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

Class II FOMC – Restricted (FR)

Material for Briefing on

Financial Developments and Open Market Operations

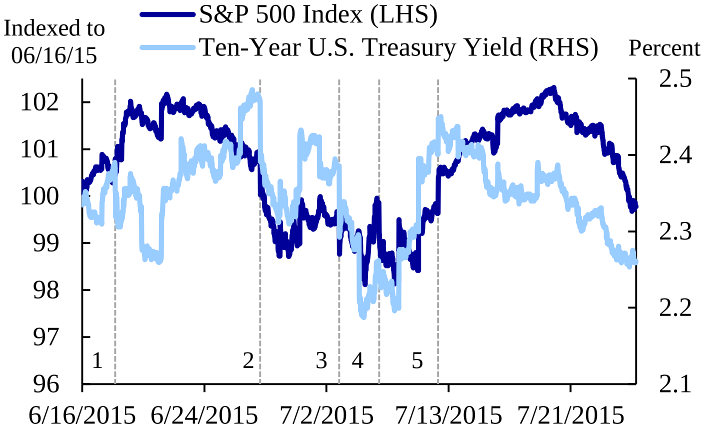
Simon Potter and Lorie Logan

July 28, 2015

Class II FOMC – Restricted (FR)

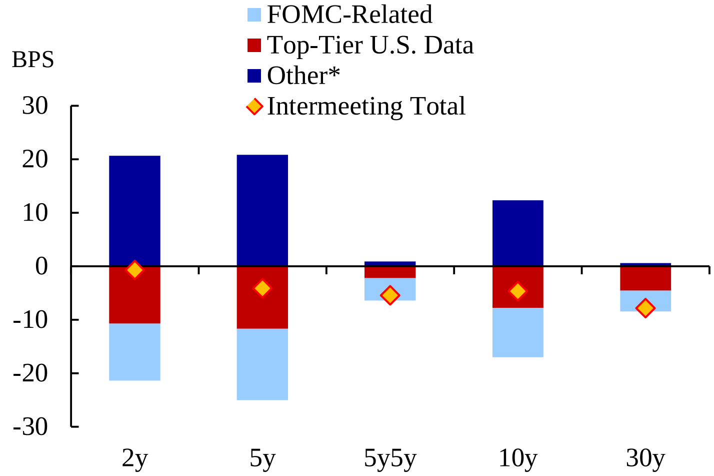
Exhibit 1

(1) U.S. Ten-Year Yield and S&P 500 Index Over Intermeeting Period*



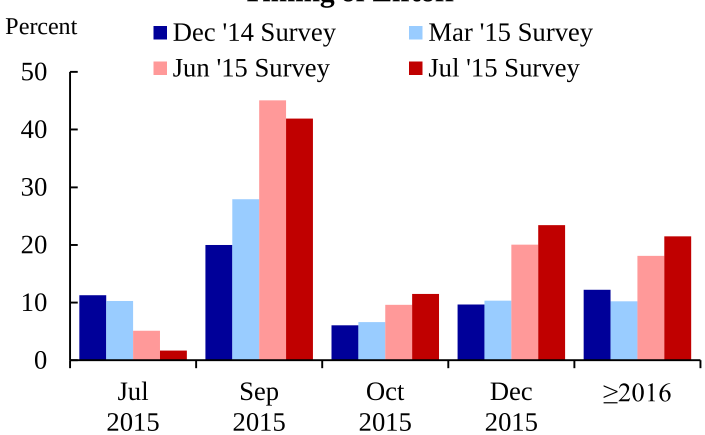
(1) June FOMC statement released, (2) Greek referendum called, (3) Greek "no" vote, (4) Chinese equity volatility, (5) Greek agreement.
Source: Bloomberg

(2) Intermeeting Changes in Treasury Yields



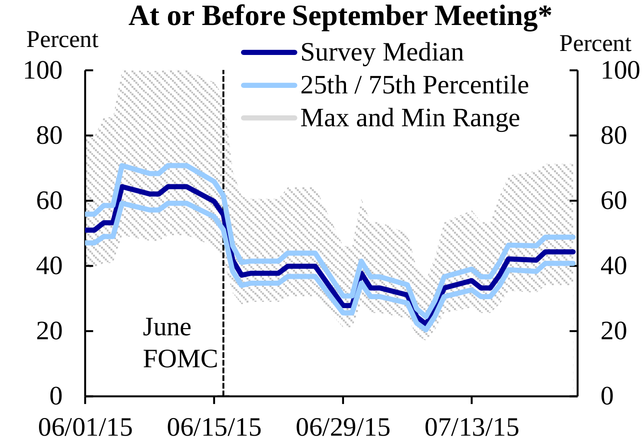
*Other includes days when there were large yield moves due to international developments in Greece and China.
Source: Bloomberg

(3) Survey-Implied Probability Distribution of the Timing of Liftoff*



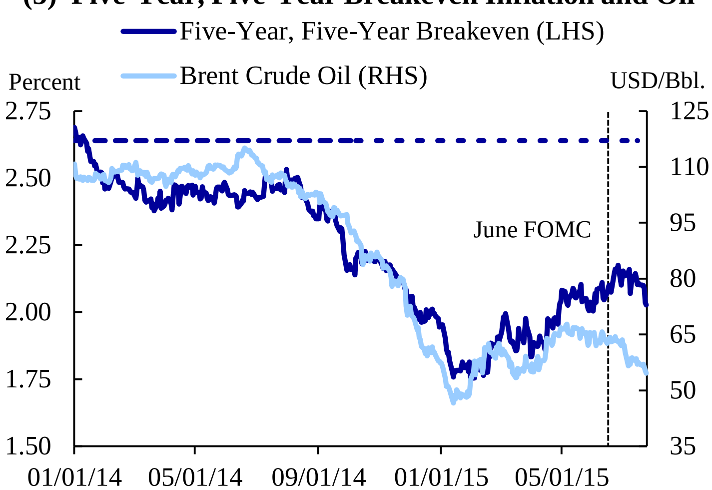
*Average of all responses to the Survey of Primary Dealers and Survey of Market Participants. Probabilities may not add up to 100%.
Source: Federal Reserve Bank of New York

(4) Market-Implied Cumulative Probability of Liftoff At or Before September Meeting*



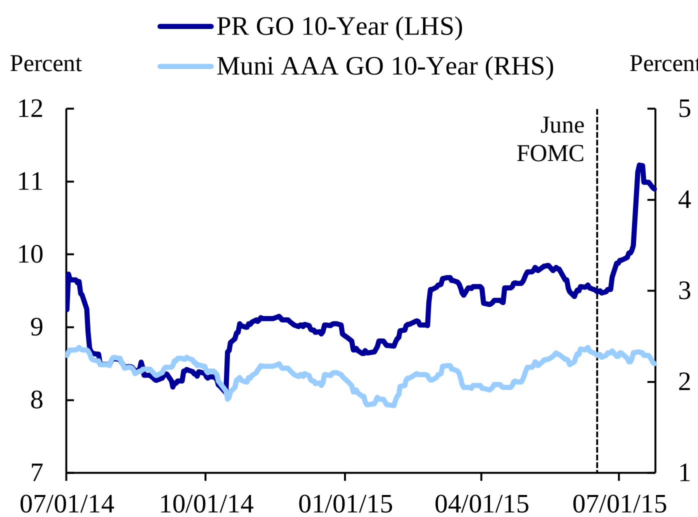
*Based on responses from the July Survey of Primary Dealers and June Survey for Market Participants' PDF-implied means for the EFFR immediately after liftoff. Probabilities are derived from October fed funds futures contract.
Source: Bloomberg, Federal Reserve Bank of New York Desk Calculations

(5) Five-Year, Five-Year Breakeven Inflation and Oil*



*Dashed line shows ten year average of 5Y5Y breakeven (LHS).
Source: Federal Reserve Board of Governors, Bloomberg

(6) Puerto Rico and Municipal Bond Rates

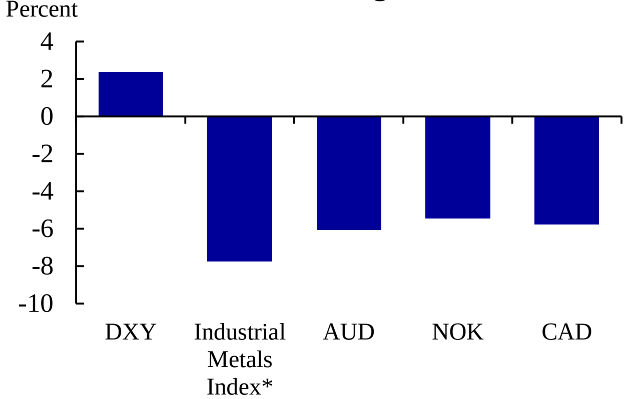


Source: Thompson Reuters

Class II FOMC – Restricted (FR)

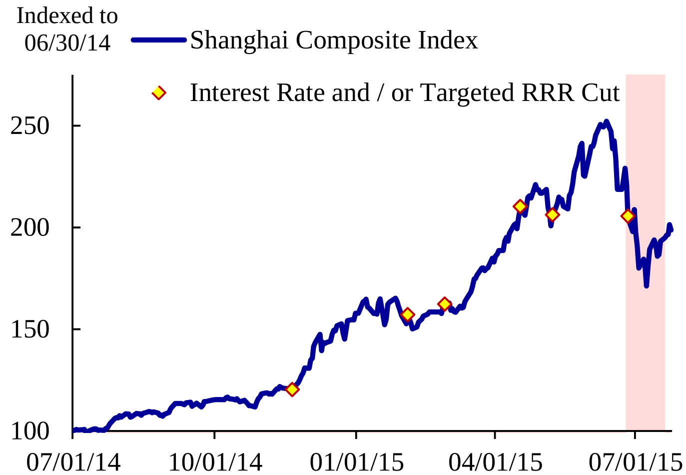
Exhibit 2

(7) Currencies and Commodities Over Intermeeting Period



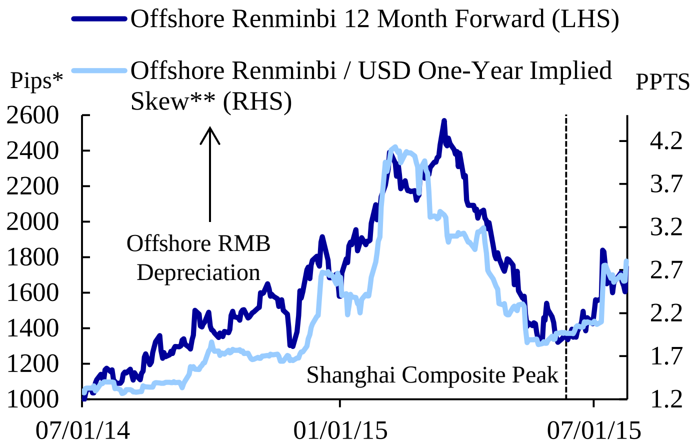
*Bloomberg industrial metals index; composed of copper, aluminum, zinc, and nickel.
Source: Bloomberg

(8) Shanghai Composite Index*



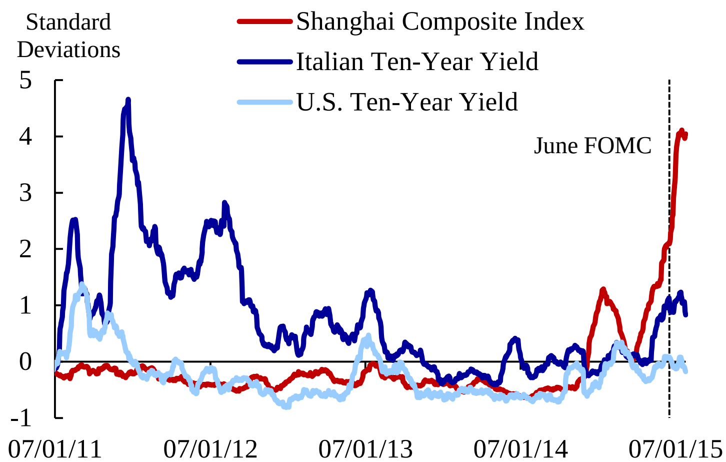
*Shaded region indicates the Chinese authorities provided unconventional support to the equity market.
Source: Bloomberg

(9) Offshore Renminbi and Implied Skew



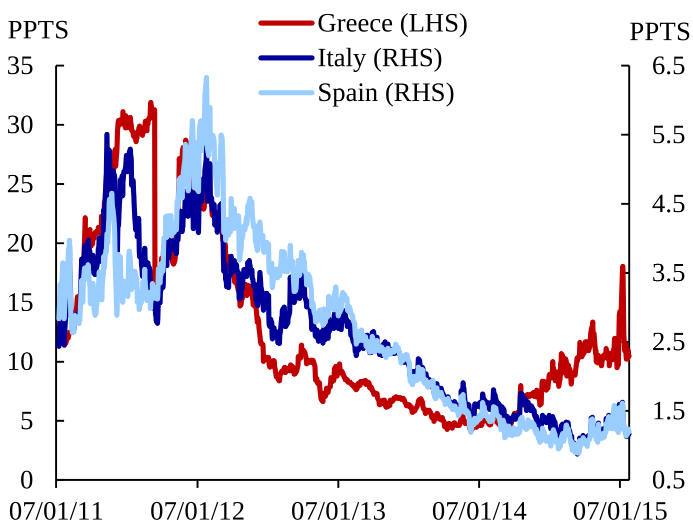
*A "pip" is 1/100th of a cent.
**Implied volatility for call options *minus* the implied volatility for put options with one year expiries and 25-deltas.
Source: Bloomberg

(10) Standardized Intraday Trading Ranges*



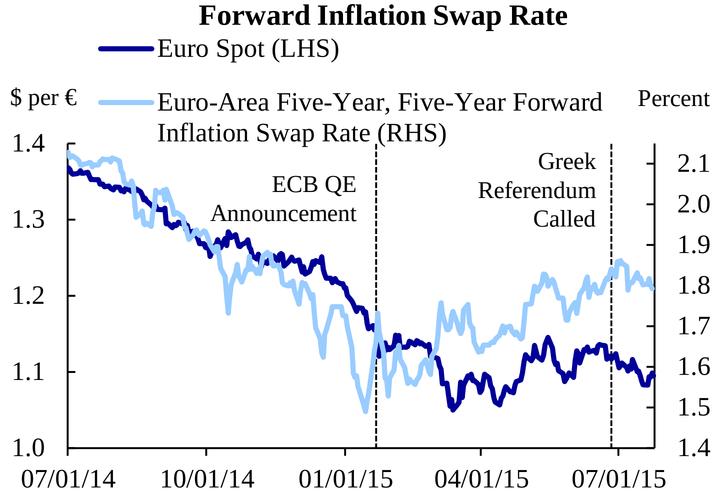
*Standardized since 12/31/99, 30-day moving average.
Source: Bloomberg

(11) Ten-Year Peripheral Spreads to Germany



Source: Bloomberg

(12) Euro-Dollar Spot and Five-Year, Five-Year Forward Inflation Swap Rate

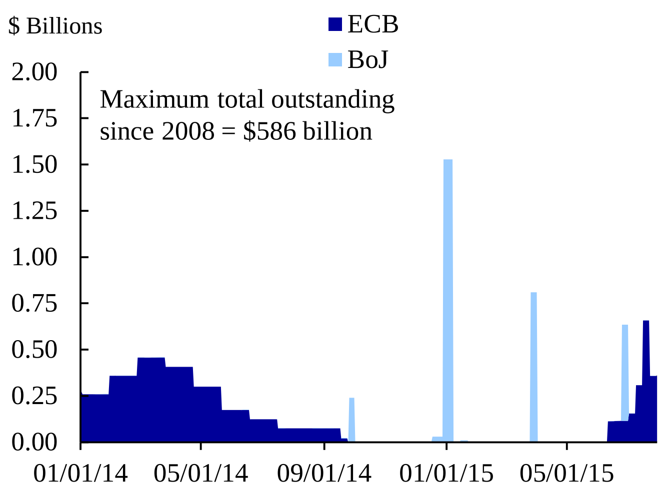


Source: Bloomberg, Barclays

Class II FOMC – Restricted (FR)

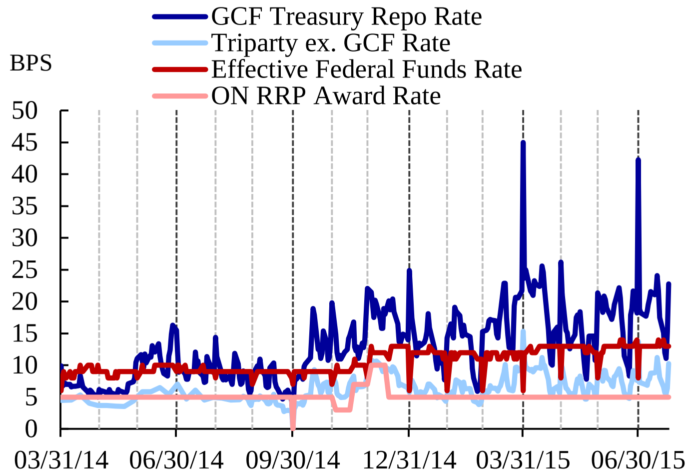
Exhibit 3

(13) Central Bank Liquidity Swaps Outstanding



Source: Federal Reserve Bank of New York

(14) Overnight Interest Rates*



*Dark trip wires indicate quarter-ends, light trip wires indicate month-ends.
Source: Federal Reserve Bank of New York, Bloomberg

(15) June Term RRP Results

	06/25/15	06/29/15
Term (Days)	7	2
Offered ($ Billions)	100	100
Bids ($ Billions)		
Accepted	100	100
Submitted	**116**	**104**
Rates (BPS)		
Stop-out	7	7
High Bid	8	8
Low Bid	0	0
Maximum Bid Rate (BPS)	8	8

Source: Federal Reserve Bank of New York

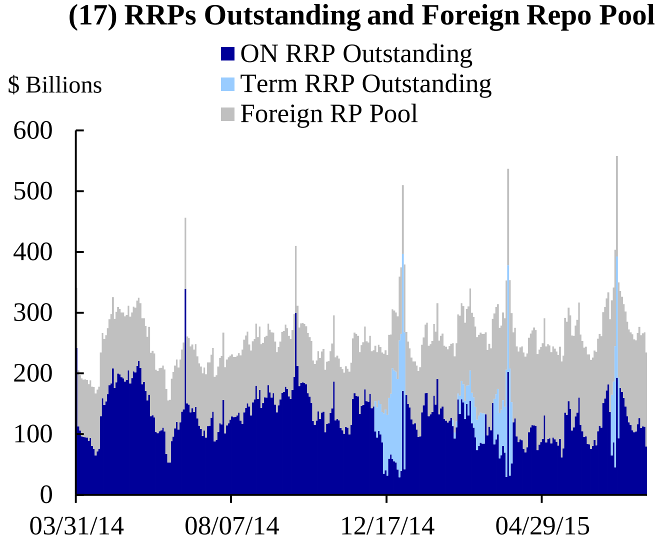
(16) September Term RRP Announcement

- Desk intends to release statement shortly after July minutes announcing:
  - o Plan to offer at least $200 billion of term RRPs over September quarter-end

Operation Date	Maturity Date	Term	Amount Offered	Max. Rate
Sep 24	Oct 01	7 days	TBA	TBA
Sep 30	Oct 02	2 days	TBA	TBA

  - o Release of the remaining details shortly ahead of quarter-end

(17) RRPs Outstanding and Foreign Repo Pool



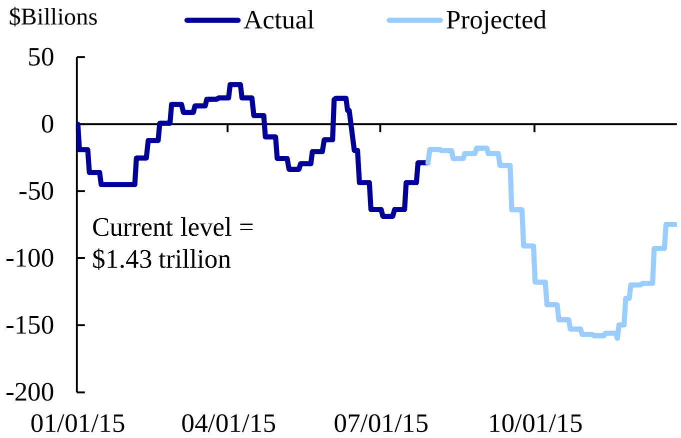
Source: Federal Reserve Bank of New York

(18) Change to Foreign RP Pool Terms of Service

- Revise customer terms of service to align with current practice
  - o Remove individual targets and notification requirements
- Ensure consistent understanding across account-holders of RP pool service
- Staff does not expect larger balances to have material impact on monetary policy implementation
  - o Could reintroduce individual targets or caps, or aggregate cap to manage any policy impact

Class II FOMC – Restricted (FR) Exhibit 4 (Last)

(19) Treasury Bill Supply Cumulative Change*



*Projection period is 07/29/15 to 12/28/15. Assumes debt limit will be resolved around end Nov / early Dec.; bill issuance expected to resume there after.
Source: U.S. Treasury, Federal Reserve Board of Governors

(20) MBS CUSIP Aggregation

- Follow similar strategy and principles as 2011 aggregation
- **Purpose:**
  - Realize cost savings and operational benefits
  - Facilitate sales of MBS holdings, should Committee direct Desk to do so
- **Proposed Plan:**
  - Aggregate ~60,000 CUSIPs into ~350 new pools, representing face value of $1.27 trillion
  - Release Desk statement and FAQs Friday following FOMC, start aggregation mid-August

Appendix 2: Materials used by Ms. Logan and Mr. Clouse

Class I FOMC – Restricted Controlled (FR)

Material for Briefing on

Normalization

Lorie Logan & James Clouse

July 28, 2015

(1) Key Elements in Draft Liftoff Directive

- Adds effective date as day following policy announcement
- Clarifies description of ON RRP capacity under a suspended cap
- Retains broad OMO authority, but adds specific instructions for ON and term RRPs

(2) Comparison of Central Banks' Operating Frameworks

Central Bank	Frequency of Operations (Times/Year)	Implementation of Policy Rate Decision
BoE	Weekly*	Same Day
SNB	Daily	Same Day
PBoC	Daily / Unknown	Same Day
BoJ	Daily	Next Day
RBA	Daily	Next Day
RBNZ	Daily	Next Day
Norges Bank	Daily	Next Day
ECB	Weekly**	Next Wed.
Riksbank	Weekly*	Next Wed.

*Weekly operations may be supplemented with daily fine-tuning operations.
** Weekly operations are supplemented with longer-term operations at various times.

(3) Description of ON RRP Capacity Under Suspended Cap

- Amounts "limited only by the value of Treasury securities held outright in the SOMA that are available for such operations"
- The Desk's operating statement would:
    - Explain derivation of the available amount
    - Note ~$2 trillion of Treasury securities will be available
    - Be posted following FOMC communications

(4) Recommendations on Language Authorizing Conduct of OMOs

- Strike phrase "seeks conditions in reserve markets" as objective of OMOs
- Maintain broad instruction to Desk to undertake OMOs "as necessary" to keep the EFFR in target range, with addition of specific instructions to undertake ON and term RRPs

Implementation Note for July 2015 Alternative C

Release Date: July 29, 2015

Actions to Implement Monetary Policy

The Federal Reserve has taken the following actions to implement the monetary policy stance adopted and announced by the Federal Open Market Committee on July 29, 2015:

- The Board of Governors of the Federal Reserve System voted [unanimously] to raise the interest rate paid on required and excess reserve balances to [0.50] percent, effective July 30, 2015.

- 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:

  "~~Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent.~~ **Effective July 30, 2015,** the Committee directs the Desk to undertake open market operations as necessary to maintain ~~such conditions~~ **the federal funds rate in a target range of [¼ to ½] percent, including: (1) 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 [0.25] percent and 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 (2) term reverse repurchase operations as authorized in the resolution on term RRP operations approved by the Committee at its March 17-18, 2015, meeting.**

  "The Committee directs the Desk to ~~maintain its policy of~~ **continue** rolling over maturing Treasury securities into new issues and ~~its policy of~~ **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." ~~The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.~~

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

  When this document is released to the public, the blue text will be a link to the relevant page on the FRBNY website.

- The Board of Governors of the Federal Reserve System voted [unanimously] to approve a [¼] percentage point increase in the primary credit rate to [1.00] percent, effective July 30, 2015. In taking this action, the Board approved requests 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 3: Materials used by Mses. Klee and Remache

Class I FOMC – Restricted Controlled (FR)

Material for Briefing on

SOMA Reinvestment Policy

Beth Klee and Julie Remache

July 28, 2015

Exhibit 1
Strategies and Outcomes

Calendar−dependent strategy

Description

- Reinvestments cease at a set date following initial firming of federal funds rate
- Committee could follow
  - o Strict calendar−dependent
  - o Conditional on macroeconomic conditions

Pros

- Relatively straightforward
- Offers some certainty regarding SOMA path

Con

- Inflexible, perhaps even with conditionality

State−dependent strategy

Description

- Reinvestments cease based on economic conditions
- Committee could follow
  - o Quantitative state−dependent
  - o Qualitative state−dependent

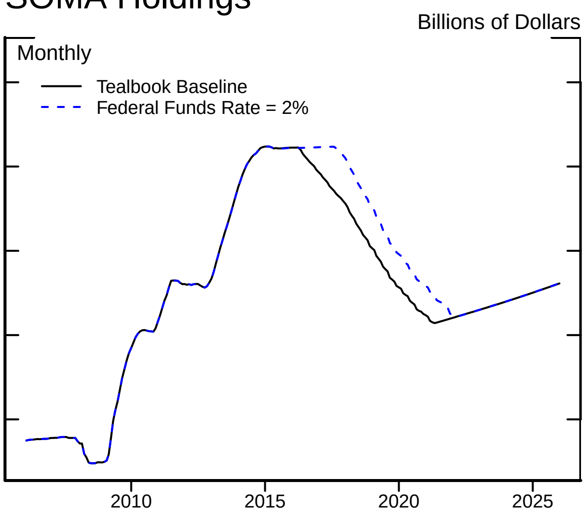
Pro

- Might reduce the possibility of returning to the zero lower bound

Cons

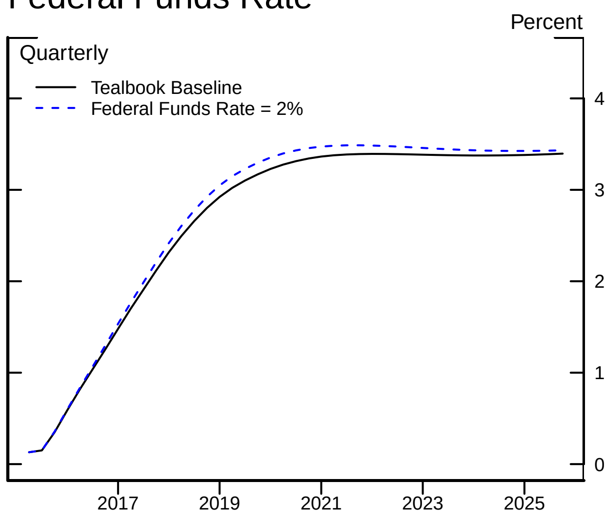
- Challenging to determine appropriate threshold or trigger, or to be sufficiently clear
- Less certainty about SOMA path

SOMA Holdings



Source: H.4.1 Statistical Release and Staff Estimates.

Federal Funds Rate

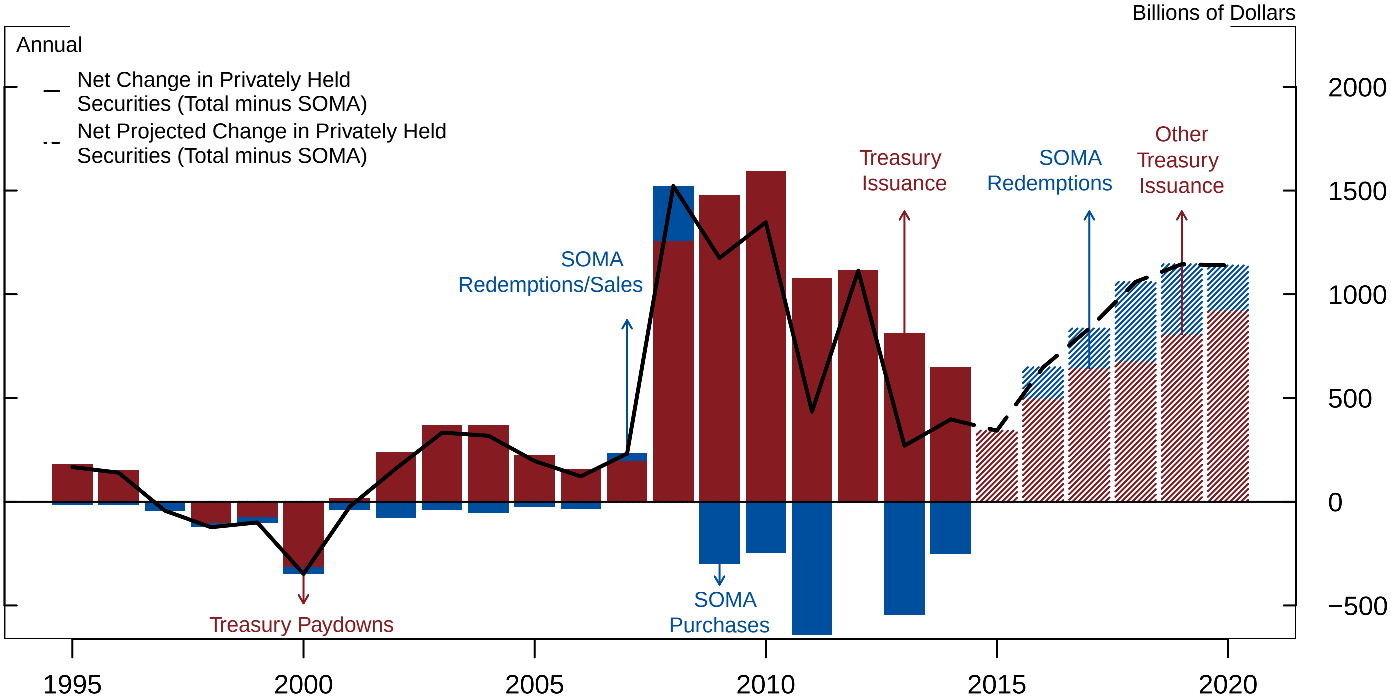


Source: Staff Estimates.

Class I FOMC − Restricted Controlled (FR)

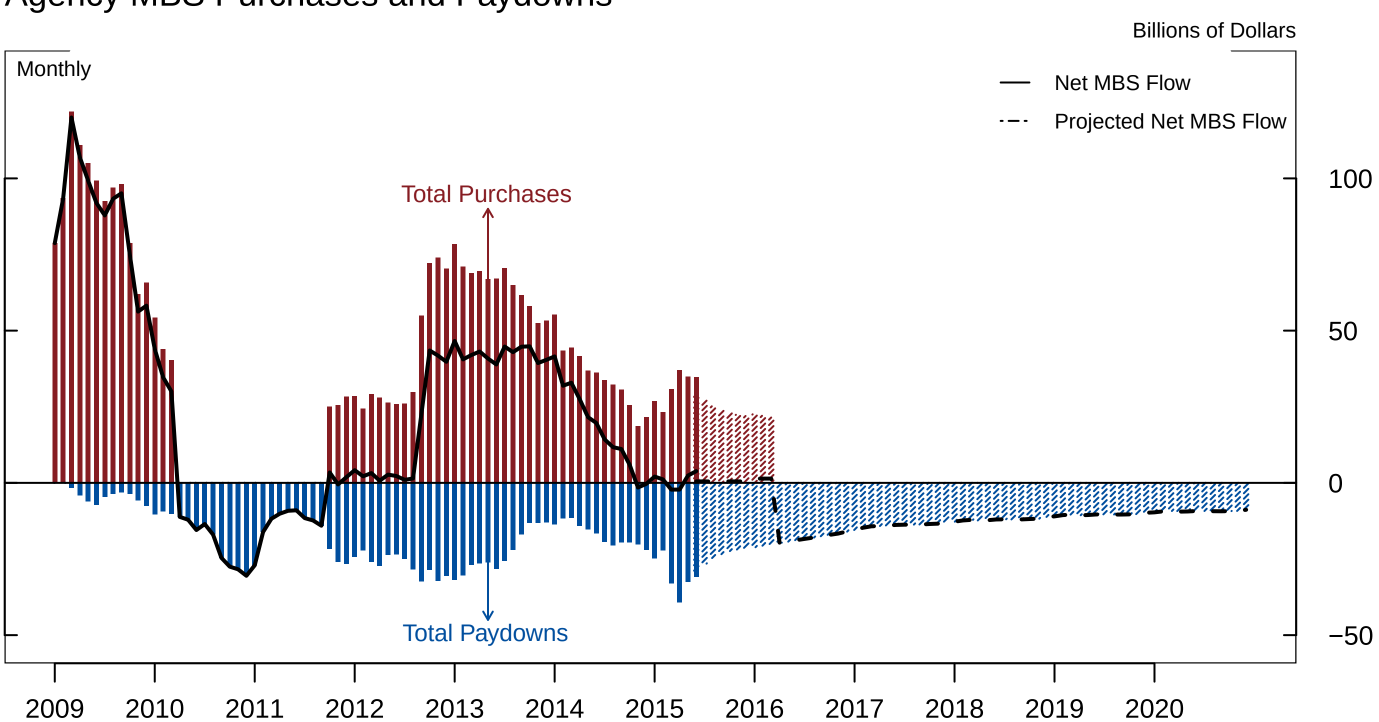
Exhibit 2
Securities Flows

Net Change in Privately Held Treasury Securities



Source: Monthly Statement of the Public Debt, H.4.1 Statistical Release, Staff Estimates.

Agency MBS Purchases and Paydowns

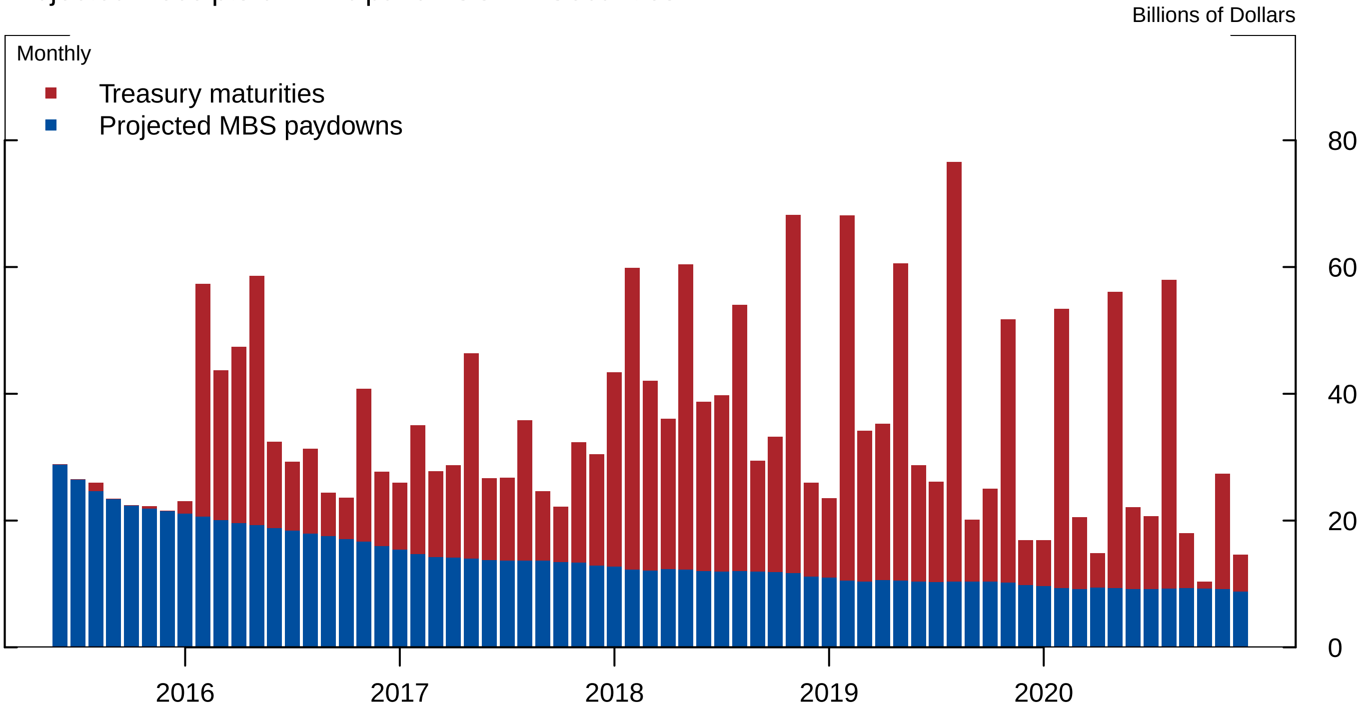


Source: Federal Reserve Bank of New York and Staff Estimates.

Class I FOMC − Restricted Controlled (FR)

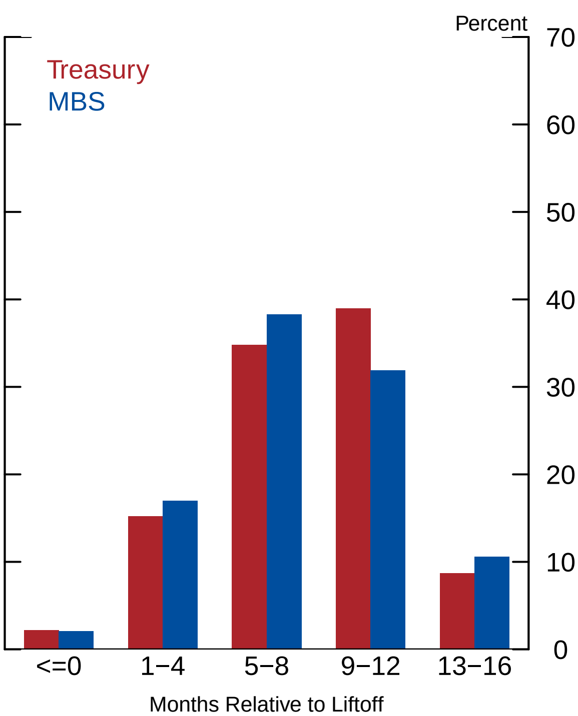
Exhibit 3
SOMA Maturities and Expectations

Projected Receipts of Principal on SOMA Securities



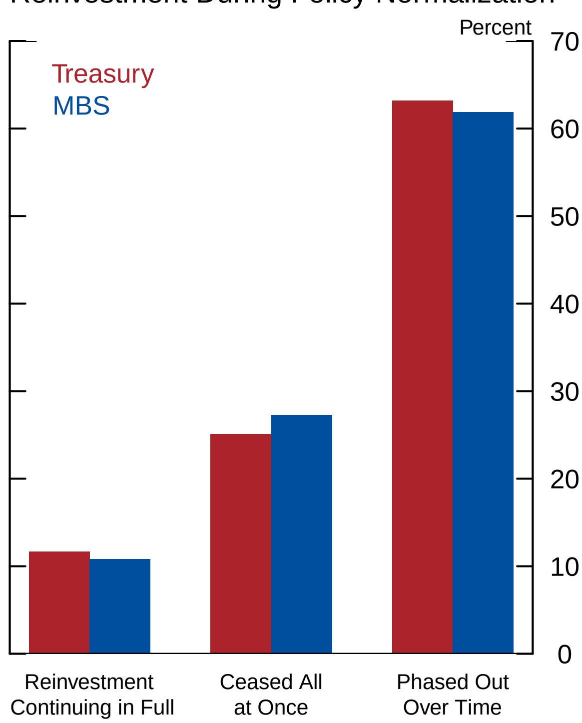
Source: Monthly Statement of the Public Debt and Staff Estimates.

Desk Surveys: Timing to End Reinvestments



Source: Desk Surveys of Dealers and Market Participants from July 21, 2015.

Desk Surveys: Expected Change to Reinvestment During Policy Normalization



Source: Desk Surveys of Dealers and Market Participants from July 21, 2015.

Questions for Committee Discussion

(1) Would you prefer to communicate the Committee's approach to ending or beginning to phase out reinvestments by stating a calendar date, perhaps with economic conditionality, or by stating economic conditions that would make it appropriate to begin shrinking the balance sheet?

a. If the Committee were to adopt a calendar-based approach, would you want to include some economic conditionality? If so, in what form?

b. If the Committee were to adopt a state-dependent approach, would you prefer to link the initial change in reinvestments to a numeric value for a specific variable, or would you prefer a less specific approach?

(2) Would you prefer to cease reinvestments all at once, or would you prefer to phase out reinvestments over time?

a. Would you prefer taking the same approach for Treasury securities and for MBS, or should they be handled differently?

b. If you prefer different treatment for Treasury securities and MBS, how should the approaches differ?

Appendix 4: Materials used by Mr. Clark

Class I FOMC – Restricted Controlled (FR)

Material for Briefing on

Potential Enhancements to the Summary of Economic Projections

Todd E. Clark

July 28, 2015

Possible Enhancements to the Summary of Economic Projections

- Addition of median projections
- Revision of Figure 2
- Later this year: a recommendation for fan charts to illustrate forecast uncertainty

Median projections

- Current SEP content:
    - Table 1 and Figure 1: ranges and central tendencies for macroeconomic variables
    - Figure 2: dot plot for the federal funds rate
    - Figure 3: histograms for all variables
- Medians would improve communications
    - Provide a better measure of the collective view, in a more direct form
    - Standard and robust statistical measure of the center of a distribution
    - Publication would foster public use of the median as a summary of projections
- Proposed revisions to Table 1 and Figure 1:
    - Add columns with medians to Table 1
    - Add funds rate to Table 1 as a memo item
    - Add thick red lines for medians to Figure 1
- Recommended introduction: September 2015
    - Minutes of the July meeting will report discussion of medians
    - Complete mock-ups of new materials to be circulated over intermeeting period

Figure 2

- Top panel reports histogram of liftoff years; bottom panel provides dot plot of funds rate projections
- Onset of normalization will make the top panel obsolete
- Dot plot warrants preservation
    - Has helped communicate policy at the zero lower bound
    - Likely to remain useful for policy communication

Forecast uncertainty

- Adding fan charts to the SEP would help to communicate forecast uncertainty
    - Staff work to date: fan charts centered on median projections
    - Quantitative illustration would complement judgmental assessment
    - Fan charts likely to be more effective for communications than is the current SEP table of forecast RMSEs
- Concrete proposal to the Committee to come after the subcommittee resolves technical issues

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of appropriate monetary policy, March 2015

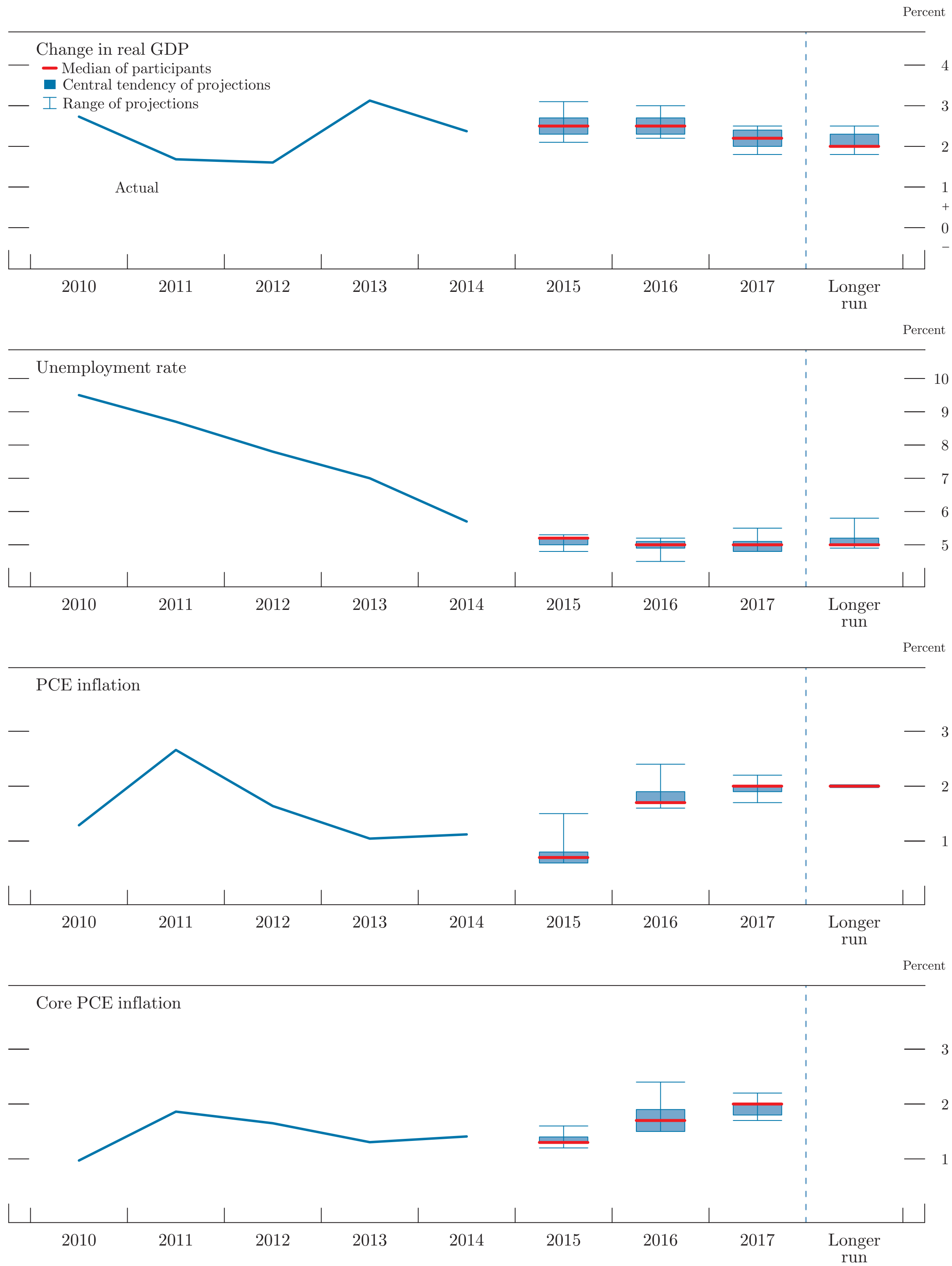
Percent

Variable	Median[1]				Central tendency[2]				Range[3]			
	2015	2016	2017	Longer run	2015	2016	2017	Longer run	2015	2016	2017	Longer run
Change in real GDP	2.5	2.5	2.2	2.0	2.3 to 2.7	2.3 to 2.7	2.0 to 2.4	2.0 to 2.3	2.1 to 3.1	2.2 to 3.0	1.8 to 2.5	1.8 to 2.5
December projection	2.8	2.7	2.3	2.2	2.6 to 3.0	2.5 to 3.0	2.3 to 2.5	2.0 to 2.3	2.1 to 3.2	2.1 to 3.0	2.0 to 2.7	1.8 to 2.7
Unemployment rate	5.2	5.0	5.0	5.0	5.0 to 5.2	4.9 to 5.1	4.8 to 5.1	5.0 to 5.2	4.8 to 5.3	4.5 to 5.2	4.8 to 5.5	4.9 to 5.8
December projection	5.3	5.1	5.0	5.2	5.2 to 5.3	5.0 to 5.2	4.9 to 5.3	5.2 to 5.5	5.0 to 5.5	4.9 to 5.4	4.7 to 5.7	5.0 to 5.8
PCE inflation	0.7	1.7	2.0	2.0	0.6 to 0.8	1.7 to 1.9	1.9 to 2.0	2.0	0.6 to 1.5	1.6 to 2.4	1.7 to 2.2	2.0
December projection	1.2	1.8	2.0	2.0	1.0 to 1.6	1.7 to 2.0	1.8 to 2.0	2.0	1.0 to 2.2	1.6 to 2.1	1.8 to 2.2	2.0
Core PCE inflation[4]	1.3	1.7	2.0		1.3 to 1.4	1.5 to 1.9	1.8 to 2.0		1.2 to 1.6	1.5 to 2.4	1.7 to 2.2	
December projection	1.6	1.8	2.0		1.5 to 1.8	1.7 to 2.0	1.8 to 2.0		1.5 to 2.2	1.6 to 2.1	1.8 to 2.2	
Memo: Appropriate policy path												
Federal funds rate	0.6	1.9	3.1	3.8	0.6 to 1.1	1.6 to 2.6	2.6 to 3.8	3.5 to 3.8	0.1 to 1.6	0.4 to 3.8	2.0 to 4.0	3.0 to 4.2
December projection	1.1	2.5	3.6	3.8	0.6 to 1.9	1.9 to 3.4	3.1 to 4.0	3.5 to 4.0	0.1 to 1.9	0.4 to 4.0	2.0 to 4.2	3.2 to 4.2

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value (rounded to the nearest 1/8 percentage point) 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 December projections were made in conjunction with the meeting of the Federal Open Market Committee on December 16–17, 2014.

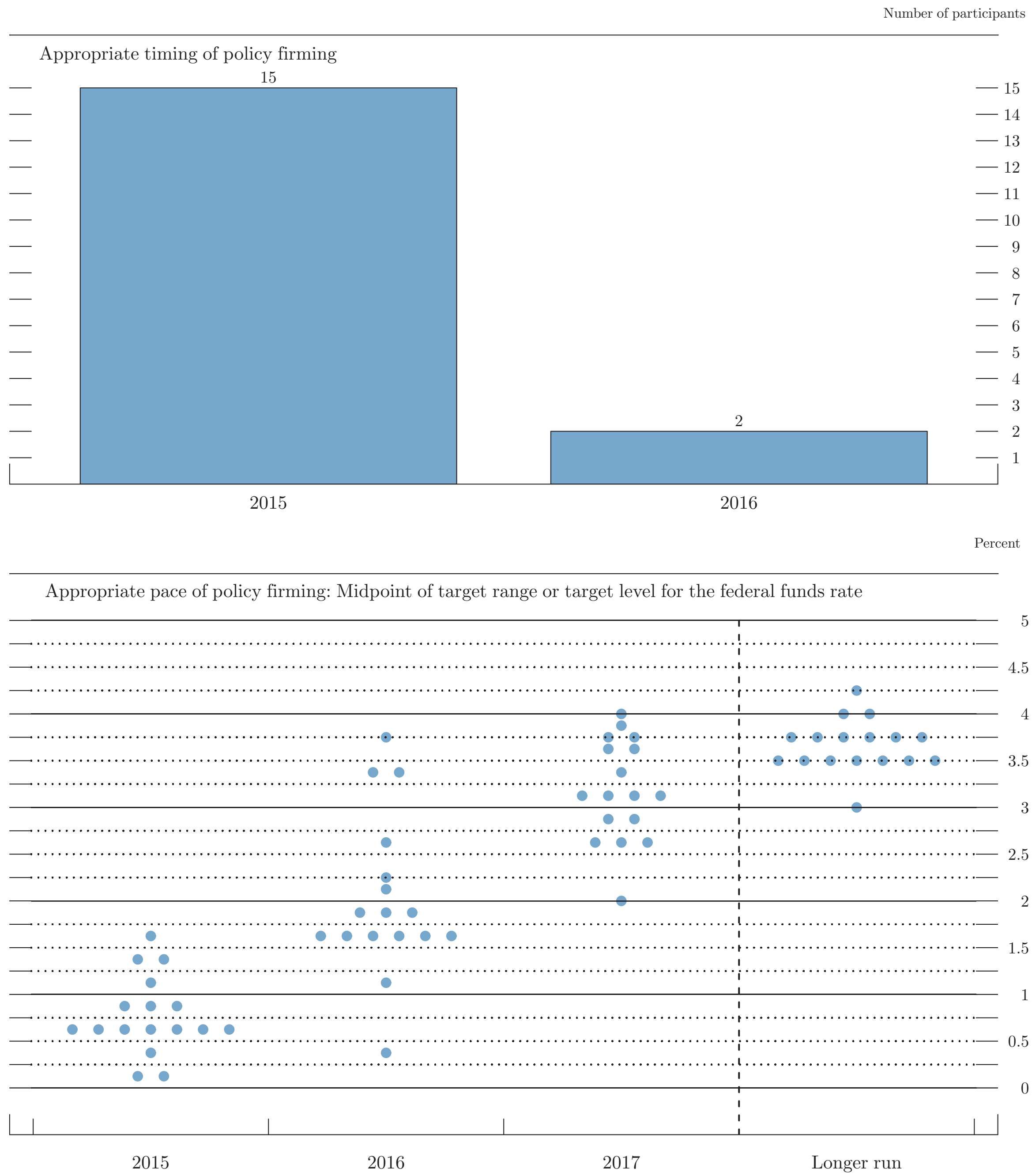
1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable in each year.
3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
4. Longer-run projections for core PCE inflation are not collected.

Figure 1. Medians, central tendencies and ranges of economic projections, 2015–17 and over the longer run



Note: Definitions of variables are in the general note to table 1. The data for the actual values of the variables are annual.

Figure 2. Overview of FOMC participants' assessments of appropriate monetary policy



NOTE: In the upper panel, the height of each bar denotes the number of FOMC participants who judge that, under appropriate monetary policy, the first increase in the target range for the federal funds rate from its current range of 0 to 1/4 percent will occur in the specified calendar year. In December 2014, the numbers of FOMC participants who judged that the first increase in the target federal funds rate would occur in 2015, and 2016 were, respectively, 15, and 2. In the lower panel, each shaded 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.

Appendix 5: Materials used by Mr. Wilcox

Class II FOMC – Restricted (FR)

Material for

The U.S. Outlook

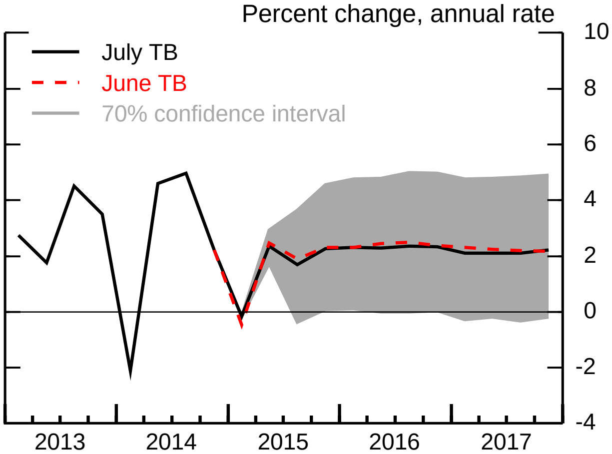
David W. Wilcox

July 28, 2015

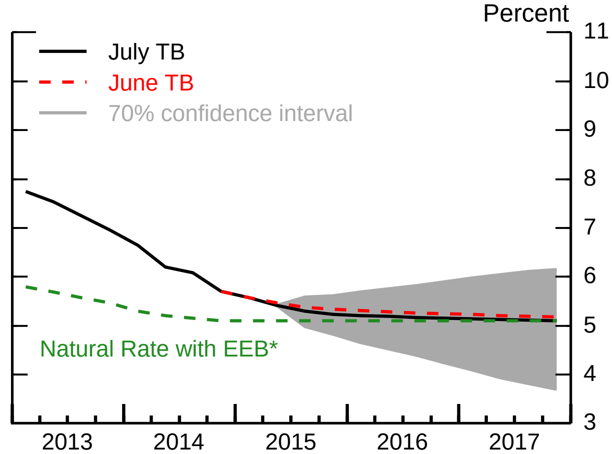
Forecast Summary

Confidence Intervals Based on FRB/US Stochastic Simulations

1. Real GDP

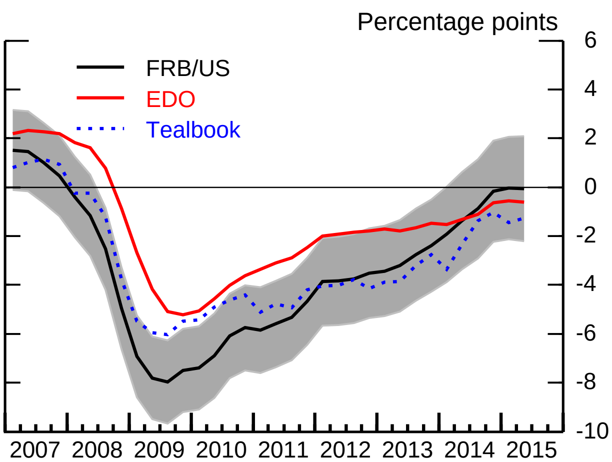


2. Unemployment Rate



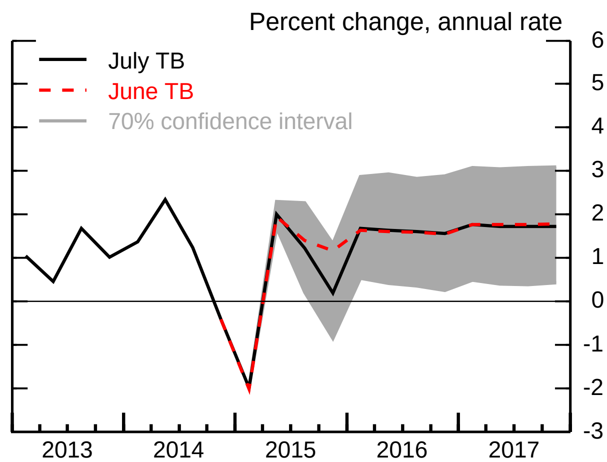
*Effect of emergency unemployment compensation and state-federal extended benefit programs.

3. Output Gap Estimates

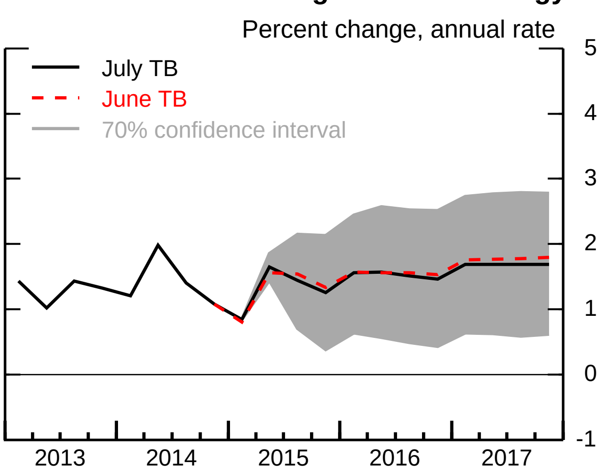


Note: The shaded region is the 2-standard deviation band around the FRB/US output gap, reflecting only filtering uncertainty.

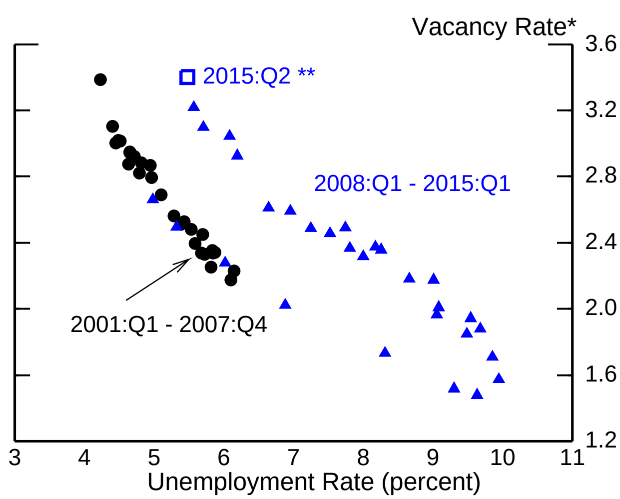
4. PCE Prices



5. PCE Prices Excluding Food and Energy



6. Beveridge Curve



* JOLTS job openings divided by labor force (percent).
** Average of April and May.

Key Economic Indicators for the September, October, and December FOMC Meetings

(Percent change at annual rate, except as noted)

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total PCE price index							
3-month change	2.2	2.5	1.1	0.0	-0.4	0.1	0.9
12-month change	0.2	0.2	0.2	0.1	0.1	0.3	0.7
Core PCE price index							
3-month change	1.5	1.5	1.4	1.4	1.3	1.3	1.2
12-month change	1.2	1.2	1.3	1.3	1.2	1.3	1.4
Unemployment rate (percent)	5.3	5.3	5.3	5.3	5.2	5.2	5.2
Payroll employment (change in 000s)	223	223	218	213	210	205	200
Gross Domestic Product			Second Q2 estimate 2.4	Third Q2 estimate 2.4		Second Q3 estimate 1.7	

Available at: September meeting October meeting December meeting

Notes: Values shown in the table are based on the July Tealbook projection. The August CPI will be released on the first day of the September FOMC meeting; the November CPI will be released on the first day of the December FOMC meeting.

Appendix 6: Materials used by Mr. Kamin

Class II FOMC – Restricted (FR)

Material for

The International Outlook

Steven B. Kamin

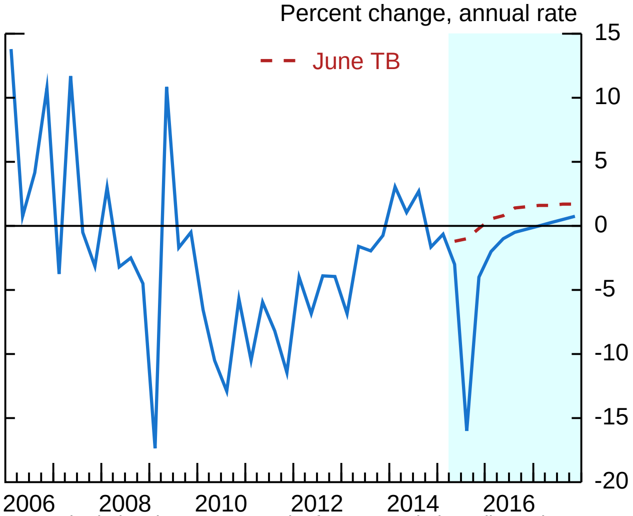
July 28, 2015

Class II FOMC - Restricted (FR)

Exhibit 1

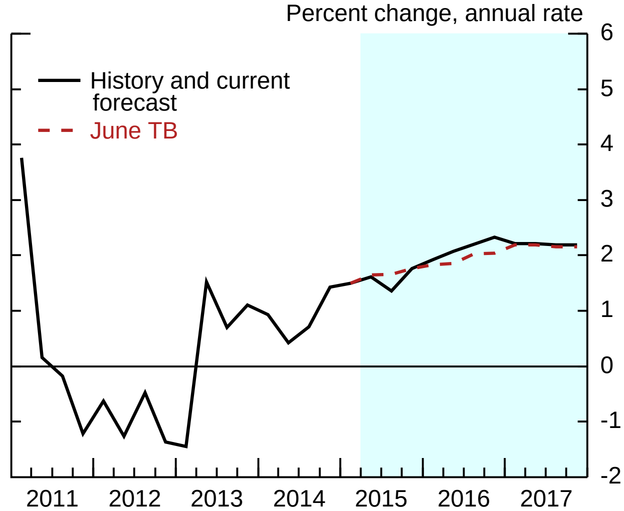
The International Outlook

1. Greek GDP

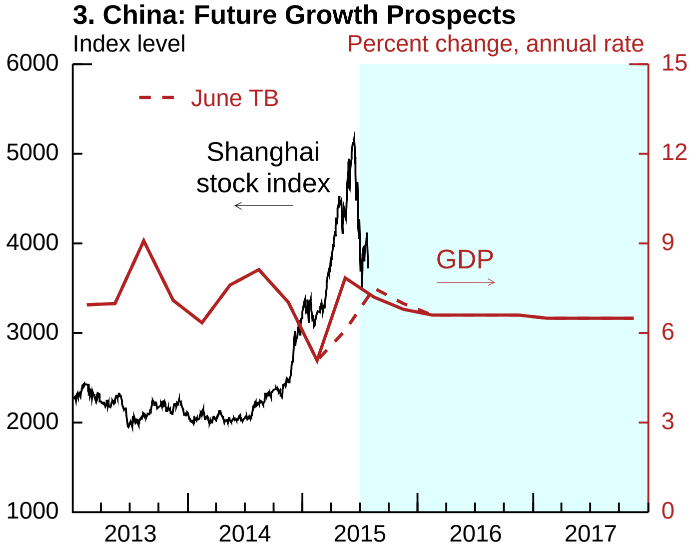


Note: Shaded region represents the forecast period on all panels.

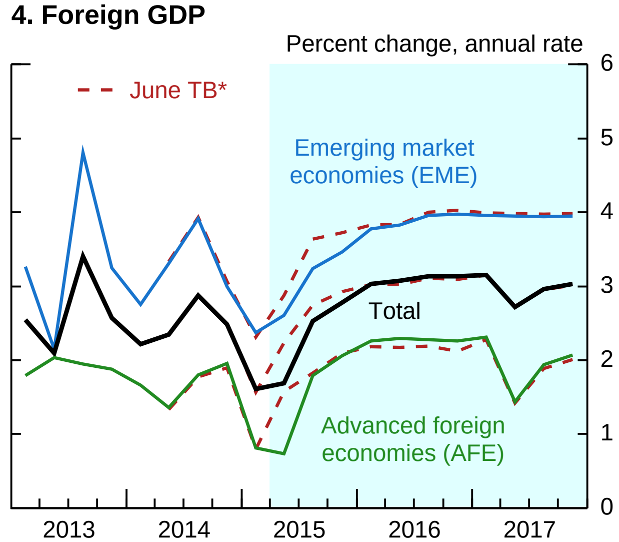
2. Euro-area GDP



3. China: Future Growth Prospects

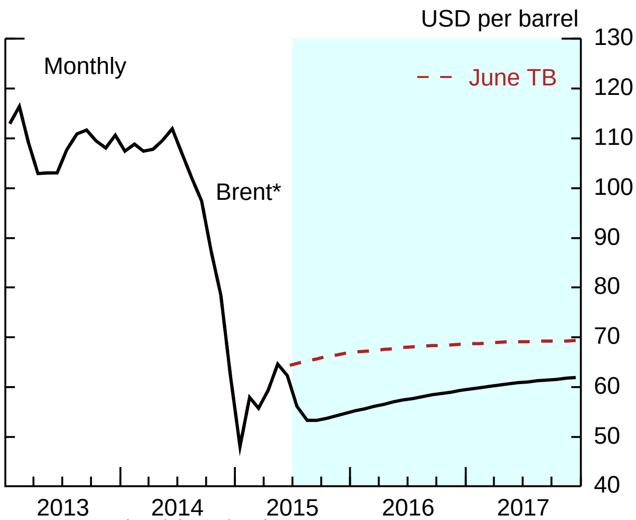


4. Foreign GDP



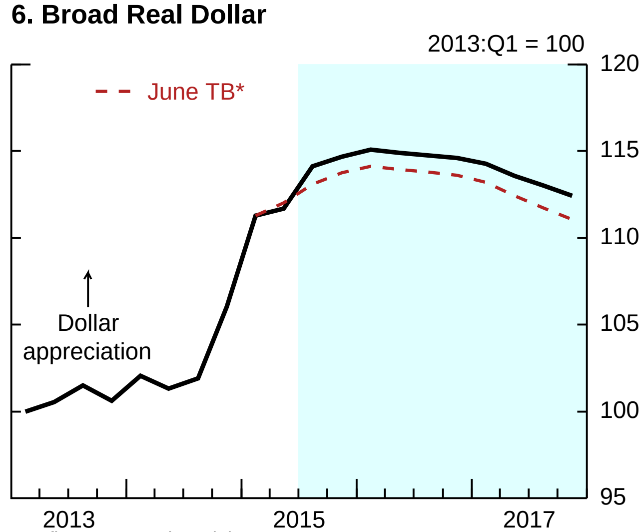
* Reflects new trade weights.

5. Crude Oil Price Outlook



* Forecast updated through July 27.

6. Broad Real Dollar



* Reflects new trade weights.

Class II FOMC - Restricted (FR)

Exhibit 2

The International Outlook (2)

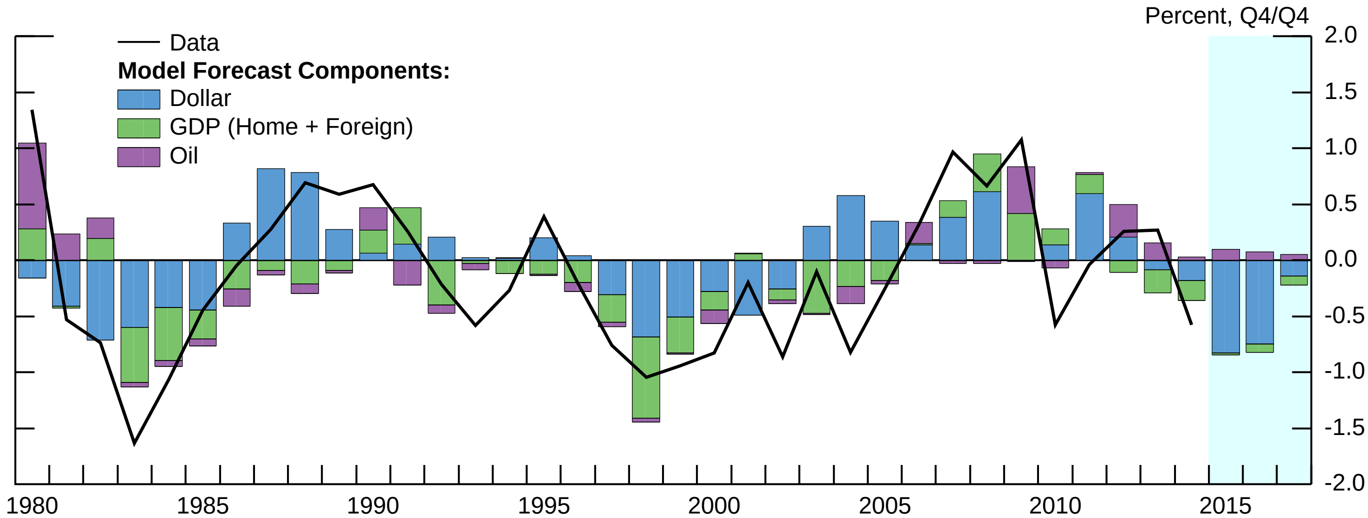
7. Trade Model Background

Forecasts based on:

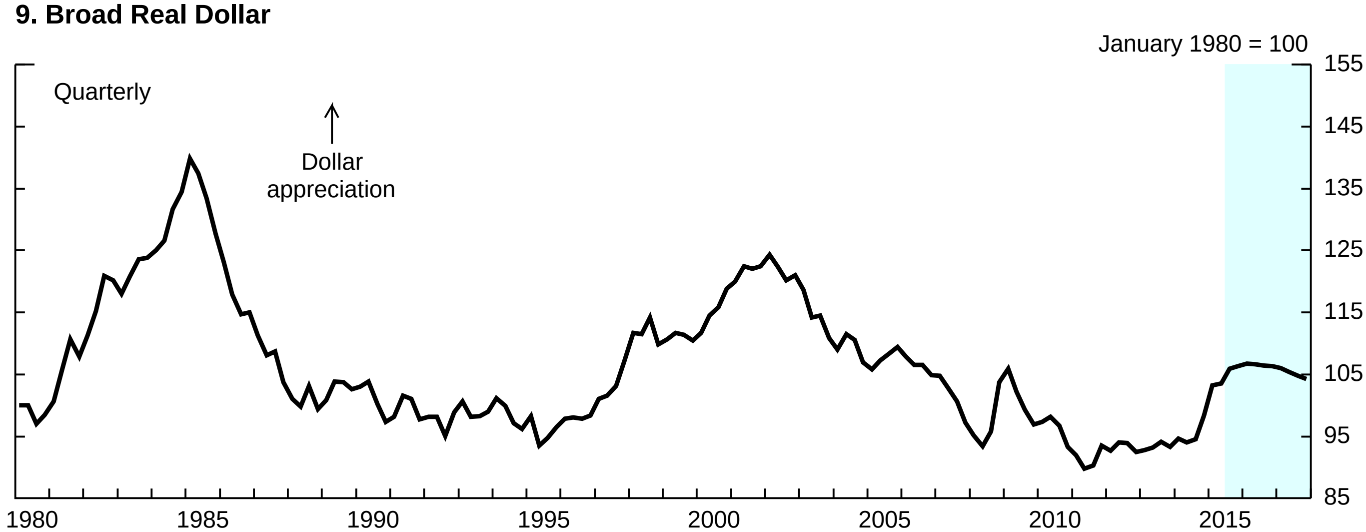
- Estimated equations for:
  1) Exported services 2) Exported noncomputer goods 3) Imported services 4) Imported noncomputer nonfuel goods
  -- 35+ year estimation period
  -- Using forecasted explanatory variables:
  - GDP (foreign for exports, U.S. for imports)
  - Trade-weighted exchange rates.
- Historical trends for:
  -- Trade in computers and semicondutors
- Judgmental forecasts for:
  -- Oil and natural gas imports (informed by Department of Energy Outlook)

Model predicts a decline in the NX contribution of 1.7 percentage points over 3 years for a 10 percent dollar appreciation.

8. NX Contribution to Real GDP Growth



9. Broad Real Dollar



Appendix 7: Materials used by Ms. Liang

Class II FOMC – Restricted (FR)

Material for Briefing on

Financial Stability Developments

Nellie Liang
July 28, 2015

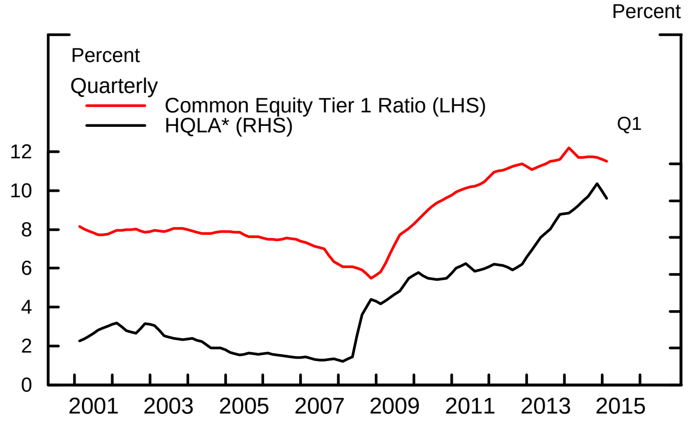
Internal FR

Exhibit 1

July 27, 2015

Financial Stability

Regulatory Capital and HQLA Ratios

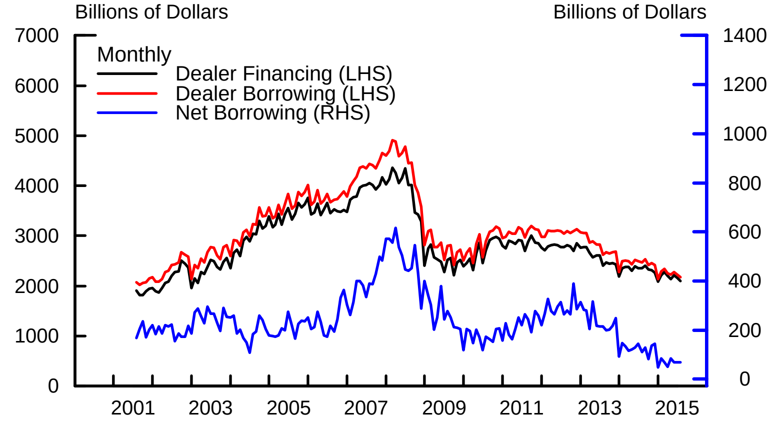


Note: Prior to 2014:Q1, the numerator of the common equity tier 1 ratio is tier 1 common capital. Beginning in 2014:Q1 for advanced approaches BHCs and in 2015:Q1 for all other BHCs, the numerator is common equity tier 1 capital.

* High Quality Liquid Assets for Standard LCR BHCs are those with total assets higher than or equal to $250 billion.

Source: FR Y-9C and FR 2900.

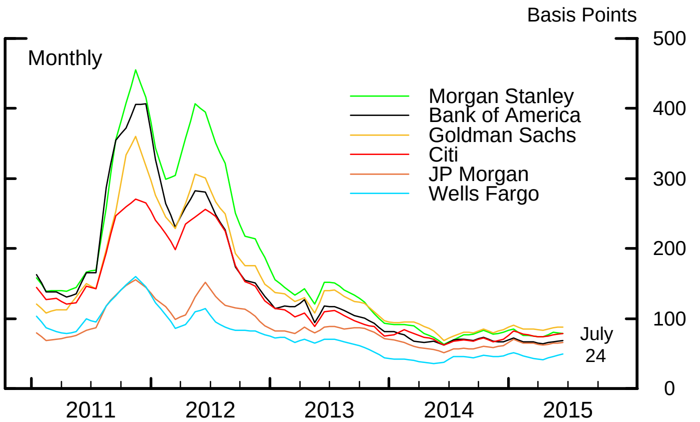
Dealer Financing and Borrowing



Note: Graph shows fixed income securities. The FR 2004 survey was revised effective April 1, 2013.

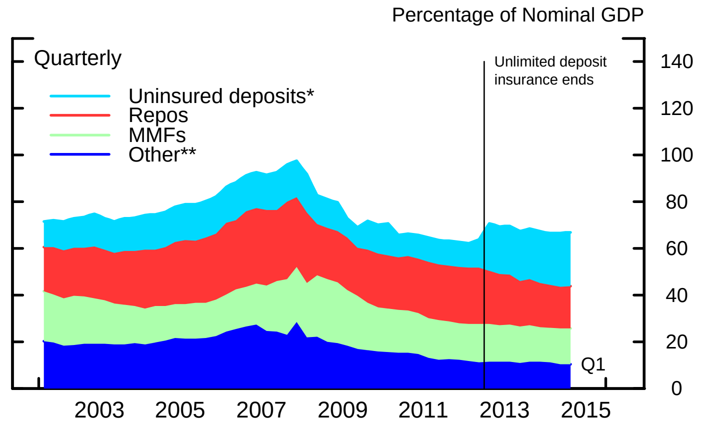
Source: FR 2004C

Five-Year CDS Premiums



Source: Markit.

Runnable Money-Like Liabilities

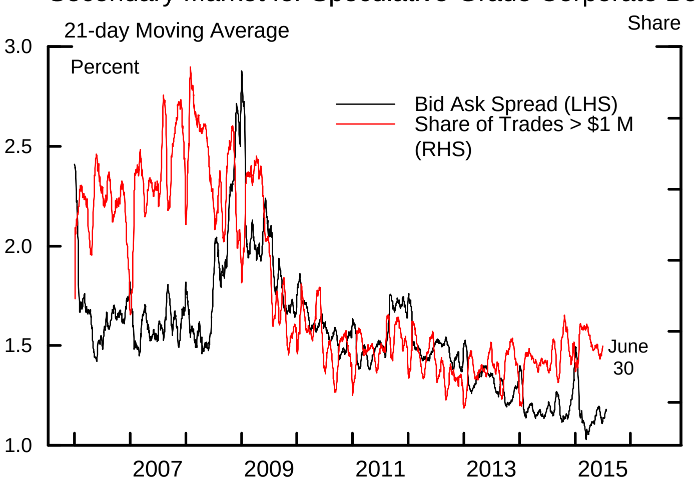


* Uninsured deposits equals total deposits less insured deposits.

** Includes Fed funds, VRDOs, CP, and cash collateral pools.

Source: Call Reports, DTCC, Financial Accounts of the United States, ICI, JP Morgan Chase, M3 monetary aggregates, Risk Management Association, SIFMA.

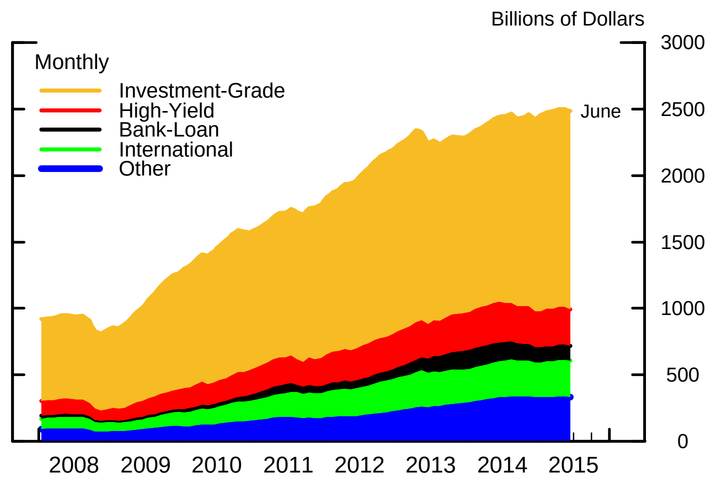
Secondary Market for Speculative-Grade Corporate Bonds



Note: *Only trades of bonds that have been issued for 60 days or more at the time of trading are included. Excluding 144a bonds.

Source: FINRA, Mergent, Moody's DRD.

Bond Mutual Fund Assets



Note: Excludes government bond funds.

Source: Morningstar.

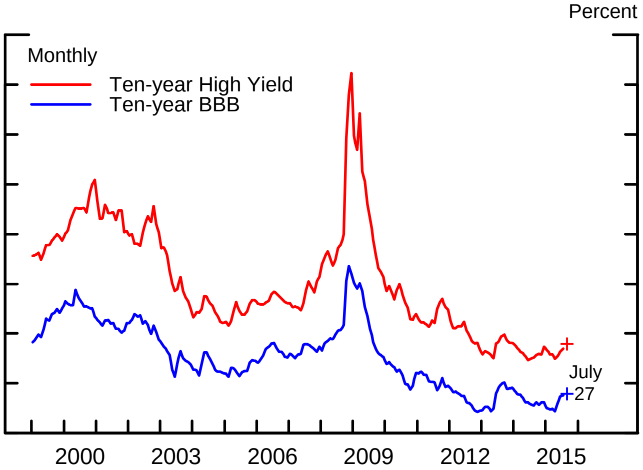
Internal FR

Exhibit 2

July 27, 2015

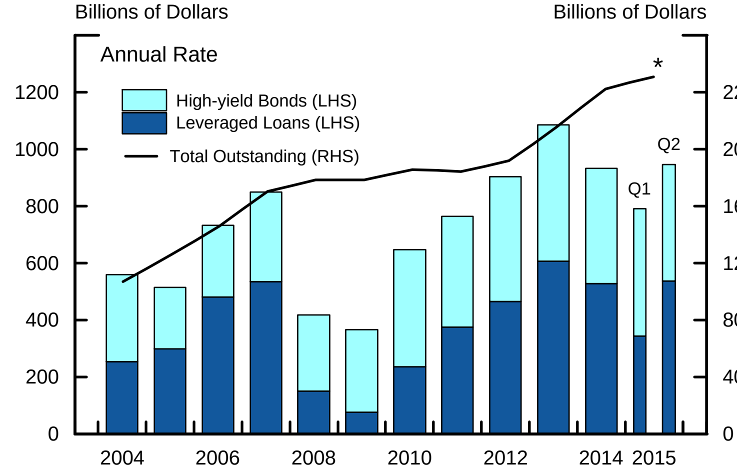
Financial Stability

Corporate Bond Yields



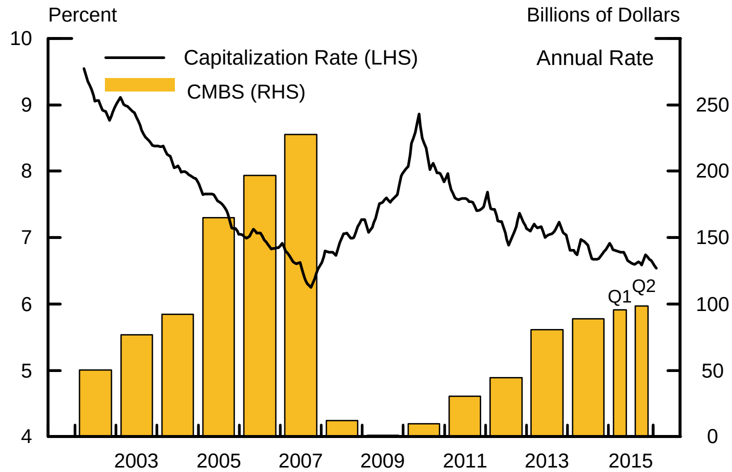
+ Denotes the latest daily observation.
Source: Staff estimates of smoothed yield curves based on Merrill Lynch bond data.

Leveraged Loan and High Yield Bond Issuance



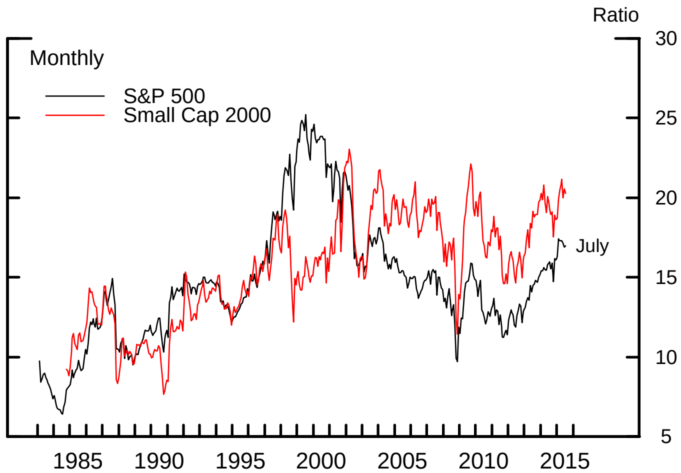
Note: * Staff estimate of 2015 total outstanding HY bonds and leveraged loans. Data includes bonds and loans to both financial and nonfinancial companies, unrated bonds and loans.
Source: S&P LCD, Mergent FISD.

Capitalization Rate and CMBS Issuance



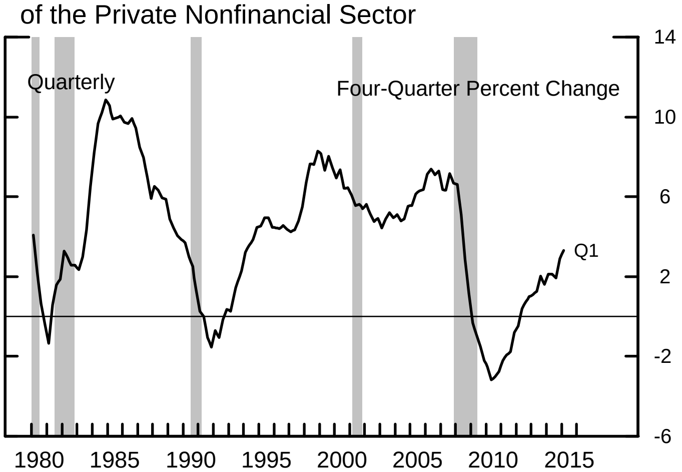
Note: Capitalization Rate is a 3-month moving average at origination for offices.
Source: Commercial Mortgage Alert and RCA.

Forward Price-to-Earnings Ratios



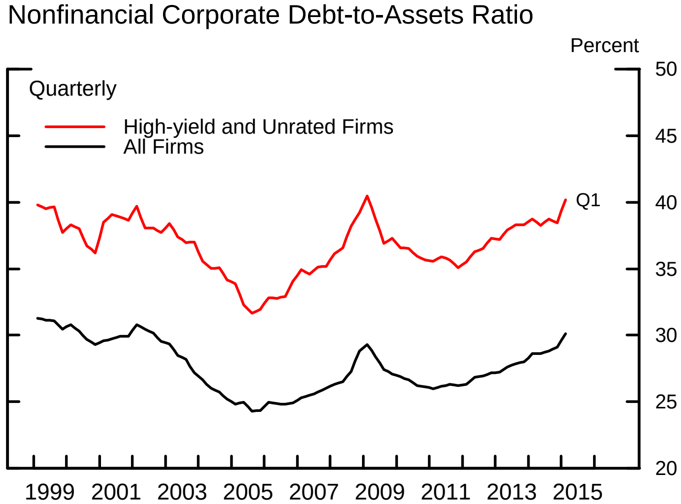
Note: Forward Price-to-Earning based on expected earnings for twelve months ahead.
Source: Thomson Reuters Financial, Yahoo Finance.

Real Growth of Credit Market Debt Outstanding of the Private Nonfinancial Sector



Note: The private nonfinancial sector includes households and nonfinancial businesses.
Source: Financial Accounts of the United States.

Nonfinancial Corporate Debt-to-Assets Ratio



Source: Compustat.

Appendix 8: Materials used by Mr. Laubach

Class I FOMC – Restricted Controlled (FR)

Material for

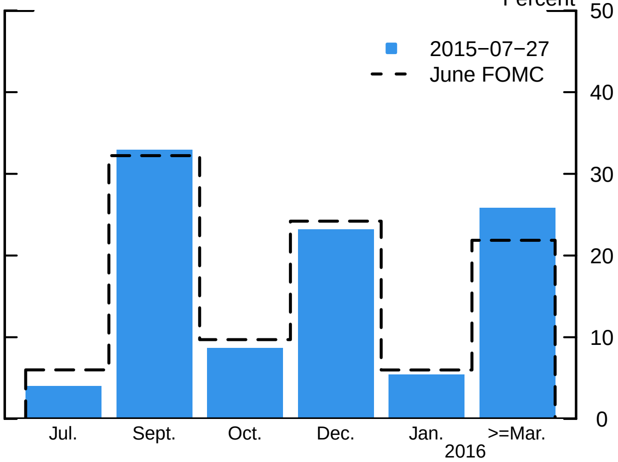
Briefing on Monetary Policy Alternatives

Thomas Laubach

July 28–29, 2015

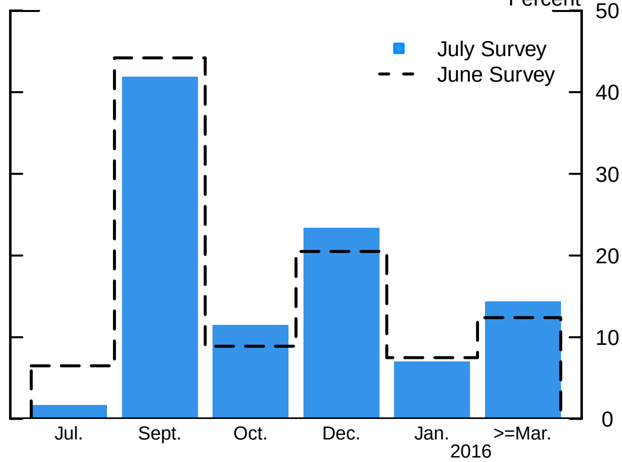
Exhibit 1: Monetary Policy Expectations

Liftoff Probability Distribution Implied by Federal Funds Futures



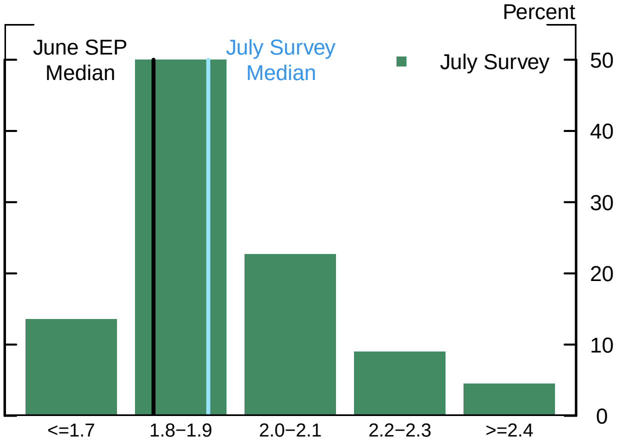
Source: CME Group and staff calculations.

Average Probability Distribution of Timing of Liftoff



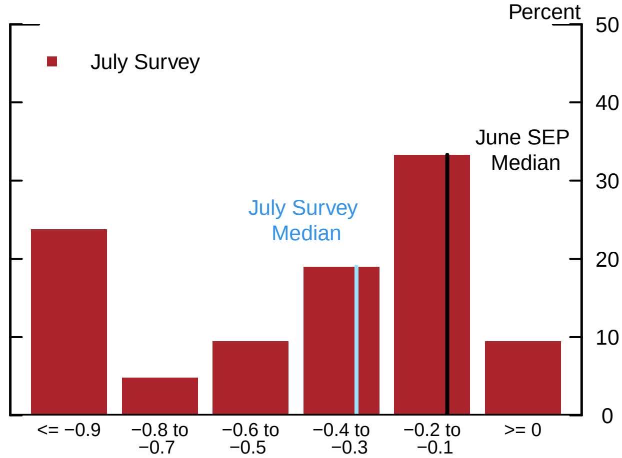
Source: FRBNY Primary Dealer Survery.

Q4/Q4 2016 Core PCE Inflation Forecasts (Percent of Respondents)



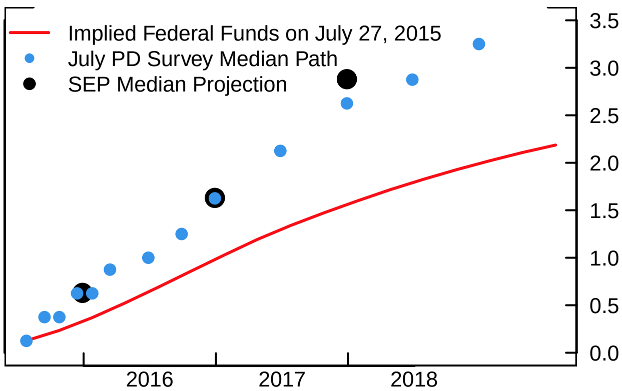
Source: FRBNY Primary Dealer Survey and June 2015 SEP.

Q4 2016 Unemployment Gap Forecasts (Percent of Respondents)



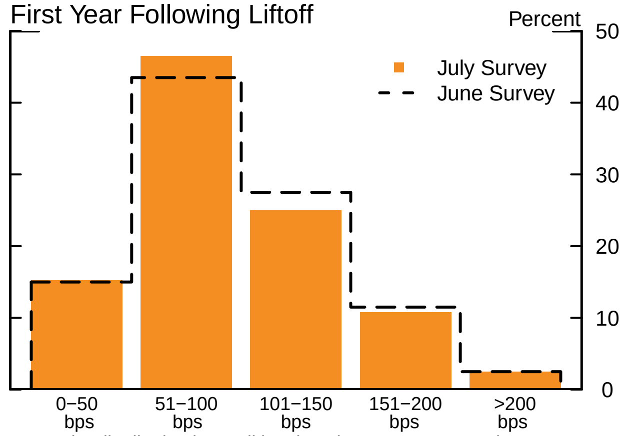
Note: The unemployment gap was calculated using Q4 2016 unemployment forecasts and long run forecasts.
Source: FRBNY Primary Dealer Survery and June 2015 SEP.

Federal Funds Rate Projections



Note: The implied fed funds rate path is estimated using OIS quotes with a spline approach and a term premium of zero basis points.
Source: Bloomberg, FRBNY Primary Dealer Survey, June 2015 SEP, and staff calculations.

Conditional Pace of Tightening First Year Following Liftoff



Note: The distribution is conditional on the target not returning to the zero lower bound.
Source: FRBNY Primary Dealer Survery.

Exhibit 2: Alternatives A, B, and C

Alternative B

- could become appropriate to lift off in September
- but sufficiently data dependent to avoid a deliberate shift in current probabilities
- the labor market continued to improve
  - solid job gains and declining unemployment
  - cumulative progress in labor market conditions important
  - still need to see "some" further improvement
- assessment of current and expected inflation developments unchanged
  - but energy prices have fallen back
  - still need to be "reasonably confident that inflation will move back to 2 percent over the medium term"

Alternative A

- policy normalization not likely to begin for some time
  - risks to economic activity and the labor market to the downside
  - risk of persistent below−target inflation
- inflation concerns emphasized
  - stronger inflation criterion
  - "prepared to use all tools" to raise inflation

Alternative C

- economic conditions and the outlook consistent with lift off
- proposes language that might accompany the start of policy normalization
  - indicate further appropriate adjustments expected
  - add a sentence linking the overall stance of monetary policy to the funds rate
  - update forward guidance for future target range adjustments
    - "deviations from" objectives, or
    - "economic conditions relative to" objectives
  - option to retain intention to follow "balanced approach"
  - retain expectation that the target rate will be below longer−run "normal" levels for some time
  - add that the path might change and "will depend on the incoming data"

JUNE 2015 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in April suggests that economic activity has been expanding moderately after having changed little during the first quarter. The pace of job gains picked up while the unemployment rate remained steady. On balance, a range of labor market indicators suggests that underutilization of labor resources diminished somewhat. Growth in household spending has been moderate and the housing sector has shown some improvement; however, business fixed investment and net exports stayed soft. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports; energy prices appear to have stabilized. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.
2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of earlier declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.
3. To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward 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 anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.
4. 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. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.
5. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

ALTERNATIVE A FOR JULY 2015

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** suggests that economic activity has been expanding moderately ~~after having changed little during the first quarter~~. The pace of job gains ~~picked up while~~ **was solid and** the unemployment rate ~~remained steady~~ **declined**. On balance, a range of labor market indicators suggests that underutilization of labor resources diminished somewhat. Growth in household spending has been moderate and the housing sector has shown some improvement; however, business fixed investment and net exports stayed soft. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports~~; energy prices appear to have stabilized~~. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of earlier declines in energy and import prices dissipate. ~~The Committee continues to monitor inflation developments closely.~~ **However, in light of economic and financial developments abroad,** the Committee ~~continues to~~ see**s** the risks to the outlook for economic activity and the labor market as ~~nearly balanced~~ **tilted to the downside**. **Moreover, the Committee is concerned that inflation could run substantially below the 2 percent objective for a protracted period.**

3. To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward 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 ~~anticipates~~ **judges** that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and ~~is reasonably confident~~ **projects** that inflation will ~~move back to its~~ **reach** 2 percent ~~objective over the medium term~~ **within one to two years**.

4. 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. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions. **If inflation does not begin to rise soon, the Committee is prepared to use all of its tools as necessary to return inflation to 2 percent within one to two years.**

5. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

ALTERNATIVE B FOR JULY 2015

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** ~~suggests~~ **indicates** that economic activity has been expanding moderately ~~after having changed little during the first quarter~~ **in recent months**. Growth in household spending has been moderate and the housing sector has shown ~~some~~ **additional** improvement; however, business fixed investment and net exports stayed soft. The ~~pace of~~ **labor market continued to improve, with solid** job gains ~~picked up while the~~ **and declining** unemployment ~~rate remained steady~~. On balance, a range of labor market indicators suggests that underutilization of labor resources **has** diminished ~~somewhat~~ **since early this year**. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports~~; energy prices appear to have stabilized~~. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate policy accommodation, economic activity will expand at a moderate pace, with labor market indicators continuing to move toward levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. Inflation is anticipated to remain near its recent low level in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of earlier declines in energy and import prices dissipate. The Committee continues to monitor inflation developments closely.

3. To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate. In determining how long to maintain this target range, the Committee will assess progress—both realized and expected—toward 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 anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen **some** further improvement in the labor market and is reasonably confident that inflation will move back to its 2 percent objective over the medium term.

4. 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. This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.

5. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent. The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions

may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run.

ALTERNATIVE C FOR JULY 2015

1. Information received since the Federal Open Market Committee met in ~~April~~ **June** ~~suggests~~ **indicates** that economic activity has been expanding moderately ~~after having changed little during the first quarter~~ **in recent months**. Growth in household spending has been moderate and the housing sector has ~~shown some improvement~~ **continued to strengthen**; however, business fixed investment and net exports stayed soft. The ~~pace of~~ **labor market continued to improve, with solid** job gains ~~picked up while the~~ **and declining** unemployment ~~rate remained steady~~. On balance, a range of labor market indicators ~~suggests that underutilization of labor resources diminished somewhat~~ **shows an appreciable improvement in labor market conditions since early this year**. Inflation continued to run below the Committee's longer-run objective, partly reflecting earlier declines in energy prices and decreasing prices of non-energy imports~~; energy prices appear to have stabilized~~. Market-based measures of inflation compensation remain low; survey-based measures of longer-term inflation expectations have remained stable.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that, with appropriate **adjustments in the stance of monetary** policy ~~accommodation~~, economic activity will expand at a moderate pace, with labor market indicators ~~continuing to move toward~~ **reaching** levels the Committee judges consistent with its dual mandate. The Committee continues to see the risks to the outlook for economic activity and the labor market as nearly balanced. **Although** inflation is anticipated to remain near its recent low level in the near term, ~~but~~ the Committee ~~expects~~ **is reasonably confident that** inflation ~~to~~ **will** rise ~~gradually toward~~ **to** 2 percent over the medium term as the labor market improves further and the transitory effects of earlier declines in energy and import prices dissipate. ~~The Committee continues to monitor inflation developments closely.~~

3. ~~To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that the current 0 to ¼ percent target range for the federal funds rate remains appropriate.~~ **In light of the considerable progress that has been achieved toward the attainment of the Committee's objective of maximum employment, and the Committee's expectation that inflation will rise, over the medium term, to its 2 percent objective, the Committee decided to raise the target range for the federal funds to ¼ to ½ percent. Even after this adjustment, the stance of policy remains highly accommodative and will continue to support a strong economy.**

4. In determining ~~how long to maintain this~~ **future adjustments of the** target range, the Committee will assess ~~progress—both~~ realized and expected~~—toward~~ **[deviations from | economic conditions relative to]** its objectives of maximum employment and 2 percent inflation **[, and will take a balanced approach to pursuing those objectives]**. 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 anticipates that it will be appropriate to raise the target range for the federal funds rate when it has seen further improvement in the labor market and is~~

~~reasonably confident that inflation will move back to its 2 percent objective over the medium term.~~ The Committee currently anticipates that, even after employment and inflation are near mandate-consistent levels, economic conditions may, for some time, warrant keeping the target federal funds rate below levels the Committee views as normal in the longer run. **However, the actual path of the target for the federal funds rate will depend on the 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. ~~This policy, by keeping the Committee's holdings of longer-term securities at sizable levels, should help maintain accommodative financial conditions.~~

6. ~~When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.~~

June 2015 Directive

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of 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. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Directive for July 2015 Alternatives A and B

Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent. The Committee directs the Desk to undertake open market operations as necessary to maintain such conditions. The Committee directs the Desk to maintain its policy of rolling over maturing Treasury securities into new issues and its policy of 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. The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.

Implementation Note for July 2015 Alternative C

Release Date: July 29, 2015

Actions to Implement Monetary Policy

The Federal Reserve has taken the following actions to implement the monetary policy stance adopted and announced by the Federal Open Market Committee on July 29, 2015:

- The Board of Governors of the Federal Reserve System voted [unanimously] to raise the interest rate paid on required and excess reserve balances to [0.50] percent, effective July 30, 2015.

- 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:

  "~~Consistent with its statutory mandate, the Federal Open Market Committee seeks monetary and financial conditions that will foster maximum employment and price stability. In particular, the Committee seeks conditions in reserve markets consistent with federal funds trading in a range from 0 to ¼ percent.~~ **Effective July 30, 2015,** the Committee directs the Desk to undertake open market operations as necessary to maintain ~~such conditions~~ **the federal funds rate in a target range of [¼ to ½] percent, including: (1) 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 [0.25] percent and 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 (2) term reverse repurchase operations as authorized in the resolution on term RRP operations approved by the Committee at its March 17-18, 2015, meeting.**

  "The Committee directs the Desk to ~~maintain its policy of~~ **continue** rolling over maturing Treasury securities into new issues and ~~its policy of~~ **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." ~~The System Open Market Account manager and the secretary will keep the Committee informed of ongoing developments regarding the System's balance sheet that could affect the attainment over time of the Committee's objectives of maximum employment and price stability.~~

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

  When this document is released to the public, the blue text will be a link to the relevant page on the FRBNY website.

- The Board of Governors of the Federal Reserve System voted [unanimously] to approve a [¼] percentage point increase in the primary credit rate to [1.00] percent, effective July 30, 2015. In taking this action, the Board approved requests 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.