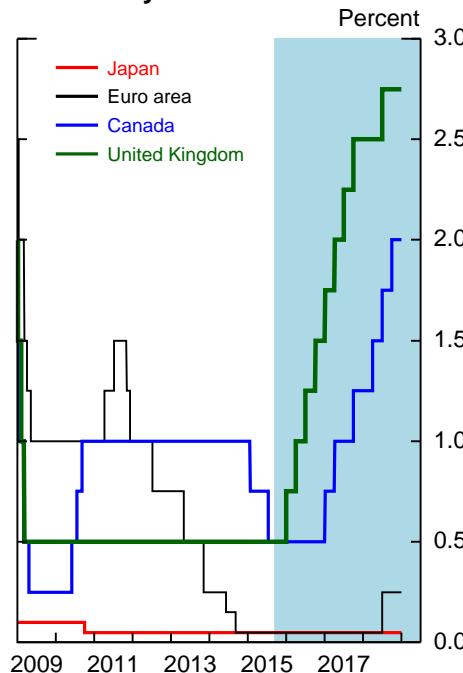
* CPI aggregates weighted by shares of U.S. non-oil imports.

... Not applicable.

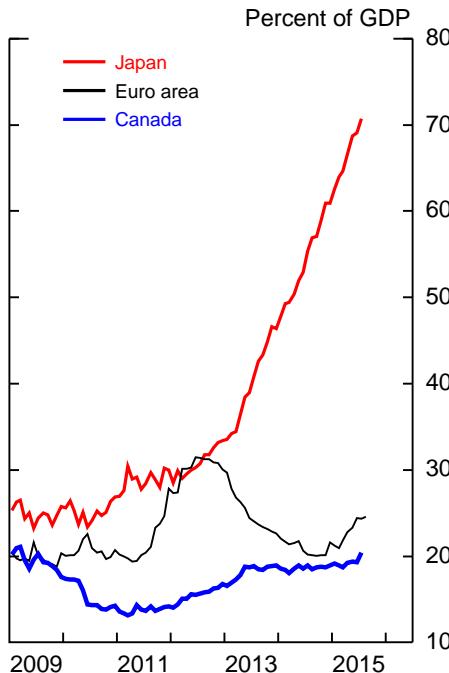
Int'l Econ Devel & Outlook

Foreign Monetary Policy

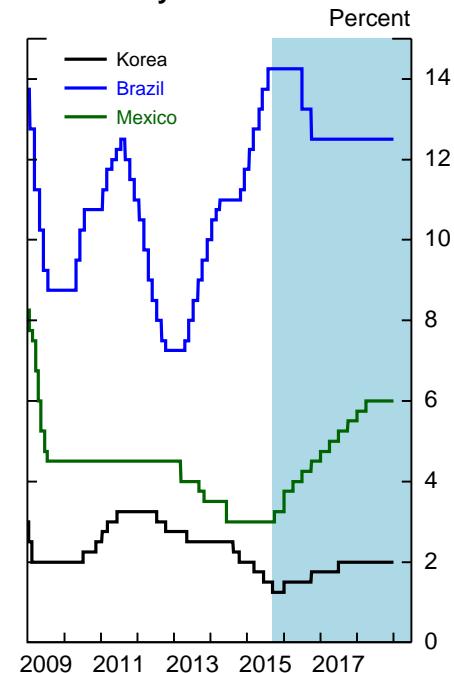
AFE Policy Rates



AFE Central Bank Balance Sheets

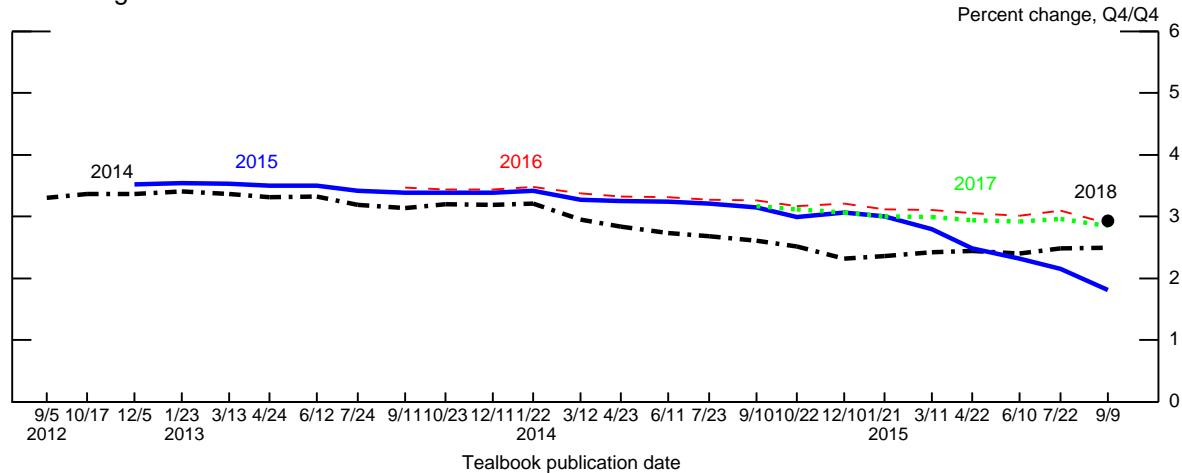


EME Policy Rates

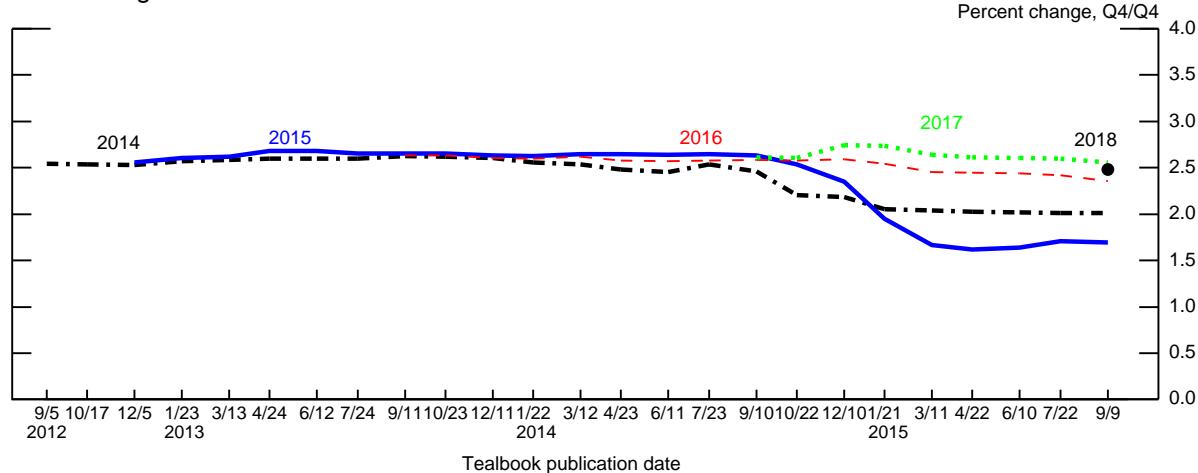


Evolution of Staff's International Forecast

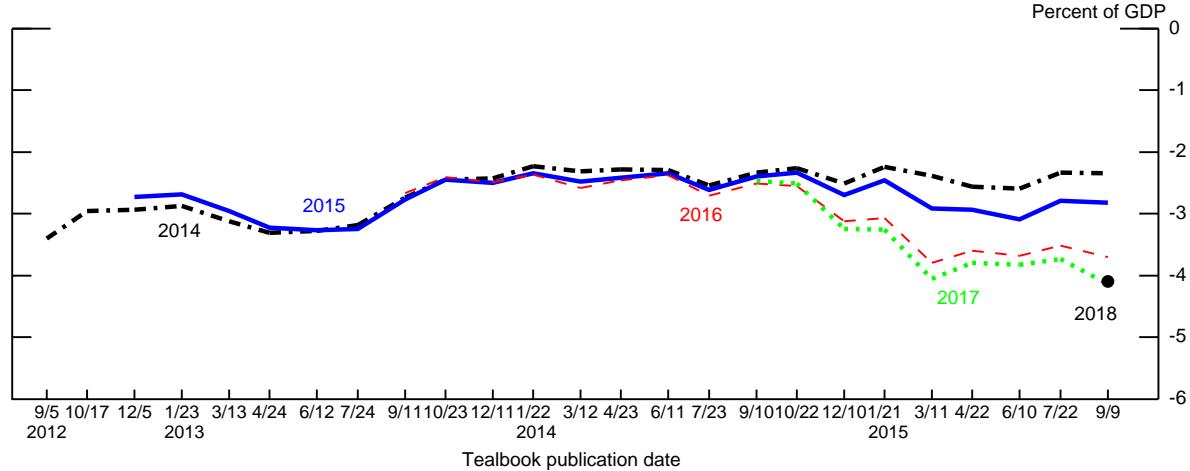
Total Foreign GDP



Total Foreign CPI

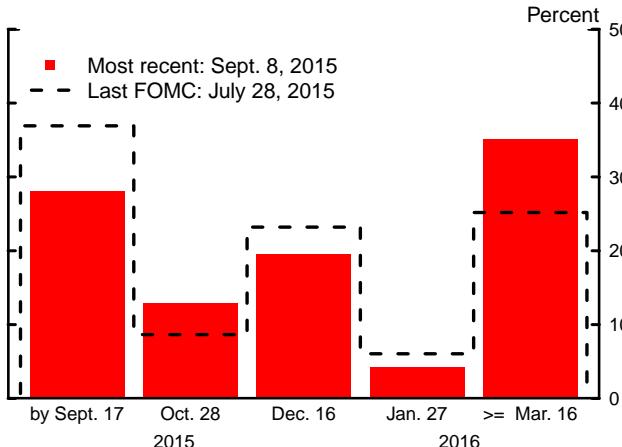


U.S. Current Account Balance



Policy Expectations

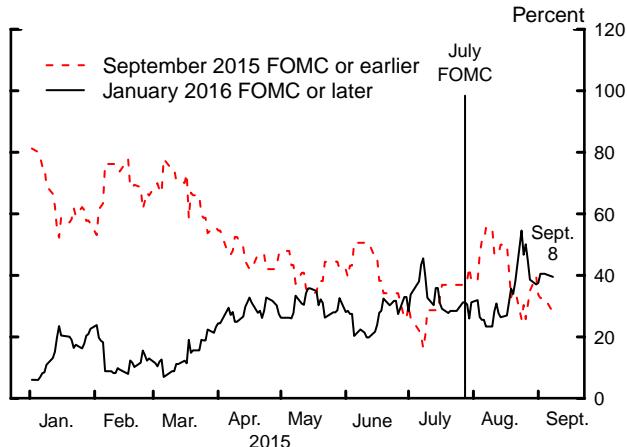
Implied Probability Distribution of Liftoff



Note: Implied by federal funds futures. Assumes that investors expect the federal funds rate to trade around 37.5 basis points after liftoff.

Source: CME Group.

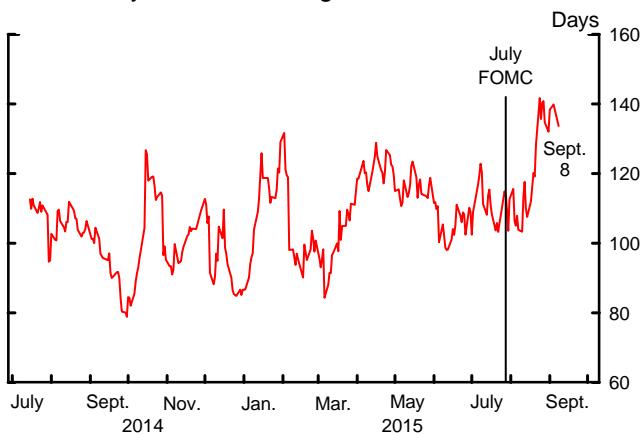
Implied Probability of Liftoff



Note: Implied by federal funds futures. Assumes that investors expect the federal funds rate to trade around 37.5 basis points after liftoff.

Source: CME Group.

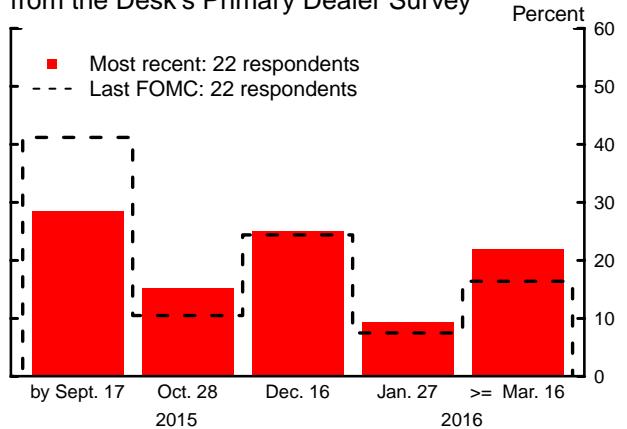
Uncertainty of Liftoff Timing



Note: Implied by federal funds futures. Standard deviation (in days) of the date of liftoff as implied by rates on federal funds futures contracts.

Source: CME Group.

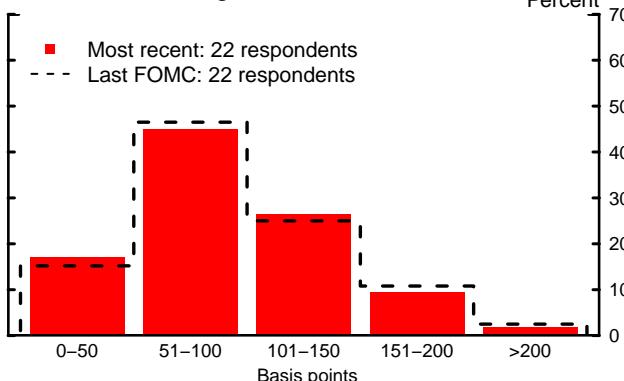
Distribution of Expected Timing of First Rate Increase from the Desk's Primary Dealer Survey



Note: Average across dealers of their individual probabilities attached to the first tightening occurring at a particular meeting. For March 2016, expected timing is during or after that meeting.

Source: Desk's primary dealer survey from September 8, 2015.

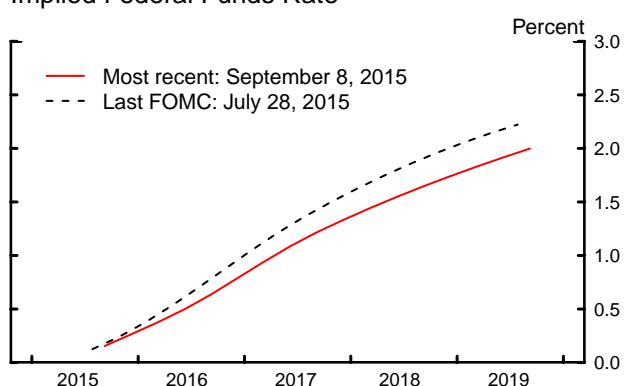
Conditional Pace of Tightening, First Year following Liftoff



Note: Distribution conditional on the federal funds rate not returning to its zero lower bound.

Source: Desk's primary dealer survey from September 8, 2015.

Implied Federal Funds Rate

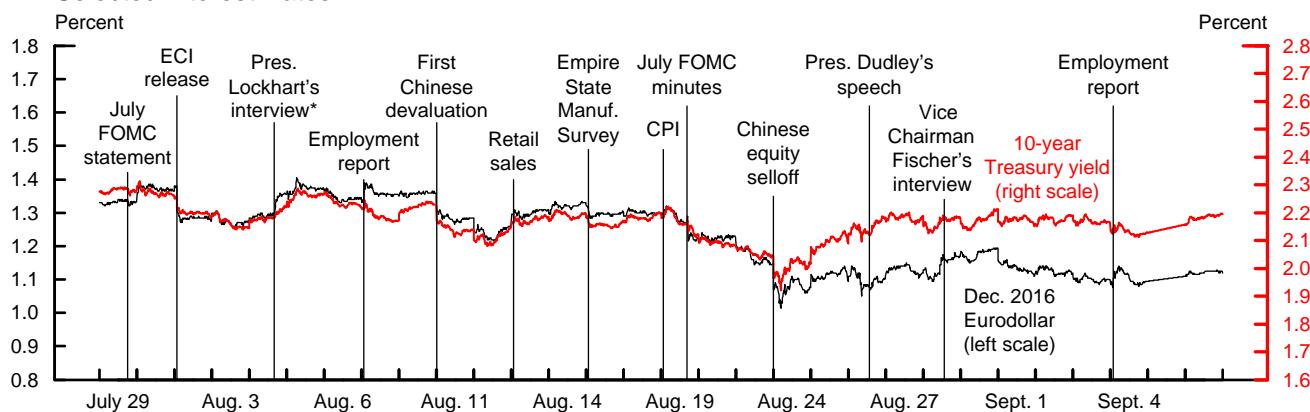


Note: Path is estimated using overnight index swap quotes with a spline approach and a term premium of zero basis points.

Source: Bloomberg; staff estimates.

Treasury Yields

Selected Interest Rates

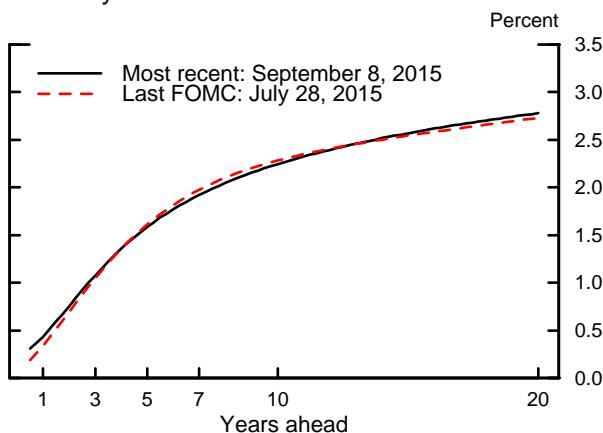


Note: 5-minute intervals. 8:00 a.m. to 4:00 p.m.

* Wall Street Journal interview time was around 1:20 p.m.

Source: Bloomberg.

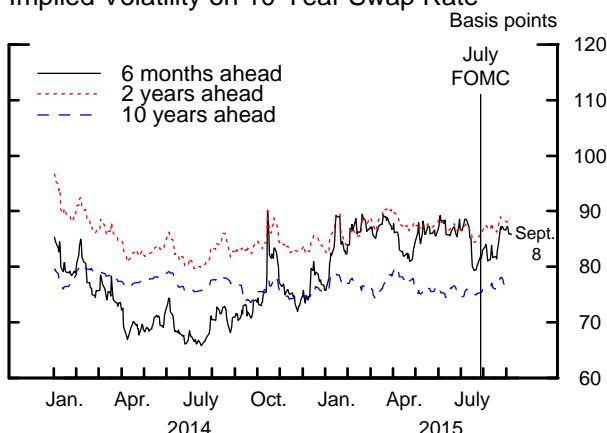
Treasury Yield Curve



Note: Smoothed yield curve estimated from off-the-run Treasury coupon securities. Yields shown are those on nominal par Treasury securities with semiannual coupons.

Source: Federal Reserve Board.

Implied Volatility on 10-Year Swap Rate



Source: Barclays.

Inflation Compensation

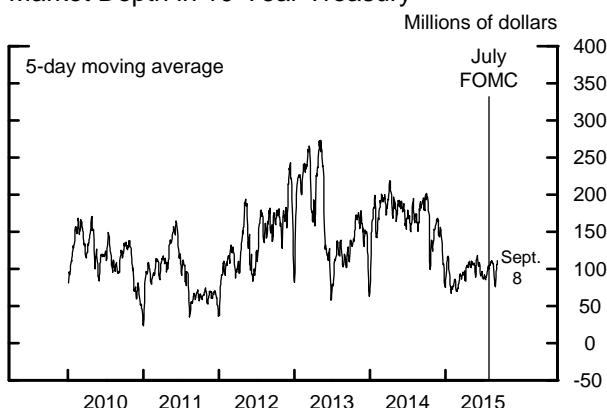


Note: Estimates based on smoothed nominal and inflation-indexed Treasury yield curves.

* Adjusted for lagged indexation of Treasury Inflation-Protected Securities (carry effect).

Source: Federal Reserve Bank of New York; staff estimates.

Market Depth in 10-Year Treasury

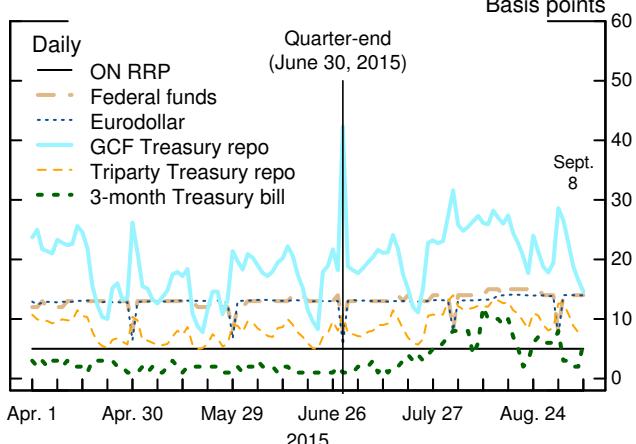


Note: Market depth is defined as the average top 3 bid and asked quote sizes.

Source: BrokerTec.

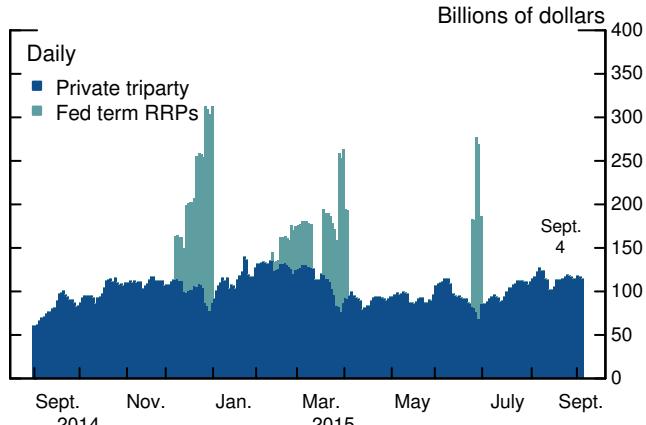
Federal Reserve Operations and Short-Term Funding Markets

Money Market Rates

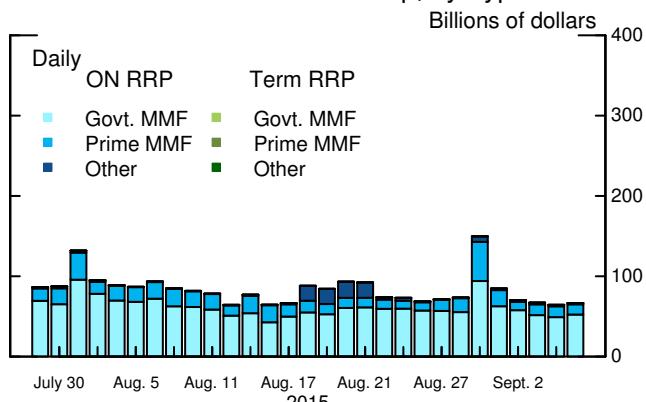


Note: GCF is General Collateral Finance; repo is repurchase agreement.
Source: Depository Trust & Clearing Corporation; Federal Reserve Bank of New York; Federal Reserve Board.

Outstanding Term Treasury Repo

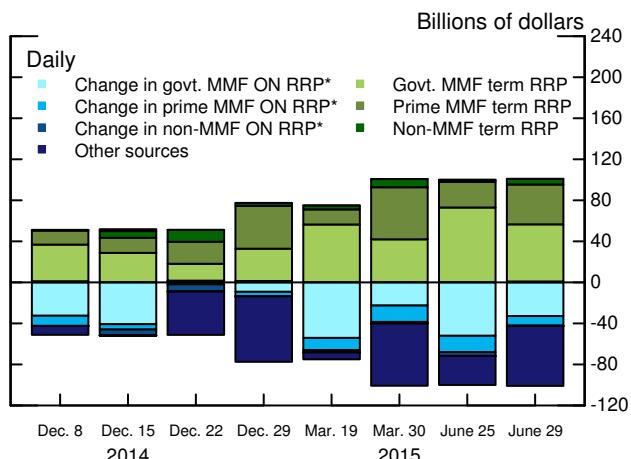


ON RRP and Term RRP Take-Up, by Type

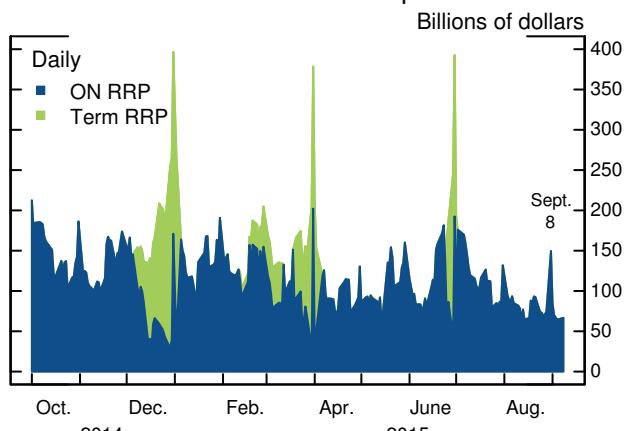


Note: Overnight reverse repurchase agreements (ON RRP) specify operations in which the trade matures on the next business day. Term reverse repurchase agreements (term RRP) specify operations in which the trade matures more than 1 business day after the settlement date.

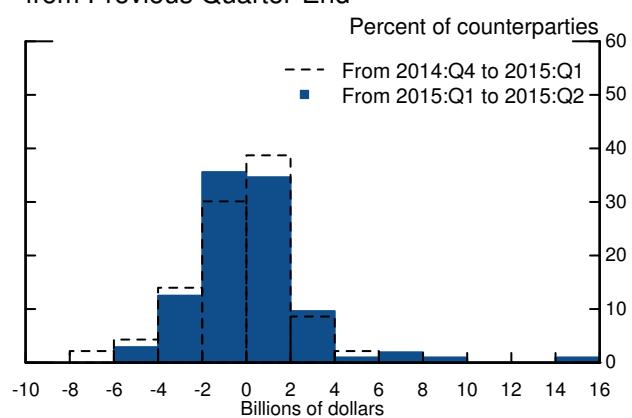
Sources of Term RRP Awards at Quarter-End



ON RRP and Term RRP Take-Up



Distribution of the Change in Total RRP Take-Up from Previous Quarter-End



Alternative Scenarios

(Percent change, annual rate, from end of preceding period except as noted)

Measure and scenario	2015		2016	2017	2018-19
	H1	H2			
<i>Real GDP</i>					
Extended Tealbook baseline	2.2	1.9	2.1	2.0	1.8
Increased financial turbulence	2.2	-.5	1.7	2.5	2.0
Productivity growth speeds up	2.2	2.2	3.1	3.3	3.1
Lower long-term inflation expectations	2.2	1.9	2.1	2.0	1.8
China-driven EME slowdown	2.2	1.6	1.3	2.1	2.1
China-driven EME crisis	2.2	1.0	-.9	1.3	2.6
<i>Unemployment rate¹</i>					
Extended Tealbook baseline	5.4	5.0	4.9	4.8	4.7
Increased financial turbulence	5.4	5.5	5.5	5.2	4.8
Productivity growth speeds up	5.4	5.1	4.9	4.7	4.3
Lower long-term inflation expectations	5.4	5.0	4.9	4.8	4.6
China-driven EME slowdown	5.4	5.1	5.2	5.2	4.9
China-driven EME crisis	5.4	5.1	6.1	6.6	5.9
<i>Total PCE prices</i>					
Extended Tealbook baseline	.1	.4	1.5	1.7	1.9
Increased financial turbulence	.1	.4	1.4	1.7	1.8
Productivity growth speeds up	.1	.4	1.2	1.1	1.1
Lower long-term inflation expectations	.1	.3	1.2	1.2	1.4
China-driven EME slowdown	.1	-.3	.7	1.7	2.0
China-driven EME crisis	.1	-.8	-.6	1.3	1.8
<i>Core PCE prices</i>					
Extended Tealbook baseline	1.4	1.2	1.4	1.7	1.9
Increased financial turbulence	1.4	1.2	1.4	1.6	1.9
Productivity growth speeds up	1.4	1.2	1.1	1.1	1.1
Lower long-term inflation expectations	1.4	1.1	1.1	1.2	1.4
China-driven EME slowdown	1.4	1.0	.9	1.5	1.9
China-driven EME crisis	1.4	.7	.0	.9	1.6
<i>Federal funds rate¹</i>					
Extended Tealbook baseline	.1	.4	1.4	2.3	3.5
Increased financial turbulence	.1	.3	.5	1.2	2.7
Productivity growth speeds up	.1	.4	1.3	2.0	3.0
Lower long-term inflation expectations	.1	.4	1.3	1.9	3.0
China-driven EME slowdown	.1	.5	1.1	1.7	3.1
China-driven EME crisis	.1	.5	.1	.1	1.4

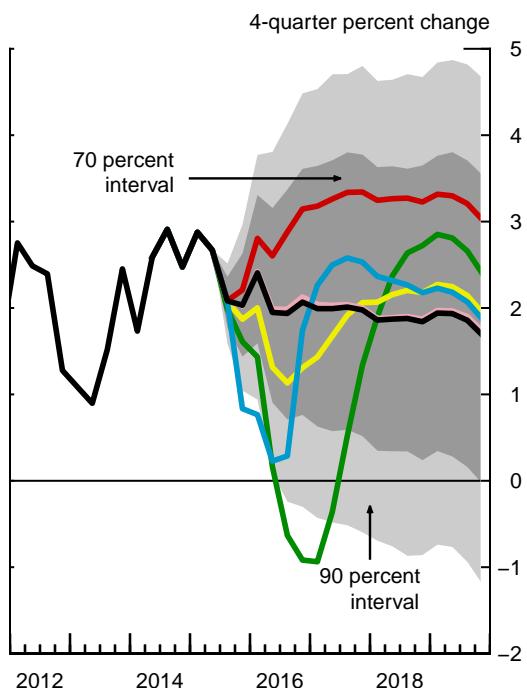
1. Percent, average for the final quarter of the period.

Forecast Confidence Intervals and Alternative Scenarios

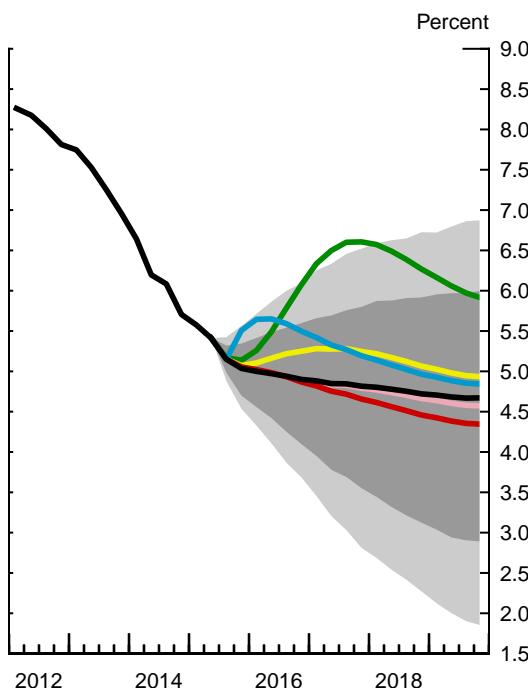
Confidence Intervals Based on FRB/US Stochastic Simulations

- Extended Tealbook baseline
- Productivity growth speeds up
- China–driven EME slowdown
- Increased financial turbulence
- Lower long-term inflation expectations
- China–driven EME crisis

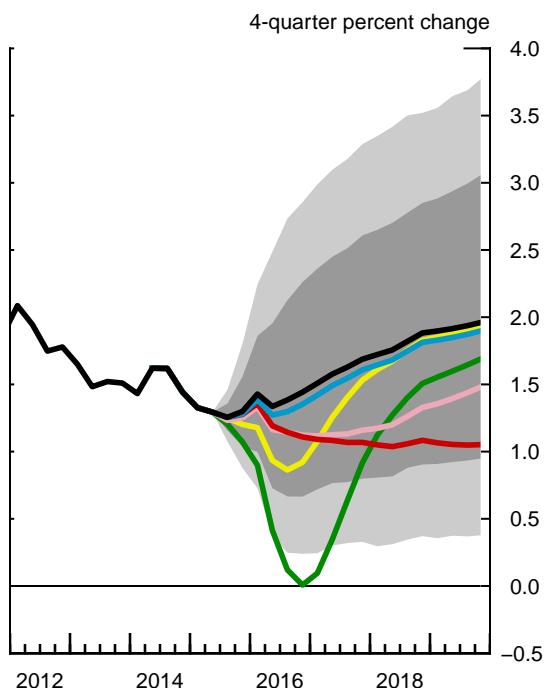
Real GDP



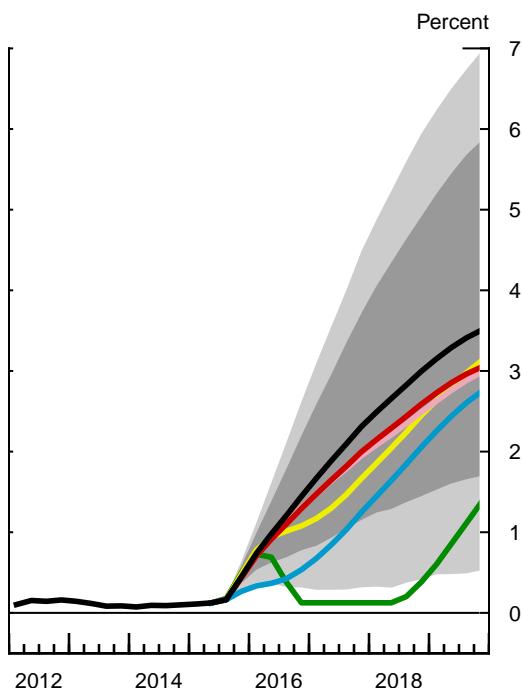
Unemployment Rate



PCE Prices excluding Food and Energy



Federal Funds Rate



**Selected Tealbook Projections and 70 Percent Confidence Intervals Derived
from Historical Tealbook Forecast Errors and FRB/US Simulations**

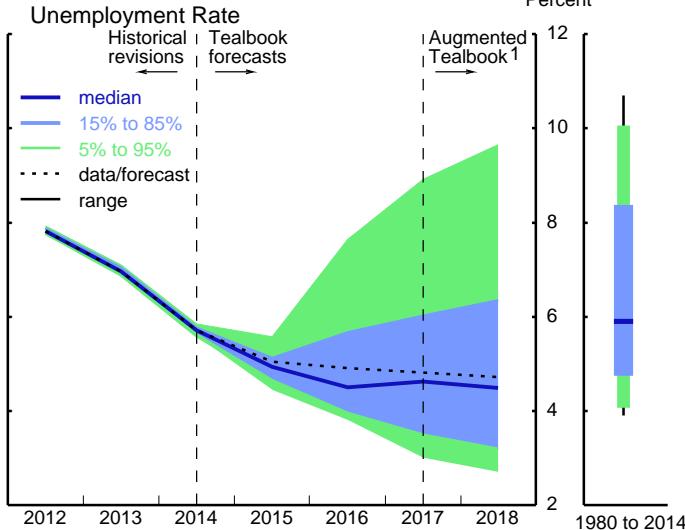
Measure	2015	2016	2017	2018	2019
<i>Real GDP</i> <i>(percent change, Q4 to Q4)</i>					
Projection	2.0	2.1	2.0	1.8	1.7
Confidence interval					
Tealbook forecast errors	1.2–3.4	.2–3.8	-.5–3.7
FRB/US stochastic simulations	1.4–2.6	.8–3.6	.5–3.8	.2–3.6	.0–3.5
<i>Civilian unemployment rate</i> <i>(percent, Q4)</i>					
Projection	5.0	4.9	4.8	4.7	4.7
Confidence interval					
Tealbook forecast errors	4.6–5.1	3.9–5.7	3.5–6.0
FRB/US stochastic simulations	4.7–5.3	4.1–5.6	3.6–5.8	3.1–5.9	2.9–6.0
<i>PCE prices, total</i> <i>(percent change, Q4 to Q4)</i>					
Projection	.3	1.5	1.7	1.9	1.9
Confidence interval					
Tealbook forecast errors	-.2–.5	.7–3.1	1.1–3.3
FRB/US stochastic simulations	.0–.6	.7–2.4	.8–2.7	.8–3.0	.9–3.1
<i>PCE prices excluding</i> <i>food and energy</i> <i>(percent change, Q4 to Q4)</i>					
Projection	1.3	1.4	1.7	1.9	2.0
Confidence interval					
Tealbook forecast errors	1.1–1.6	.9–2.3
FRB/US stochastic simulations	1.0–1.6	.7–2.3	.8–2.6	.9–2.9	1.0–3.1
<i>Federal funds rate</i> <i>(percent, Q4)</i>					
Projection	.4	1.4	2.3	3.0	3.5
Confidence interval					
FRB/US stochastic simulations	.4–.6	.8–2.2	1.2–3.7	1.4–4.9	1.7–5.9

Note: Shocks underlying FRB/US stochastic simulations are randomly drawn from the 1969–2014 set of model equation residuals. Intervals derived from Tealbook forecast errors are based on projections made from 1980 to 2014 for real GDP and unemployment and from 1998 to 2014 for PCE prices. The intervals for real GDP, unemployment, and total PCE prices are extended into 2017 using information from the Blue Chip survey and forecasts from the CBO and CEA.

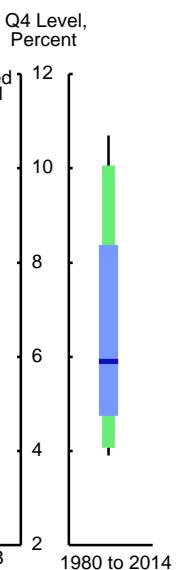
... Not applicable.

Prediction Intervals Derived from Historical Tealbook Forecast Errors

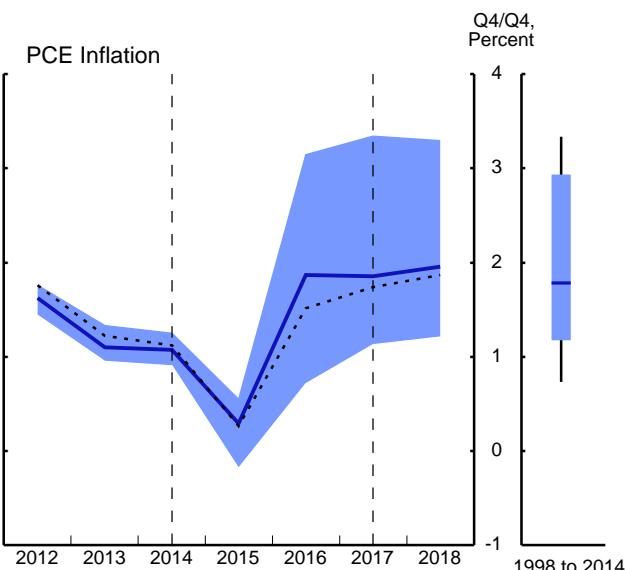
Forecast Error Percentiles



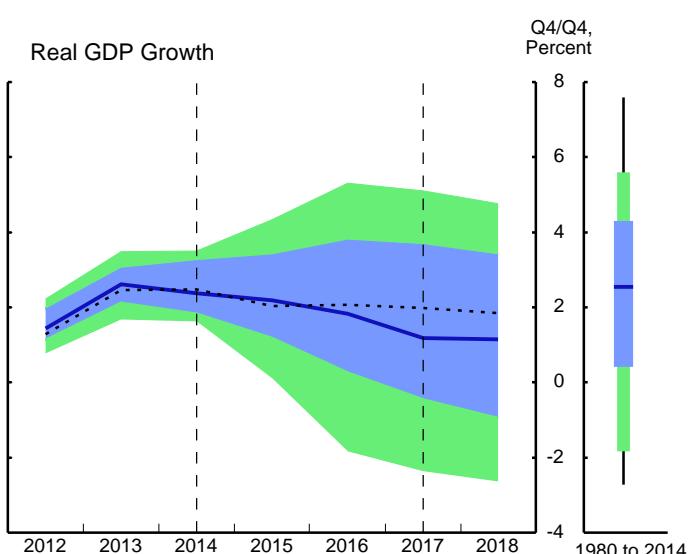
Historical Distributions



PCE Inflation

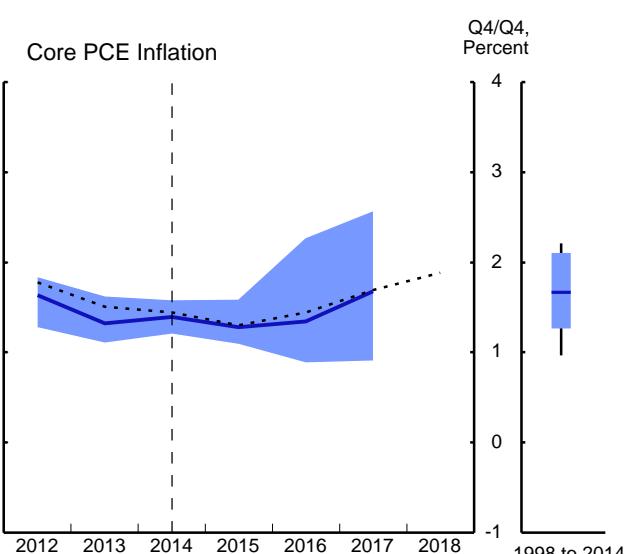


Real GDP Growth



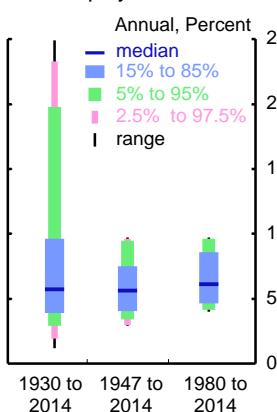
Q4/Q4, Percent

Core PCE Inflation

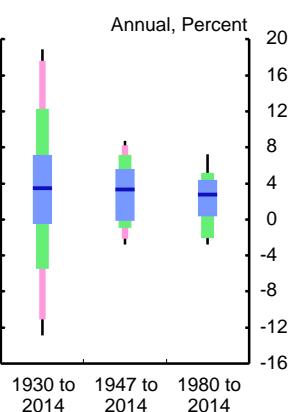


Historical Distributions

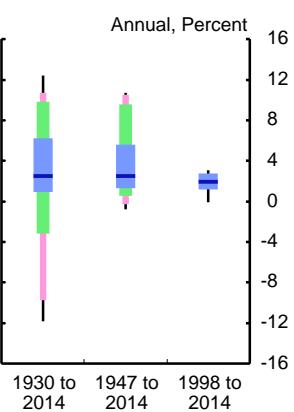
Unemployment Rate



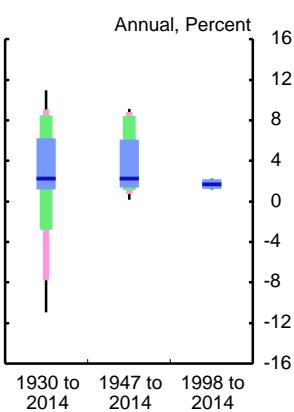
Real GDP Growth



PCE Inflation



Core PCE Inflation



Risks & Uncertainty

Note: See the technical note in the appendix for more information on this exhibit.

1. Augmented Tealbook prediction intervals use 2- and 3-year-ahead forecast errors from Blue Chip, CBO, and CEA to extend the Tealbook prediction intervals through 2018.

Alternative Models
(Percent change, Q4 to Q4, except as noted)

Measure and projection	2015		2016		2017	
	June Tealbook	Current Tealbook	June Tealbook	Current Tealbook	June Tealbook	Current Tealbook
<i>Real GDP</i>						
Staff	1.6	2.0	2.4	2.1	2.2	2.0
FRB/US	1.9	2.2	2.6	2.2	2.2	2.0
EDO	1.7	2.2	2.4	2.6	2.6	2.7
<i>Unemployment rate¹</i>						
Staff	5.3	5.0	5.2	4.9	5.2	4.8
FRB/US	5.4	5.1	5.4	5.1	5.5	5.2
EDO	5.7	5.5	5.9	5.6	5.9	5.6
<i>Total PCE prices</i>						
Staff	.6	.3	1.6	1.5	1.8	1.7
FRB/US	.7	.3	1.7	1.4	1.5	1.1
EDO	.9	.7	2.1	1.8	2.1	2.0
<i>Core PCE prices</i>						
Staff	1.3	1.3	1.6	1.4	1.8	1.7
FRB/US	1.5	1.4	1.7	1.4	1.5	1.0
EDO	1.6	1.4	2.1	1.8	2.1	2.0
<i>Federal funds rate¹</i>						
Staff	.4	.4	1.3	1.4	2.1	2.3
FRB/US	.6	.4	1.2	.8	1.1	.6
EDO	1.0	.5	2.1	1.7	2.7	2.4

1. Percent, average for Q4.

Assessment of Key Macroeconomic Risks (1)

Probability of Inflation Events

(4 quarters ahead—2016:Q3)

Probability that the 4-quarter change in total PCE prices will be ...	Staff	FRB/US	EDO	BVAR
<i>Greater than 3 percent</i>				
Current Tealbook	.02	.02	.12	.06
Previous Tealbook	.03	.04	.13	.08
<i>Less than 1 percent</i>				
Current Tealbook	.48	.48	.28	.19
Previous Tealbook	.42	.28	.24	.15

Probability of Unemployment Events

(4 quarters ahead—2016:Q3)

Probability that the unemployment rate will ...	Staff	FRB/US	EDO	BVAR
<i>Increase by 1 percentage point</i>				
Current Tealbook	.04	.04	.25	.01
Previous Tealbook	.04	.04	.27	.01
<i>Decrease by 1 percentage point</i>				
Current Tealbook	.12	.05	.02	.29
Previous Tealbook	.11	.04	.03	.37

Probability of Near-Term Recession

Probability that real GDP declines in each of 2015:Q4 and 2016:Q1	Staff	FRB/US	EDO	BVAR	Factor Model
Current Tealbook	.06	.04	.03	.02	.11
Previous Tealbook	.05	.02	.03	.03	.17

Note: “Staff” represents Tealbook forecast errors applied to the Tealbook baseline; baselines for FRB/US, BVAR, EDO, and the factor model are generated by those models themselves, up to the current-quarter estimate. Data for the current quarter are taken from the staff estimate for the second Tealbook in each quarter; if the second Tealbook for the current quarter has not yet been published, the preceding quarter is taken as the latest historical observation.

Changes in GDP, Prices, and Unemployment
(Percent, annual rate except as noted)

	Nominal GDP		Real GDP		PCE price index		Core PCE price index		Unemployment rate ¹	
Interval	07/22/15	09/09/15	07/22/15	09/09/15	07/22/15	09/09/15	07/22/15	09/09/15	07/22/15	09/09/15
<i>Quarterly</i>										
2015:Q1	.2	.8	.2	.6	-2.0	-1.9	.8	1.0	5.6	5.6
Q2	4.7	5.9	2.4	3.7	2.0	2.2	1.7	1.8	5.4	5.4
Q3	3.4	3.8	1.7	1.9	1.2	1.2	1.4	1.2	5.3	5.2
Q4	2.7	1.9	2.3	1.9	.2	-.4	1.3	1.2	5.2	5.0
2016:Q1	4.2	3.9	2.3	2.1	1.7	1.5	1.6	1.5	5.2	5.0
Q2	4.0	3.6	2.3	1.9	1.6	1.6	1.6	1.5	5.2	5.0
Q3	4.0	3.5	2.3	1.9	1.6	1.5	1.5	1.4	5.2	4.9
Q4	4.0	4.0	2.3	2.4	1.6	1.5	1.5	1.4	5.2	4.9
2017:Q1	4.1	3.9	2.1	1.8	1.8	1.8	1.7	1.7	5.1	4.9
Q2	3.9	3.7	2.1	1.9	1.7	1.8	1.7	1.7	5.1	4.8
Q3	3.9	3.7	2.1	1.9	1.7	1.7	1.7	1.6	5.1	4.8
Q4	4.0	4.0	2.2	2.3	1.7	1.7	1.7	1.6	5.1	4.8
<i>Two-quarter²</i>										
2015:Q2	2.2	3.3	1.1	2.2	.0	.1	1.2	1.4	-.3	-.3
Q4	3.0	2.9	2.0	1.9	.7	.4	1.4	1.2	-.2	-.4
2016:Q2	4.1	3.7	2.3	2.0	1.7	1.5	1.6	1.5	0	0
Q4	4.0	3.8	2.3	2.1	1.6	1.5	1.5	1.4	.0	-.1
2017:Q2	4.0	3.8	2.1	1.9	1.7	1.8	1.7	1.7	-.1	-.1
Q4	3.9	3.9	2.2	2.1	1.7	1.7	1.7	1.6	.0	0
<i>Four-quarter³</i>										
2014:Q4	3.7	3.9	2.4	2.5	1.1	1.1	1.4	1.4	-1.3	-1.3
2015:Q4	2.6	3.1	1.5	2.0	.3	.3	1.3	1.3	-.5	-.7
2016:Q4	4.1	3.8	2.3	2.1	1.6	1.5	1.5	1.4	.0	-.1
2017:Q4	4.0	3.8	2.1	2.0	1.7	1.7	1.7	1.7	-.1	-.1
2018:Q4	3.8	3.8	2.0	1.8	1.8	1.9	1.8	1.9	-.2	-.1
<i>Annual</i>										
2014	3.9	4.1	2.4	2.4	1.3	1.4	1.4	1.5	6.2	6.2
2015	3.1	3.4	2.1	2.4	.3	.2	1.3	1.3	5.4	5.3
2016	3.8	3.5	2.2	2.1	1.3	1.2	1.5	1.4	5.2	5.0
2017	4.0	3.8	2.2	2.0	1.7	1.7	1.6	1.6	5.1	4.8
2018		3.8	2.1	1.9	1.8	1.8	1.7	1.8	5.0	4.8

- 1. Level, except for two-quarter and four-quarter intervals.
- 2. Percent change from two quarters earlier; for unemployment rate, change is in percentage points.
- 3. Percent change from four quarters earlier; for unemployment rate, change is in percentage points.

Greensheets
Changes in Real Gross Domestic Product and Related Items
(Percent, annual rate except as noted)

Item	2015			2016			2017			2015 ¹			2016 ¹			2017 ¹		
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2015 ¹	2016 ¹	2017 ¹	2016 ¹	2017 ¹	2018 ¹	
Real GDP <i>Previous Tealbook</i>	3.7	1.9	1.9	2.1	1.9	1.9	2.4	1.8	1.9	1.9	2.3	2.0	2.1	2.0	2.1	2.0	1.8	
2.4	1.7	2.3	2.3	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.2	1.5	2.3	2.1	2.1	2.0	2.0	
Final sales <i>Previous Tealbook</i>	3.6	2.3	1.9	1.5	2.6	2.1	2.6	2.0	2.4	2.2	2.4	1.9	2.2	2.3	2.4	2.5	2.1	
2.5	1.8	2.3	1.8	2.6	2.4	2.9	2.3	2.5	2.4	2.6	1.5	2.4	2.4	2.5	2.4	2.5	2.1	
Priv. dom. final purch. <i>Previous Tealbook</i>	3.4	3.3	3.1	3.4	3.8	3.6	3.5	3.4	2.9	2.7	2.7	3.0	3.6	2.9	3.0	3.6	2.9	
3.0	3.0	3.4	3.6	3.8	3.7	3.7	3.5	3.3	3.0	2.8	2.6	2.7	2.7	3.7	2.7	3.7	2.2	
Personal cons. expend. <i>Previous Tealbook</i>	3.1	2.8	2.9	3.1	3.3	3.2	3.1	3.0	2.6	2.5	2.4	2.6	2.6	3.2	2.6	3.2	2.6	
2.8	2.9	3.3	3.4	3.3	3.2	3.1	2.9	2.8	2.6	2.5	2.5	2.8	2.8	3.3	2.7	3.3	2.7	
Durables	8.2	8.0	7.9	5.9	6.8	6.6	5.6	5.0	4.3	3.8	3.6	6.5	6.2	4.2	3.7	4.2	3.7	
Nondurables	4.1	2.7	2.8	2.2	2.6	2.6	2.8	2.7	2.3	2.1	2.4	2.5	2.5	2.4	2.3	2.4	2.3	
Services	2.0	2.0	2.1	2.9	2.9	2.9	2.8	2.8	2.5	2.4	2.2	2.0	2.0	2.5	2.5	2.5	1.8	
Residential investment <i>Previous Tealbook</i>	9.2	7.4	2.0	7.9	11.4	11.1	10.1	11.1	8.0	5.7	4.5	7.1	10.1	7.3	4.2	7.3	4.2	
8.4	5.8	5.0	11.7	12.9	11.4	10.4	9.6	6.9	5.9	5.0	6.4	11.6	6.9					
Nonres. priv. fixed invest. <i>Previous Tealbook</i>	3.6	5.0	4.5	3.8	4.7	3.8	3.8	3.2	2.6	3.0	3.6	3.7	4.0	3.1	3.1	3.5	2.1	
2.5	2.6	3.1	2.6	4.0	3.8	3.6	3.4	3.1	2.7	2.6	1.5	3.5	3.5	2.9	3.5	2.9	2.1	
Equipment & intangibles <i>Previous Tealbook</i>	2.9	4.5	4.7	5.8	5.0	4.3	4.4	3.4	2.8	3.4	4.1	4.1	4.9	3.5	3.5	3.5	2.4	
4.5	2.9	3.6	4.2	4.4	4.2	4.1	4.1	3.8	3.4	3.1	3.0	3.6	4.2	3.3	3.3	4.2	3.3	
Nonres. structures <i>Previous Tealbook</i>	5.9	6.9	4.1	-3.1	3.5	2.0	1.9	2.4	1.9	1.4	1.8	2.2	1.0	1.9	1.9	1.8	.8	
-4.3	1.4	1.3	-3.3	2.5	2.0	1.9	1.8	1.7	1.3	1.0	-5.5	.8						
Net exports ² <i>Previous Tealbook</i> ²	-534	-556	-590	-651	-691	-737	-757	-798	-814	-827	-829	-555	-709	-817	-817	-817	-838	
-558	-591	-621	-677	-711	-751	-763	-794	-805	-813	-804	-804	-580	-726	-804	-804	-804		
Exports	5.1	1.6	1.8	-2.3	1.4	1.1	2.9	-1.4	2.1	2.4	5.0	.5						
Imports	3.0	4.6	6.6	7.3	7.0	7.5	5.1	4.6	3.8	3.6	3.9	5.3	6.7	4.0	4.0	4.0	3.2	
Gov't. cons. & invest. <i>Previous Tealbook</i>	2.7	.0	.0	1.3	.4	.4	.4	.3	1.6	.7	.7	.7	.5	.8	.9	.8	.9	
1.1	.2	.6	.3	.6	.8	.6	.6	1.2	.7	.8	.6	.3	.6	.8	.8	.8	.9	
Federal	.0	-1.7	-1.6	-1.1	-1.0	-1.2	-1.9	-1.0	-1.0	-1.8	-1.6	-1.0	-1.6	-1.1	-1.1	-1.1	-1.1	
Defense	.3	-2.2	-2.1	-1.6	-1.4	-1.8	-1.2	-1.7	-1.4	-1.1	-1.0	-1.0	-1.0	-1.5	-1.4	-1.4	-1.0	
Nonddefense	-.4	-1.1	-.8	-.4	-.4	-.4	-.4	-.1	0.0	1.1	1.1	1.1	1.4	1.5	1.5	1.5	1.4	
State & local	4.4	1.1	1.0	.7	2.7	1.4	1.3	1.1	1.1	1.7	1.4	1.4	1.4	1.5	1.5	1.5	1.8	
Change in priv. inventories ² <i>Previous Tealbook</i> ²	119	105	106	133	107	97	88	79	58	48	43	111	106	57	57	57	14	
95	92	92	112	101	101	80	71	56	45	29	29	95	98	50	50	50		

1. Change from fourth quarter of previous year to fourth quarter of year indicated.

2. Billions of chained (2009) dollars.

Changes in Real Gross Domestic Product and Related Items
 (Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

Item	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Real GDP <i>Previous Tealbook</i>	-.2	2.7	1.7	1.3	2.5	2.5	2.0	2.1	2.0	1.8
Final sales <i>Previous Tealbook</i>	-4	2.0	1.5	1.7	1.9	2.6	1.9	2.2	2.3	2.1
Priv. dom. final purch. <i>Previous Tealbook</i>	-2.4	3.5	2.6	2.3	2.6	3.6	1.5	2.4	2.5	2.2
Personal cons. expend. <i>Previous Tealbook</i>	-.2	3.1	1.5	1.3	2.3	3.2	3.0	3.6	2.9	2.9
Durables	2.5	9.3	4.8	7.2	4.6	7.5	6.5	6.2	4.2	3.7
Nondurables	.2	3.3	.4	.8	2.6	2.3	2.5	2.5	2.4	2.3
Services	-.8	2.0	1.4	.6	1.8	2.8	2.0	2.9	2.5	1.8
Residential investment <i>Previous Tealbook</i>	-10.8	-5.2	6.0	15.7	3.5	5.1	7.1	10.1	7.3	4.2
Nonres. priv. fixed invest. <i>Previous Tealbook</i>	-12.2	8.1	9.0	5.2	4.2	5.5	3.7	4.0	3.1	2.1
Equipment & intangibles <i>Previous Tealbook</i>	-6.0	12.0	9.2	3.7	4.7	6.2	1.5	3.5	2.9	
Nonres. structures <i>Previous Tealbook</i>	-6.0	12.0	9.2	5.5	3.6	5.7	4.1	4.9	3.5	2.4
Nonres. structures <i>Previous Tealbook</i>	-27.1	-4.0	8.0	4.1	3.3	4.8	6.1	3.6	4.2	3.3
Net exports ¹ <i>Previous Tealbook</i>	-395	-459	-459	-447	-417	-443	-555	-709	-817	-838
Exports	.8	10.1	4.2	2.2	5.2	2.4	5	.8	2.0	4.3
Imports	-6.2	12.0	3.5	.3	2.4	5.4	5.3	6.7	4.0	3.2
Gov't. cons. & invest. <i>Previous Tealbook</i>	2.3	-1.1	-3.0	-2.2	-2.9	.4	.7	.5	.8	.9
Federal	2.3	-1.1	-3.0	-1.7	-1.9	.8	.3	.6	.8	
Defense	3.9	3.2	-4.0	-2.1	-6.8	-.8	-.6	-1.1	-.8	-.7
Nondefense	3.6	2.0	-4.1	-3.9	-7.4	-2.9	-8	-1.5	-1.4	-1.0
State & local	4.6	5.5	-3.9	1.0	-5.9	2.7	-3	-4	1	-.4
Change in priv. inventories ¹ <i>Previous Tealbook</i>	-148	58	38	55	61	68	111	106	57	14
	-148	58	38	57	64	71	95	98	50	

1. Billions of chained (2009) dollars.

Contributions to Changes in Real Gross Domestic Product
 (Percentage points, annual rate except as noted)

Item	2015			2016				2017				2015 ¹	2016 ¹	2017 ¹	2018 ¹
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Real GDP <i>Previous Tealbook</i>	3.7	1.9	2.1	1.9	2.1	2.3	2.4	1.8	1.9	1.9	2.3	2.0	2.1	2.0	1.8
Final sales <i>Previous Tealbook</i>	2.4	1.7	2.3	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.2	1.5	2.3	2.1	2.0
Priv. dom. final purch. <i>Previous Tealbook</i>	3.5	2.3	1.8	1.5	2.5	2.1	2.6	2.0	2.4	2.2	2.4	1.8	2.2	2.2	2.0
Personal cons. expend. <i>Previous Tealbook</i>	2.5	1.8	2.3	1.8	2.6	2.3	2.9	2.3	2.5	2.4	2.6	1.5	2.4	2.4	2.4
Durables	2.9	2.8	2.6	2.9	3.2	3.1	3.0	2.9	2.5	2.3	2.3	2.5	3.0	2.5	1.9
Nondurables	.6	.6	.4	.3	.4	.5	.4	.4	.3	.3	.3	.5	.5	.3	.3
Services	.6	.4	1.0	1.4	1.3	1.3	1.3	1.3	1.2	1.1	1.0	.9	.4	1.2	.8
Residential investment <i>Previous Tealbook</i>	.9	.9	.2	.1	.3	.4	.4	.4	.4	.3	.2	.2	.3	.3	.2
Nonres. priv. fixed invest. <i>Previous Tealbook</i>	.5	.6	.6	.5	.6	.5	.5	.4	.4	.3	.4	.5	.5	.4	.3
Equipment & intangibles <i>Previous Tealbook</i>	.3	.3	.4	.5	.6	.5	.4	.4	.4	.3	.4	.3	.2	.4	.3
Nonres. structures <i>Previous Tealbook</i>	.4	.3	.4	.4	.4	.4	.4	.4	.4	.3	.3	.4	.4	.3	.3
Net exports <i>Previous Tealbook</i>	.2	.2	.2	.2	.4	.4	.4	.4	.4	.3	.2	.2	.2	.2	.2
Exports	-1.1	-1.0	-1.1	-1.1	-1.1	-1.1	-1.2	-1.1	-1.2	-1.1	-1.2	-1.1	-1.0	-1.0	-1.5
Imports	-1.1	-1.0	-1.1	-1.1	-1.1	-1.1	-1.2	-1.1	-1.2	-1.1	-1.2	-1.1	-1.0	-1.0	-1.6
Gov't. cons. & invest. <i>Previous Tealbook</i>	.2	-.8	-.7	-1.3	-.8	-.9	-1.0	-1.4	-1.0	-1.4	-1.9	-1.3	-1.3	-1.4	-.4
Federal	-2.0	-1.8	-1.7	-1.3	-1.2	-1.1	-1.1	-1.1	-1.1	-1.1	-1.2	-1.2	-1.2	-1.2	-2.0
Defense	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Nondefense	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
State & local	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Change in priv. inventories <i>Previous Tealbook</i>	.2	-.3	0.0	.7	-.6	-.2	-.2	-.2	-.5	-.2	-.5	-.1	.2	-.3	-.2
	-1.1	-.1	0.0	.5	-.3	.0	-.5	-.2	-.4	-.3	-.4	.1	-.1	-.1	-.3

1. Change from fourth quarter of previous year to fourth quarter of year indicated.

Changes in Prices and Costs
(Percent, annual rate except as noted)

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Item	2015				2016				2017				2018 ¹			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2015 ¹	2016 ¹	2017 ¹	2018 ¹	
GDP chain-wt. price index	2.1	1.9	.0	1.7	1.7	1.6	1.6	2.0	1.8	1.7	1.7	1.0	1.7	1.8	1.9	
<i>Previous Tealbook</i>	2.3	1.7	.4	1.8	1.7	1.6	1.6	2.0	1.8	1.7	1.7	1.1	1.7	1.8	1.9	
PCE chain-wt. price index	2.2	1.2	-.4	1.5	1.6	1.5	1.5	1.8	1.8	1.7	1.7	.3	1.5	1.7	1.8	
<i>Previous Tealbook</i>	2.0	1.2	.2	1.7	1.6	1.6	1.6	1.8	1.7	1.7	1.7	.3	1.6	1.7	1.8	
Energy	15.2	-1.0	-29.7	1.0	3.2	3.4	3.1	2.9	2.6	2.2	2.0	-18.3	2.7	2.4	1.5	
<i>Previous Tealbook</i>	15.7	-3.0	-21.5	4.4	2.8	3.1	3.1	3.2	2.0	1.9	2.0	-16.4	3.3	2.3	2.3	
Food	-1.1	1.9	1.4	1.7	1.7	1.8	1.9	1.9	1.9	2.0	2.0	.5	1.8	2.0	1.9	
<i>Previous Tealbook</i>	-1.1	1.0	1.5	1.6	1.7	1.8	1.9	1.9	1.9	2.0	2.0	.3	1.8	2.0	2.0	
Ex. food & energy	1.8	1.2	1.2	1.5	1.5	1.4	1.4	1.7	1.7	1.6	1.6	1.3	1.4	1.7	1.9	
<i>Previous Tealbook</i>	1.7	1.4	1.3	1.6	1.6	1.5	1.5	1.7	1.7	1.7	1.7	1.3	1.5	1.7	1.8	
Ex. food & energy, market based	1.8	1.0	1.0	1.4	1.4	1.4	1.4	1.7	1.7	1.6	1.6	1.1	1.4	1.7	1.9	
<i>Previous Tealbook</i>	1.7	1.4	1.3	1.6	1.6	1.5	1.5	1.7	1.7	1.7	1.7	1.2	1.5	1.7	1.7	
CPI	3.0	1.7	-.7	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	.2	2.0	2.1	2.0	
<i>Previous Tealbook</i>	3.0	1.6	.1	2.1	2.0	2.1	2.1	2.2	2.1	2.0	2.1	.4	2.1	2.1	2.0	
Ex. food & energy	2.5	1.8	1.6	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	1.9	2.0	2.1	2.0	
<i>Previous Tealbook</i>	2.5	1.9	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	
ECI, hourly compensation ²	.0	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.0	2.6	2.7	2.7	
<i>Previous Tealbook</i>	2.5	2.6	2.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.6	2.7	2.8	
Business sector	3.6	.6	2.0	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.2	1.6	1.5	1.6	
Output per hour	2.1	1.9	2.2	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.0	1.7	1.7	1.7	
<i>Previous Tealbook</i>	2.1	2.2	2.8	3.2	2.9	2.9	2.9	3.3	3.0	3.0	3.0	2.1	3.0	3.1	3.3	
Compensation per hour	2.6	2.3	3.2	3.5	3.1	3.1	3.1	3.5	3.2	3.2	3.2	2.8	3.2	3.3	3.3	
<i>Previous Tealbook</i>	-1.4	1.6	.8	1.5	1.3	1.3	1.3	1.7	1.4	1.4	1.4	.9	1.4	1.5	1.6	
Unit labor costs	.4	.3	1.0	1.7	1.4	1.4	1.4	1.8	1.4	1.4	1.4	1.8	1.4	1.5	1.5	
<i>Previous Tealbook</i>	-3.1	-1.7	-2.0	-1.1	.3	.3	1.0	1.1	1.2	1.3	1.4	1.5	-2.8	.3	1.3	
Core goods imports chain-wt. price index ³	-3.1	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-2.3	.9	1.4	1.2	
<i>Previous Tealbook</i>	-3.0	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-.8	-2.3	.9	1.4	1.2	

1. Change from fourth quarter of previous year to fourth quarter of year indicated.

2. Private-industry workers.

3. Core goods imports exclude computers, semiconductors, oil, and natural gas.

Greensheets

Changes in Prices and Costs
(Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

Item	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
GDP chain-wt. price index <i>Previous Tealbook</i>	.4	1.8	1.9	1.9	1.8	1.6	1.3	1.0	1.7	1.8
PCE chain-wt. price index <i>Previous Tealbook</i>	1.2	1.3	2.7	1.8	1.2	1.1	.3	1.5	1.7	1.9
Energy <i>Previous Tealbook</i>	1.2	1.3	2.7	1.6	1.0	1.1	.3	1.6	1.7	1.8
Food <i>Previous Tealbook</i>	2.3	6.4	12.0	2.3	-2.5	-6.4	-18.3	2.7	2.4	1.5
Ex. food & energy <i>Previous Tealbook</i>	2.3	6.4	12.0	2.1	-2.6	-6.1	-16.4	3.3	2.3	
Ex. food & energy; market based <i>Previous Tealbook</i>	-1.8	1.3	5.1	1.2	.8	2.8	.5	1.8	2.0	1.9
CPI <i>Previous Tealbook</i>	1.4	1.0	1.9	1.8	1.5	1.4	1.3	1.4	1.7	1.9
Ex. food & energy <i>Previous Tealbook</i>	1.4	1.0	1.9	1.6	1.3	1.4	1.3	1.5	1.7	1.8
ECL, hourly compensation ¹ <i>Previous Tealbook</i>	1.8	.7	1.9	1.5	1.2	1.2	1.1	1.4	1.7	1.9
Business sector										
Output per hour <i>Previous Tealbook</i>	5.6	1.7	.0	-.2	1.6	-.2	1.2	1.6	1.5	1.6
Compensation per hour <i>Previous Tealbook</i>	5.6	1.7	.0	.2	2.3	-.4	1.0	1.7	1.7	
Unit labor costs <i>Previous Tealbook</i>	1.3	1.2	.6	5.8	-.1	2.6	2.1	3.0	3.1	3.3
Core goods imports chain-wt. price index ² <i>Previous Tealbook</i>	-1.9	2.3	4.3	.1	-1.1	.5	-2.8	.3	1.3	1.2

1. Private-industry workers.

2. Core goods imports exclude computers, semiconductors, oil, and natural gas.

Other Macroeconomic Indicators

Item	2015			2016			2017			2015 ¹	2016 ¹	2017 ¹	2018 ¹
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<i>Employment and production</i>													
Nonfarm payroll employment ²	.6	.7	.7	.6	.5	.4	.4	.4	.4	.4	.4	2.7	1.9
Unemployment rate ³	5.4	5.2	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.8	4.8	5.0	4.9
<i>Previous Tealbook</i> ³	5.4	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.2	5.2	5.1	4.9
Natural rate of unemployment ³	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
<i>Previous Tealbook</i> ³	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Employment-to-Population Ratio ³	59.4	59.4	59.4	59.5	59.5	59.5	59.4	59.4	59.4	59.3	59.4	59.5	59.3
Employment-to-Population Trend ³	59.9	59.8	59.7	59.6	59.5	59.5	59.4	59.3	59.2	59.1	59.7	59.4	59.1
GDP gap ⁴	-5	-4	-2	-1	0	.1	.4	.4	.5	.6	.8	.2	.4
<i>Previous Tealbook</i> ⁴	-1.3	-1.2	-1.0	-0.9	-0.7	-0.5	-0.4	-0.2	-0.1	0.0	0.1	-1.0	-4
Industrial production ⁵	-2.4	2.7	-1.3	1.2	2.2	2.2	3.0	3.0	2.3	2.1	2.0	-3	2.1
<i>Previous Tealbook</i> ⁵	-1.7	1.2	0	1.2	2.7	2.1	2.5	1.9	1.8	1.8	1.8	-2	2.0
Manufacturing industr. prod. ⁵	1.2	2.5	-3	1.6	3.0	2.8	2.9	2.6	2.4	2.1	2.0	.7	2.6
<i>Previous Tealbook</i> ⁵	1.5	1.7	1.2	1.4	2.5	2.3	2.2	2.0	1.9	1.7	1.7	.9	2.1
Capacity utilization rate - mfg. ³	75.9	76.1	75.8	75.9	76.2	76.5	76.8	77.1	77.4	77.5	77.7	75.8	77.7
<i>Previous Tealbook</i> ³	75.9	76.0	76.0	76.1	76.3	76.4	76.4	76.5	76.5	76.6	76.6	76.0	76.6
Housing starts ⁶	1.2	1.2	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.1	1.3
Light motor vehicle sales ⁶	17.1	17.5	17.0	16.8	16.8	16.8	16.8	16.8	16.7	16.6	17.1	16.8	16.7
<i>Income and saving</i>													
Nominal GDP ⁵	5.9	3.8	1.9	3.9	3.6	3.5	4.0	3.9	3.7	3.7	4.0	3.1	3.8
Real disposable pers. income ⁵	1.3	4.4	1.9	3.8	2.4	2.2	2.1	2.9	1.7	2.3	2.2	2.9	2.6
<i>Previous Tealbook</i> ⁵	3.0	1.7	2.6	3.9	2.3	2.3	2.3	3.2	2.1	2.3	2.2	3.2	2.7
Personal saving rate ³	4.8	5.1	4.9	5.1	4.9	4.6	4.4	4.4	4.2	4.1	4.1	4.9	4.4
<i>Previous Tealbook</i> ³	5.4	5.1	5.0	5.1	4.8	4.6	4.4	4.5	4.3	4.2	4.2	5.0	4.4
Corporate profits ⁷	8.3	7.0	-12.9	-1.6	-2.8	1.4	6.3	-2.3	-3.3	.2	4.1	-5.5	.7
Profit share of GNP ³	11.3	11.4	11.0	10.8	10.7	10.6	10.7	10.5	10.4	10.3	10.3	11.0	10.7
Gross national saving rate ³	18.2	18.5	18.4	18.3	18.2	18.0	17.9	17.7	17.6	17.5	17.5	18.4	17.9
Net national saving rate ³	3.3	3.6	3.5	3.2	3.1	2.8	2.6	2.3	2.2	2.0	1.9	3.5	2.6

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1. Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise indicated.

2. Change, millions.

3. Percent; annual values are for the fourth quarter of the year indicated.

4. Percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential.

Annual values are for the fourth quarter of the year indicated.

5. Percent change, annual rate.

6. Level, millions; annual values are annual averages.

7. Percent change, annual rate, with inventory valuation and capital consumption adjustments.

Greensheets

Other Macroeconomic Indicators

(Change from fourth quarter of previous year to fourth quarter of year indicated, unless otherwise noted)

Item	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Employment and production</i>										
Nonfarm payroll employment ¹	-5.6	.8	2.0	2.2	2.5	2.9	2.7	1.9	1.6	1.3
Unemployment rate ²	9.9	9.5	8.7	7.8	7.0	5.7	5.0	4.9	4.8	4.7
<i>Previous Tealbook</i> ²	9.9	9.5	8.7	7.8	7.0	5.7	5.2	5.1	5.1	4.9
Natural rate of unemployment ²	6.2	6.2	6.0	5.8	5.4	5.1	5.1	5.1	5.1	5.1
<i>Previous Tealbook</i> ²	6.2	6.2	6.0	5.8	5.4	5.1	5.1	5.1	5.1	5.1
Employment-to-Population Ratio ²	58.4	58.3	58.5	58.7	58.5	59.2	59.4	59.5	59.3	59.1
Employment-to-Population Trend ²	61.3	60.9	60.6	60.3	60.2	60.0	59.7	59.4	59.1	58.8
GDP gap ³	-5.5	-4.4	-4.2	-4.2	-2.8	-2.8	-2.9	-2.2	-4	.9
<i>Previous Tealbook</i> ³	-5.5	-4.4	-4.2	-4.1	-2.8	-2.8	-1.0	-1.0	-4	.1
Industrial production ⁴	-5.4	5.9	2.8	2.1	2.3	4.5	-3	2.1	2.4	1.9
<i>Previous Tealbook</i> ⁴	-5.4	5.9	2.8	2.1	2.3	4.5	-2	2.0	2.0	2.0
Manufacturing industr. prod. ⁴	-6.1	6.0	2.7	1.5	1.3	3.4	.7	2.6	2.3	1.9
<i>Previous Tealbook</i> ⁴	-6.1	6.0	2.7	1.5	1.3	3.4	.9	2.1	1.8	1.8
Capacity utilization rate - mfg. ²	67.1	72.5	74.4	74.1	74.2	76.2	75.8	76.8	77.7	78.3
<i>Previous Tealbook</i> ²	67.1	72.5	74.4	74.1	74.2	76.2	76.0	76.4	76.6	76.6
Housing starts ⁵	.6	11.5	12.6	.8	.9	1.0	1.1	1.3	1.5	1.5
Light motor vehicle sales ⁵	10.4	11.5	12.7	14.4	15.5	16.4	17.1	16.8	16.7	16.6
<i>Income and saving</i>										
Nominal GDP ⁴	.1	4.6	3.6	3.2	4.1	3.9	3.1	3.8	3.8	3.8
Real disposable pers. income ⁴	-7	2.6	1.7	5.1	-2.9	3.6	2.9	2.6	2.3	2.2
<i>Previous Tealbook</i> ⁴	-7	2.6	1.7	5.0	-1.9	3.3	3.2	2.7	2.5	2.5
Personal saving rate ²	5.6	5.5	5.8	9.2	4.4	4.7	4.9	4.4	4.1	4.2
<i>Previous Tealbook</i> ²	5.6	5.5	5.8	8.6	4.4	4.7	5.0	4.4	4.2	4.2
Corporate profits ⁶	53.7	18.0	6.8	.6	4.1	3.4	-5.5	.7	-.3	1.8
Profit share of GNP ²	10.6	12.0	12.3	12.0	12.0	11.9	11.0	10.7	10.3	10.1
Gross national saving rate ²	14.6	15.2	16.1	18.0	18.1	18.8	18.4	17.9	17.5	17.4
Net national saving rate ²	-1.7	-.3	.8	2.9	3.1	3.9	3.5	2.6	1.9	1.7

1. Change, millions.

2. Percent; values are for the fourth quarter of the year indicated.

3. Percent difference between actual and potential GDP; a negative number indicates that the economy is operating below potential.

Values are for the fourth quarter of the year indicated.

4. Percent change.

5. Level, millions; values are annual averages.

6. Percent change, with inventory valuation and capital consumption adjustments.

Staff Projections of Federal Sector Accounts and Related Items
(Billions of dollars except as noted)

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Item	Fiscal year				2015				2016				2017			
	2015	2016	2017	2018	Q1 ^a	Q2 ^a	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Unified budget																
Receipts	3,252	3,399	3,527	3,639	680	1,027	805	736	720	1,084	859	794	747	1,116	871	819
Outlays	3,675	3,862	3,996	4,214	943	904	912	999	944	949	970	975	1,056	990	975	1,031
Surplus/deficit	-424	-463	-469	-575	-263	123	-107	-263	-224	135	-111	-181	-309	125	-104	-213
<i>Previous Tealbook</i>	-393	-443	-478	-627	-263	126	-80	-253	-223	138	-105	-180	-315	121	-103	-227
Means of financing:																
Borrowing	345	418	587	696	67	-15	53	29	364	-93	117	195	360	-97	129	242
Cash decrease	-45	65	2	-1	123	-154	51	164	-110	-12	23	16	-21	2	5	1
Other ¹	123	-20	-120	-120	73	44	3	70	-30	-30	-30	-30	-30	-30	-30	-30
Cash operating balance, end of period	203	138	136	137	100	254	203	39	149	161	138	122	143	141	136	135
NIPA federal sector																
Receipts	3,378	3,515	3,648	3,785	3,356	3,408	3,452	3,468	3,498	3,528	3,566	3,610	3,629	3,659	3,695	3,734
Expenditures	3,983	4,103	4,309	4,514	3,936	4,014	4,058	4,006	4,110	4,122	4,173	4,237	4,315	4,314	4,371	4,424
Consumption expenditures	955	961	972	983	957	957	956	954	962	963	963	964	973	975	976	977
Defense	594	595	597	601	595	595	594	592	596	595	595	595	598	598	597	597
Nondefense	361	366	375	382	362	362	362	362	366	367	368	369	375	376	378	380
Other spending	3,028	3,142	3,337	3,531	2,979	3,057	3,102	3,052	3,148	3,159	3,210	3,273	3,341	3,339	3,395	3,446
Current account surplus	-605	-588	-661	-729	-579	-606	-606	-538	-612	-594	-608	-626	-685	-655	-676	-690
Gross investment	263	260	261	262	263	262	260	260	260	260	260	260	260	260	260	260
Gross saving less gross investment ²	-596	-574	-644	-710	-569	-598	-595	-525	-599	-580	-593	-611	-669	-638	-658	-672
Fiscal indicators																
High-employment (HEB) surplus/deficit ³	-552.4	-585.5	-683.9	-769.9	-507.9	-569.0	-583.1	-524.6	-608.0	-594.8	-614.6	-645.6	-703.7	-679.4	-706.8	-730.1
Change in HEB, percent of potential GDP	.5	.1	.4	.3	-.2	.3	.1	-.3	.4	-.1	.1	.1	.3	-.2	.1	.1
Fiscal impetus (FI), percent of GDP ⁴	.3	.2	.2	.2	.0	.7	.2	.3	.1	.3	.2	.2	.1	.3	.2	.2
<i>Previous Tealbook</i>	.2	.2	.2	.2	-.2	.4	.3	.3	.7	.2	.3	.2	.3	.2	.2	.2
Federal purchases	.0	-1	.0	.1	.1	.0	.0	-.1	-.1	-.1	-.1	-.1	-.1	-.1	-.1	0
State and local purchases	.2	.2	.2	.2	-.1	.2	.5	.1	.1	.1	.1	.1	.1	.3	.2	.1
Taxes and transfers	.2	.1	.1	.0	.0	.2	.2	.3	.1	.1	.1	.1	.1	.1	.1	.1

1. Other means of financing include checks issued less checks paid, accrued items, and changes in other financial assets and liabilities.

2. Gross saving is the current account surplus plus consumption of fixed capital of the general government as well as government enterprises.

3. HEB is gross saving less gross investment (NIPA) of the federal government in current dollars, with cyclically sensitive receipts and outlays adjusted to the staff's measure of potential output and the natural rate of unemployment. The sign on Change in HEB, as a percent of nominal potential GDP, is reversed. Quarterly figures for change in HEB are not at annual rates.

4. Fiscal impetus measures the contribution to growth of real GDP from fiscal policy actions at the general government level (excluding multiplier effects). It equals the sum of the direct contributions to real GDP growth from changes in federal purchases and state and local purchases, plus the estimated contribution from real consumption and investment that is induced by discretionary policy changes in transfers and taxes.

a Actual.

Greensheets

Foreign Real GDP and Consumer Prices: Selected Countries (Quarterly percent changes at an annual rate)

Measure and country	2015				2016				Projected 2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Real GDP¹												
Total foreign	1.6	1.1	2.1	2.4	2.8	2.9	3.0	3.0	3.0	2.6	2.9	2.9
<i>Previous Tealbook</i>	<i>1.6</i>	<i>1.7</i>	<i>2.5</i>	<i>2.8</i>	<i>3.0</i>	<i>3.1</i>	<i>3.1</i>	<i>3.1</i>	<i>3.1</i>	<i>2.7</i>	<i>3.0</i>	<i>3.0</i>
Advanced foreign economies	1.0	.3	1.7	1.8	2.0	2.1	2.1	2.1	2.2	1.3	1.8	2.0
Canada	-8	-.5	1.8	2.0	2.2	2.4	2.3	2.2	2.1	2.0	2.0	2.0
Japan	4.5	-1.2	1.1	2.5	1.0	1.1	1.1	1.3	3.0	-5.0	-3	1.0
United Kingdom	1.5	2.7	2.6	2.5	2.7	2.7	2.8	2.7	2.5	2.4	2.4	2.4
Euro area	2.1	1.4	1.6	1.6	1.7	1.9	1.9	2.0	2.0	2.0	2.0	2.1
Germany	1.4	1.8	1.8	1.8	1.7	1.8	1.9	2.0	2.0	1.9	1.9	1.9
Emerging market economies	2.3	1.9	2.5	3.0	3.5	3.6	3.8	3.8	3.8	3.8	3.8	3.8
Asia	4.1	3.9	4.2	4.7	4.9	4.9	4.9	4.9	4.8	4.8	4.8	4.8
Korea	3.3	1.3	3.0	3.9	3.9	3.9	3.9	3.9	3.7	3.7	3.7	3.7
China	5.1	7.8	6.3	6.3	6.2	6.2	6.2	6.2	6.1	6.1	6.1	6.1
Latin America	.9	.2	1.1	1.7	2.4	2.5	2.8	2.8	2.9	2.9	3.0	3.0
Mexico	1.7	2.0	2.3	2.6	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2
Brazil	-3.0	-7.2	-3.0	-.5	.8	1.0	1.2	1.5	1.8	2.1	2.1	2.1
<i>Consumer prices²</i>												
Total foreign	-1	2.6	2.3	2.0	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4
<i>Previous Tealbook</i>	<i>-1</i>	<i>2.6</i>	<i>2.2</i>	<i>2.2</i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	<i>2.5</i>	<i>2.5</i>	<i>2.5</i>	<i>2.5</i>
Advanced foreign economies	-.8	2.0	.6	.9	1.3	1.4	1.5	1.5	1.6	1.6	1.6	1.7
Canada	-2	2.5	1.2	1.7	1.7	1.7	1.8	1.9	2.0	2.0	2.0	2.0
Japan	-.3	1.7	0	-.4	.5	.9	1.0	1.1	1.2	6.5	1.2	1.2
United Kingdom	-1.6	1.1	1.7	1.5	1.7	1.7	1.8	1.9	1.9	2.0	2.0	2.0
Euro area	-1.4	2.3	.3	.9	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.6
Germany	-1.7	2.3	.9	.8	1.3	1.5	1.6	1.7	1.7	1.7	1.7	1.7
Emerging market economies	.4	3.1	3.6	2.9	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Asia	-.3	2.7	3.4	2.5	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Korea	.1	1.5	1.4	2.5	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.3
China	-.4	2.6	4.1	2.2	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Latin America	1.6	3.9	4.2	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7
Mexico	.3	2.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Brazil	11.1	10.8	10.0	6.6	6.1	5.7	5.7	5.6	5.5	5.4	5.4	5.4

¹Foreign GDP aggregates calculated using shares of U.S. exports.

²Foreign CPI aggregates calculated using shares of U.S. non-oil imports.

Foreign Real GDP and Consumer Prices: Selected Countries
 (Percent change, Q4 to Q4)

Class II FOMC - Restricted (FR)

Authorized for Public Release

September 9, 2015

Measure and country	2010	2011	2012	2013	2014	2015	2016	2017	2018
Real GDP¹									
Total foreign	4.8	3.2	2.3	2.7	2.5	1.8	2.9	2.8	2.9
<i>Previous Tealbook</i>	4.8	3.2	2.3	2.7	2.5	2.2	3.1	3.0	3.0
Advanced foreign economies	3.1	1.8	.3	2.0	1.7	1.2	2.1	1.8	1.9
Canada	3.6	3.0	1.0	2.7	2.5	.6	2.3	2.0	1.9
Japan	3.6	.3	.0	2.3	-.8	1.3	1.1	-.4	1.1
United Kingdom	2.2	1.5	.4	2.4	3.4	2.3	2.7	2.4	2.4
Euro area	2.4	.6	-1.0	.6	.9	1.7	1.9	2.0	2.0
Germany	4.5	2.4	.1	1.3	1.5	1.7	1.8	1.9	1.8
Emerging market economies	6.7	4.6	4.3	3.4	3.2	2.4	3.7	3.8	3.9
Asia	8.3	4.9	5.7	5.3	4.9	4.2	4.9	4.8	4.8
Korea	6.1	2.9	2.1	3.4	2.7	2.9	3.9	3.7	3.7
China	9.7	8.7	7.8	7.5	7.3	6.4	6.2	6.1	6.0
Latin America	4.7	4.2	3.4	1.5	1.9	1.0	2.6	3.0	3.1
Mexico	4.4	4.2	3.4	1.0	2.6	2.2	3.0	3.1	3.3
Brazil	5.8	2.5	2.3	2.0	-.3	-3.4	1.1	2.0	2.1
<i>Consumer prices²</i>									
Total foreign	3.2	3.4	2.3	2.3	2.0	2.0	1.7	2.4	2.6
<i>Previous Tealbook</i>	3.2	3.4	2.3	2.3	2.0	1.7	2.4	2.6	2.5
Advanced foreign economies	1.7	2.2	1.3	1.0	1.2	.7	1.4	1.9	1.7
Canada	2.2	2.7	1.0	1.0	1.9	1.3	1.8	2.0	2.0
Japan	-.3	-.3	-.2	1.4	2.5	.3	.9	2.5	1.3
United Kingdom	3.4	4.6	2.6	2.1	.9	.6	1.8	2.0	2.0
Euro area	2.0	2.9	2.3	.8	.2	.5	1.4	1.5	1.6
Germany	1.6	2.6	2.0	1.3	.4	.5	1.5	1.7	1.8
Emerging market economies	4.3	4.3	3.1	3.3	2.6	2.5	3.1	3.1	3.1
Asia	4.3	4.5	2.6	3.1	1.8	2.1	2.7	2.8	2.8
Korea	3.2	3.9	1.7	1.1	1.0	1.4	3.2	3.2	3.2
China	4.6	4.6	2.1	2.9	1.5	2.1	2.5	2.5	2.5
Latin America	4.4	4.0	4.3	4.0	4.8	3.4	3.8	3.7	3.7
Mexico	4.3	3.5	4.1	3.7	4.2	2.4	3.3	3.3	3.3
Brazil	5.6	6.7	5.6	5.9	6.5	9.6	5.8	5.4	5.4

¹ Foreign GDP aggregates calculated using shares of U.S. exports.

² Foreign CPI aggregates calculated using shares of U.S. non-oil imports.

**U.S. Current Account
Quarterly Data**

	<i>Billions of dollars, s.a.a.r.</i>							
	2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
U.S. current account balance								
<i>Previous Tealbook</i>	-469.5	-456.7	-454.7	-512.2	-588.5	-604.2	-653.8	-696.7
Current account as percent of GDP	-2.7	-2.6	-2.5	-2.8	-3.2	-3.3	-3.5	-3.7
<i>Previous Tealbook</i>	-453.3	-440.7	-470.5	-507.2	-586.6	-596.3	-643.9	-664.0
Net goods & services	-2.6	-2.5	-2.6	-2.8	-3.2	-3.2	-3.4	-3.5
Investment income, net	-537.2	-520.0	-514.1	-547.0	-608.0	-637.3	-685.3	-715.1
Direct, net	212.7	200.7	199.6	178.3	176.0	171.5	169.7	161.9
Portfolio, net	283.6	280.8	282.7	272.3	282.1	291.3	306.1	316.2
Other income and transfers, net	-71.0	-80.1	-83.1	-94.0	-106.1	-119.9	-136.4	-154.3
	-145.0	-137.4	-140.1	-143.5	-156.5	-138.3	-138.2	-143.5
<i>Annual Data</i>								
	2010	2011	2012	2013	2014	2015	2016	2017
<i>Billions of dollars</i>								
U.S. current account balance								
<i>Previous Tealbook</i>	-442.0	-460.4	-449.7	-449.7	-376.8	-389.5	-473.3	-635.8
Current account as percent of GDP	-3.0	-3.0	-2.8	-2.8	-2.3	-2.2	-2.6	-3.4
<i>Previous Tealbook</i>	-442.0	-460.4	-449.7	-449.7	-376.8	-389.5	-468.0	-622.7
Net goods & services	-3.0	-3.0	-2.8	-2.8	-2.2	-2.2	-2.6	-3.3
Investment income, net	-494.7	-548.6	-536.8	-478.4	-508.3	-529.5	-661.4	-778.3
Direct, net	185.7	229.0	220.8	233.6	247.4	197.8	169.8	145.4
Portfolio, net	288.0	298.6	290.2	301.7	300.5	279.9	298.9	347.9
Other income and transfers, net	-102.3	-69.5	-69.4	-68.1	-53.1	-82.1	-129.2	-202.5
	-133.0	-140.8	-133.7	-132.0	-128.6	-141.5	-144.2	-144.2
<i>Projected</i>								
								2018

Abbreviations

ABS	asset-backed securities
AFE	advanced foreign economy
BHC	bank holding company
BLS	Bureau of Labor Statistics
BOC	Bank of Canada
BOE	Bank of England
BOM	Bank of Mexico
CDS	credit default swaps
C&I	commercial and industrial
CMBS	commercial mortgage-backed securities
CPI	consumer price index
CRE	commercial real estate
Desk	Open Market Desk
DSGE	dynamic stochastic general equilibrium
ECB	European Central Bank
ECI	employment cost index
EME	emerging market economy
ETF	exchange-traded fund
FFELP	Federal Family Education Loan Program
FOMC	Federal Open Market Committee; also, the Committee
GDP	gross domestic product
HQLA	high-quality liquid assets
IT	information technology
MBS	mortgage-backed securities
MERS	Middle East Respiratory Syndrome
Michigan survey	University of Michigan Surveys of Consumers
NIPA	national income product accounts
OIS	overnight index swap

ON RRP	overnight reverse repurchase agreement
PBOC	People's Bank of China
PCE	personal consumption expenditures
PMI	purchasing managers index
RRP	reverse repurchase agreement
SOMA	System Open Market Account
S&P	Standard & Poor's
TDF	Term Deposit Facility
TIPS	Treasury Inflation-Protected Securities

Class I FOMC – Restricted Controlled (FR)

Report to the FOMC on Economic Conditions and Monetary Policy



Book B Monetary Policy: Strategies and Alternatives

September 10, 2015

Prepared for the Federal Open Market Committee
by the staff of the Board of Governors of the Federal Reserve System

Policy Rules and the Staff Projection

Near-Term Prescriptions of Selected Policy Rules

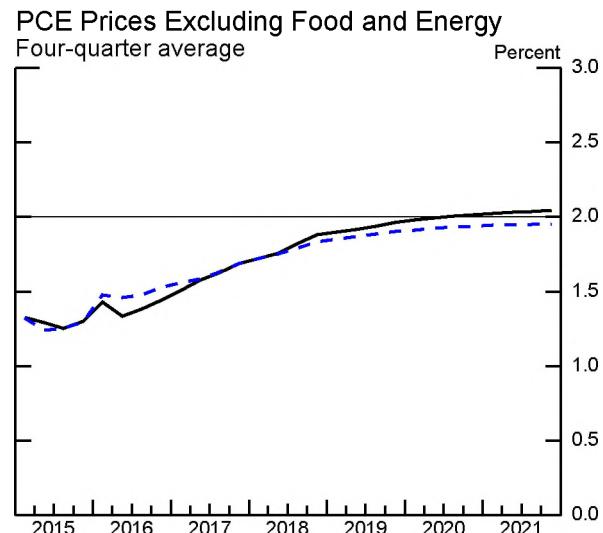
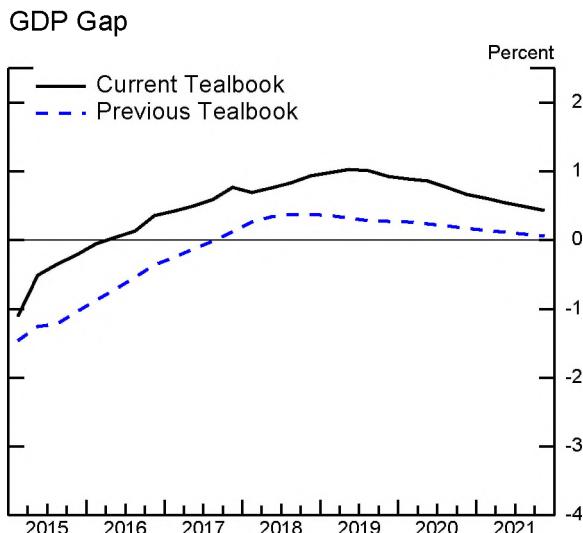
	<u>2015:Q4</u>	<u>2016:Q1</u>
Taylor (1993) rule	2.11	2.37
<i>Previous Tealbook</i>	1.67	2.04
Taylor (1999) rule	2.01	2.34
<i>Previous Tealbook</i>	1.15	1.60
Inertial Taylor (1999) rule	0.44	0.73
<i>Previous Tealbook outlook</i>	0.30	0.50
First-difference rule	0.13	0.13
<i>Previous Tealbook outlook</i>	0.23	0.33

Memo: Equilibrium and Actual Real Federal Funds Rates

	Current Tealbook	<i>Previous Tealbook</i>
Tealbook-consistent FRB/US r^* estimate	0.47	−0.06
Actual real federal funds rate	−1.16	−1.11

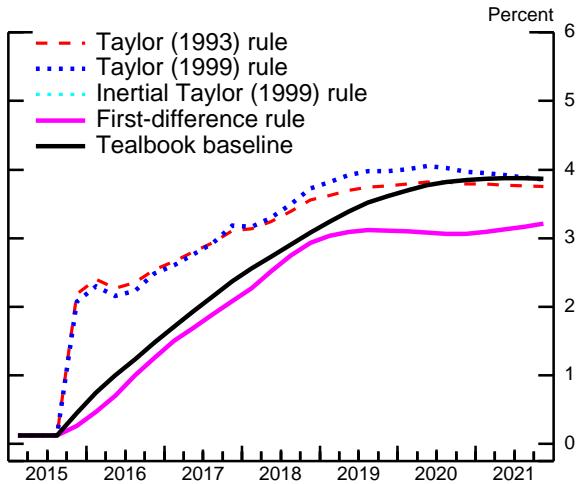
Note: The lines denoted "Previous Tealbook" and "Previous Tealbook outlook" report rule prescriptions based on the previous Tealbook's staff outlook using the current rule specifications, which have intercept terms that have been adjusted, where applicable, to reflect the staff's downward revision to the longer-run real federal funds rate. Rules that have the lagged policy rate as a right-hand-side variable jump off from the average value of the policy rate thus far in the current quarter.

Key Elements of the Staff Projection

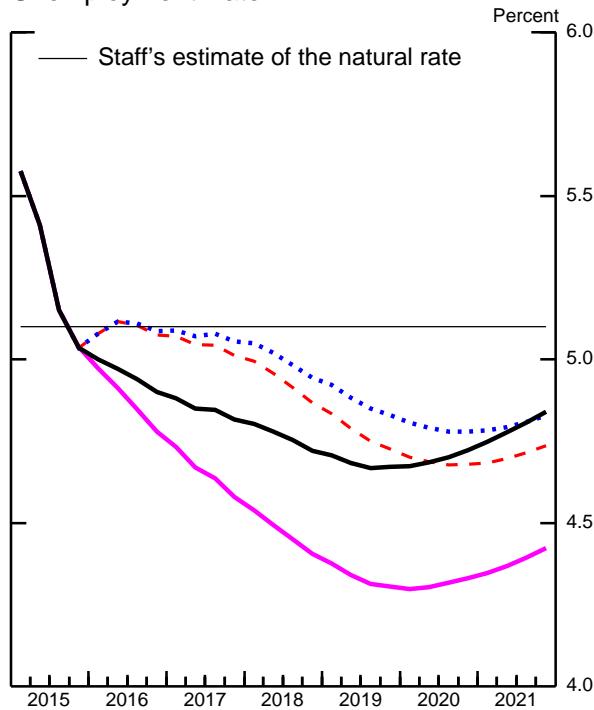


Policy Rule Simulations

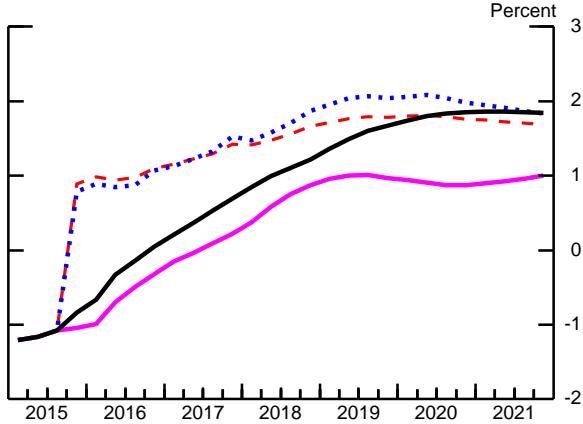
Effective Nominal Federal Funds Rate



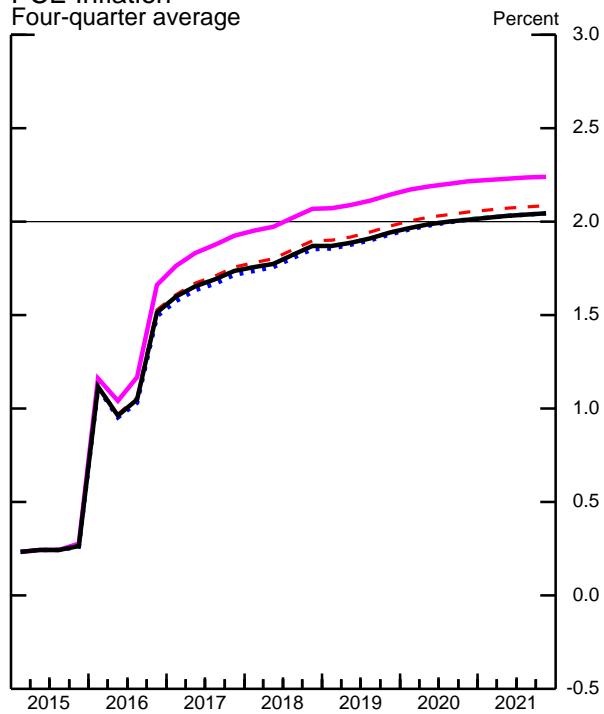
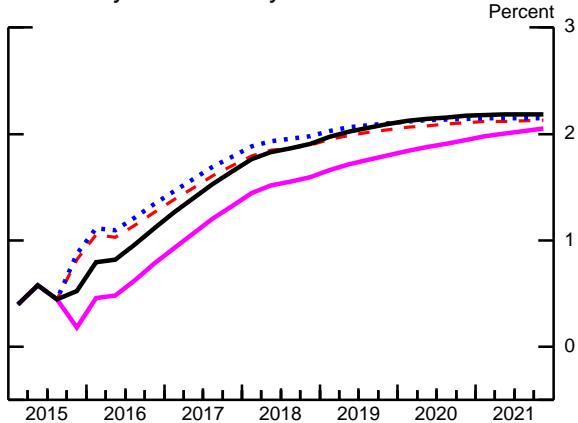
Unemployment Rate



Real Federal Funds Rate

PCE Inflation
Four-quarter average

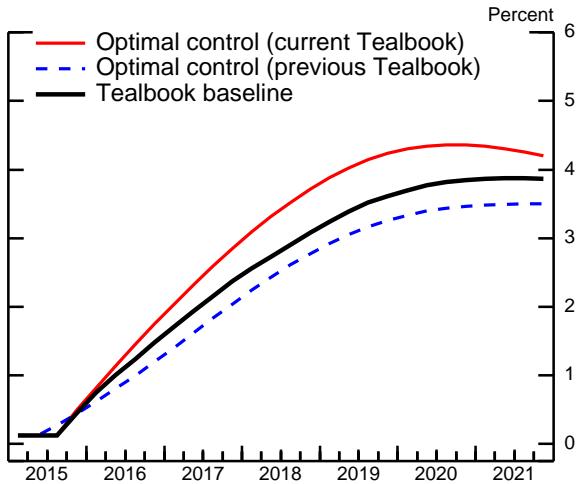
Real 10-year Treasury Yield



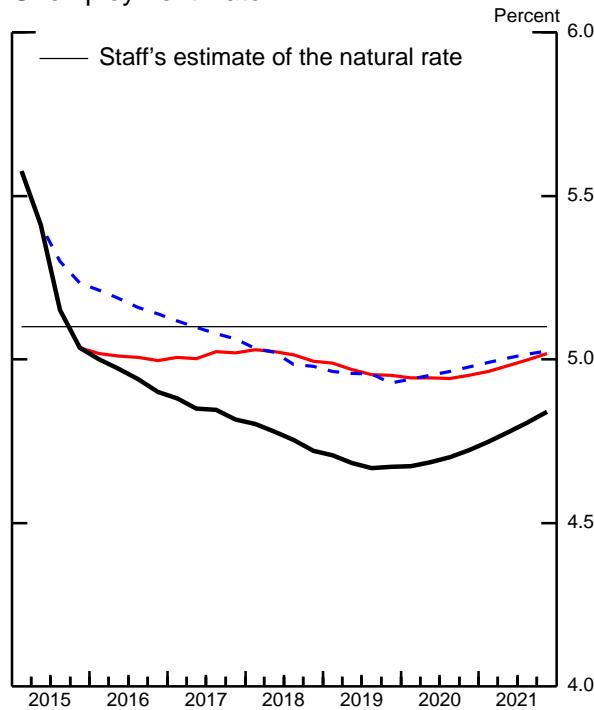
Note: The policy rule simulations in this exhibit are based on rules that respond to core inflation. This choice of rule specification was made in light of the tendency for current and near-term core inflation rates to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

Optimal Control Policy under Commitment

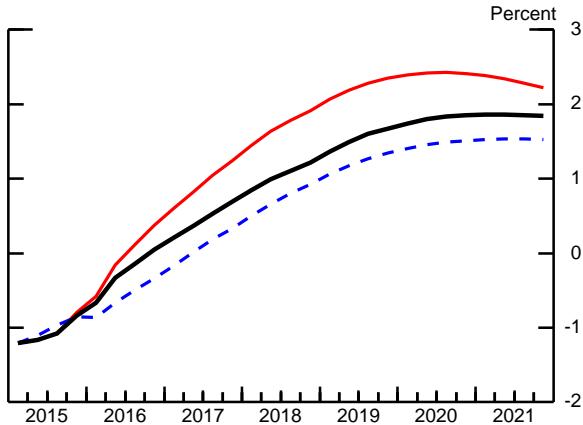
Effective Nominal Federal Funds Rate



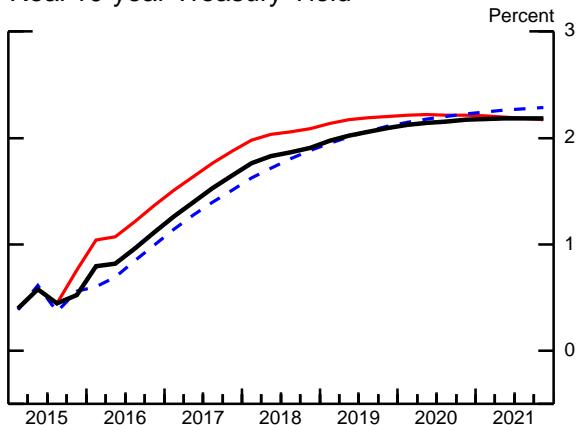
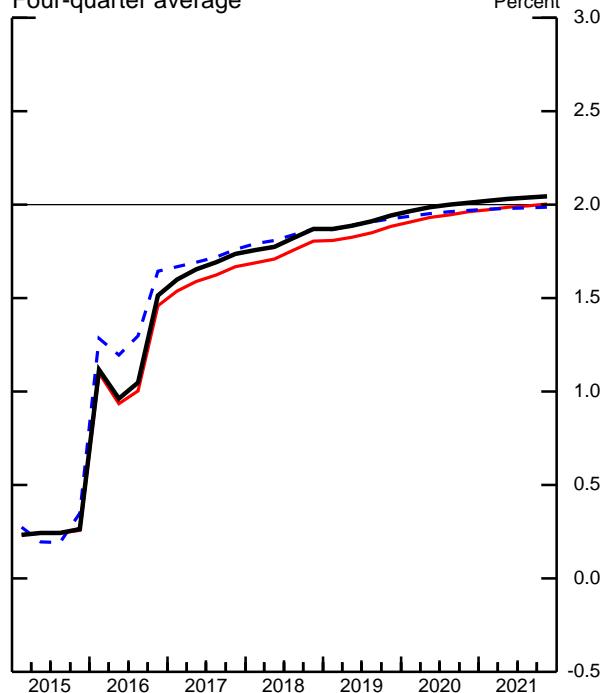
Unemployment Rate



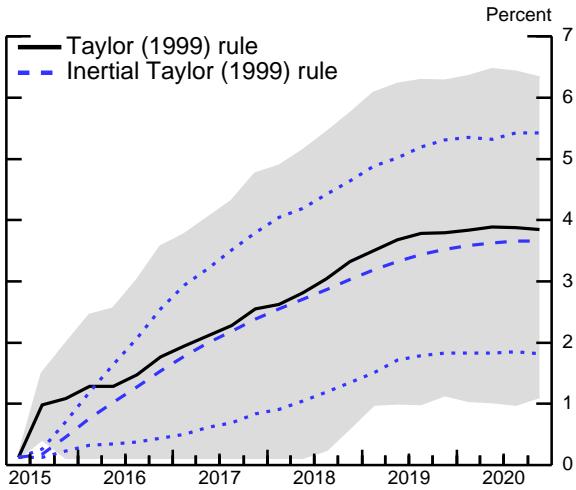
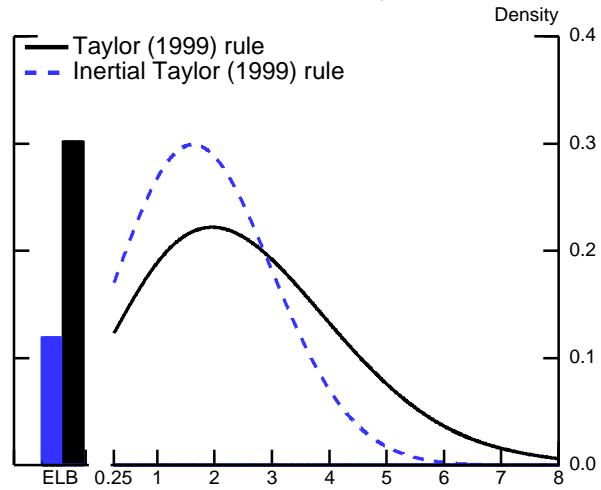
Real Federal Funds Rate



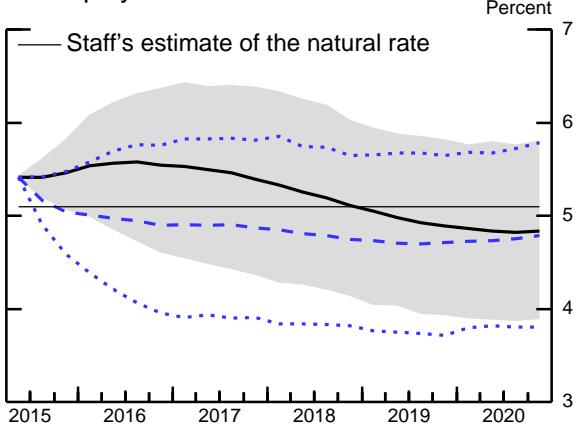
Real 10-year Treasury Yield

PCE Inflation
Four-quarter average

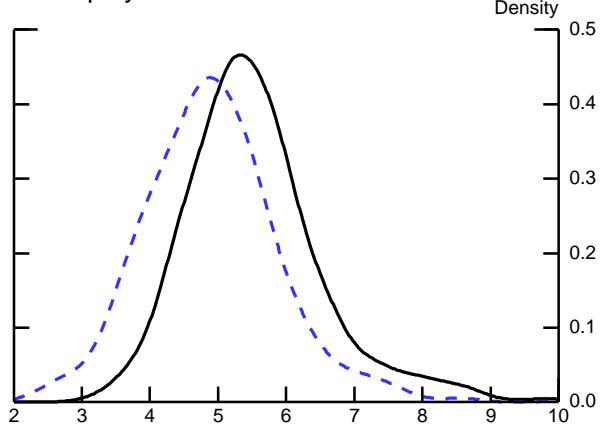
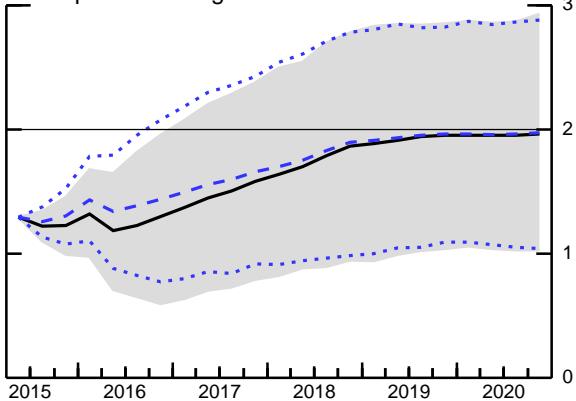
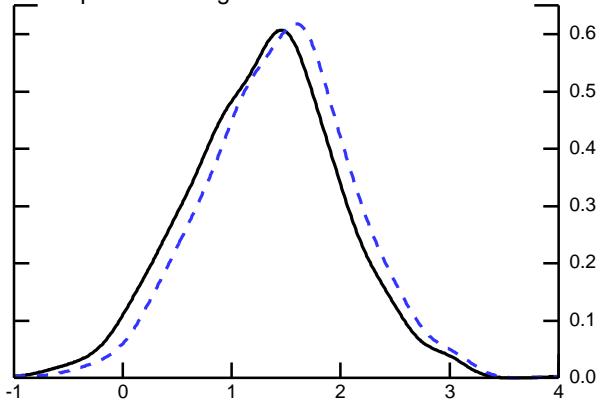
Policy Inertia and Macroeconomic Outcomes

Federal Funds Rate¹Federal Funds Rate in 2016:Q4²

Unemployment Rate



Unemployment Rate in 2016:Q4

Core PCE Inflation
Four-quarter averageCore PCE Inflation in 2016:Q4
Four-quarter average

1. The gray shaded area and the dotted lines show 68 percent coverage intervals associated with the non-inertial and inertial versions of the Taylor (1999) rule, respectively.

2. The thick vertical bars represent the probability of the federal funds rate being at the effective lower bound (ELB), while the lines plot the density of the federal funds rate conditional on being above the ELB.

Outcomes under Alternative Policies

(Percent change, annual rate, from end of preceding period except as noted)

Measure and policy	2015		2016	2017	2018	2019
	H1	H2				
<i>Real GDP</i>						
Extended Tealbook baseline ¹	2.2	1.9	2.1	2.0	1.8	1.7
Taylor (1993)	2.2	1.9	1.7	1.9	1.9	1.8
Taylor (1999)	2.2	1.9	1.7	1.9	1.9	1.8
Inertial Taylor (1999)	2.2	1.9	2.1	2.0	1.8	1.7
First-difference	2.2	1.9	2.3	2.2	2.0	1.8
Optimal control	2.2	1.9	1.9	1.8	1.7	1.7
<i>Unemployment rate²</i>						
Extended Tealbook baseline ¹	5.4	5.0	4.9	4.8	4.7	4.7
Taylor (1993)	5.4	5.0	5.1	5.0	4.9	4.7
Taylor (1999)	5.4	5.0	5.1	5.1	4.9	4.8
Inertial Taylor (1999)	5.4	5.0	4.9	4.8	4.7	4.7
First-difference	5.4	5.0	4.8	4.6	4.4	4.3
Optimal control	5.4	5.0	5.0	5.0	5.0	5.0
<i>Total PCE prices</i>						
Extended Tealbook baseline ¹	0.1	0.4	1.5	1.7	1.9	1.9
Taylor (1993)	0.1	0.4	1.5	1.8	1.9	2.0
Taylor (1999)	0.1	0.4	1.5	1.7	1.9	1.9
Inertial Taylor (1999)	0.1	0.4	1.5	1.7	1.9	1.9
First-difference	0.1	0.4	1.7	1.9	2.1	2.1
Optimal control	0.1	0.4	1.5	1.7	1.8	1.9
<i>Core PCE prices</i>						
Extended Tealbook baseline ¹	1.4	1.2	1.4	1.7	1.9	2.0
Taylor (1993)	1.4	1.2	1.5	1.7	1.9	2.0
Taylor (1999)	1.4	1.2	1.4	1.7	1.9	2.0
Inertial Taylor (1999)	1.4	1.2	1.4	1.7	1.9	2.0
First-difference	1.4	1.2	1.6	1.9	2.1	2.2
Optimal control	1.4	1.2	1.4	1.6	1.8	1.9
<i>Effective nominal federal funds rate²</i>						
Extended Tealbook baseline ¹	0.1	0.5	1.5	2.4	3.1	3.6
Taylor (1993)	0.1	2.2	2.5	3.1	3.6	3.8
Taylor (1999)	0.1	2.1	2.5	3.2	3.7	4.0
Inertial Taylor (1999)	0.1	0.5	1.5	2.4	3.1	3.6
First-difference	0.1	0.3	1.3	2.1	2.9	3.1
Optimal control	0.1	0.5	1.7	2.8	3.7	4.2

1. In the Tealbook baseline, the federal funds rate first departs from an effective lower bound of 12½ basis points in September of 2015. Thereafter, the federal funds rate follows the prescriptions of the inertial Taylor (1999) rule.

2. Percent, average for the final quarter of the period.

Outcomes under Alternative Policies, Quarterly

(Four-quarter percentage change, except as noted)

Measure and policy	2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<i>Real GDP</i>								
Extended Tealbook baseline ¹	2.9	2.7	2.1	2.0	2.4	1.9	1.9	2.1
Taylor (1993)	2.9	2.7	2.1	2.0	2.3	1.7	1.7	1.7
Taylor (1999)	2.9	2.7	2.1	2.0	2.3	1.7	1.6	1.7
Inertial Taylor (1999)	2.9	2.7	2.1	2.0	2.4	1.9	1.9	2.1
First-difference	2.9	2.7	2.1	2.0	2.5	2.1	2.1	2.3
Optimal control	2.9	2.7	2.1	2.0	2.4	1.9	1.8	1.9
<i>Unemployment rate²</i>								
Extended Tealbook baseline ¹	5.6	5.4	5.2	5.0	5.0	5.0	4.9	4.9
Taylor (1993)	5.6	5.4	5.2	5.0	5.1	5.1	5.1	5.1
Taylor (1999)	5.6	5.4	5.2	5.0	5.1	5.1	5.1	5.1
Inertial Taylor (1999)	5.6	5.4	5.2	5.0	5.0	5.0	4.9	4.9
First-difference	5.6	5.4	5.2	5.0	5.0	4.9	4.8	4.8
Optimal control	5.6	5.4	5.2	5.0	5.0	5.0	5.0	5.0
<i>Total PCE prices</i>								
Extended Tealbook baseline ¹	0.2	0.2	0.2	0.3	1.1	1.0	1.0	1.5
Taylor (1993)	0.2	0.2	0.2	0.3	1.1	1.0	1.0	1.5
Taylor (1999)	0.2	0.2	0.2	0.3	1.1	1.0	1.0	1.5
Inertial Taylor (1999)	0.2	0.2	0.2	0.3	1.1	1.0	1.0	1.5
First-difference	0.2	0.2	0.2	0.3	1.2	1.0	1.0	1.7
Optimal control	0.2	0.2	0.2	0.3	1.1	0.9	1.0	1.5
<i>Core PCE prices</i>								
Extended Tealbook baseline ¹	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.4
Taylor (1993)	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.5
Taylor (1999)	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.4
Inertial Taylor (1999)	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.4
First-difference	1.3	1.3	1.3	1.3	1.5	1.4	1.5	1.6
Optimal control	1.3	1.3	1.3	1.3	1.4	1.3	1.3	1.4
<i>Effective nominal federal funds rate²</i>								
Extended Tealbook baseline ¹	0.1	0.1	0.2	0.5	0.8	1.0	1.2	1.5
Taylor (1993)	0.1	0.1	0.2	2.2	2.4	2.3	2.4	2.5
Taylor (1999)	0.1	0.1	0.2	2.1	2.3	2.2	2.2	2.5
Inertial Taylor (1999)	0.1	0.1	0.2	0.5	0.7	1.0	1.2	1.5
First-difference	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3
Optimal control	0.1	0.1	0.2	0.5	0.8	1.1	1.4	1.7

1. In the Tealbook baseline, the federal funds rate first departs from an effective lower bound of 12½ basis points in September of 2015. Thereafter, the federal funds rate follows the prescriptions of the inertial Taylor (1999) rule.

2. Percent, average for the quarter.

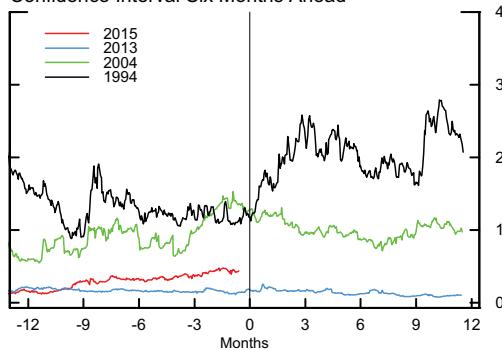
Financial Market Responses to Episodes of Tightening

As the FOMC contemplates the first policy rate increase in almost a decade, we review the 1994 and 2004 tightening episodes, as well as the 2013 “taper tantrum,” to shed some light on potential financial market responses to liftoff.

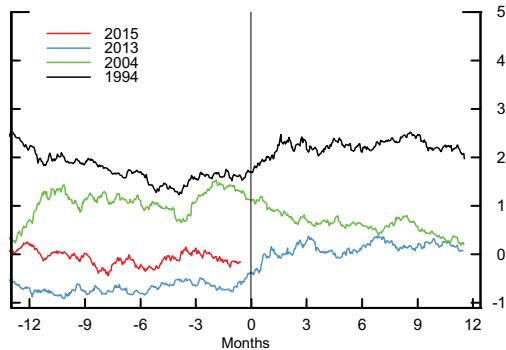
- On February 4, 1994, the FOMC increased the target federal funds rate for the first time since 1989, by 25 basis points. The 10-year nominal Treasury yield rose 14 basis points on the day of the announcement and continued to move higher in subsequent months amid stronger-than-expected economic data. Uncertainty about the path of short-term interest rates also rose notably (figure 1), likely pushing up term premiums (figure 2).
- On June 30, 2004, the FOMC raised the target federal funds rate for the first time since 2000, again by 25 basis points. The 10-year Treasury yield declined 9 basis points on the day, as investors reportedly focused on the unexpected retention of the “measured pace” language, and continued to decline over the next six months along with term premiums. Uncertainty about the policy rate, which had risen modestly ahead of tightening, subsequently declined a bit.
- In late spring of 2013, following Federal Reserve communications interpreted as suggesting that the odds of a reduction in the pace of asset purchases in subsequent months were higher than market participants had been expecting, investors suddenly reassessed the monetary policy outlook (the “taper tantrum”). The 10-year Treasury yield rose 85 basis points in the three months following Chairman Bernanke’s Congressional testimony on May 22, 2013, largely reflecting higher term premiums.

As shown in table 3, financial market quotes suggest that investors currently place notably lower odds on a rate hike at the September 2015 FOMC meeting than they did a day before the 1994 and 2004 tightening moves. Nevertheless, market quotes and surveys still indicate a probability of liftoff in September of roughly 25 to 30 percent, with survey respondents’ individual views quite dispersed. Therefore, whether or not the FOMC decides to raise the federal funds target range at the upcoming meeting, there is likely to be a revision in investors’ policy expectations that may result in a noticeable market reaction. Beyond the extent to which any initial monetary policy tightening decision was anticipated by market participants, other factors, including the evolution of the economy, may importantly shape subsequent market developments.

1. Width of 90 Percent Federal Funds Rate Confidence Interval Six Months Ahead



2. 10-Year Yield Term Premium



Note: The vertical line denotes the day before the February 1994 FOMC meeting for the 1994 episode, the day before the June 2004 FOMC meeting for the 2004 episode, the day before the Chairman’s JEC testimony for the 2013 episode, and the day before the upcoming September 2015 meeting.

First, as shown in table 3, just ahead of the initial tightening investors anticipated a much shallower pace of subsequent rate increases in 1994 than they did in 2004. However, economic data came in stronger than expected during the 1994 tightening cycle, leading investors to repeatedly mark up their policy expectations and contributing to the sharp rise in longer-term interest rates and volatility. By contrast, soft data releases in the months following the 2004 rate hike likely accounted for some of the decline in longer-term interest rates during the so-called “conundrum” period. While current financial market quotes point to a very gradual expected increase in the policy rate target after liftoff, the actual path of interest rates will depend importantly on the evolution of the U.S. economic outlook. For example, investors have recently expressed some concerns about spillovers from a weaker global economic outlook, and additional easing by central banks in Europe and Asia could potentially trigger capital flows into the United States, placing upward pressure on the dollar and downward pressure on domestic longer-term yields. Conversely, a faster-than-expected pickup in inflation might lead investors to anticipate a more rapid removal of policy accommodation, pushing up longer-term interest rates.

Second, longer-term Treasury term premiums are currently near historically low levels, raising the concern that, after years with the federal funds rate at its effective lower bound, the first rate hike may trigger an abrupt rise in term premiums toward more typical levels, as witnessed during the taper tantrum. To quantify this risk, we ran quantile regressions of the change in the 10-year term premium on its own lagged level and a time-varying trend term. The results suggest that a below-trend term premium is expected to rise at an above-average rate over subsequent months, but does not appear to raise the probability of an outsized jump in its level relative to this expected increase.

Finally, as witnessed during the taper tantrum, technical factors and market dynamics could play an important role in amplifying movements in interest rates. Currently, investors' positions in derivatives on short-term interest rates indicate a notable divergence among different types of institutional investors. As shown in figure 4, asset managers' combined positions are currently net short—suggesting that they are positioned for an interest rate hike. Conversely, leveraged funds are currently net long—so that they would benefit from a decline in short-term rates. If investors were to unwind positions abruptly in response to a monetary policy surprise, this could amplify interest rate movements. A similar amplification effect could result from possible rapid outflows from open-ended fixed-income mutual funds, which have witnessed a significant increase in assets under management in recent years.

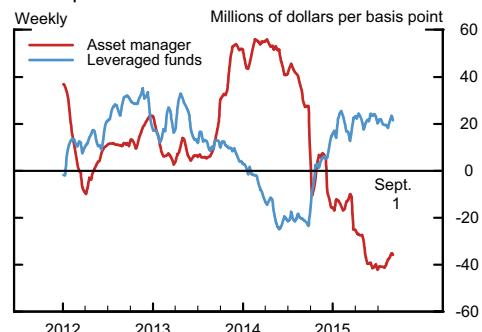
3. Liftoff Probability and Cumulative Amount of Tightening Six Months After Liftoff

	Prob. of liftoff the day before the FOMC*	Expected tightening* (basis points)	Actual tightening (basis points)
1994	67%	61	125
2004	100%	129	125
2015**	28%	23	-

* Derived from implied rates on federal funds futures contracts.

** As of September 9, 2015, based on the contract expiring in September 2015.

4. Net Positions in Eurodollar Futures and Options



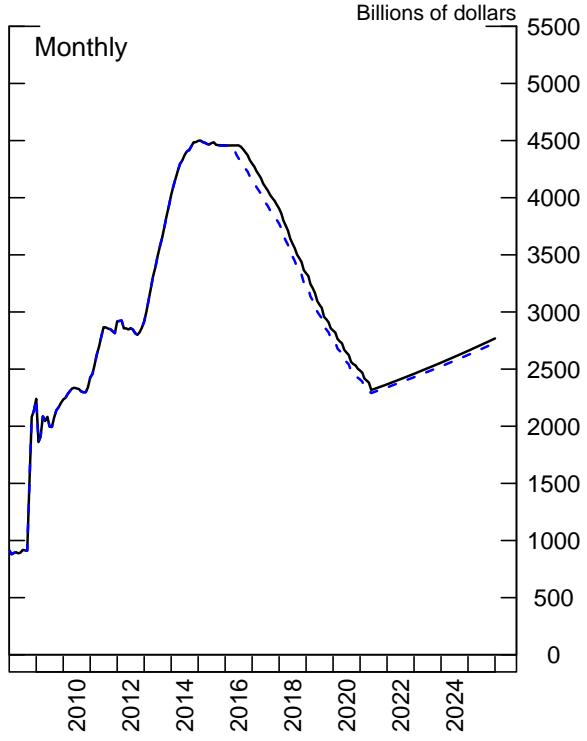
Note: Figure shows the estimated dollar value of a basis point parallel decrease in Eurodollar futures rates.

Source: CFTC Traders in Financial Futures (TFF) reports.

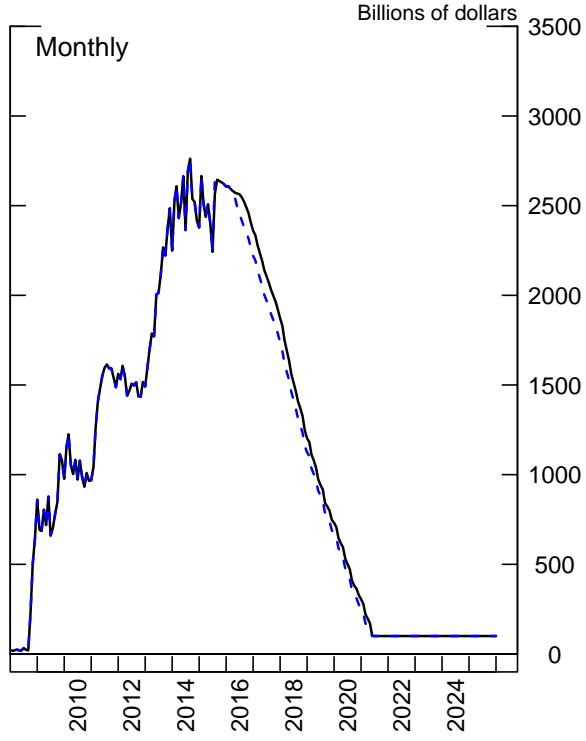
Total Assets and Selected Balance Sheet Items

— September Tealbook - July Tealbook

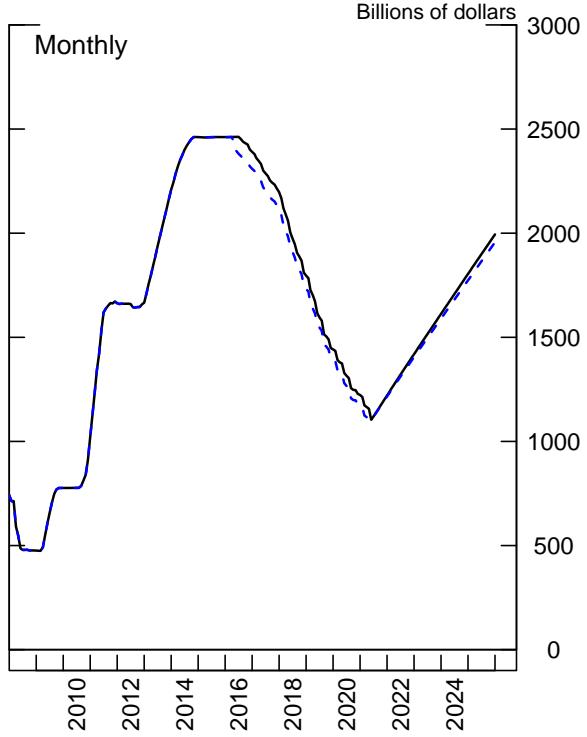
Total Assets



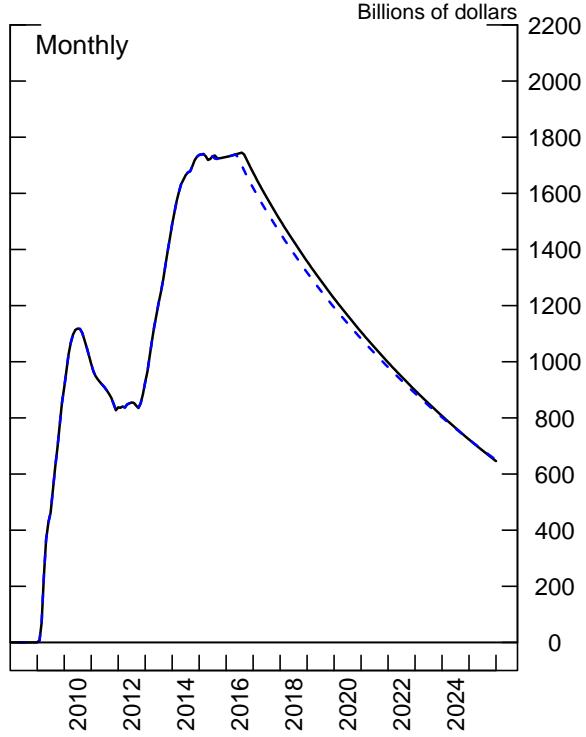
Reserve Balances



SOMA Treasury Holdings



SOMA Agency MBS Holdings



Projections

Federal Reserve Balance Sheet
End-of-Year Projections -- September Tealbook
(Billions of dollars)

	Jul 31, 2015	2015	2017	2019	2021	2023	2025
Total assets	4,485	4,459	3,906	2,838	2,367	2,556	2,768
Selected assets							
Loans and other credit extensions*	2	0	0	0	0	0	0
Securities held outright	4,231	4,224	3,706	2,670	2,221	2,422	2,642
U.S. Treasury securities	2,462	2,461	2,197	1,442	1,221	1,612	1,994
Agency debt securities	35	33	4	2	2	2	2
Agency mortgage-backed securities	1,735	1,730	1,505	1,226	998	807	646
Unamortized premiums	197	190	151	117	93	80	71
Unamortized discounts	-17	-17	-13	-10	-8	-7	-6
Total other assets	52	54	54	54	54	54	54
Total liabilities	4,427	4,399	3,837	2,751	2,257	2,418	2,593
Selected liabilities							
Federal Reserve notes in circulation	1,327	1,364	1,537	1,692	1,830	1,991	2,166
Reverse repurchase agreements	299	267	267	167	167	167	167
Deposits with Federal Reserve Banks	2,793	2,763	2,028	887	255	255	255
Reserve balances held by depository institutions	2,564	2,608	1,872	731	100	100	100
U.S. Treasury, General Account	210	150	150	150	150	150	150
Other deposits	19	5	5	5	5	5	5
Interest on Federal Reserve Notes due to U.S. Treasury	3	0	0	0	0	0	0
Total capital	58	59	69	86	109	138	175

Projections

Source: Federal Reserve H.4.1 statistical releases and staff calculations.

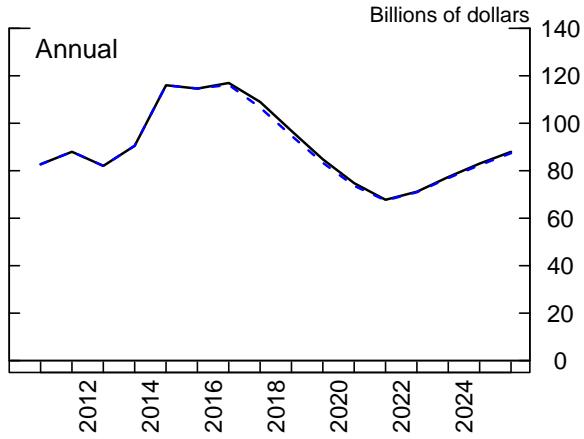
Note: Components may not sum to totals due to rounding.

*Loans and other credit extensions includes primary, secondary, and seasonal credit; central bank liquidity swaps; and net portfolio holdings of Maiden Lane LLC.

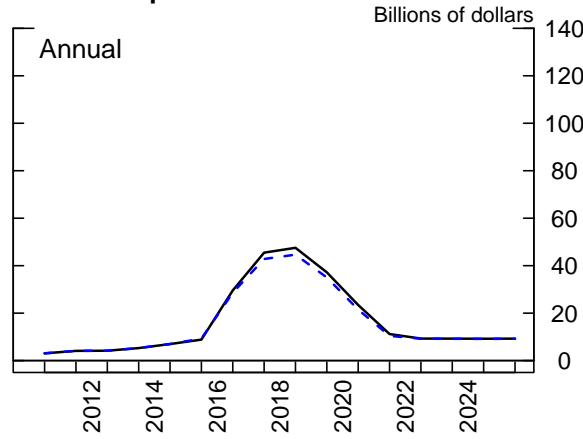
Income Projections

— September Tealbook - July Tealbook

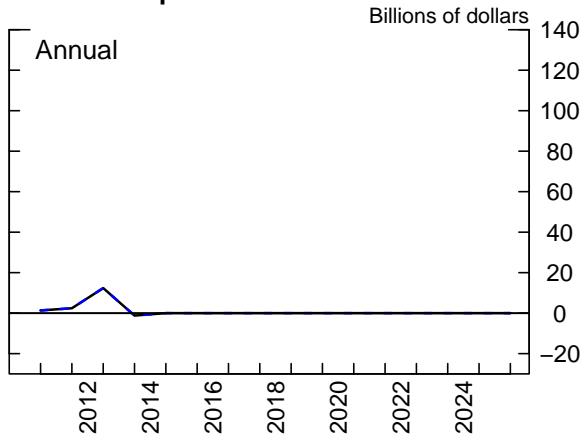
Interest Income



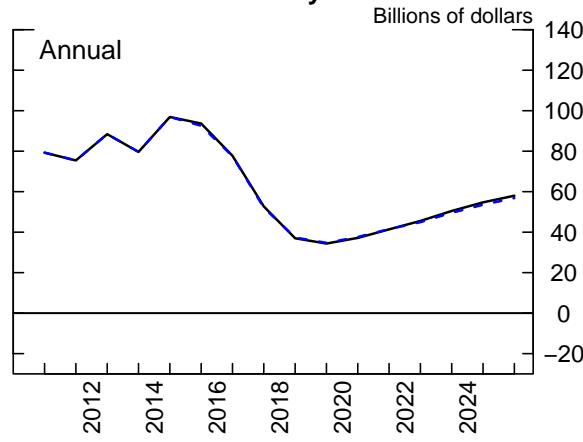
Interest Expense



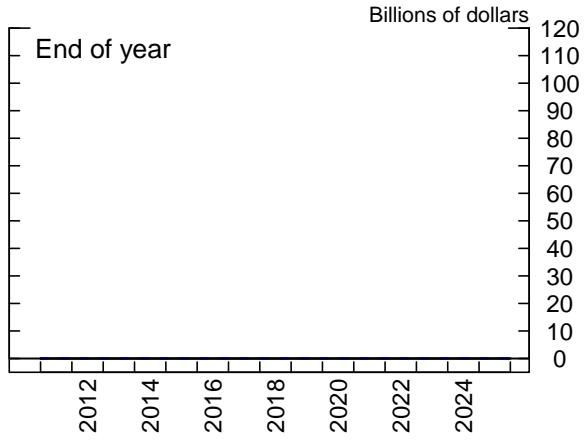
Realized Capital Gains



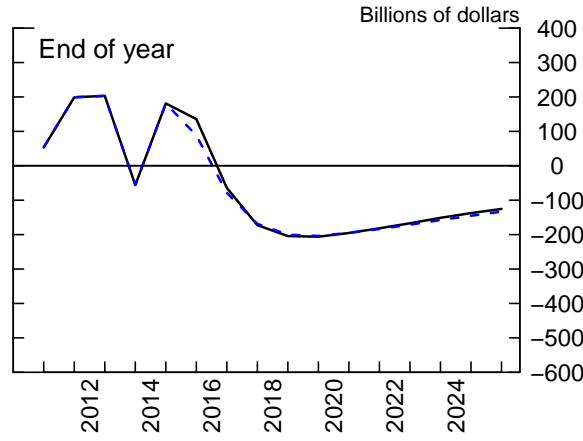
Remittances to Treasury



Deferred Asset



Memo: Unrealized Gains/Losses

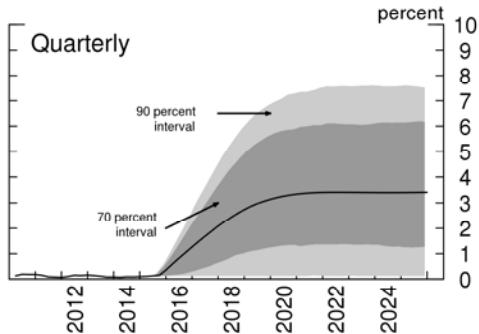
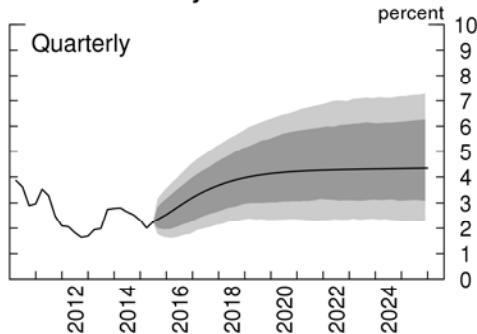
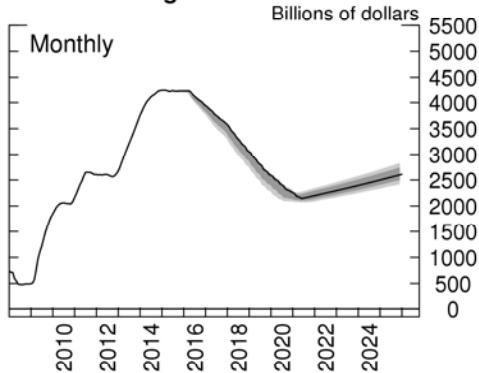
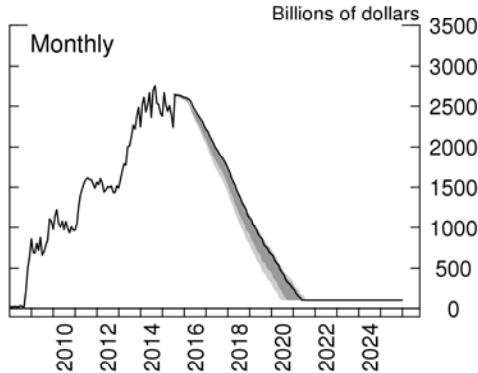
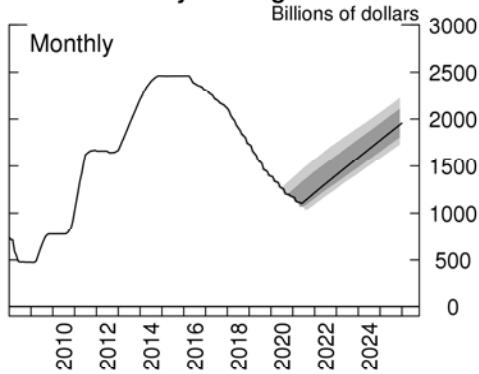
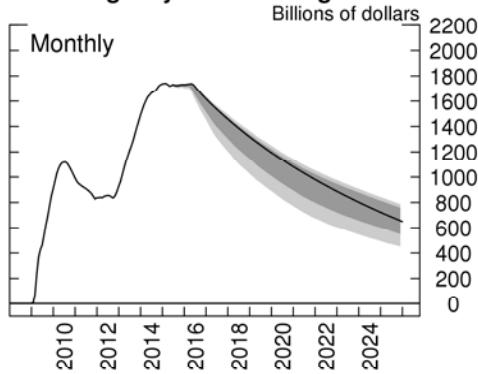


Projections for the 10-Year Treasury Term Premium Effect
(Basis Points)

Date	September Tealbook	July Tealbook
Quarterly Averages		
2015:Q3	-113	-108
Q4	-109	-103
2016:Q1	-104	-99
Q2	-100	-94
Q3	-95	-90
Q4	-91	-85
2017:Q4	-75	-70
2018:Q4	-62	-58
2019:Q4	-52	-49
2020:Q4	-44	-41
2021:Q4	-37	-35
2022:Q4	-32	-30
2023:Q4	-26	-25
2024:Q4	-20	-19
2025:Q4	-15	-14

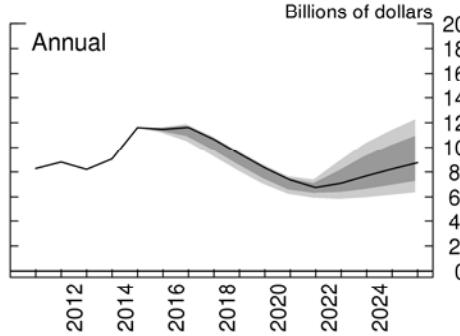
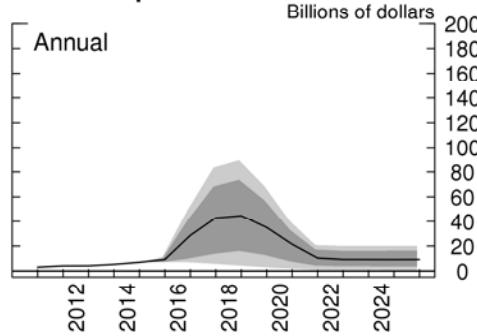
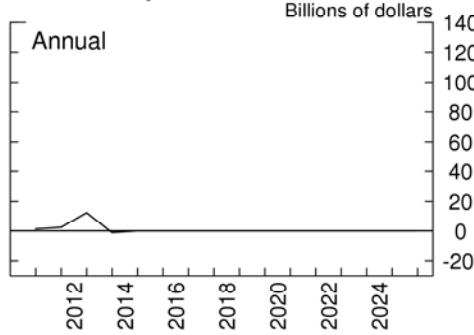
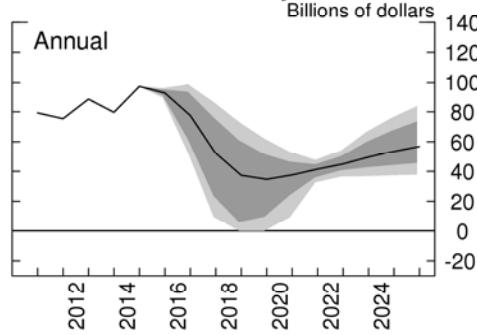
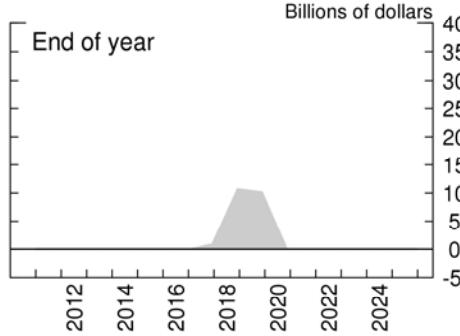
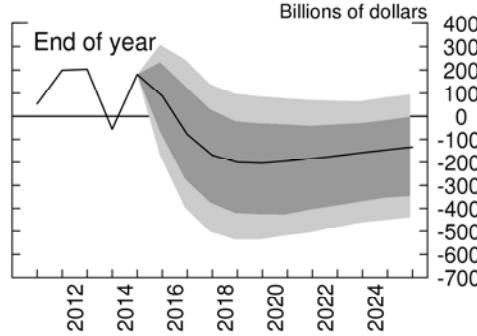
Interest Rates and Selected Assets and Liabilities of the Balance Sheet

— July Tealbook

Federal Funds Rate**10-Year Treasury Rate****SOMA Holdings****Reserve Balances****SOMA Treasury Holdings****SOMA Agency MBS Holdings**

Income Projections

— July Tealbook

Interest Income**Interest Expense****Realized Capital Gains****Remittances to Treasury****Deferred Asset****Memo: Unrealized Gains/Losses**

Projections for the Monetary Base
(Percent change, annual rate; not seasonally adjusted)

Date	September Tealbook	July Tealbook
<i>Quarterly</i>		
2015:Q3	0.2	26.2
Q4	4.6	6.3
2016:Q1	-0.2	-0.2
Q2	-0.1	-4.9
Q3	-2.5	-9.7
Q4	-8.4	-8.9
<i>Annual</i>		
2017	-10.2	-9.7
2018	-15.9	-14.6
2019	-14.8	-13.3
2020	-14.4	-13.1
2021	-8.0	-5.1
2022	3.9	3.3
2023	4.0	3.4
2024	4.0	3.4
2025	4.0	3.4

MONEY

With its brisk advance in July and August, M2 is on track to once again expand at a rapid pace in the third quarter. However, we project M2 will grow slowly in the fourth quarter of 2015 and then contract through the second quarter of 2016 as the rise in the opportunity cost of holding money associated with the assumed increase in the target range for the federal funds rate restrains money demand. Over the remainder of the projection period, projected further increases in opportunity cost are expected to continue to hold M2 growth below that of nominal GDP, although the restraint is projected to diminish over 2017 and 2018.

M2 Monetary Aggregate Projections (Percent change, annual rate; seasonally adjusted)*		
<i>Quarterly</i>		
2015:	Q1	7.6
	Q2	5.0
	Q3	6.4
	Q4	2.0
2016:	Q1	-2.4
	Q2	-1.1
	Q3	0.2
	Q4	0.8
2017:	Q1	1.3
	Q2	1.5
	Q3	1.7
	Q4	1.9
2018:	Q1	2.2
	Q2	2.4
	Q3	2.7
	Q4	3.0
<i>Annual</i>		
	2015	5.3
	2016	-0.6
	2017	1.6
	2018	2.6

Note: This forecast is consistent with nominal GDP and interest rates in the Tealbook forecast. Actual data through August 31, 2015; projections thereafter.

* Quarterly growth rates are computed from quarterly averages. Annual growth rates are calculated from quarterly averages using the change from fourth quarter of previous year to fourth quarter of year indicated.

Abbreviations

ABS	asset-backed securities
BEA	Bureau of Economic Analysis, Department of Commerce
BHC	bank holding company
CDS	credit default swaps
C&I	commercial and industrial
CLO	collateralized loan obligation
CMBS	commercial mortgage-backed securities
CPI	consumer price index
CRE	commercial real estate
Desk	Open Market Desk
ECB	European Central Bank
EDO	Estimated, dynamic, optimization-based model
EME	emerging market economy
FDIC	Federal Deposit Insurance Corporation
FOMC	Federal Open Market Committee; also, the Committee
GCF	general collateral finance
GDI	gross domestic income
GDP	gross domestic product
GSIBs	globally systemically important banking organizations
HQLA	high-quality liquid assets
ISM	Institute for Supply Management
LIBOR	London interbank offered rate
MBS	mortgage-backed securities
MMFs	money market funds
NIPA	national income and product accounts
OIS	overnight index swap
ON RRP	overnight reverse repurchase agreement

PCE	personal consumption expenditures
repo	repurchase agreement
RMBS	residential mortgage-backed securities
RRP	reverse repurchase agreement
SCOOS	Senior Credit Officer Opinion Survey on Dealer Financing Terms
SEP	Summary of Economic Projections
SFA	Supplemental Financing Account
SLOOS	Senior Loan Officer Opinion Survey on Bank Lending Practices
SOMA	System Open Market Account
TBA	to be announced (for example, TBA market)
TGA	U.S. Treasury's General Account
TIPS	Treasury inflation-protected securities
TPE	Term premium effects