

Appendix 1: Materials used by Mr. Potter and Ms. Logan

Class II FOMC – Restricted (FR)

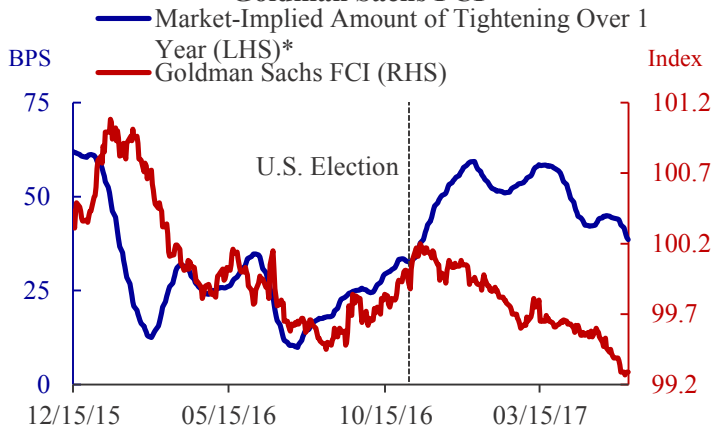
Material for the Briefing on

**Financial Developments and
Open Market Operations**

Simon Potter and Lorie Logan

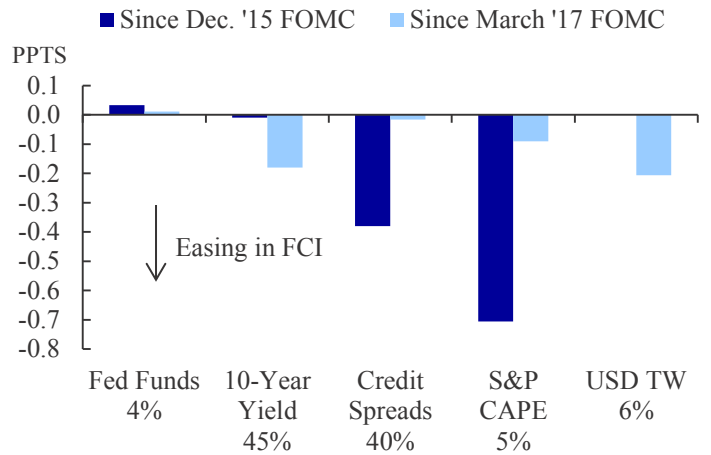
June 13, 2017

(1) One-Year Ahead Tightening and Goldman Sachs FCI



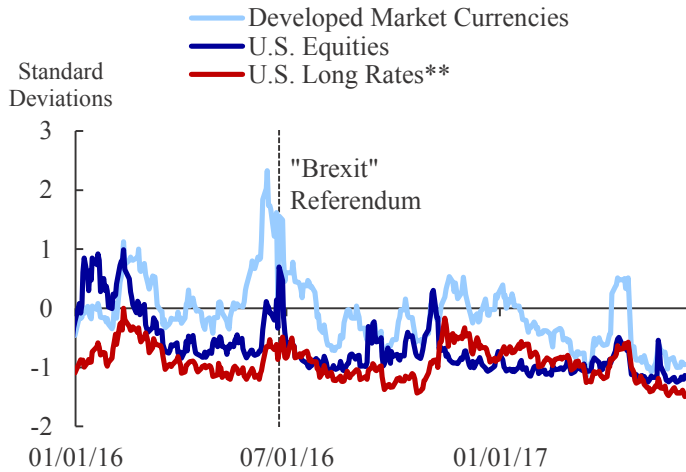
*Rolling 20-day average of difference between fed funds futures contract 13 months ahead and 1 month ahead.
Source: Bloomberg, Desk Calculations, Goldman Sachs

(2) Decomposition of Goldman Sachs FCI*



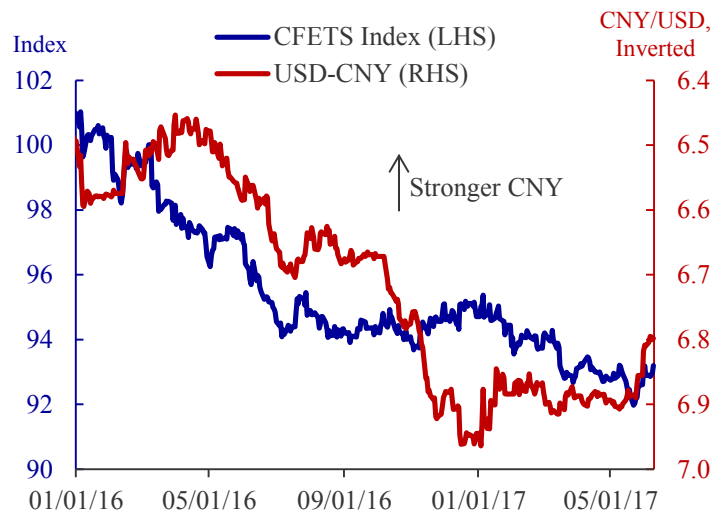
*Values below asset indicate weight in index.
Source: Bloomberg, Desk Calculations, Goldman Sachs

(3) Standardized Implied Volatility Indices*



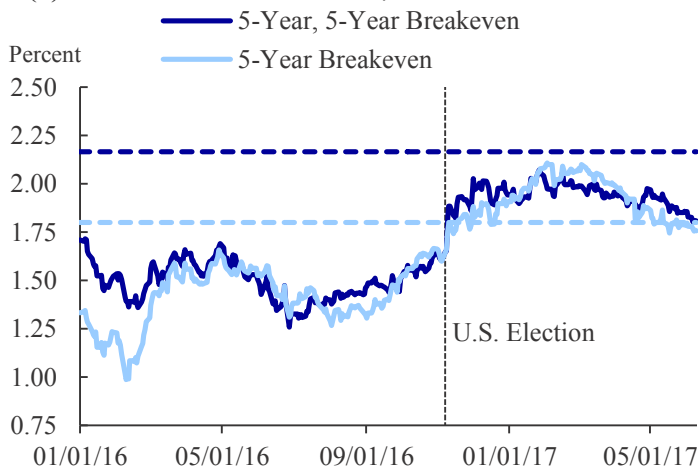
*Standardized 1-month implied volatilities since June 1994.
**Swaption with 10-year underlying.
Source: Barclays, Bloomberg, CBOE, Deutsche Bank, Desk Calculations

(4) Chinese Currency



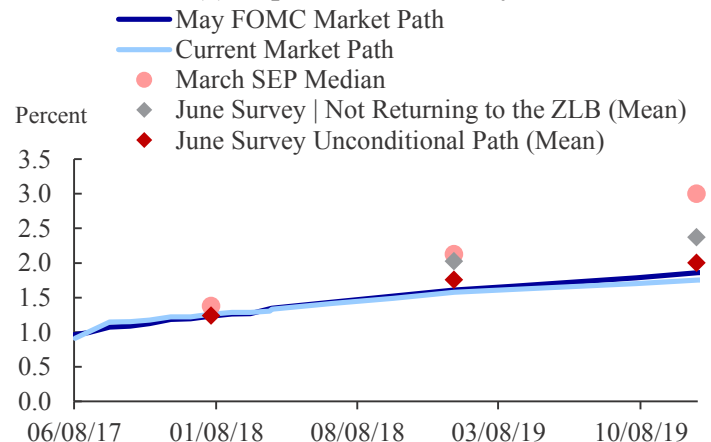
Source: Bloomberg, Standard Chartered

(5) Five-Year and Five-Year, Five-Year Breakevens*



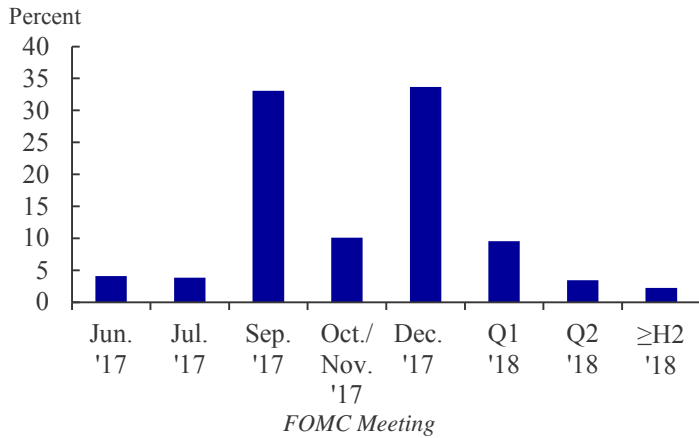
*Dashed lines show respective 5-year averages.
Source: Federal Reserve Board

(6) Implied Path of Policy*



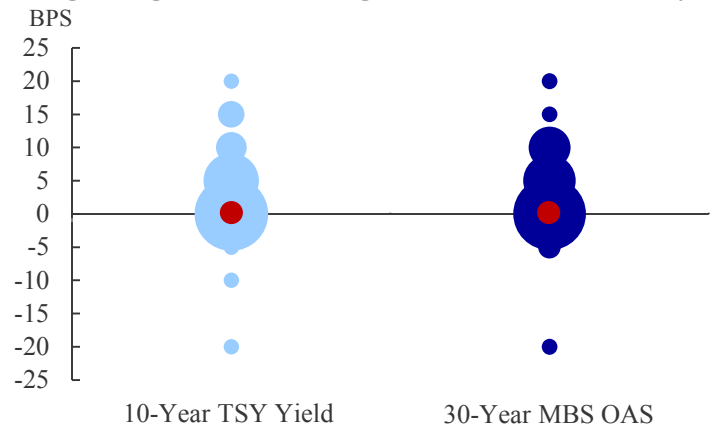
*Market-implied paths derived from federal funds and Eurodollar futures. Survey paths show the average PDF-implied means from the June Surveys of Primary Dealers and Market Participants.
Source: Bloomberg, Desk Calculations, Federal Reserve Board, FRBNY

(7) Average PDF of Expected Time of First Announced Change in Reinvestment Policy*



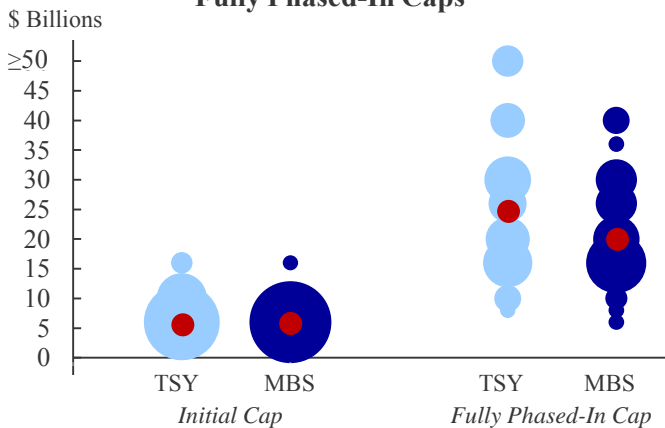
*Conditional on a change to reinvestments occurring. Based on all responses from the June Surveys of Primary Dealers and Market Participants. Source: FRBNY

(8) Estimated Impact To-Date of Fed Communication Regarding Potential Changes to Reinvestment Policy*



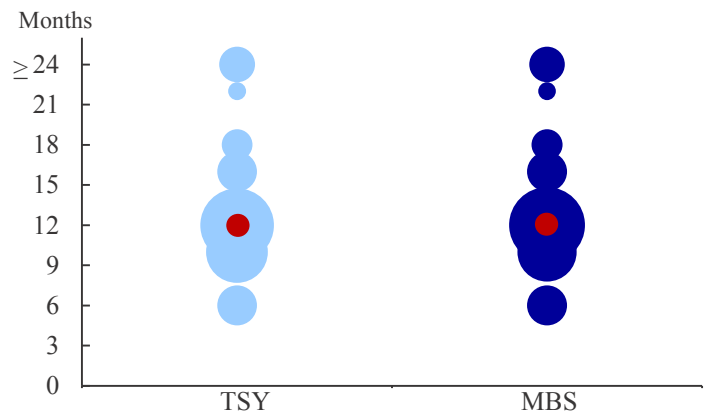
*Red dot indicates median. Dots scaled by percent of respondents from the June Surveys of Primary Dealers and Market Participants. Source: FRBNY

(9) Expected Level of Initial and Fully Phased-In Caps*



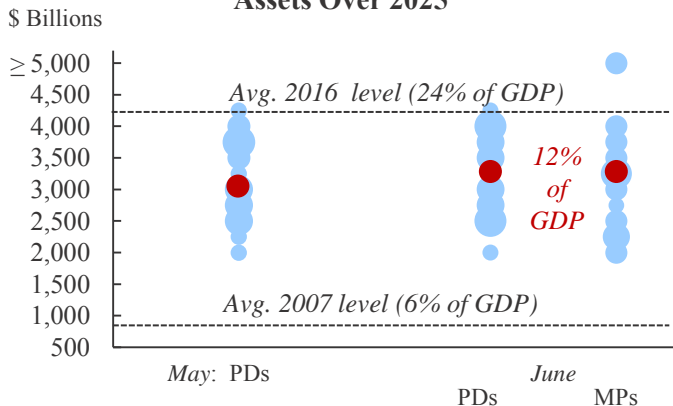
*Red dot indicates median. Dots scaled by percent of respondents from the June Surveys of Primary Dealers and Market Participants. Conditional on adopting a strategy like the one outlined in the May '17 FOMC Minutes. Source: FRBNY

(10) Expected Number of Months From When Caps are Implemented to Fully Phased-In*



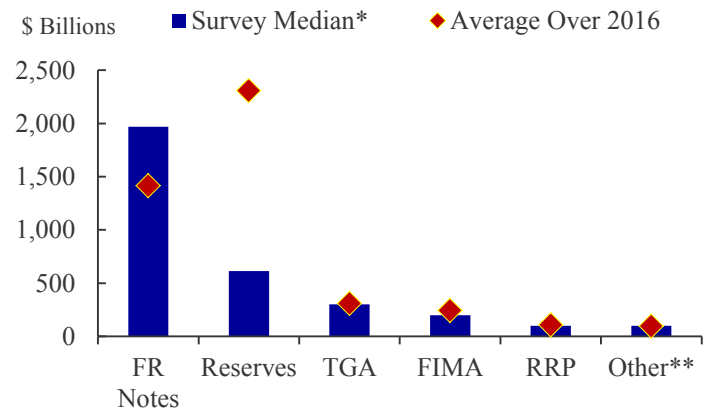
*Red dot indicates median. Dots scaled by percent of respondents from the June Surveys of Primary Dealers and Market Participants. Conditional on adopting a strategy like the one outlined in the May '17 FOMC Minutes. Source: FRBNY

(11) Expected Level of Average Federal Reserve Assets Over 2025*



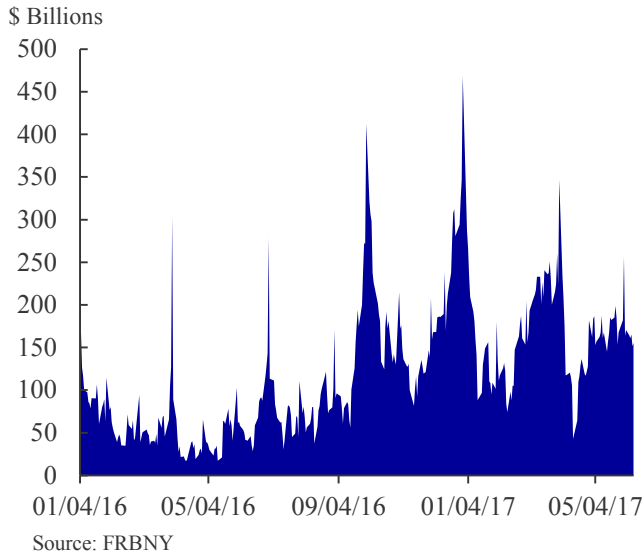
*Red dot indicates median. Dots scaled by percent of respondents from the May and June Surveys of Primary Dealers and Market Participants. Conditional on not moving to the ZLB before end of 2025. Source: BEA, CBO, FRBNY

(12) Recent and Expected Level of Average Federal Reserve Liabilities and Capital Over 2025

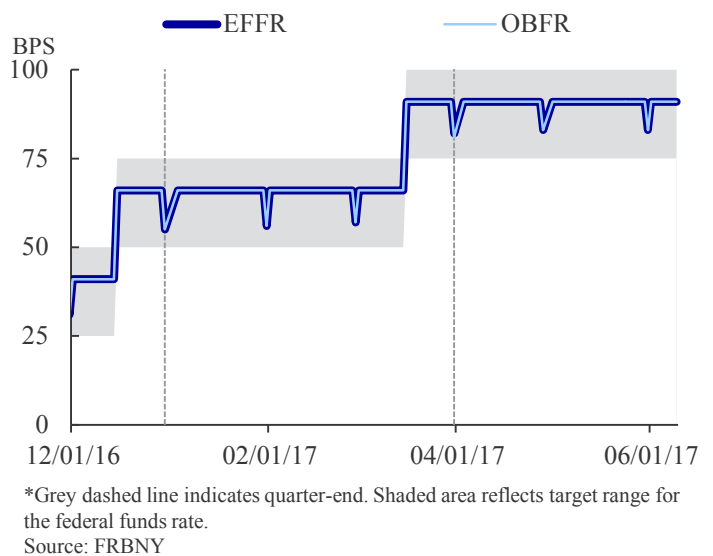


*Based on all responses from the June Surveys of Primary Dealers and Market Participants. Conditional on not moving to the ZLB before end of 2025. **Includes other deposits and all other liabilities and capital. Source: FRBNY

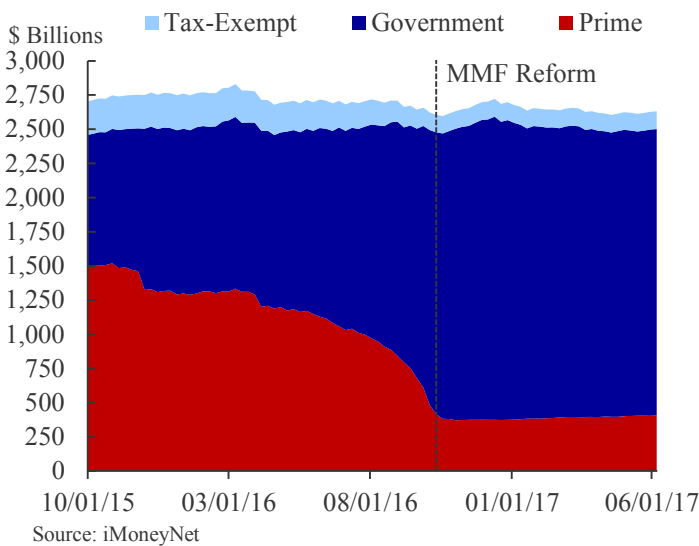
(13) ON RRP Take-up



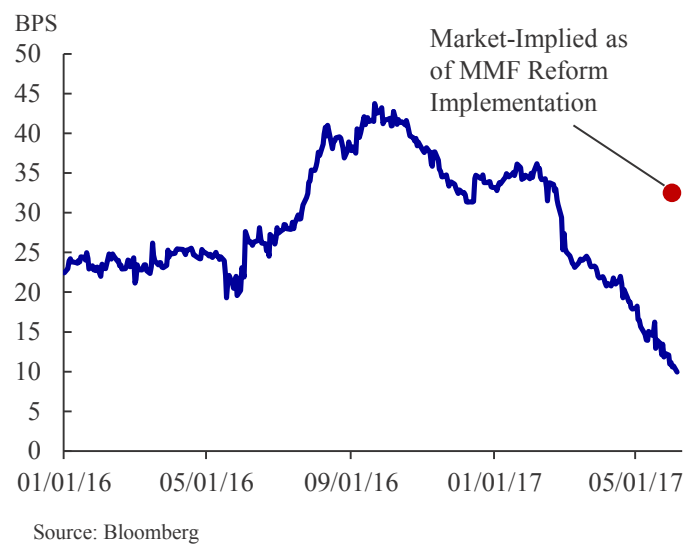
(14) Overnight Unsecured Rates*



(15) Money Market Mutual Fund AUM



(16) 3-Month LIBOR-OIS



(17) Other Operational Developments

1. FX Global Code

- Global principles of good practice
- Published on May 25, 2017
- Statement of Commitment (SoC)
 - NY Fed to publish SoC on or around June 1, 2018
 - FX counterparties expected to send SoC to NY Fed

2. Euro and Yen Portfolios

- Euro: incoming proceeds remain as cash
- Yen: two-tiered remuneration policy

3. Operational Exercises (in Appendix)

Appendix

(1) Summary of Operational Testing

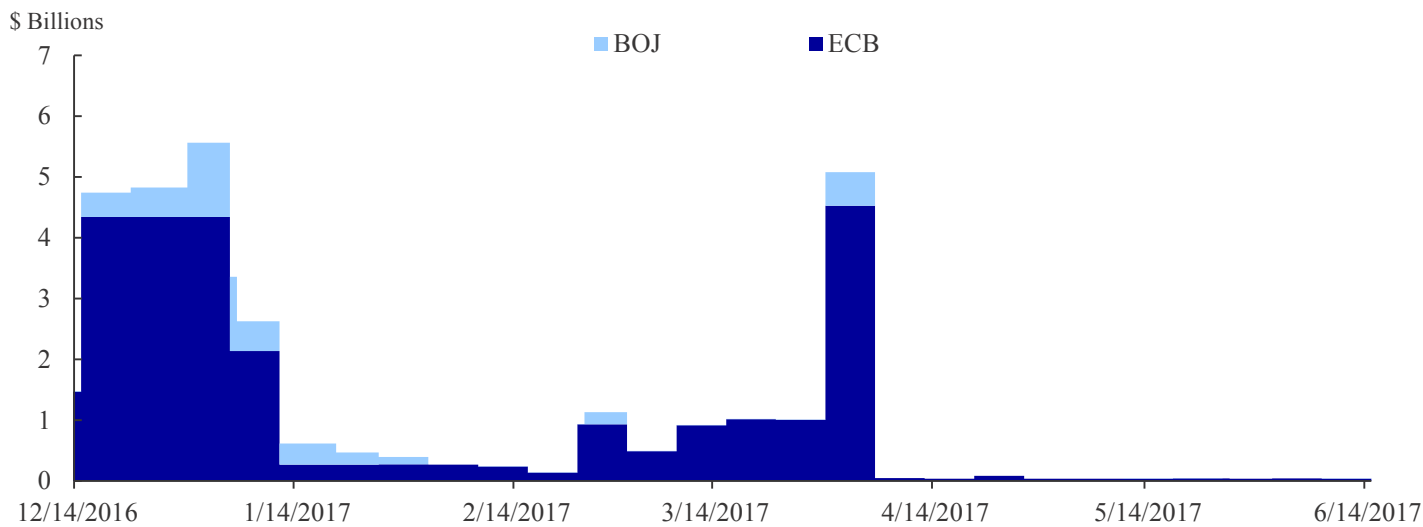
Summary of Operational Tests in prior period:

- Domestic Authorization
 - May 10: Term repo (with Treasury, Agency and Agency MBS collateral) for \$62 million
 - May 11: Treasury outright sale for \$200 million
 - May 16: Term reverse repo (with Treasury collateral) for \$112 million
 - May 22: Overnight reverse repo (with agency MBS collateral) for \$21 million
 - May 23 and 24: Coupon swaps with unsettled agency MBS holdings for \$20 million total
 - May 24: Overnight repo (with Treasury, Agency and Agency MBS collateral) for \$62 million
- Foreign Authorization
 - May 9: Euro-denominated reverse repo for €1 million

Upcoming Operational Tests

- Two tests scheduled under the Foreign Authorization
 - June 18: Yen-denominated sovereign debt sale for approximately ¥100 million
 - July 11: Euro-denominated overnight repo for approximately €1 million

(2) FX Swaps Outstanding



Source: FRBNY

(3) FX Intervention

- There were no intervention operations in foreign currencies for the System's account during the intermeeting period

Appendix 2: Materials used by Ms. Logan

Class I FOMC – Restricted Controlled (FR)

Desk Material Related to

SOMA Reinvestment Policy

Lorie Logan
June 13, 2017

(1) Reinvestment Cap Approach

- Treasury Securities:
 - Initial \$6 billion monthly cap
 - Increased in \$6 billion increments every three months
 - Maximum monthly cap \$30 billion
- MBS:
 - Initial \$4 billion monthly cap
 - Increased in \$4 billion increments every three months
 - Maximum monthly cap \$20 billion

(2) Treasury Rollover Operations

- Cap is subtracted from total amount of securities maturing within a month
- Amount to be reinvested, if any, allocated in proportion to maturing funds within a month
- Amount to be rolled over allocated at auction in proportion to publically announced offering amounts

(3) Agency MBS Reinvestment Operations

- Reinvestment amount allocated across securities in the TBA market roughly in line with issuance trends
- Size and frequency of individual operations would decline as overall monthly reinvestment amount declines
- Cap subtracted from total estimated amount of principal payments from agency debt and agency MBS within a month
- Announcement about overall reinvestment amount and operations schedule made around the 9th business day; purchases scheduled from the next business day until the next announcement
- Propose applying a minimum monthly purchase amount

(4) Planned Desk Communications

- Desk statement (draft in exhibit 2), to be released with FOMC statement
- Treasury rollover FAQs
- Agency MBS reinvestment FAQs

Statement Regarding Treasury and Agency Reinvestments

[June 14, 2017]

On [June 14, 2017], the Federal Open Market Committee (FOMC) directed the Open Market Trading Desk (the Desk) at the Federal Reserve Bank of New York to begin reducing the reinvestment of principal payments from the System Open Market Account (SOMA) holdings of Treasury securities, agency debt, and agency mortgage-backed securities (MBS). As described in the [June 2017 addendum to the Committee’s Policy Normalization Principles and Plans](#), the Committee intends to reduce reinvestments by implementing a series of gradually rising caps that limit the reduction, or runoff, of Treasury and agency securities holdings each month.

The Committee directed the Desk, effective in July, to reinvest in new Treasury securities at auction only the amount of principal payments from the Federal Reserve’s holdings of Treasury securities maturing during a calendar month that exceeds \$6 billion, and to reinvest in agency mortgage-backed securities only the amount of principal payments received during a calendar month from the Federal Reserve’s holdings of agency debt and agency mortgage-backed securities that exceeds \$4 billion. This step will begin a gradual decline in the Federal Reserve’s securities holdings. Based on [June 2017 addendum to the Committee’s Policy Normalization Principles and Plans](#), the schedule of monthly runoff caps will be as follows:

	Monthly Runoff Caps	
	Treasury Securities	Agency Securities*
Jul – Sep 2017	\$6 billion	\$4 billion
Oct – Dec 2017	\$12 billion	\$8 billion
Jan – Mar 2018	\$18 billion	\$12 billion
Apr – Jun 2018	\$24 billion	\$16 billion
From Jul 2018**	\$30 billion	\$20 billion

** Applies to combined principal payments of agency debt and agency MBS*

*** Once caps reach their maximum amounts, they will remain in effect until the Committee judges that the Federal Reserve is holding no more securities than necessary to implement monetary policy efficiently and effectively.*

For Treasury securities, the reinvestment amount for a given month will be determined by subtracting the Treasury runoff cap amount from the total amount of Treasury principal payments scheduled to be received over that calendar month. The Desk will allocate that reinvestment amount across the month’s maturity dates in proportion to total maturities of SOMA Treasury holdings on each date. In months when the amount of maturing securities held by the SOMA is lower than the runoff cap, the full amount of maturing principal will be allowed to runoff.

Consistent with current practice, Treasury reinvestment operations will continue to be accomplished by placing non-competitive bids at Treasury auctions allocated proportionally across the securities being issued by announced offering amounts.

Similarly, for agency securities, the reinvestment amount for a given month will be determined by subtracting the agency runoff cap amount from the sum of agency MBS principal payments that are anticipated to be received over the month plus the agency debt principal payments that are scheduled to be received over the month. In months when the amount of principal proceeds are lower than the runoff cap, the full amount of maturing principal will be allowed to runoff.

Consistent with current practice, reinvestment purchases of agency MBS will continue to be concentrated in newly-issued agency MBS in the To-Be-Announced (TBA) market. Going forward, the planned amount of reinvestments in agency MBS that are anticipated to take place over each monthly period will be announced on or around the ninth business day of the month and will generally be conducted over the subsequent one-month period until the next announcement. Specifically, in [July], the reinvestment amount will be announced on [July 14] and purchases associated with that amount will proceed through [August 11]. The [June] monthly reinvestment amount and operating schedules will remain unchanged by the change in the reinvestment policy.

Additional information on Treasury and agency MBS reinvestments can be found in Frequently Asked Questions in the following locations:

FAQs: Treasury Rollovers »

FAQs: Agency MBS Reinvestments »

Appendix 3: Materials used by Chair Yellen

Class I FOMC – Restricted Controlled (FR)

Draft of

**Addendum to the Policy Normalization Principles
and Plans**

June 13, 2017

Addendum to the Policy Normalization Principles and Plans

As adopted effective [June 13, 2017]

[All] participants agreed to augment the Committee's Policy Normalization Principles and Plans by providing the following additional details regarding the approach the FOMC intends to use to reduce the Federal Reserve's holdings of Treasury and agency securities once normalization of the level of the federal funds rate is well under way.¹

- The Committee intends to gradually reduce the Federal Reserve's securities holdings by decreasing its reinvestment of the principal payments it receives from securities held in the System Open Market Account. Specifically, such payments will be reinvested only to the extent that they exceed gradually rising caps.

- For payments of principal that the Federal Reserve receives from maturing Treasury securities, the Committee anticipates that the cap will be \$6 billion per month initially and will increase in steps of \$6 billion at three-month intervals over 12 months until it reaches \$30 billion per month.

- For payments of principal that the Federal Reserve receives from its holdings of agency debt and mortgage-backed securities, the Committee anticipates that the cap will be \$4 billion per month initially and will increase in steps of \$4 billion at three-month intervals over 12 months until it reaches \$20 billion per month.

- The Committee also anticipates that the caps will remain in place once they reach their respective maximums so that the Federal Reserve's securities holdings will continue to decline in a gradual and

predictable manner until the Committee judges that the Federal Reserve is holding no more securities than necessary to implement monetary policy efficiently and effectively.

- Gradually reducing the Federal Reserve's securities holdings will result in a declining supply of reserve balances. The Committee currently anticipates reducing the quantity of reserve balances, over time, to a level appreciably below that seen in recent years but larger than before the financial crisis; the level will reflect the banking system's demand for reserve balances and the Committee's decisions about how to implement monetary policy most efficiently and effectively in the future. The Committee expects to learn more about the underlying demand for reserves during the process of balance sheet normalization.

- The Committee affirms that changing the target range for the federal funds rate is its primary means of adjusting the stance of monetary policy. However, the Committee would be prepared to resume reinvestment of principal payments received on securities held by the Federal Reserve if a material deterioration in the economic outlook were to warrant a sizable reduction in the Committee's target for the federal funds rate. Moreover, the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate.

¹ The Committee's Policy Normalization Principles and Plans were adopted on September 16, 2014, and are available at www.federalreserve.gov/monetary-policy/files/FOMC_PolicyNormalization.pdf. On

March 18, 2015, the Committee adopted an addendum to the Policy Normalization Principles and Plans, which is available at www.federalreserve.gov/monetarypolicy/files/FOMC_PolicyNormalization.20150318.pdf.

Appendix 4: Materials used by Ms. Tevlin and Mr. Erceg

Class II FOMC – Restricted (FR)

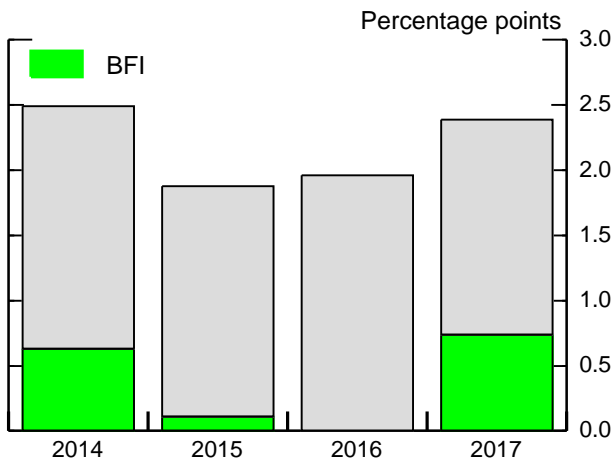
Material for

**Staff Presentation on the Economic and Financial
Situation**

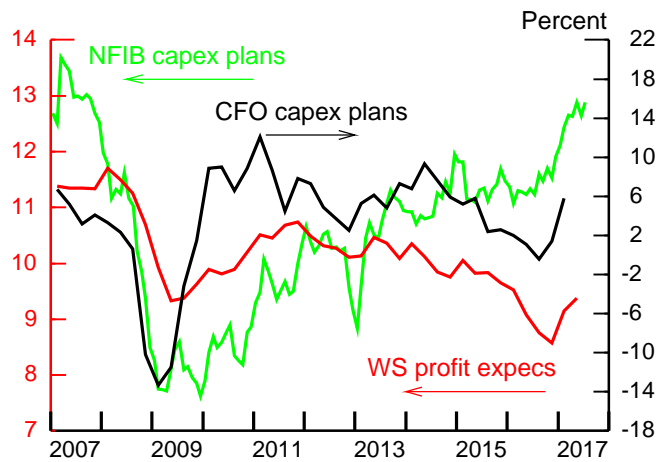
Stacey Tevlin and Christopher J. Erceg
June 13–14, 2017

An Overview of the Staff Projection

1. GDP Growth Picking Up

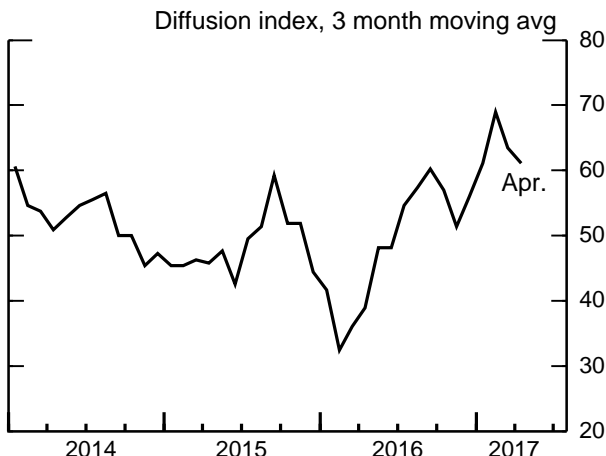


2. Business More Optimistic



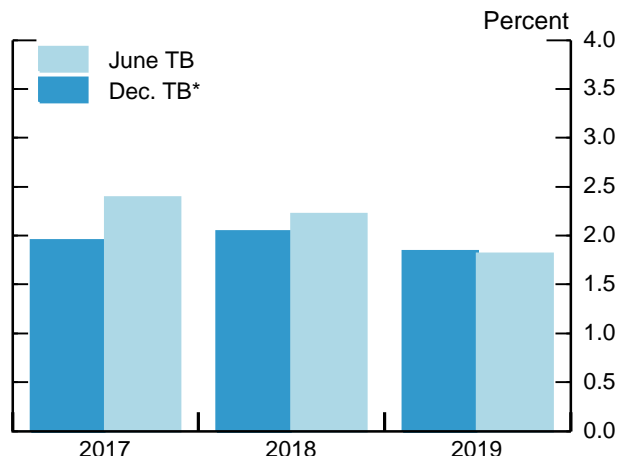
Note: NFIB data are re-indexed for left axis. Wall Street profit expectations drawn from IBES data on analysts' long-term profit expectations, Q2 data is for April/May.

3. Capex Orders Increase Widespread



Note: Percentage of orders categories with an increase relative to 3 months prior, plus half of those with no change.

4. GDP Growth Projection



* Adjusted so that fiscal policy assumptions match the June TB.

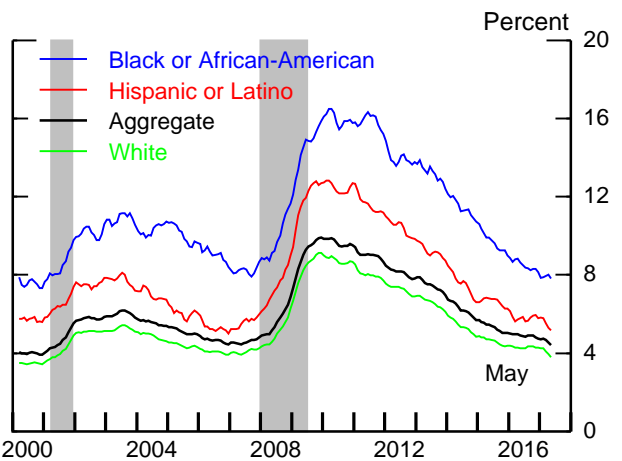
5. Labor Market Variables

	2017:H1	2019
Unemployment rate*	4.3	3.8
<i>Dec. TB</i>	4.7	4.2
Payroll gains**	163	122
<i>Dec. TB</i>	180	121

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

** Thousands, average monthly changes.

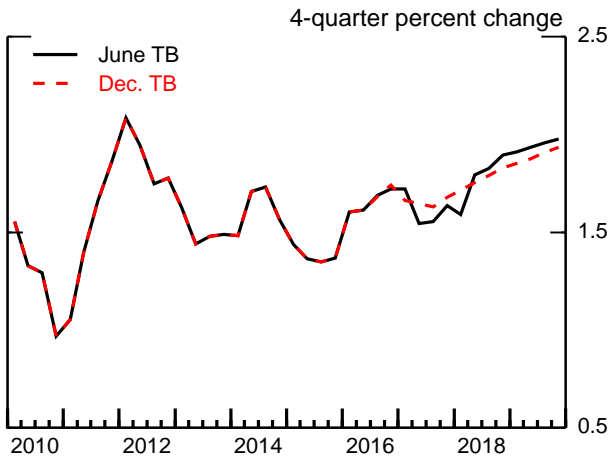
6. Unemployment Rates by Race or Ethnicity



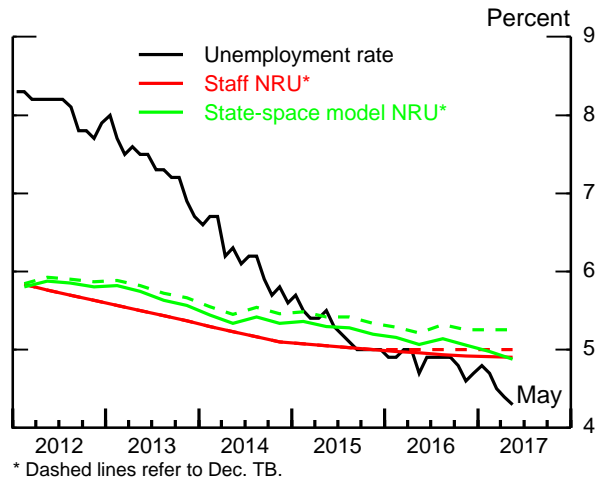
Note: Three-month moving averages. Shaded bars indicate a period of business recession as defined by the NBER.

Reconciling the Labor and Price Data

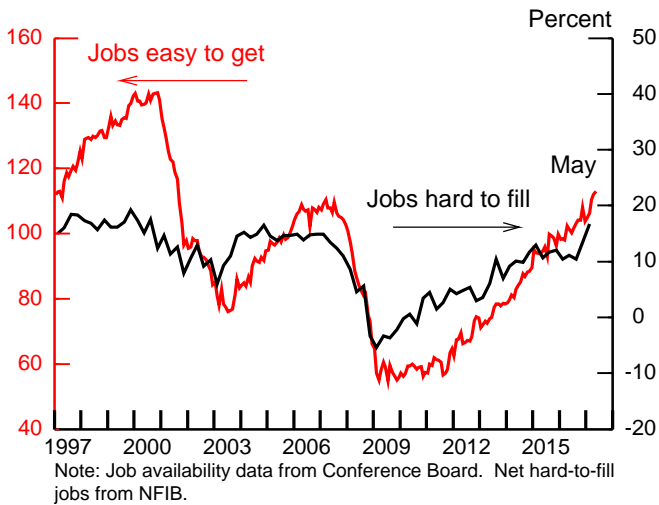
1. Core PCE prices



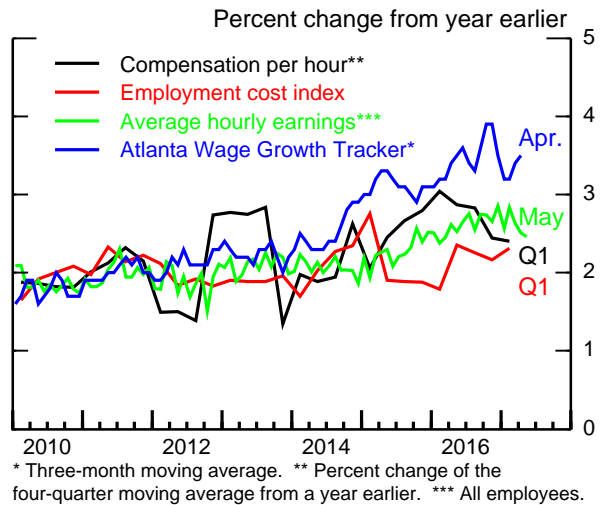
2. Unemployment and the Natural Rate



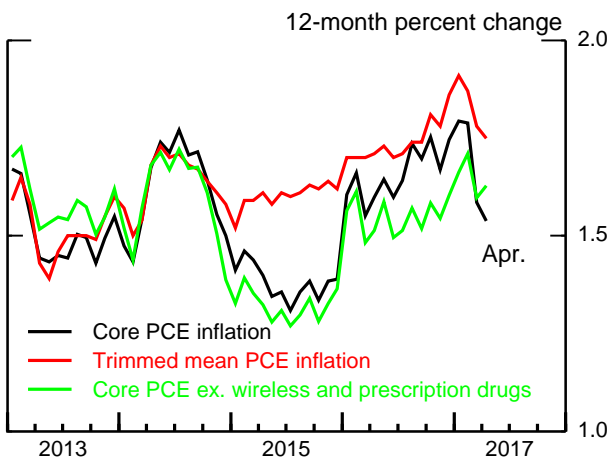
3. Job Market Perceptions



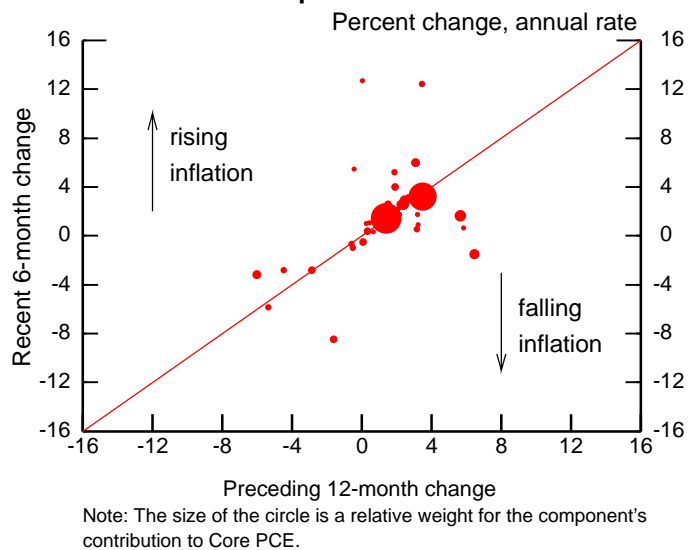
4. Measures of Change in Hourly Compensation



5. Measures of PCE Prices

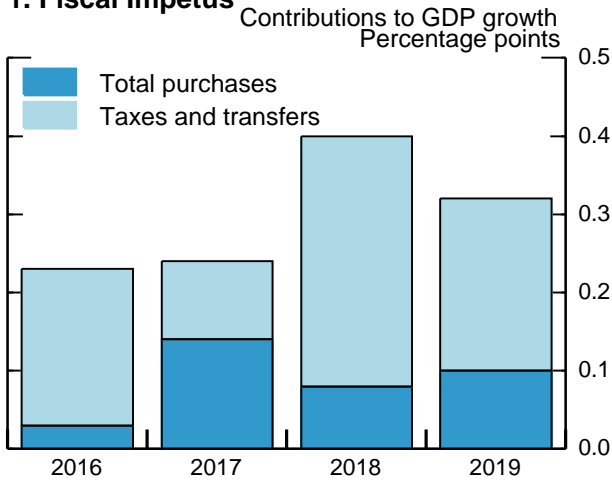


6. Core PCE Components



Fiscal Policy Assumptions

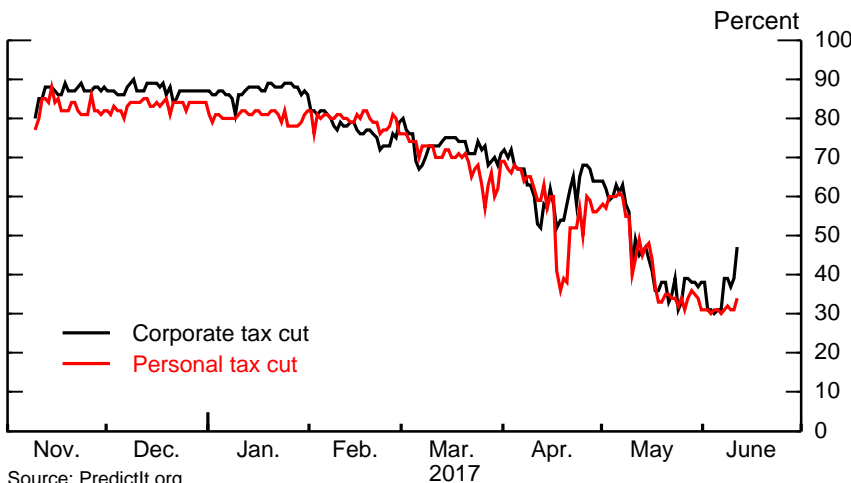
1. Fiscal Impetus



2. Recent News Calls Assumptions into Doubt

- House passage of AHCA means Senate is focused on health care legislation, not tax reform.
- Republican leadership indicated a preference for a deficit-neutral plan.

3. Prediction Market Odds of a Tax Cut Passing in 2017



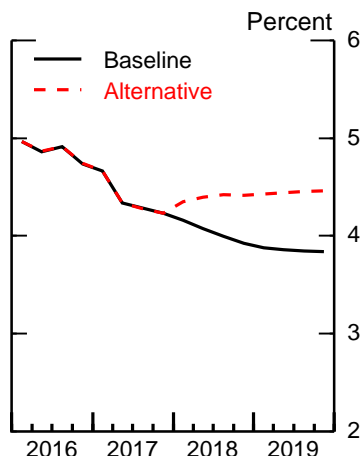
4. News to Come

- Fate of AHCA in Senate likely to become clearer.
- Congressional committees will begin work on FY2018 budget resolution.

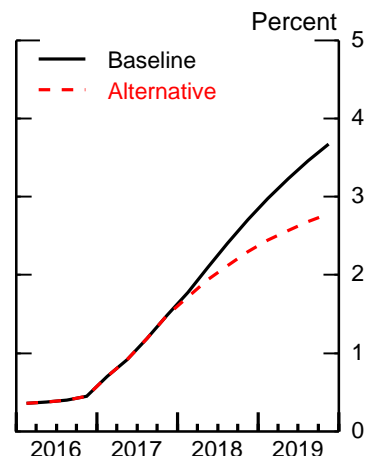
5. Alternative Scenario: Policy Disappoints

- Government fails to pass fiscal expansion or other policies that may currently be expected.
- Business and consumer sentiment erodes.
- Financial conditions tighten materially.

6. Unemployment Rate

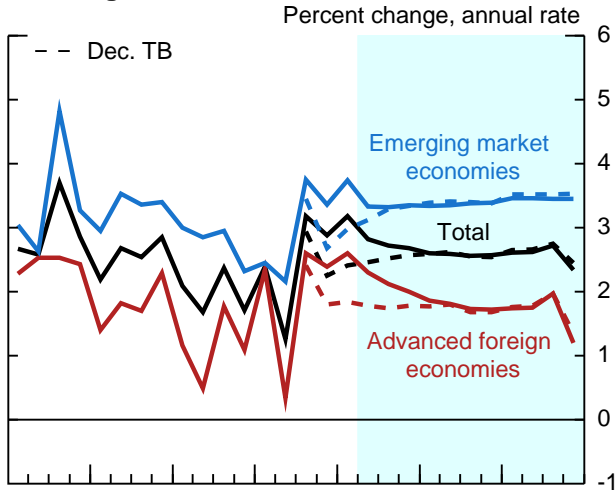


7. Federal Funds Rate



The Foreign Outlook

1. Foreign Real GDP*



* GDP aggregates weighted by shares of U.S. merchandise exports. Shading indicates projected data.

2. Foreign Real GDP*

Percent change, annual rate

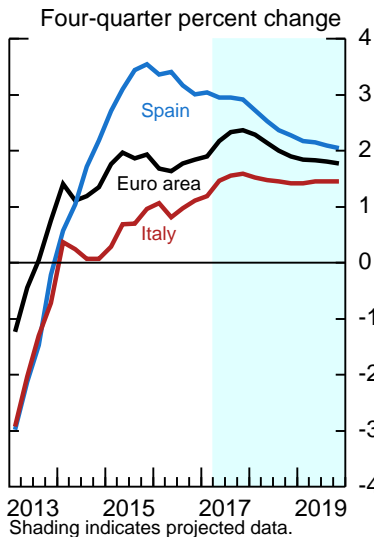
	2016	2017	2018-19
1. Total Foreign	2.4	2.9	2.6
2. December Tealbook	2.2	2.5	2.6
3. Advanced Foreign Economies	1.9	2.3	1.7
Of which:			
4. Canada	2.0	2.6	1.8
5. Euro Area	1.8	2.4	1.8
6. Japan	1.6	1.4	0.4
7. UK	1.9	1.4	1.6
8. Emerging Market Economies	2.9	3.4	3.4
Of which:			
9. China	6.8	6.6	5.8
10. Mexico	2.3	2.3	2.5
11. Brazil	-2.4	2.2	2.1

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

3. Factors Supporting Growth

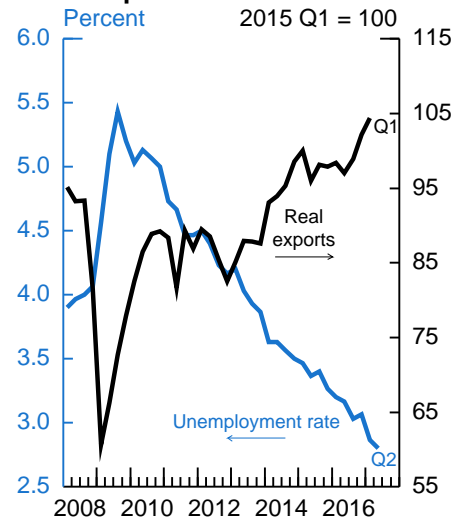
- Highly accommodative monetary policies.
- Waning downside risks.
- Stabilization of commodity prices.

4. Euro Area Real GDP

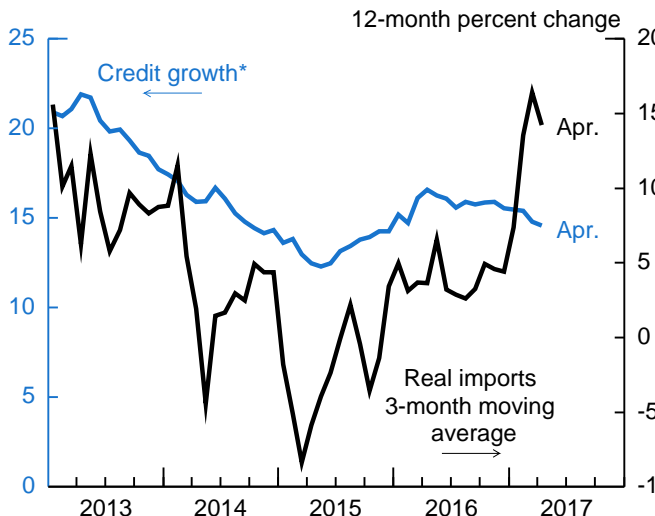


Shading indicates projected data.

5. Japan

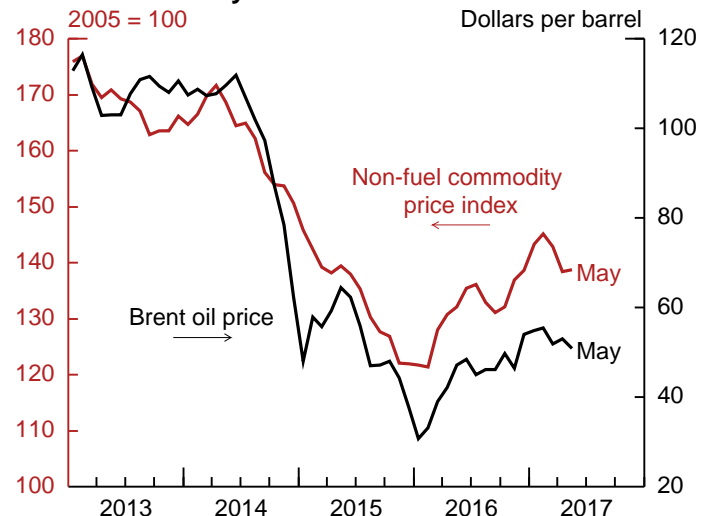


6. China



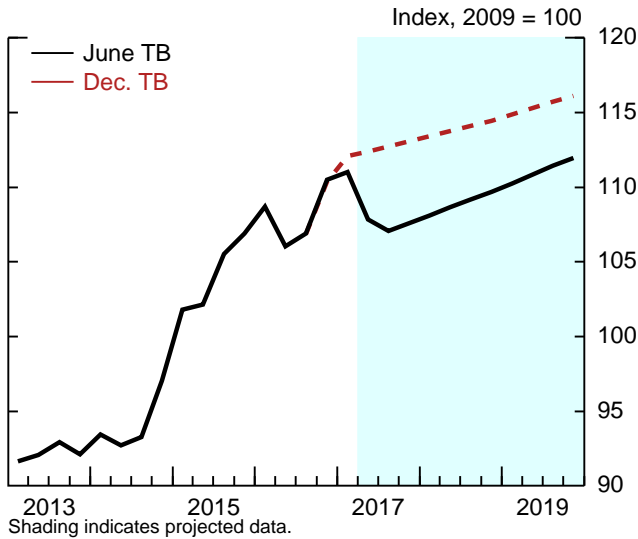
* Total credit includes off-balance sheet financing, trust loans, net corporate debt/equity issuance, and municipal bonds swapped for bank loans.

7. Commodity Prices

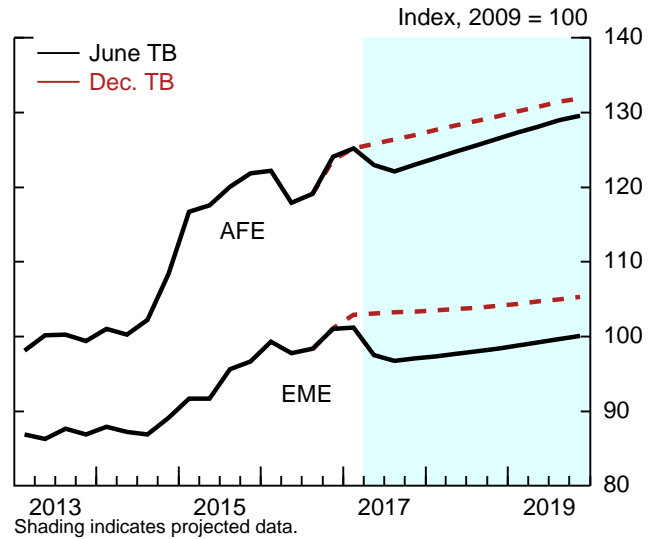


The Dollar and U.S. Trade

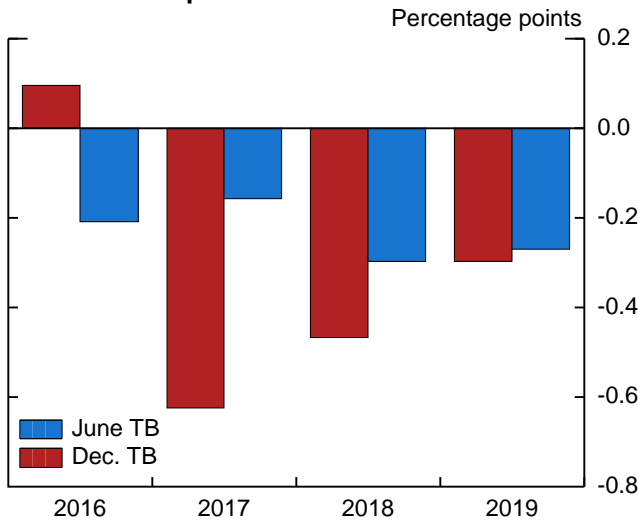
1. Real Broad Dollar



2. Real Dollar vs. AFE and EME Currencies



3. Real Net Export Contribution to GDP Growth

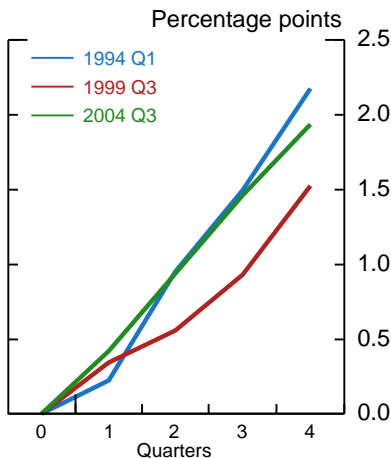


4. Normalization and Dollar

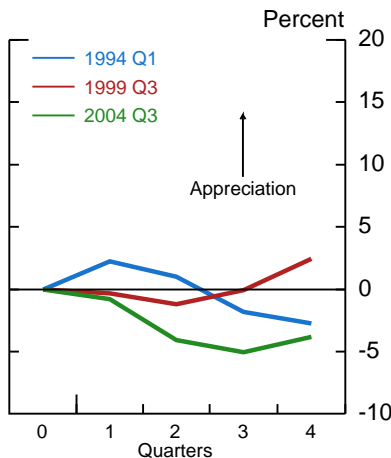
- Dollar could appreciate more if:
 - o U.S. policy hikes trigger sizeable capital outflows from the EMEs and significantly tighten their financial conditions.
 - o U.S. normalization proceeds faster than in baseline.
- However, dollar could depreciate if foreign economies gain steam and downside risks continue to wane.

Past Monetary Tightenings (change from initial level)

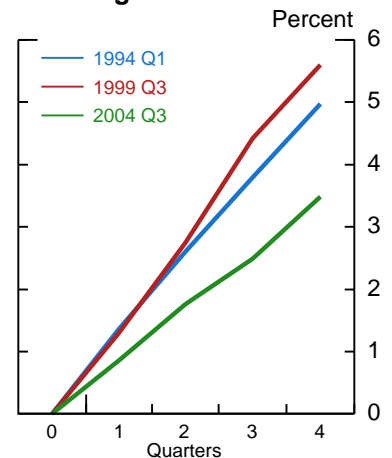
5. Federal Funds Rate



6. Broad Real Dollar

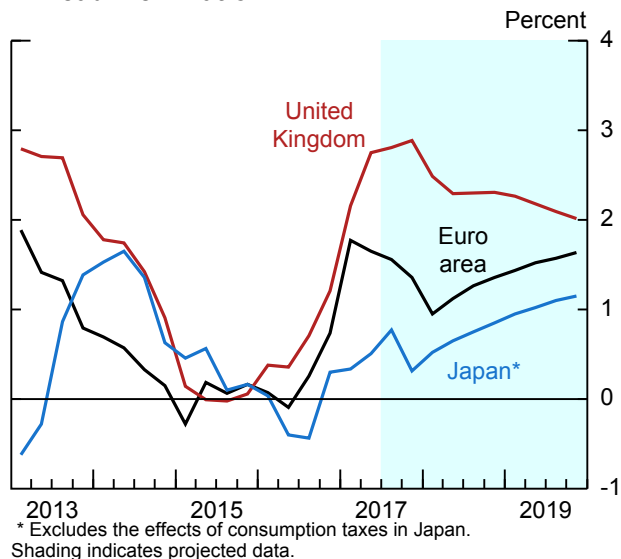


7. Foreign GDP

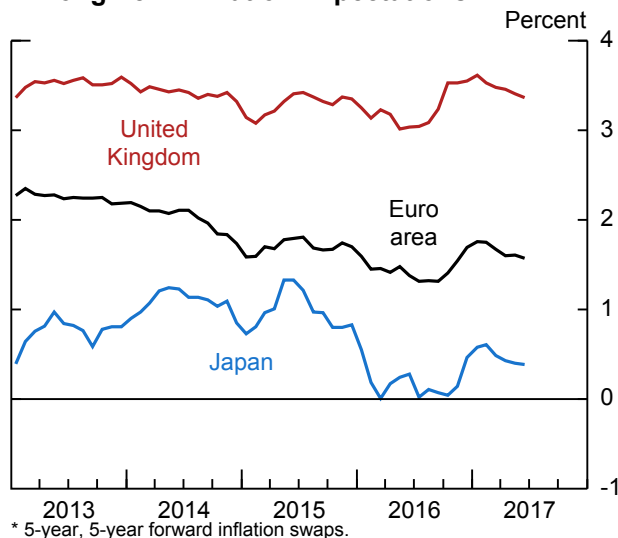


Inflation Prospects in AFEs

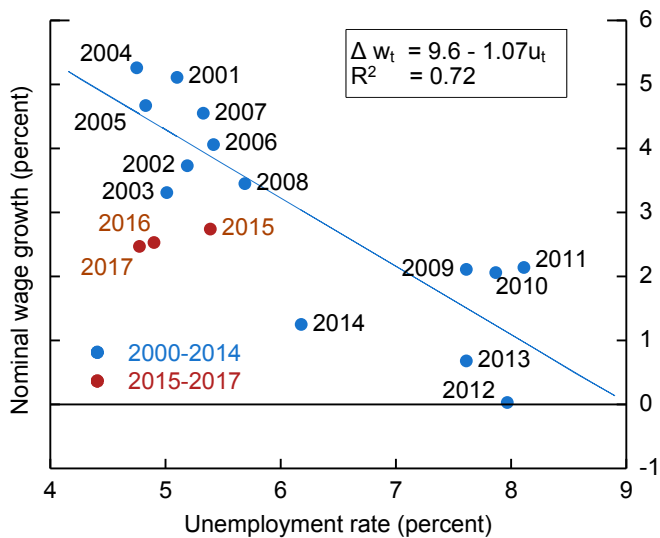
1. Headline Inflation



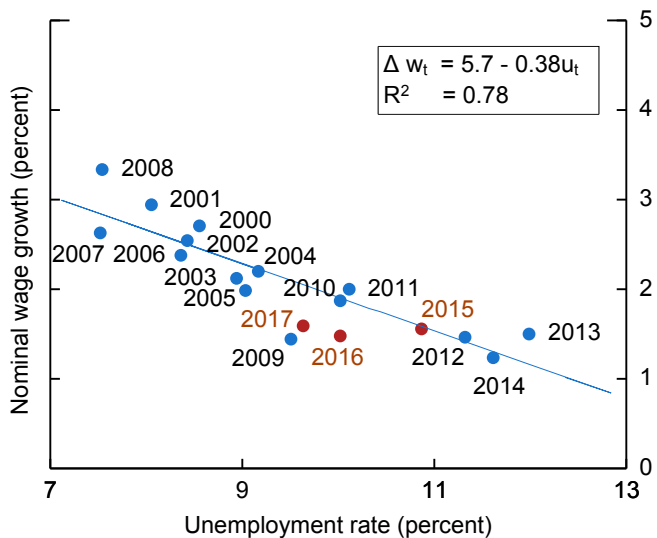
2. Long-Term Inflation Expectations*



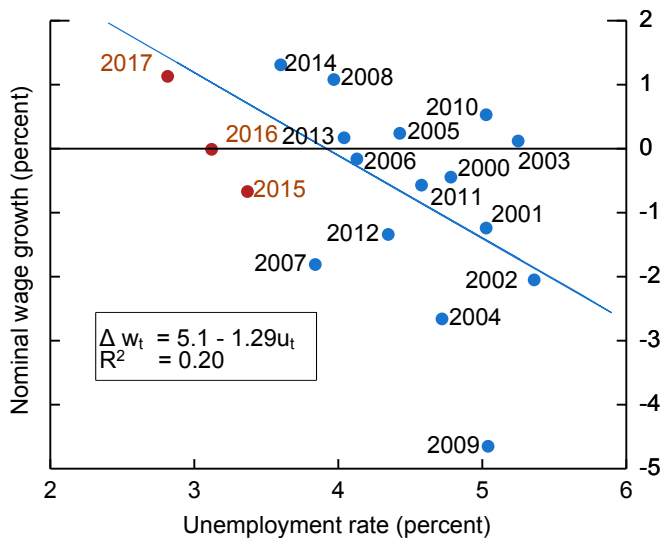
3. United Kingdom



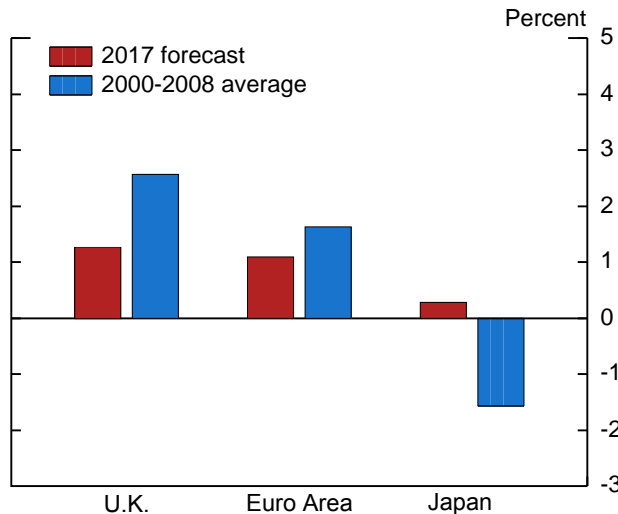
4. Euro Area



5. Japan



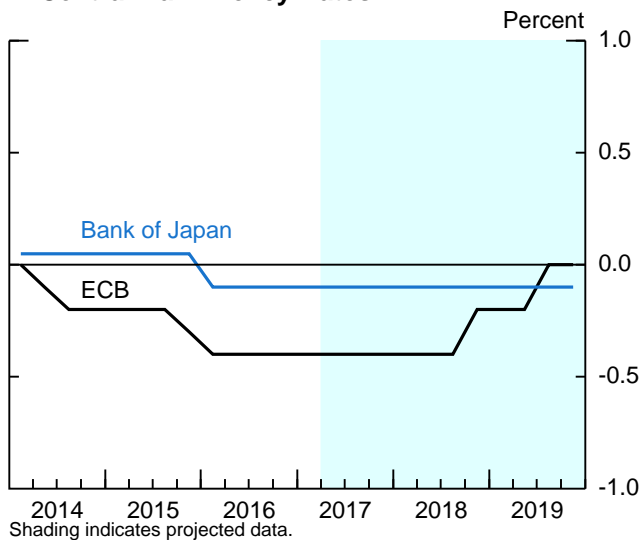
6. Nominal Unit Labor Cost Growth



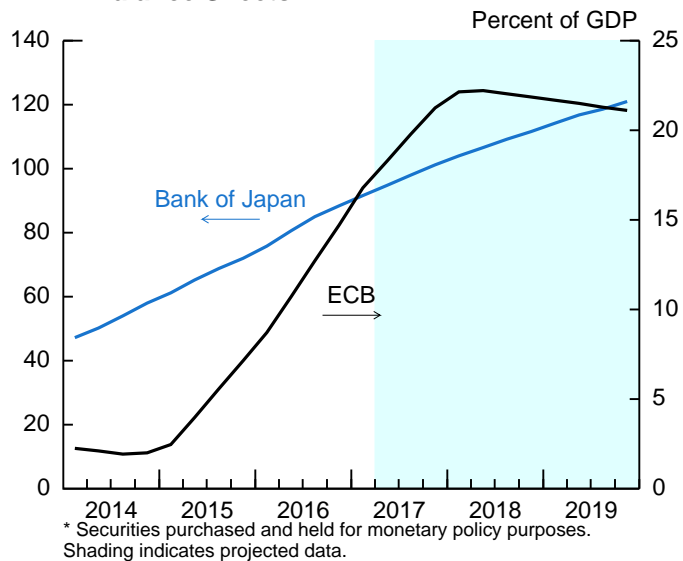
Sources: BOE, ECB, ONS (U.K.), and OECD.

Monetary Policy in AFEs

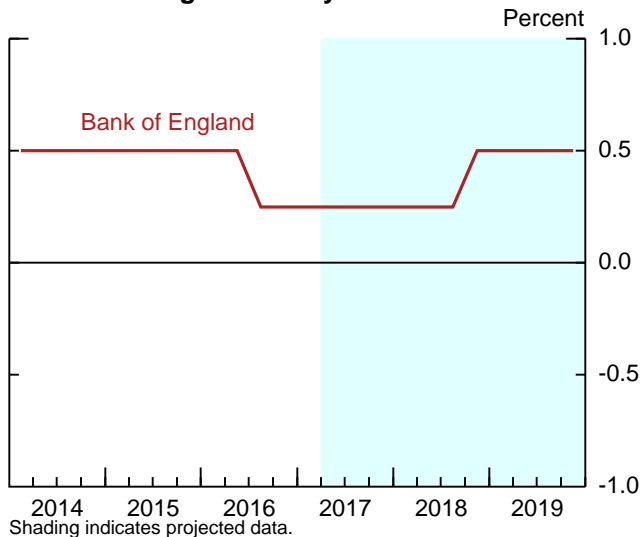
1. Central Bank Policy Rates



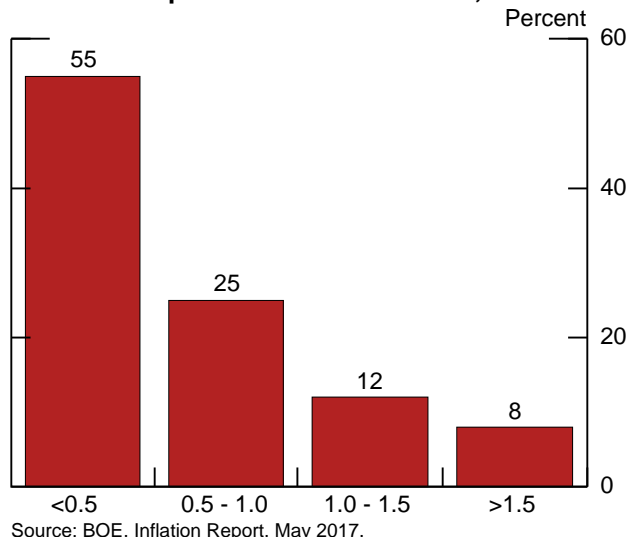
2. Balance Sheets*



3. Bank of England Policy Rate



4. Market Expectations of Bank Rate, 2019Q2



Appendix 5: Materials used by Ms. Zarutskie

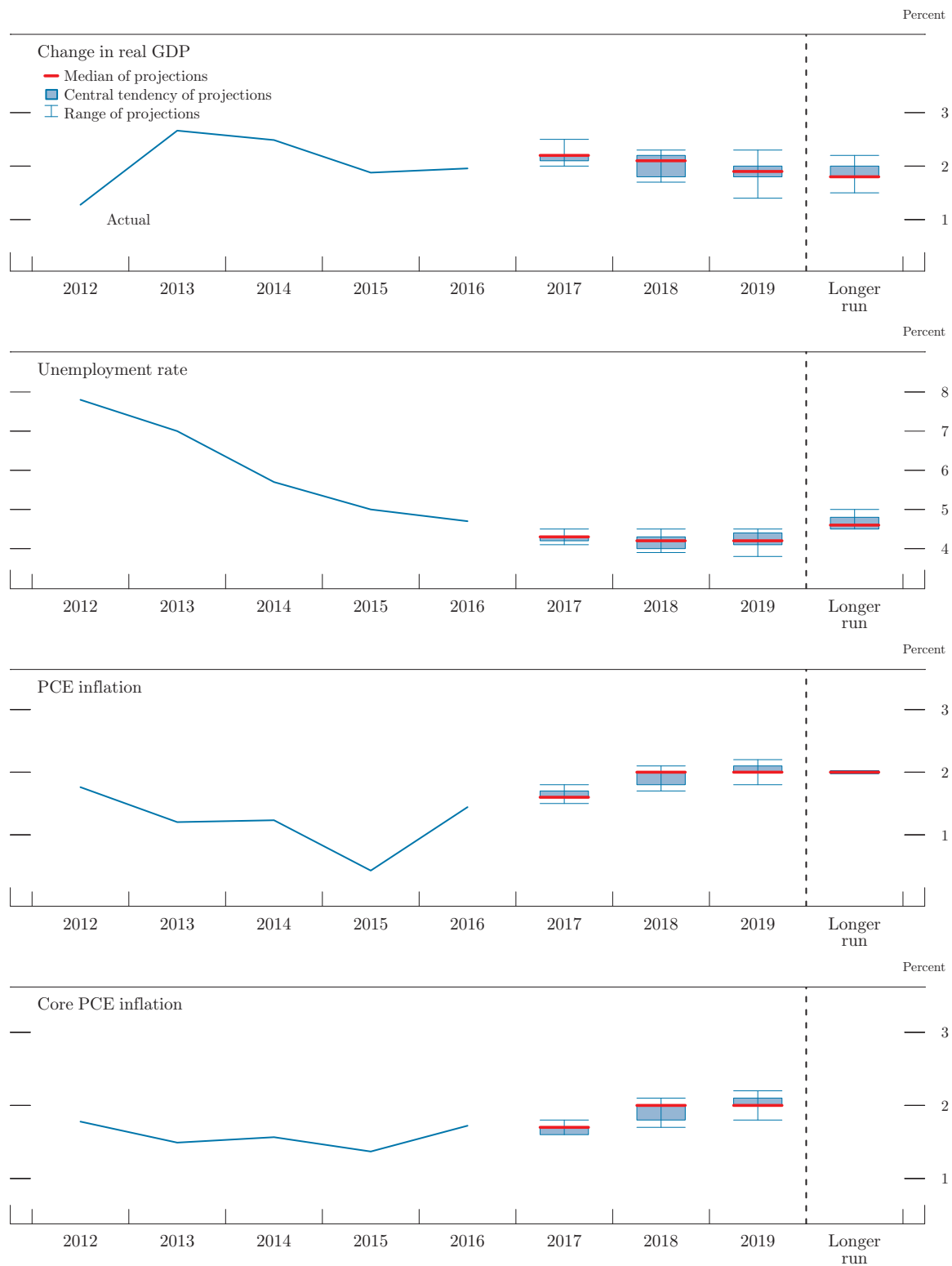
Class I FOMC – Restricted Controlled (FR)

Material for Briefing on the

Summary of Economic Projections

Rebecca Zarutskie
June 13, 2017

Exhibit 1. Medians, central tendencies, and ranges of economic projections, 2017–19 and over the longer run



NOTE: The data for the actual values of the variables are annual. The percent changes in real GDP and inflation are measured Q4/Q4. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. One participant did not submit longer-run projections for the change in real GDP or the unemployment rate.

Exhibit 2. Economic projections for 2017–19 and over the longer run (percent)

Change in real GDP				
	2017	2018	2019	Longer run
Median	2.2	2.1	1.9	1.8
March projection	2.1	2.1	1.9	1.8
Range.....	2.0 – 2.5	1.7 – 2.3	1.4 – 2.3	1.5 – 2.2
March projection	1.7 – 2.3	1.7 – 2.4	1.5 – 2.2	1.6 – 2.2
Memo: Tealbook.....	2.4	2.2	1.8	1.7
March projection	2.0	2.2	1.9	1.7

Unemployment rate				
	2017	2018	2019	Longer run
Median	4.3	4.2	4.2	4.6
March projection	4.5	4.5	4.5	4.7
Range.....	4.1 – 4.5	3.9 – 4.5	3.8 – 4.5	4.5 – 5.0
March projection	4.4 – 4.7	4.2 – 4.7	4.1 – 4.8	4.5 – 5.0
Memo: Tealbook.....	4.2	3.9	3.8	4.9
March projection	4.6	4.2	4.1	5.0

PCE inflation				
	2017	2018	2019	Longer run
Median	1.6	2.0	2.0	2.0
March projection	1.9	2.0	2.0	2.0
Range.....	1.5 – 1.8	1.7 – 2.1	1.8 – 2.2	2.0
March projection	1.7 – 2.1	1.8 – 2.1	1.8 – 2.2	2.0
Memo: Tealbook**.....	1.5	1.9	2.0	2.0
March projection	1.7	1.8	1.9	2.0

Core PCE inflation			
	2017	2018	2019
Median	1.7	2.0	2.0
March projection	1.9	2.0	2.0
Range.....	1.6 – 1.8	1.7 – 2.1	1.8 – 2.2
March projection	1.7 – 2.0	1.8 – 2.1	1.8 – 2.2
Memo: Tealbook.....	1.6	1.9	2.0
March projection	1.8	1.9	2.0

* The percent changes in real GDP and inflation are measured Q4/Q4. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the March 14–15, 2017, meeting, and one participant did not submit such projections in conjunction with the June 13–14, 2017, meeting.

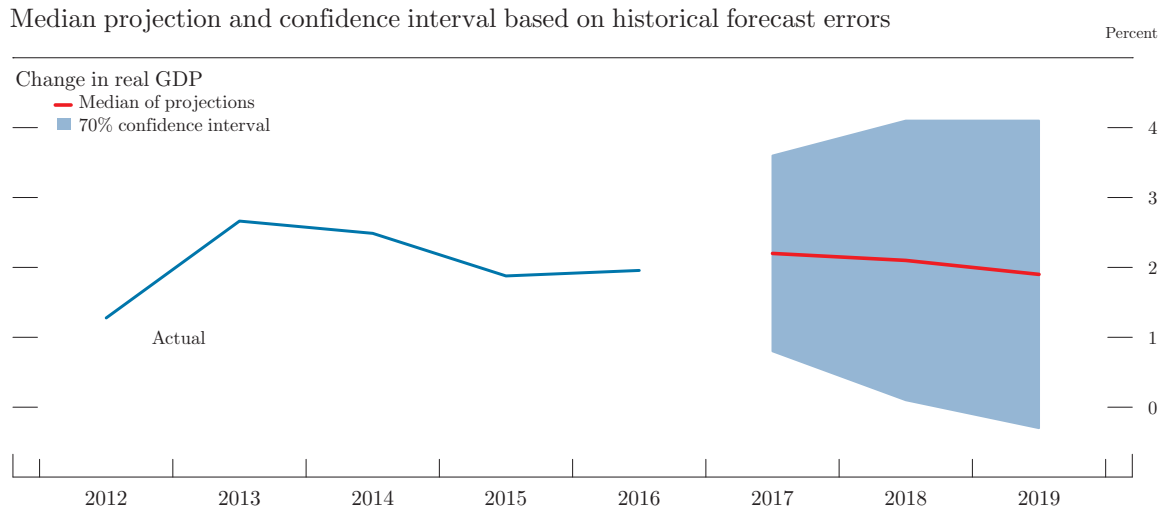
** The updated June Tealbook value for 2017 is reported here.

Exhibit 3. Overview of FOMC participants' assessments of appropriate monetary policy

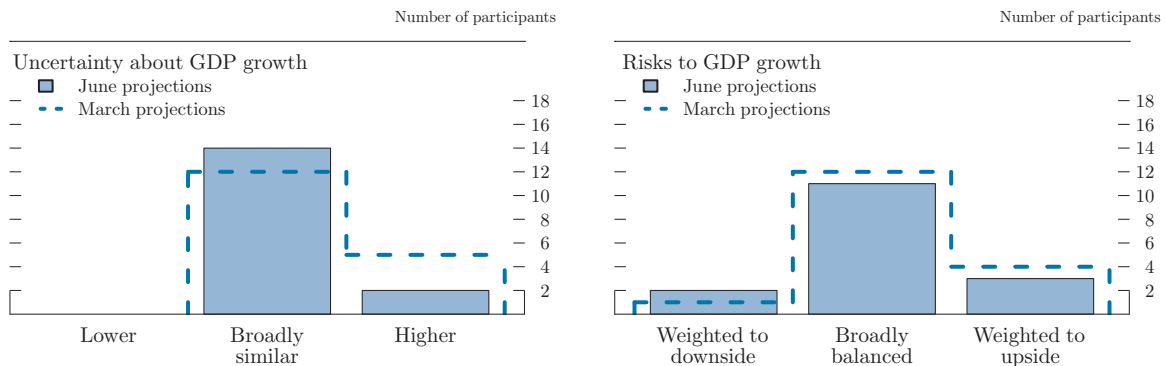


NOTE: In the two panels above, each circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The red diamonds for each year represent the median of the federal funds rate prescriptions that were derived by taking each participant's projections for the unemployment gap, core PCE inflation, and longer-run nominal federal funds rate for that year and inserting them into the non-inertial Taylor (1999) rule. The whiskers represent the central tendency of the prescriptions of the non-inertial Taylor (1999) rule using participants' projections. One participant did not submit a longer-run projection for the federal funds rate in conjunction with the March 14–15, 2017, meeting, and one participant did not submit such a projection in conjunction with the June 13–14, 2017, meeting.

Exhibit 4.A. Uncertainty and risks in projections of GDP growth

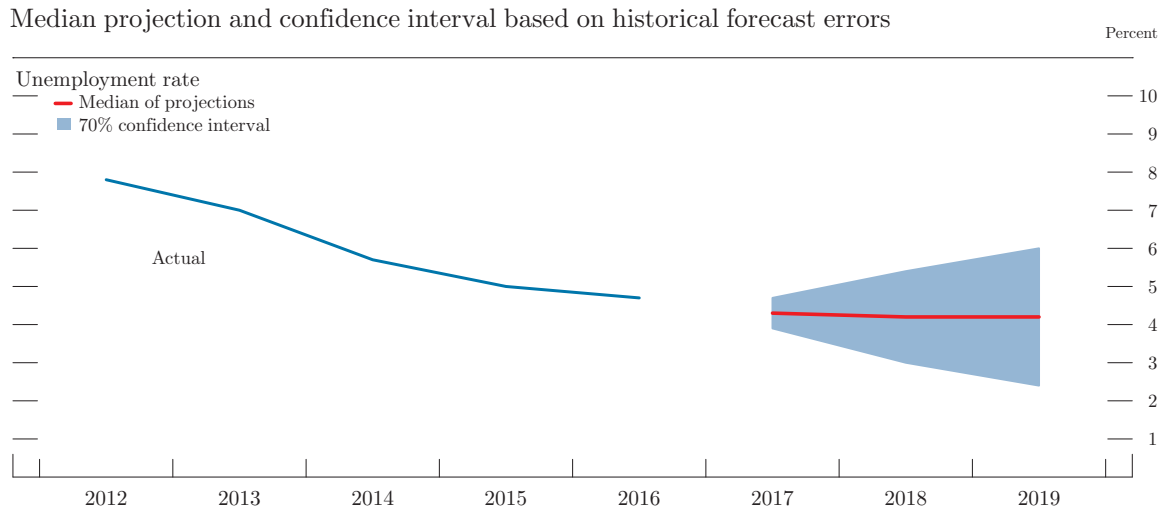


FOMC participants' assessments of uncertainty and risks around their economic projections

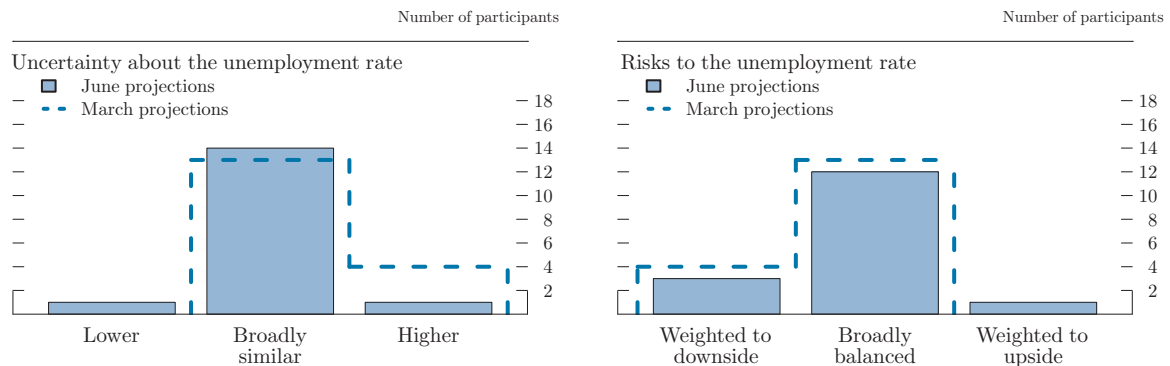


NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in real gross domestic product (GDP) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2 of the Summary of Economic Projections (SEP). Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as “broadly similar” to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as “broadly balanced” would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box “Forecast Uncertainty” in the SEP.

Exhibit 4.B. Uncertainty and risks in projections of the unemployment rate

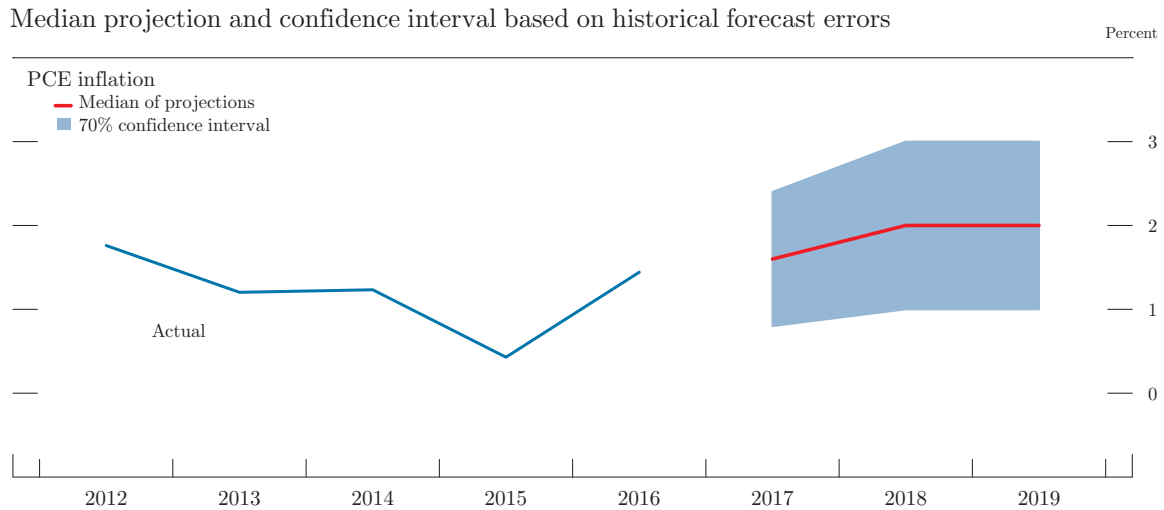


FOMC participants' assessments of uncertainty and risks around their economic projections

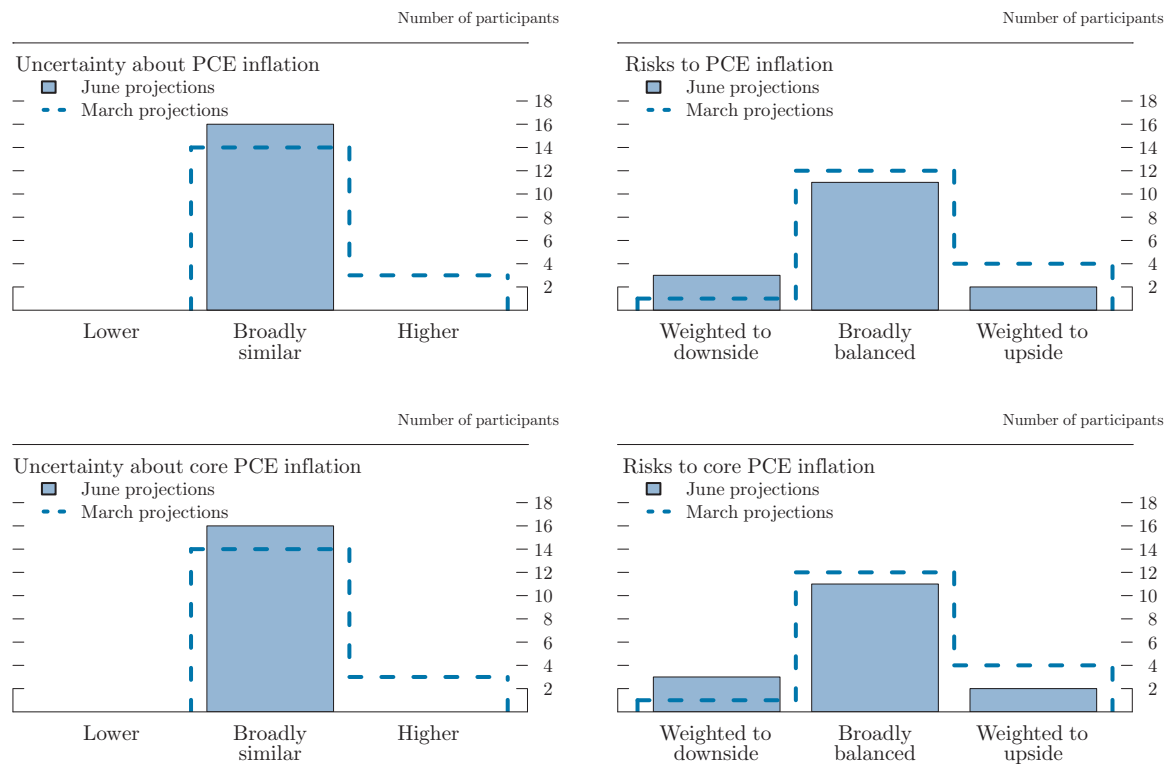


NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the average civilian unemployment rate in the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2 of the Summary of Economic Projections (SEP). Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as “broadly similar” to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as “broadly balanced” would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box “Forecast Uncertainty” in the SEP.

Exhibit 4.C. Uncertainty and risks in projections of PCE inflation

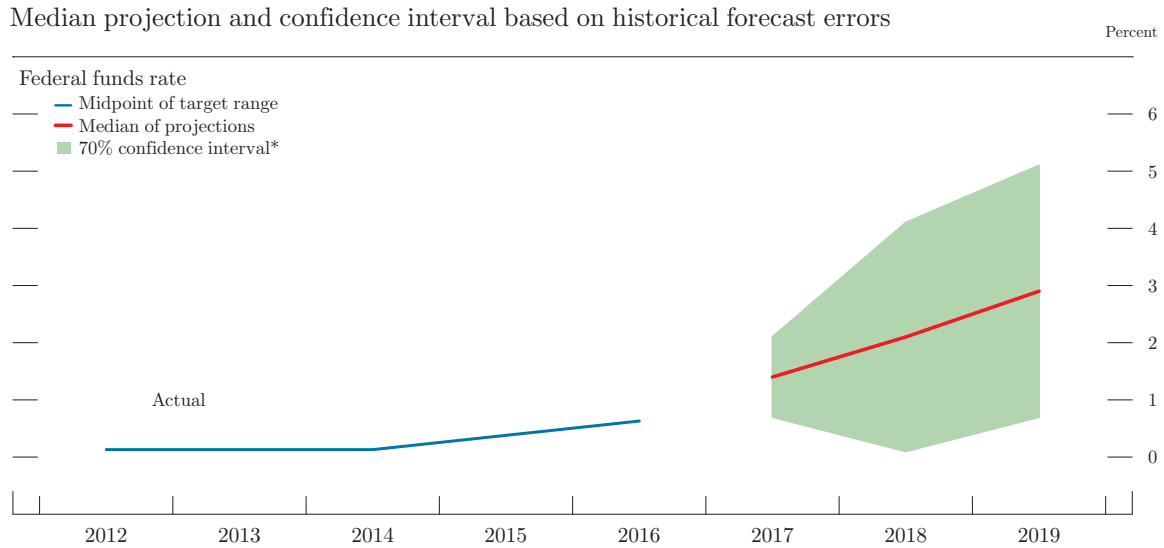


FOMC participants' assessments of uncertainty and risks around their economic projections



NOTE: The blue and red lines in the top panel show actual values and median projected values, respectively, of the percent change in the price index for personal consumption expenditures (PCE) from the fourth quarter of the previous year to the fourth quarter of the year indicated. The confidence interval around the median projected values is assumed to be symmetric and is based on root mean squared errors of various private and government forecasts made over the previous 20 years; more information about these data is available in table 2 of the Summary of Economic Projections (SEP). Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants' current assessments of the uncertainty and risks around their projections; these current assessments are summarized in the lower panels. Generally speaking, participants who judge the uncertainty about their projections as "broadly similar" to the average levels of the past 20 years would view the width of the confidence interval shown in the historical fan chart as largely consistent with their assessments of the uncertainty about their projections. Likewise, participants who judge the risks to their projections as "broadly balanced" would view the confidence interval around their projections as approximately symmetric. For definitions of uncertainty and risks in economic projections, see the box "Forecast Uncertainty" in the SEP.

Exhibit 5. Uncertainty in projections of the federal funds rate



NOTE: The blue and red lines are based on actual values and median projected values, respectively, of the Committee’s target for the federal funds rate at the end of the year indicated. The actual values are the midpoint of the target range; the median projected values are based on either the midpoint of the target range or the target level. The confidence interval around the median projected values is based on root mean squared errors of various private and government forecasts made over the previous 20 years. The confidence interval is not strictly consistent with the projections for the federal funds rate, primarily because these projections are not forecasts of the likeliest outcomes for the federal funds rate, but rather projections of participants’ individual assessments of appropriate monetary policy. Still, historical forecast errors provide a broad sense of the uncertainty around the future path of the federal funds rate generated by the uncertainty about the macroeconomic variables as well as additional adjustments to monetary policy that may be appropriate to offset the effects of shocks to the economy.

The confidence interval is assumed to be symmetric except when it is truncated at zero—the bottom of the lowest target range for the federal funds rate that has been adopted in the past by the Committee. This truncation would not be intended to indicate the likelihood of the use of negative interest rates to provide additional monetary policy accommodation if doing so was judged appropriate. In such situations, the Committee could also employ other tools, including forward guidance and large-scale asset purchases, to provide additional accommodation. Because current conditions may differ from those that prevailed, on average, over the previous 20 years, the width and shape of the confidence interval estimated on the basis of the historical forecast errors may not reflect FOMC participants’ current assessments of the uncertainty and risks around their projections.

* The confidence interval is derived from forecasts of the average level of short-term interest rates in the fourth quarter of the year indicated; more information about these data is available in table 2 of the Summary of Economic Projections. The shaded area encompasses less than a 70 percent confidence interval if the confidence interval has been truncated at zero.

Appendix 6: Materials used by Mr. Laubach

Class I FOMC – Restricted Controlled (FR)

Material for the Briefing on

Monetary Policy Alternatives

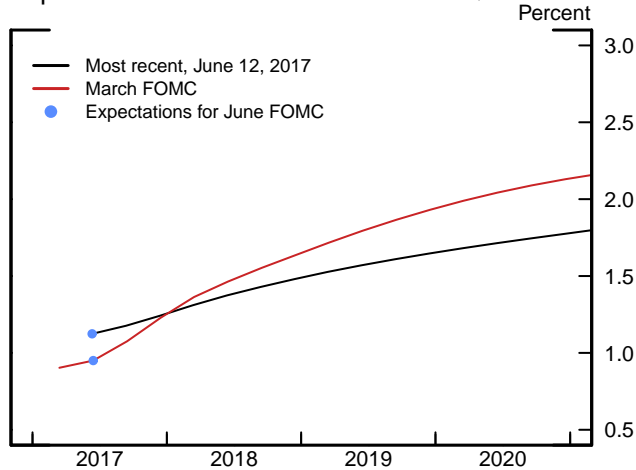
Thomas Laubach

Exhibits by Laurie Krmpotich and Michelle Bongard

June 13–14, 2017

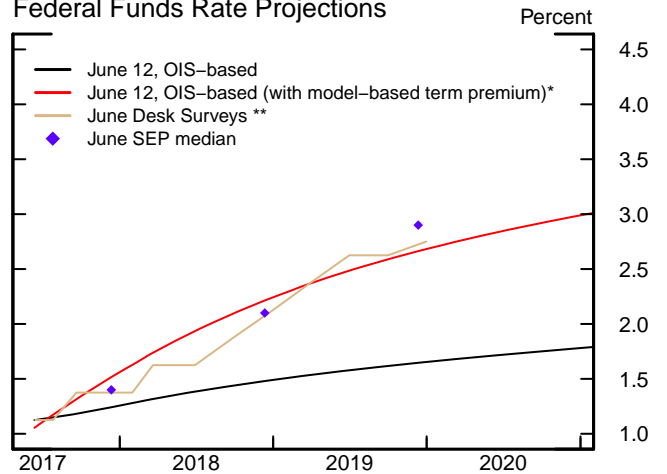
How Much Policy Tightening do Market Participants Expect Over the Medium Term?

Implied Federal Funds Rate from OIS Quotes



Note: OIS-Implied path is estimated with a spline approach.
Source: Bloomberg and Federal Reserve Board staff calculations.

Federal Funds Rate Projections



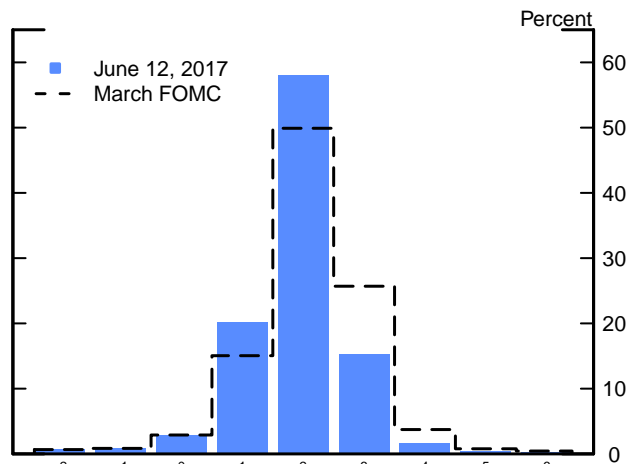
* Estimated using the Board staff's OIS term structure model.
** Path is the median of the respondents' modal paths for the federal funds rate.
Source: Bloomberg, Blue Chip Financial Forecasts, Federal Reserve Board staff estimates, and FRBNY Primary Dealer and Market Participants surveys.

Comparison of Year-End 2019 Federal Funds Rates

	June	Change from March FOMC
Modal Expectations		
1. SEP	2.9	-0.1
2. Blue Chip	2.75	-
3. Desk Survey	2.75	0.13
Mean Expectations		
4. Desk Survey, conditional*	2.36	-0.01
5. Desk Survey, unconditional	1.89	-0.11
6. OIS model implied	2.68	-0.27
7. Unadjusted OIS Spline Curve	1.65	-0.44

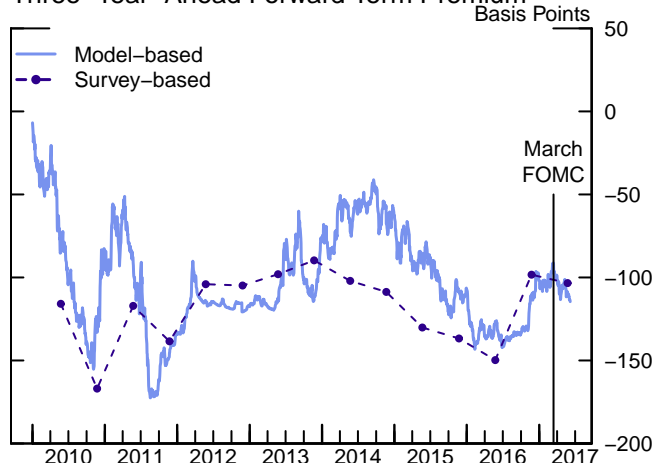
*Conditional on no return to the ZLB.
Note: OIS data is updated as of June 12, 2017.
Source: FRBNY Primary Dealer and Market Participants surveys, SEP, Blue Chip Financial Forecasts, Bloomberg, and Federal Reserve Board staff estimates.

Probability Distribution of Annualized Cumulative Headline CPI Inflation Over the Next 5 Years



Source: BGC Partners and staff calculations.

Three-Year-Ahead Forward Term Premium



Note: The solid line shows estimates from the staff's OIS term structure model that incorporates the zero lower bound. The dots show estimates implied by Blue Chip Financial Forecasts for the federal funds rate and the OIS spline curve.
Source: Blue Chip Financial Forecasts and Federal Reserve Board staff calculations.

Policy Implications

- Investors view risks as counseling caution in removing accommodation
- Little weight on inflation outbreak
- Complacency, or risks no longer related to tight labor market?
- Ability to extract expectations is limited
- Survey responses may not reflect expectations of marginal investor
- Model could be misspecified

MAY 2017 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in March indicates that the labor market has continued to strengthen even as growth in economic activity slowed. Job gains were solid, on average, in recent months, and the unemployment rate declined. Household spending rose only modestly, but the fundamentals underpinning the continued growth of consumption remained solid. Business fixed investment firmed. Inflation measured on a 12-month basis recently has been running close to the Committee's 2 percent longer-run objective. Excluding energy and food, consumer prices declined in March and inflation continued to run somewhat below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed, on balance.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee views the slowing in growth during the first quarter as likely to be transitory and continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, labor market conditions will strengthen somewhat further, and inflation will stabilize around 2 percent over the medium term. Near-term risks to the economic outlook appear roughly balanced. The Committee continues to closely monitor inflation indicators and global economic and financial developments.
3. In view of realized and expected labor market conditions and inflation, the Committee decided to maintain the target range for the federal funds rate at 3/4 to 1 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.
4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.
5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction, and it anticipates doing so until normalization of the level of the federal funds rate is well under way. This policy, by keeping the Committee's holdings of

longer-term securities at sizable levels, should help maintain accommodative financial conditions.

JUNE 2017 ALTERNATIVE A

1. Information received since the Federal Open Market Committee met in ~~March~~ May indicates that the labor market has continued to strengthen ~~even as~~ and that growth in economic activity ~~slowed~~ has been rising moderately so far this year. Job gains ~~were solid, on average, in recent months, and~~ Although the unemployment rate ~~has~~ declined, job gains have slowed in recent months, and wage pressures have remained subdued. Household spending ~~rose only modestly, but the fundamentals underpinning the continued growth of consumption remained solid.~~ has picked up, and business fixed investment ~~firmly~~ has continued to expand. ~~However,~~ Inflation ~~measured on a 12-month basis,~~ inflation has declined recently ~~has been running close to~~ and, like the measure the Committee's 2 percent longer-run objective. ~~excluding~~ food and energy and food, consumer prices, ~~declined in March and~~ inflation ~~continued to run~~ is running somewhat below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed, on balance.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee ~~views the slowing in growth during the first quarter as likely to be transitory and~~ continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, labor market conditions will strengthen somewhat further, and inflation will stabilize around 2 percent over the medium term. Near-term risks to the economic outlook appear roughly balanced, ~~but~~ the Committee ~~continues to closely~~ is monitoring inflation indicators and global economic and financial developments closely.
3. ~~In view of realized and expected labor market conditions and inflation~~ Against this backdrop, the Committee decided to maintain the target range for the federal funds rate at 3/4 to 1 percent while assessing whether the recent lower readings on inflation were due to transitory factors. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.
4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction, and it anticipates doing so until normalization of the level of the federal funds rate is well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

JUNE 2017 ALTERNATIVE B

1. Information received since the Federal Open Market Committee met in ~~March~~ May indicates that the labor market has continued to strengthen ~~even as~~ and that growth in economic activity ~~slowed~~ has been rising moderately so far this year. Job gains ~~were~~ have moderated but have been solid, on average, ~~in recent months~~ since the beginning of the year, and the unemployment rate has declined. Household spending ~~rose only modestly, but the fundamentals underpinning the continued growth of consumption remained solid.~~ has picked up in recent months, and business fixed investment ~~firm~~ has continued to expand. Inflation ~~measured~~ On a 12-month basis, inflation has declined recently ~~has been running close to~~ and, like the measure the Committee's 2 percent longer-run objective, excluding food and energy and food, consumer prices, declined in March and inflation continued to run is running somewhat below 2 percent. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations are little changed, on balance.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee ~~views the slowing in growth during the first quarter as likely to be transitory and~~ continues to expect that, with gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, and labor market conditions will strengthen somewhat further, ~~and~~ Inflation ~~will~~ on a 12-month basis is expected to remain somewhat below 2 percent in the near term but to stabilize around the Committee's 2 percent objective over the medium term. Near-term risks to the economic outlook appear roughly balanced. The Committee continues to closely monitor inflation indicators and global economic and financial developments.
3. In view of realized and expected labor market conditions and inflation, the Committee decided to ~~maintain~~ raise the target range for the federal funds rate ~~at 3/4 to 1~~ to 1-1/4 percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.
4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.

-
5. The Committee is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at auction, and it anticipates doing so until normalization of the level of the federal funds rate is well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. **The Committee currently expects to begin implementing a balance sheet normalization program this year, provided that the economy evolves broadly as anticipated. This program, which would gradually reduce the Federal Reserve's securities holdings by decreasing reinvestment of principal payments from those securities, is described in the accompanying addendum to the Committee's Policy Normalization Principles and Plans.**

JUNE 2017 ALTERNATIVE C

1. Information received since the Federal Open Market Committee met in ~~March~~ **May** indicates that the labor market has continued to ~~strengthen even as~~ **tighten and that** growth in economic activity ~~slowed~~ **has picked up**. Job gains were ~~solid,~~ **have been** solid, on average, ~~in recent months~~ **since the beginning of the year**, and the unemployment rate **has** declined. Household spending ~~rose only modestly, but the fundamentals underpinning the continued growth of consumption remained solid.~~ **has strengthened, and** business fixed investment ~~firmly~~ **has continued to expand**. Inflation measured on a 12-month basis ~~recently~~ has been running close to the Committee's 2 percent longer-run objective **in recent months**. ~~Excluding energy and food, consumer prices declined in March and inflation continued to run somewhat below 2 percent.~~ Market-based measures of inflation compensation ~~remain low;~~ **and** survey-based measures of longer-term inflation expectations are little changed, on balance.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee views the ~~slowing in growth during the first quarter~~ **recent lower readings on inflation** as likely **reflecting** to be transitory **factors** and continues to expect that, with **further** gradual adjustments in the stance of monetary policy, economic activity will expand at a moderate pace, labor market conditions will strengthen somewhat further, and inflation will stabilize around 2 percent over the medium term. Near-term risks to the economic outlook appear roughly balanced. The Committee continues to closely monitor inflation indicators and global economic and financial developments.
3. In view of realized and expected labor market conditions and inflation, the Committee decided to ~~maintain~~ **raise** the target range for the federal funds rate ~~at 3/4 to 1~~ **to 1-1/4** percent. The stance of monetary policy remains accommodative, thereby supporting some further strengthening in labor market conditions and a sustained return to 2 percent inflation.
4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its objectives of maximum employment and 2 percent inflation. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. The Committee will carefully monitor actual and expected inflation developments relative to its symmetric inflation goal. The Committee expects that economic conditions will evolve in a manner that will warrant **additional** gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data.
5. The Committee ~~is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and of rolling over maturing Treasury securities at~~

auction, and it anticipates doing so until normalization of the level of the federal funds rate, is well under way. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions **decided today to implement, effective at the beginning of July, a program for reducing reinvestment of principal payments from its holdings of Treasury securities, agency debt, and agency mortgage-backed securities. The program is described in the accompanying addendum to the Committee's Policy Normalization Principles and Plans. This step will begin a gradual decline in the Federal Reserve's securities holdings.**

Implementation Note for June 2017 Alternative A

Release Date: ~~May 3~~ **June 14**, 2017

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its [statement](#) on ~~May 3~~ **June 14**, 2017:

- The Board of Governors of the Federal Reserve System voted [unanimously] to maintain the interest rate paid on required and excess reserve balances at 1.00 percent.
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

“Effective ~~May 4~~ **June 15**, 2017, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of 3/4 to 1 percent, including overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of 0.75 percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of \$30 billion per day.

The Committee directs the Desk to continue rolling over maturing Treasury securities at auction and to continue reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve’s agency mortgage-backed securities transactions.”

More information regarding open market operations may be found on the Federal Reserve Bank of New York’s [website](#).

- In a related action, the Board of Governors of the Federal Reserve System voted [unanimously] to approve the establishment of the primary credit rate at the existing level of 1.50 percent.

This information will be updated as appropriate to reflect decisions of the Federal Open Market Committee or the Board of Governors regarding details of the Federal Reserve’s operational tools and approach used to implement monetary policy.

Implementation Note for June 2017 Alternative B

Release Date: ~~May 3~~ **June 14**, 2017

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its [statement](#) on ~~May 3~~ **June 14**, 2017:

- The Board of Governors of the Federal Reserve System voted [unanimously] to ~~maintain~~ **raise** the interest rate paid on required and excess reserve balances at ~~1.00~~ **to 1.25** percent, **effective June 15, 2017**.
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

“Effective ~~May 4~~ **June 15**, 2017, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of ~~3/4 to 1~~ **to 1-1/4** percent, including overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of ~~0.75~~ **1.00** percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of \$30 billion per day.

The Committee directs the Desk to continue rolling over maturing Treasury securities at auction and to continue reinvesting principal payments on all agency debt and agency mortgage-backed securities in agency mortgage-backed securities. The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve’s agency mortgage-backed securities transactions.”

More information regarding open market operations may be found on the Federal Reserve Bank of New York's [website](#).

- In a related action, the Board of Governors of the Federal Reserve System voted [unanimously] to approve the establishment of **a 1/4 percentage point increase in** the primary credit rate ~~at the existing level of 1.50~~ **to 1.75** percent, **effective June 15, 2017**. **In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of . . .**

This information will be updated as appropriate to reflect decisions of the Federal Open Market Committee or the Board of Governors regarding details of the Federal Reserve's operational tools and approach used to implement monetary policy.

Implementation Note for June 2017 Alternative C

Release Date: ~~May 3~~ **June 14**, 2017

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee in its [statement](#) on ~~May 3~~ **June 14**, 2017:

- The Board of Governors of the Federal Reserve System voted [unanimously] to ~~maintain~~ **raise** the interest rate paid on required and excess reserve balances at ~~1.00~~ **to 1.25** percent, **effective June 15, 2017**.
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

“Effective ~~May 4~~ **June 15**, 2017, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of ~~3/4 to 1~~ **to 1-1/4** percent, including overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of ~~0.75~~ **1.00** percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of \$30 billion per day.

The Committee directs the Desk to continue ~~rolling over maturing~~ **reinvesting in new** Treasury securities at auction **the principal payments from the Federal Reserve’s holdings of Treasury securities maturing during June**, and to continue reinvesting ~~principal payments on all agency debt and agency mortgage-backed securities~~ **the principal payments received during June from the Federal Reserve’s holdings of agency debt and agency mortgage-backed securities**.

The Committee directs the Desk, effective in July, to reinvest in new Treasury securities at auction only the amount of principal payments from the Federal Reserve’s holdings of Treasury securities that exceeds \$6 billion during each calendar month, and to reinvest in agency mortgage-backed securities only the amount of principal payments received from the Federal Reserve’s holdings of agency debt and agency mortgage-backed securities that exceeds \$4 billion during each calendar month.

The Committee also directs the Desk to engage in dollar roll and coupon swap transactions as necessary to facilitate settlement of the Federal Reserve’s agency mortgage-backed securities transactions.”

More information regarding open market operations may be found on the Federal Reserve Bank of New York's [website](#). **Additional information regarding the plans for balance sheet normalization is available in the Committee’s addendum to the Policy Normalization Principles and Plans ([link](#)) and the Desk’s operating statement ([link](#)).**

- In a related action, the Board of Governors of the Federal Reserve System voted [unanimously] to approve the establishment of **a 1/4 percentage point increase in the primary credit rate at the existing level of 1.50 to 1.75 percent, effective June 15, 2017. In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of . . .**

This information will be updated as appropriate to reflect decisions of the Federal Open Market Committee or the Board of Governors regarding details of the Federal Reserve's operational tools and approach used to implement monetary policy.

Appendix 7: Materials used by Mr. Wilcox

Class II FOMC – Restricted (FR)

Material for

Consumer Price Index Update

David W. Wilcox
June 14, 2017

Class II FOMC—Restricted (FR)

Recent Changes in Consumer Price Indexes
(Percent changes)

	Monthly change			May/May change	
	March	April	May	2016	2017
Total CPI	-0.3	0.2	-0.1	1.0	1.9
<i>June TB</i>			<i>-0.1</i>		<i>2.0</i>
Food	0.3	0.2	0.2		
<i>June TB</i>			<i>0.1</i>		
Energy	-3.2	1.1	-2.7		
<i>June TB</i>			<i>-3.0</i>		
Core CPI	-0.1	0.1	0.1	2.2	1.7
<i>June TB</i>			<i>0.2</i>		<i>1.9</i>

Note: May 2017 CPI data released at 8:30 a.m. on June 14, 2017.