Appendix 1: Materials used by Messrs. Gust, Yi, Tambalotti, and López-Salido

Class II FOMC – Restricted (FR)

Material for Briefing on

Equilibrium Real Interest Rates

**Christopher Gust, Kei-Mu Yi, Andrea Tambalotti,
and David López-Salido**

October 27, 2015

Exhibit 1
Alternative Definitions of *r**

Neutral Real Rate: The short−term real interest rate corresponding to a stance of monetary policy that is neither expansionary nor contractionary.

Natural (Wicksellian) Real Rate: The short−term real interest rate that would prevail if there were no nominal rigidities (for example, price and wage stickiness), and hence is consistent with no deviation of output from its natural level.

Efficient Real Rate: The short−term real interest rate that would prevail if there were no nominal rigidities and also no real distortions (for example, imperfect competition and distortionary taxes) that might cause output to deviate from its efficient level.

Optimal Real Rate: The short−term real interest rate that would be prescribed by optimal monetary policy (defined as the interest rate plan that maximizes a welfare criterion).

Long−Run Real Rate: The average short−term real interest rate measured over a long period of time.

Steady−State Real Rate: The short−term real interest rate that would prevail in the long−run once all structural shocks die down.

FRB/US *r:** The short−term real interest rate which, if maintained for twelve quarters, would close the output gap in the FRB/US model in exactly twelve quarters.

Exhibit 2

Definitions, Motivation, and Outline

<u>Long-run real interest rate:</u> Average short-term real interest rate measured over a long period of time.

<u>Steady-state real interest rate:</u> Short-term real interest rate that would prevail in long-run once all structural shocks die down.

"Longer-run" refers to both of these interest rates.

Why should policymakers care about longer-run real interest rates?

- Optimal monetary policy requires estimates of future path of short-run r*. Longer-run real rates characterize future path of short-run r* once short- and medium-run shocks die down – these rates serve as (time-varying) reference points.
- Intercept term of Taylor-type policy rule typically set equal to longer-run real federal funds rate.
- Estimates of longer-run real interest rates can suggest when it is appropriate to change long-run assumptions embedded in estimates of short-run r*.
- Estimates of longer-run real interest rates can shed light on probability of hitting ELB.

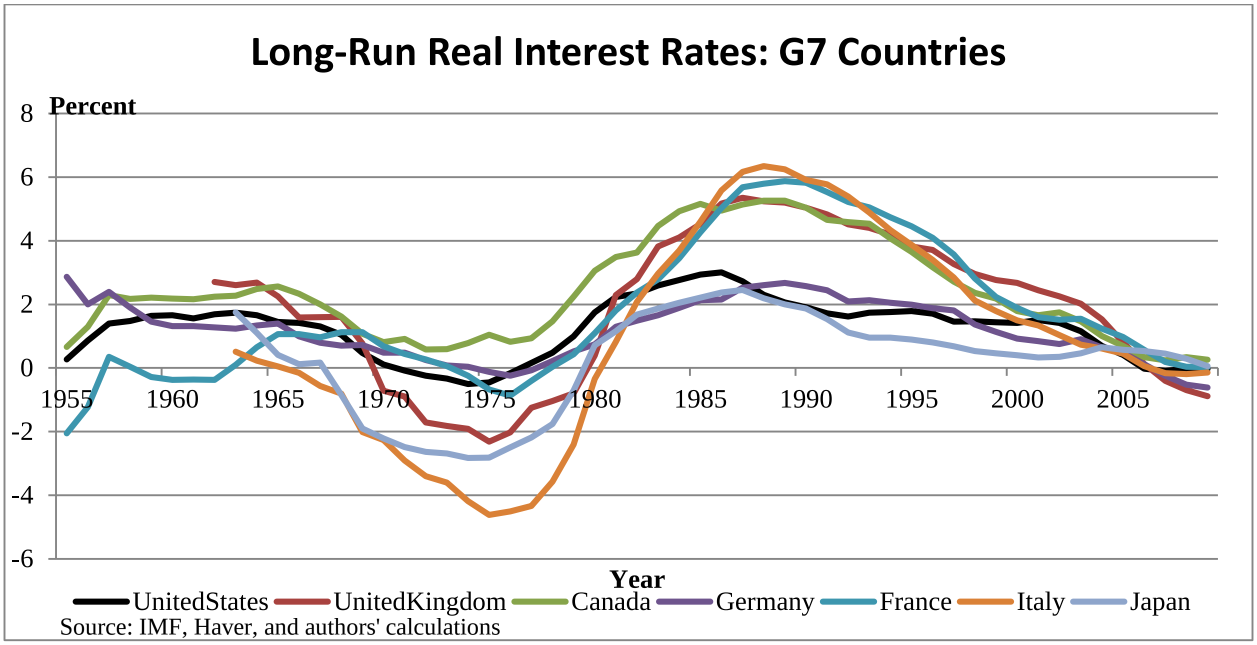
Outline:

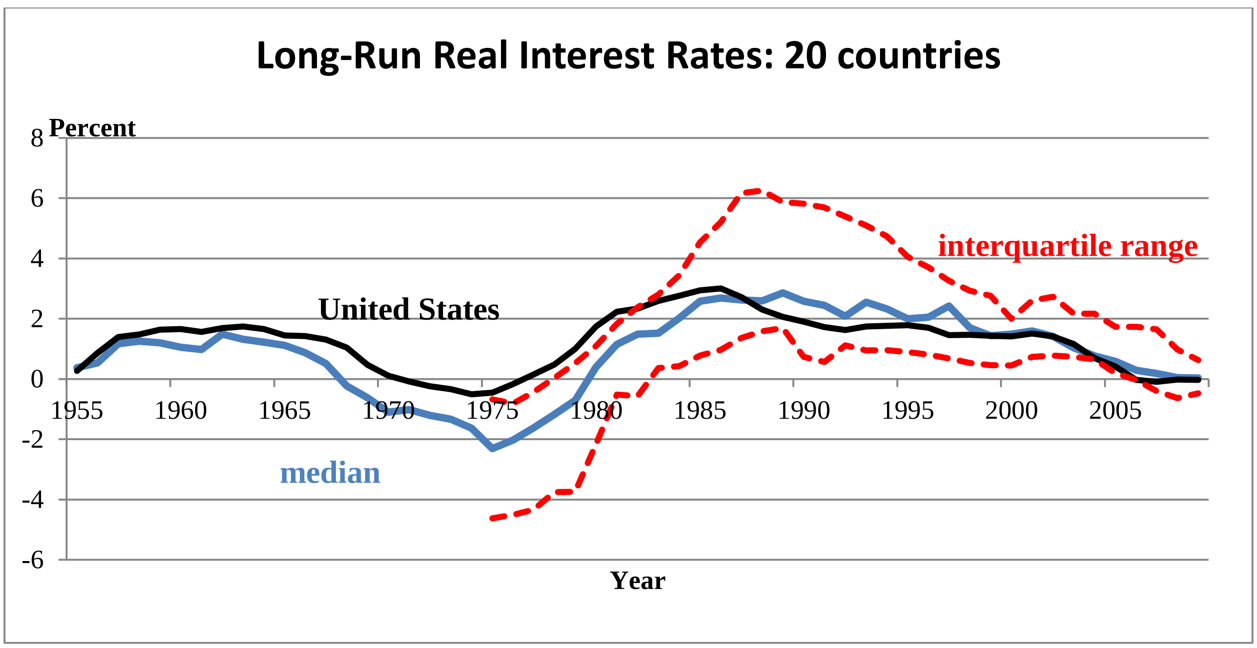
1. Present data on long-run real interest rates covering up to 20 countries and 60 years.
2. Examine evolution of key determinants of long-run real interest rates, including the marginal product of capital and risk premium on capital.
3. Present projections for future determinants of marginal product of capital and long-run real interest rates.
4. Draw takeaways and policy implications.

Exhibit 3

Long-Run Real Interest Rates

- Long-run real interest rate measured as 11-year centered moving average of policy interest rate less expected inflation rate (current inflation rate).

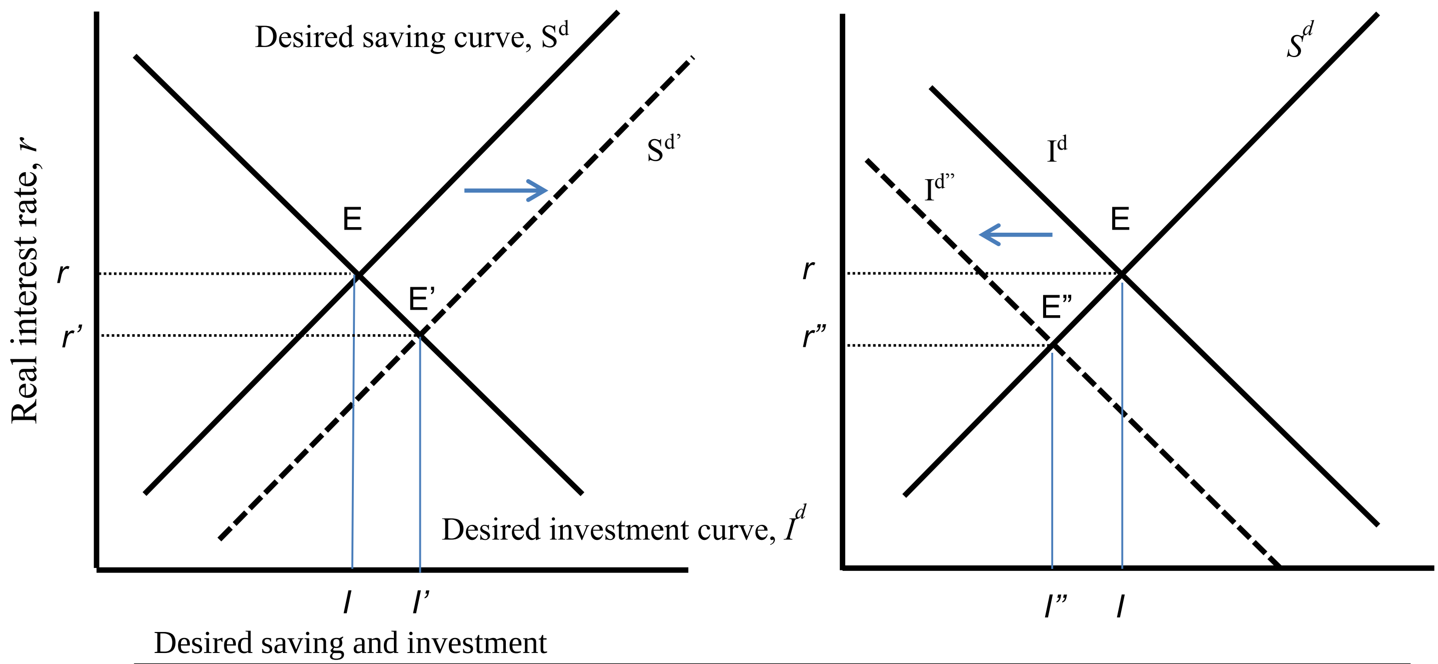




- Long-run real interest rates across 20 large countries have exhibited multiple trends over past half-century.
  - Most recent trend is decline and increased synchronization of interest rates over past quarter-century.

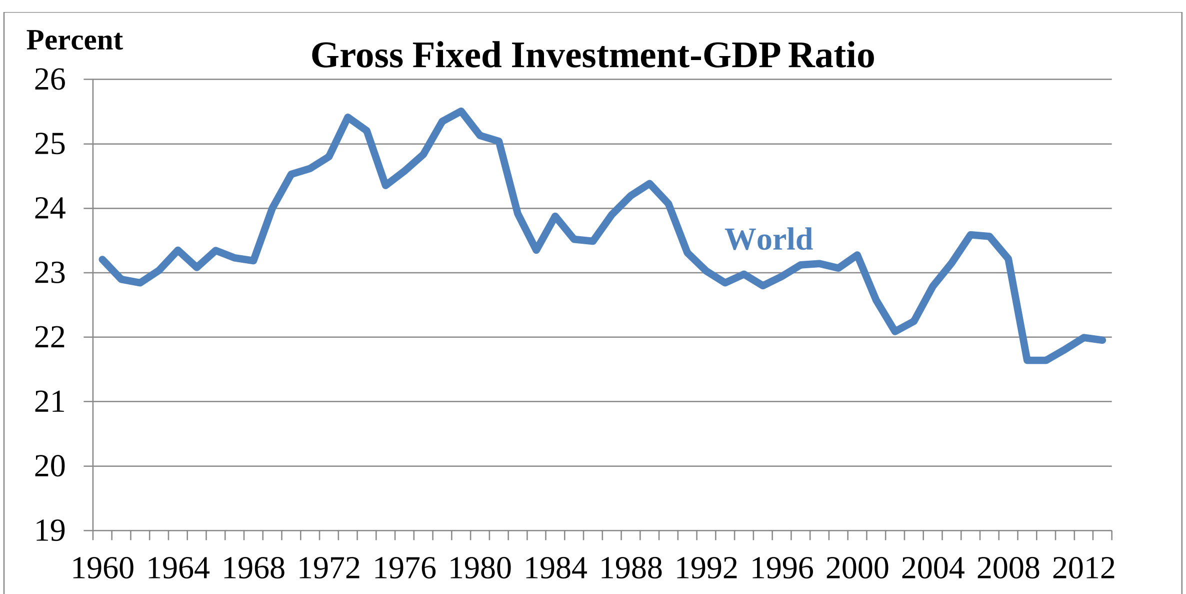
Exhibit 4

Global Saving and Investment: Theory



Forces leading to increased desired saving (e.g., global savings glut) or to decreased desired investment (e.g., declining returns to capital) can explain decline in long-run real interest rates.

Global Saving and Investment: Evidence



Source: World Bank, World Development Indicators

- Decline in global fixed investment-GDP ratio suggests importance of investment forces.

Exhibit 5

Determinants of Real Interest Rates: Theory

- Optimal choice between risk-free asset and risky capital implies:

$$r = E[MPK] - RP - \delta \qquad (1)$$

r = risk-free real interest rate; $E[MPK]$ = expected marginal product of capital RP = risk premium on capital; δ = depreciation rate of capital

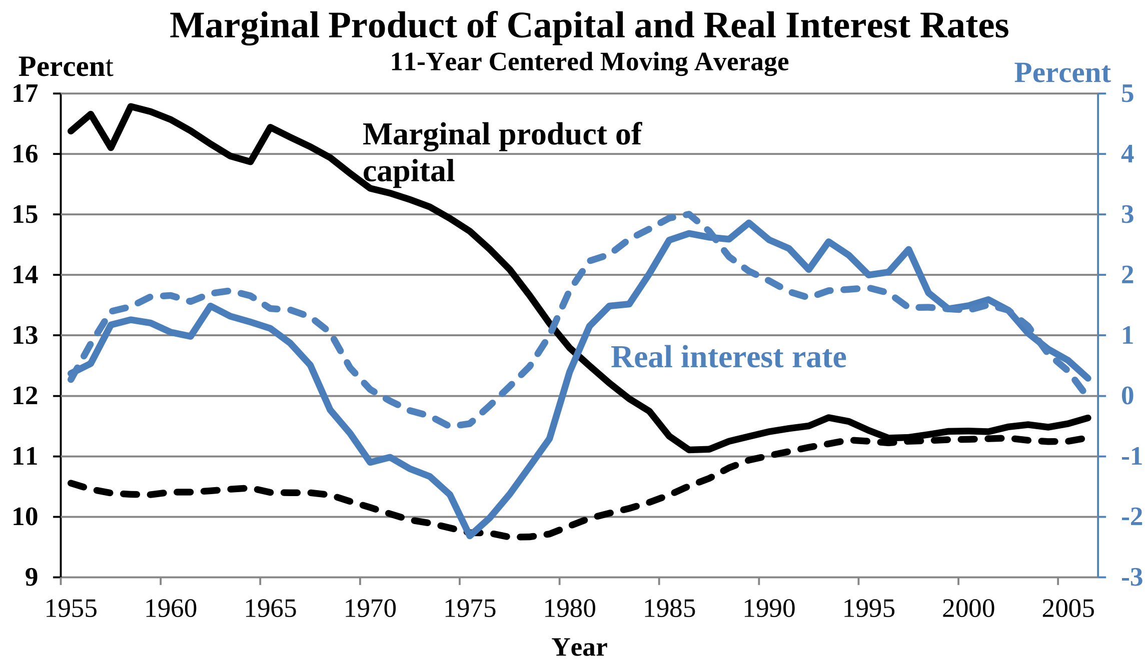
  - We measure MPK as: $MPK = \frac{\alpha Y}{K}$

α = capital share of income; Y= GDP; K= capital stock

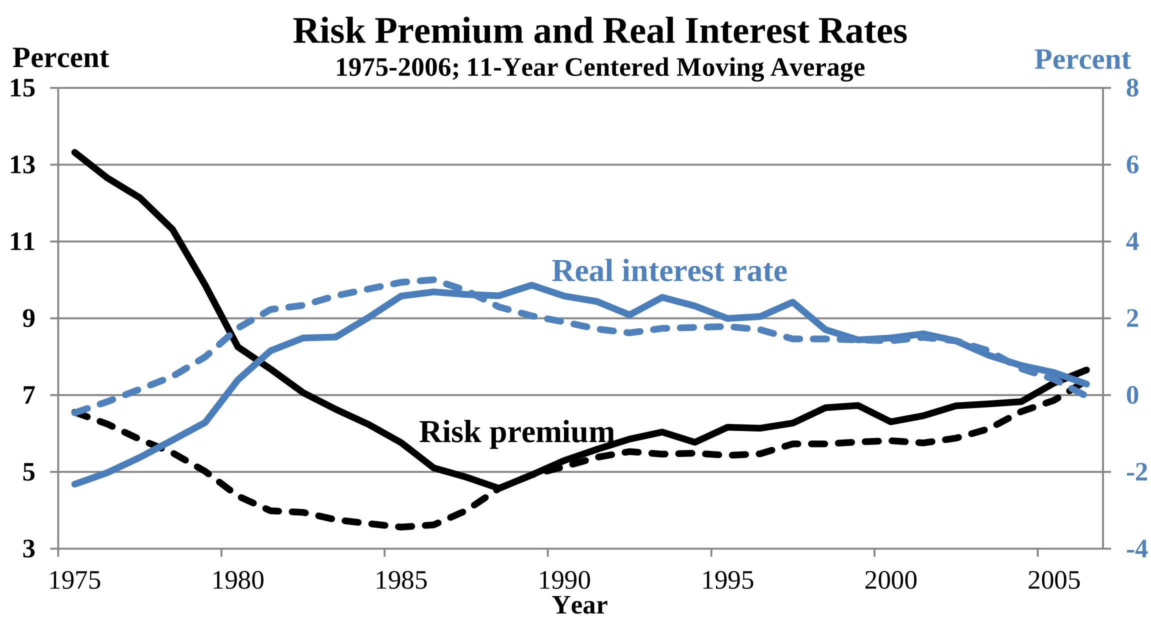
  - We measure risk premium as residual from (1)

Exhibit 6

Two Determinants of Real Interest Rates: Evidence



Note: **solid** lines are medians across 20 countries; **dashed** lines are United States.



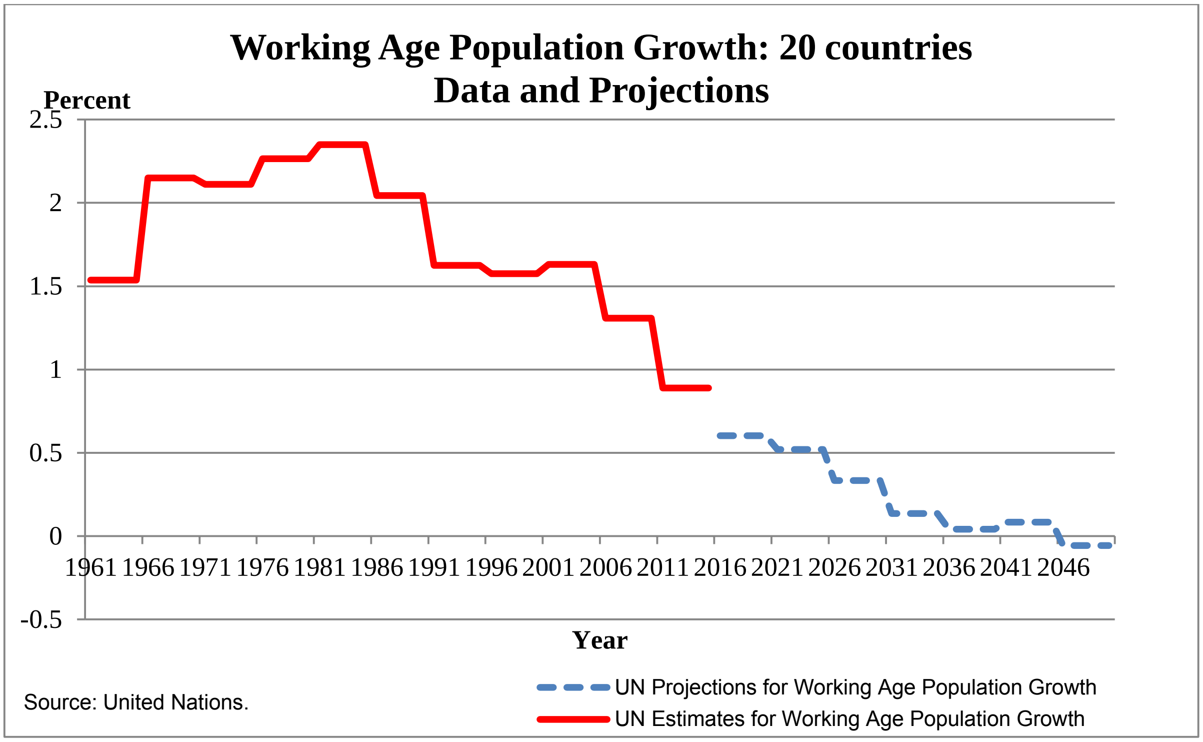
Note: **solid** lines are medians across 20 countries; **dashed** lines are United States.

- Long-run MPK declined in 1960s-1980s, but relatively flat over past quarter-century
- Long-run risk premium increased over past quarter-century
- No simple story to explain trends in long-run real interest rates
  - Increased demand for "safe assets" can potentially explain increase in risk premium and decline in real interest rates in past quarter-century

Exhibit 7

Forces affecting Future MPK and Long-Run Real Interest Rates

- Update of Fernald (2014) projections of future TFP growth in United States: **1.13 percent**
  - 0.3 percentage points lower than during great moderation
  - Lower TFP growth translates at least one-for-one into lower long-run real interest rates.



Takeaways and Policy Implications

- Long-run real interest rates have declined over past quarter-century and are currently low in all major economies. This data and estimates of U.S. steady-state r* suggest that short-run real interest rates will fluctuate around a lower anchor for some time going forward.
  - No simple story to explain behavior of long-run real interest rates, although risk premium and MPK play a role.
- Projections for slower U.S. TFP and global working-age population growth suggest further reductions in long-run or steady-state real interest rate.
- These data, estimates, and projections are consistent with hypothesis that United States and other economies are more likely to hit ELB in foreseeable future compared to prior to crisis.

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Exhibit 8

Short-run r* in empirical DSGE models

1. The natural rate of interest (NRI)

- Defined within the New Keynesian modelling framework as

The real interest rate that would prevail in the absence of nominal rigidities

- Optimal in very simple models, where it delivers price stability and full employment
- Not optimal in more realistic DSGE models, but still useful reference for monetary policy
  - Within these models, targeting the NRI generally promotes stable inflation and economic activity

2. Strengths of DSGE approach

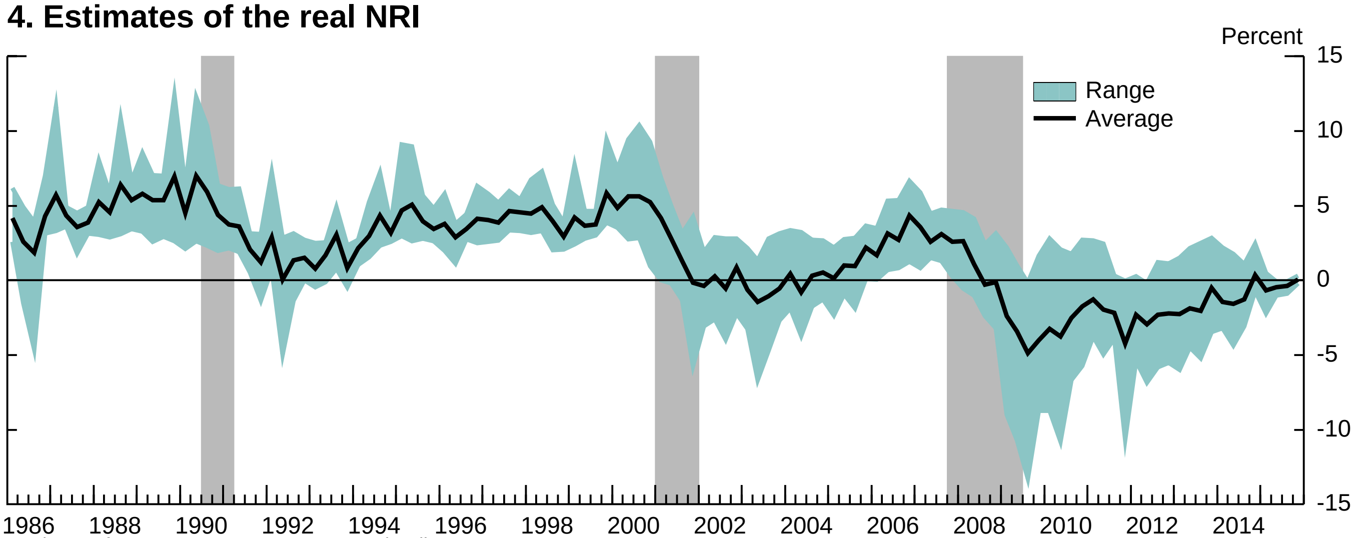
DSGE models provide a coherent framework to:

1. Estimate the NRI, which is unobservable
2. Trace movements of the NRI back to the underlying sources of business cycle fluctuations
3. Study alternative policies through the use of counterfactual simulations

3. Estimates from 5 models

- Main drawback: tight link to model features
- As a partial antidote to model dependence, present estimates from a diverse set of models
  - EDO, FR, GIH: Board of Governors
  - FRBNY-DSGE
  - DALLAS: empirical model of r*
- Diversity of theoretical and empirical approaches takes into account model uncertainty

4. Estimates of the real NRI



*Estimates from EDO, FRBNY, FR, GIH, and Dallas.

Exhibit 9

Sources of fluctuations in the NRI

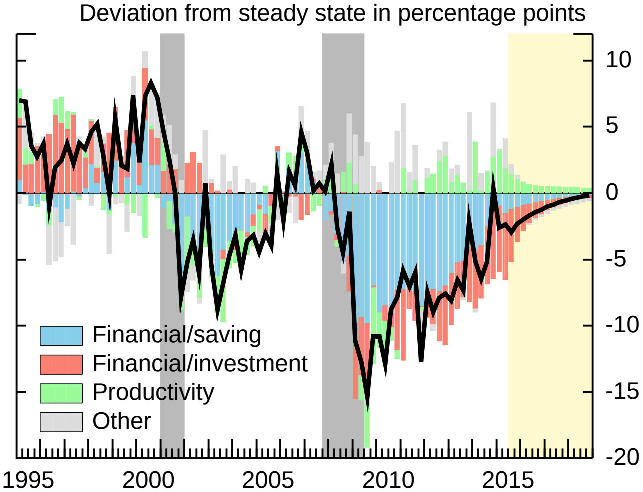
1. NRI and business cycles

- DSGE models trace fluctuations in the NRI back to fundamental shocks
- Diverse shocks across models grouped by economic decisions that they affect
  - Financial / saving
  - Financial / investment
  - Productivity
- Adverse shocks depress the NRI

2. Fluctuations of the NRI in the United States...

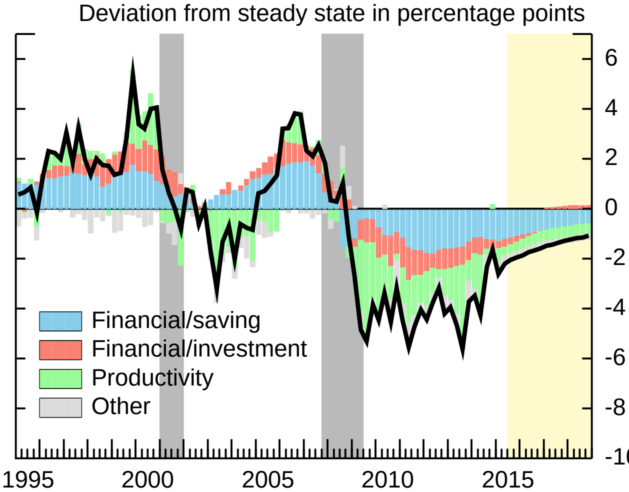
2.1. EDO

Deviation from steady state in percentage points



2.2. FRBNY-DSGE

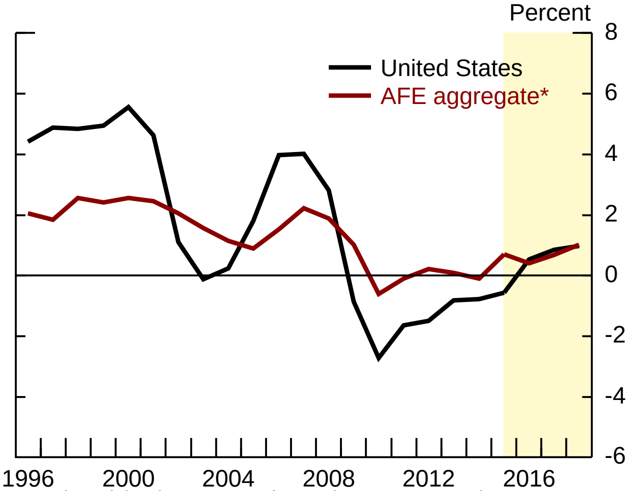
Deviation from steady state in percentage points



3. ... and in the major AFEs (using FR model)

3.1. United States vs. AFEs

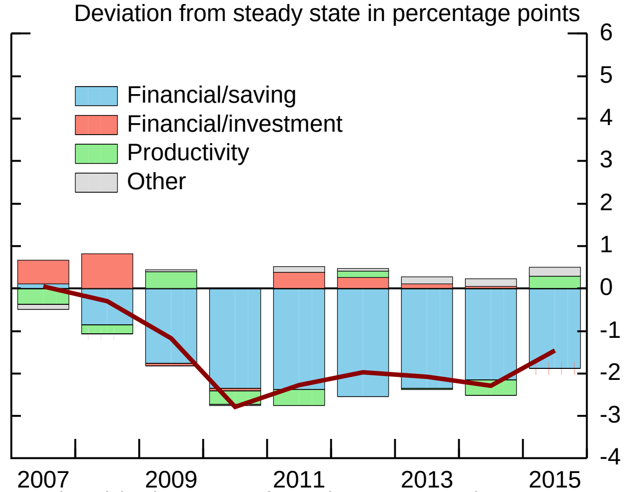
Percent



* Trade-weighted aggregate of Canada, euro area, and United Kingdom estimates.

3.2. Fluctuations in the AFE aggregate NRI

Deviation from steady state in percentage points



* Trade-weighted aggregate of Canada, euro area, and United Kingdom estimates.

Class II FOMC - Restricted (FR)

Exhibit 10

The NRI as a reference for the FFR

1. NRI targeting

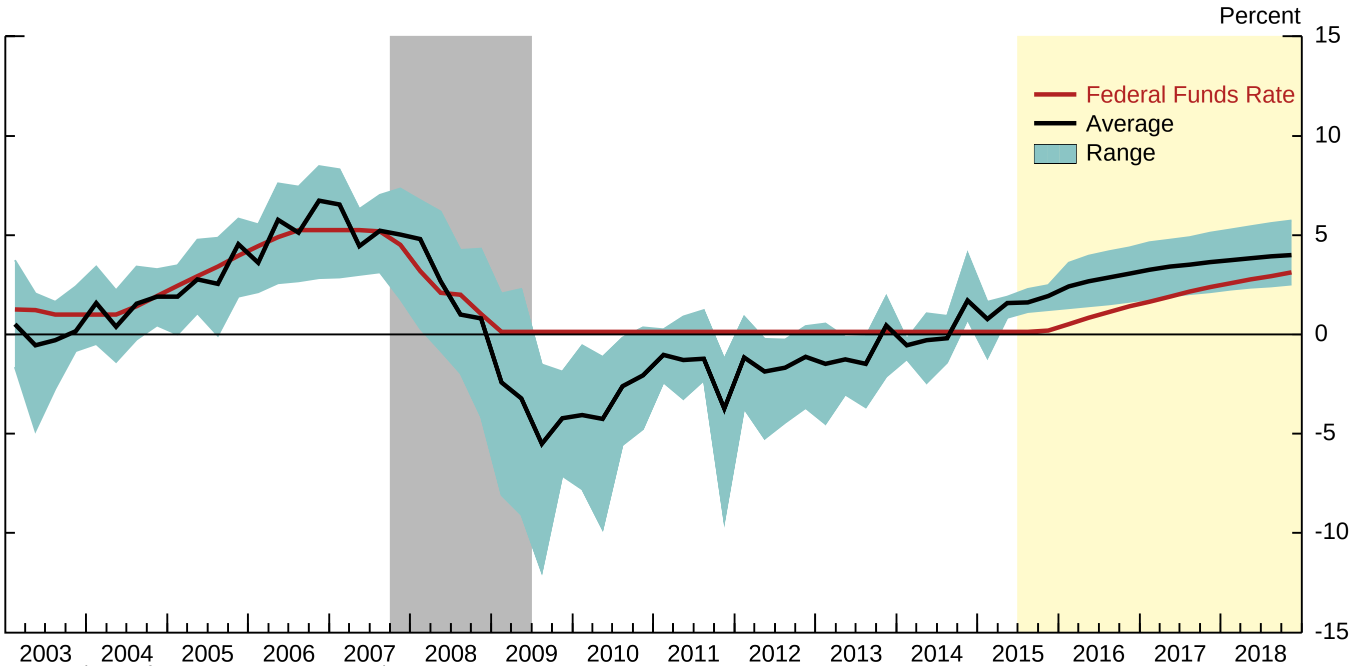
- Counterfactual policy simulation: the central bank sets the real policy rate equal to the NRI in every period.
- What happens to inflation and the output gap?
- NRI targeting tends to reduce the volatility of both inflation and the output gap.

2. Percent change in volatility under NRI targeting

Model	Inflation	Output Gap
EDO	-71	-67
FRBNY-DSGE	-39	-86
GIH	-13	25

* Percent change in the standard deviations of inflation and the output gap when replacing the estimated policy rule with the NRI targeting rule

3. The nominal natural rate of interest and the FFR



Note: Estimates from EDO, FRBNY, FR, and GIH.

4. Conclusions

- A diverse set of empirical macroeconomic models provides a consistent account of the evolution of the NRI over the business cycle
- Financial headwinds pushed the NRI to historical lows during the Great Recession and have kept it depressed since
- The nominal natural rate is currently back into positive territory and it is projected to continue a gradual normalization

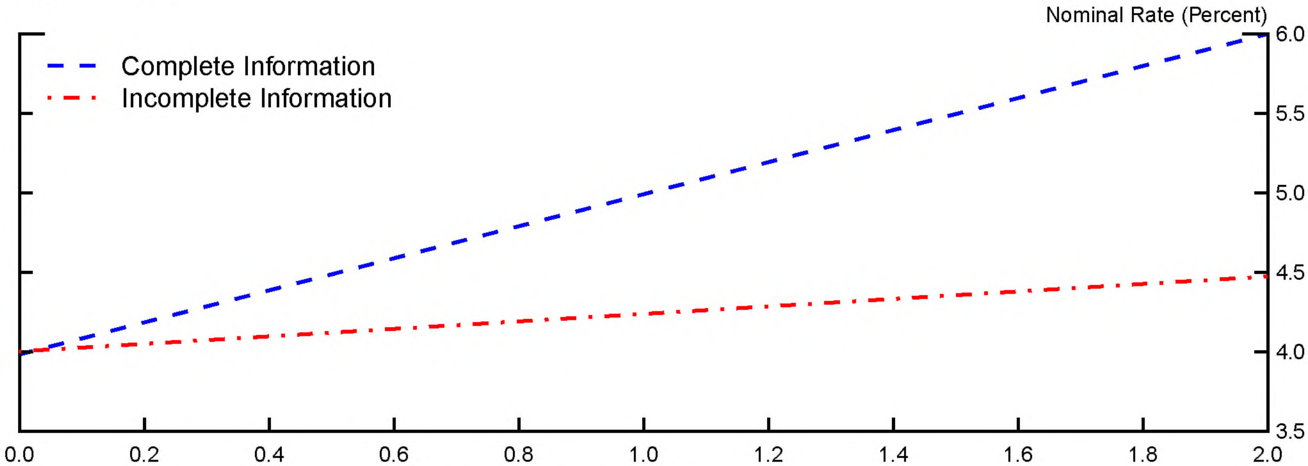
Exhibit 11
Optimal Discretionary Policy with Imperfect Information about *r**

Key Elements of the Modeling Approach

- A New Keynesian macroeconomic model.
  - An IS equation that relates output to the real interest rate.
  - A Phillips curve that relates inflation to the output gap.
  - Monetary policy stance can be defined in terms of deviations of the actual real rate from the natural real rate (*r**).
  - Policymakers choose optimal policy under discretion, that is on a period-by-period basis.
- The effective lower bound (ELB) introduces non-linearities.
- Central bank only observes an imperfect estimate of *r**.

Optimal Reaction Function under Alternative Information Sets

Normal Times



Near the Cusp of the ELB

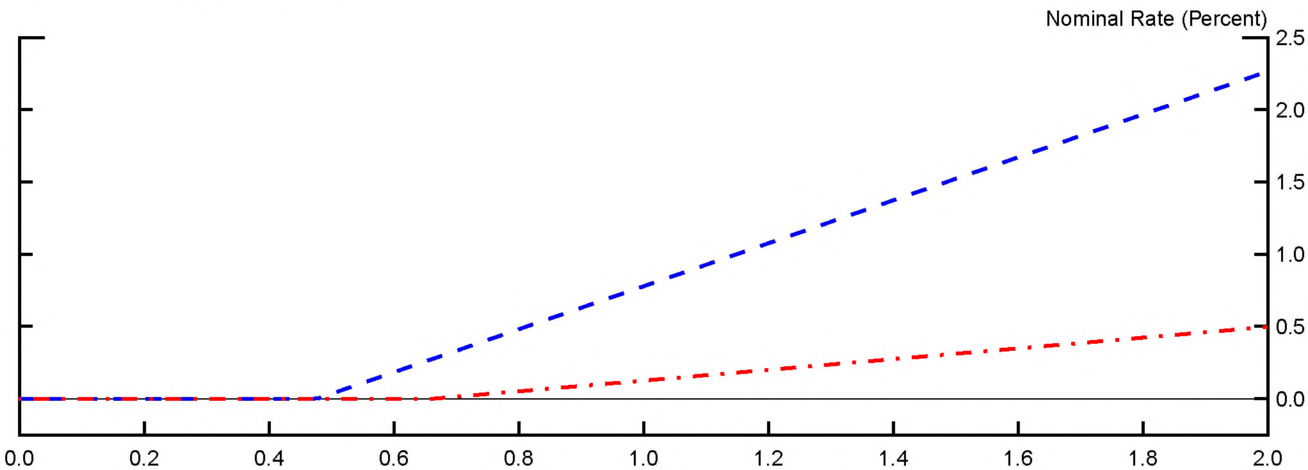


Exhibit 12
The Taylor (1999) Rule with Incomplete Information about r^*

- The nominal interest rate is related to deviations of inflation from its target value and the output gap.

$$i_t = \alpha r^* + (1-\alpha) r_t^* + \pi_t + 0.5(\pi_t - 2) + (y_t - y_t^*)$$

- Two versions:
  - Constant r^* equal to the long−run real rate ($\alpha = 1$).
  - Time−varying r_t^* equal to the natural real rate ($\alpha = 0$).
- Central bank only observes an imperfect estimate of r_t^*.

Reaction Function near the Cusp of the ELB

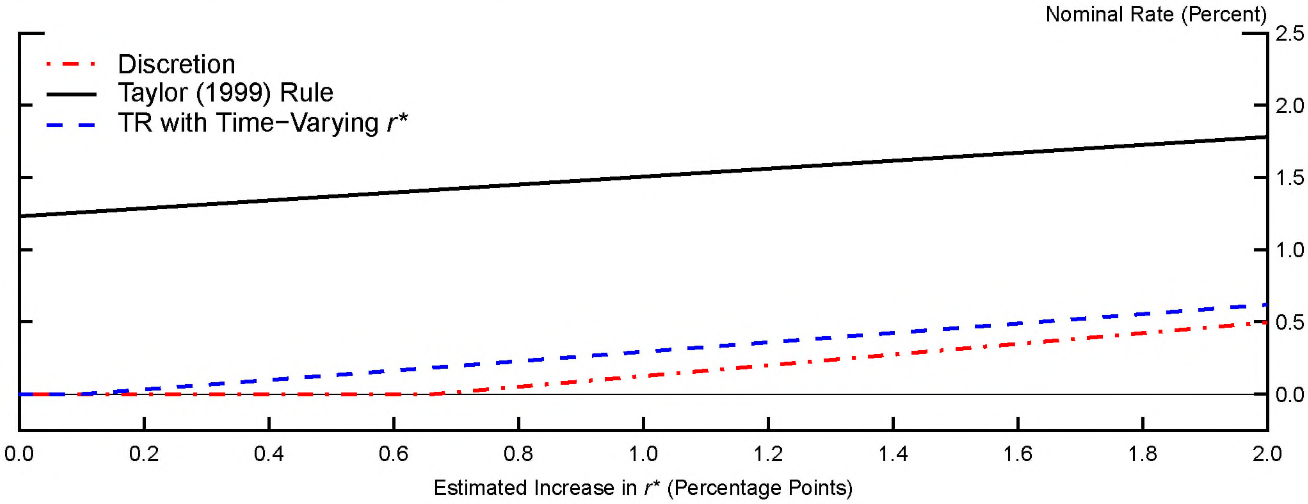


Exhibit 13
Monetary Policy Strategies near the ELB with Imperfect Information about *r**

Conclusions

- *r** is a relevant, albeit complex, *benchmark* to guide the stance of monetary policy.
- The *unobservable* nature of *r** introduces inescapable *uncertainties* about its estimated value.
- This lack of knowledge about *r** justifies *attenuation* in the optimal discretionary policy to incoming information about the state of the economy.
- This attenuation is a manifestation of a policy of *risk management* that "takes out insurance" against possible adverse future outcomes.
- Near the ELB, *policy rules* that increased the response coefficient on inflation, or that allowed for time variation in the intercept term, could come reasonably close to replicating optimal discretionary policy.

Caveats

- The usual disclaimer that comes with any *model−based analysis.*
- The policies studied are subject to important *implementability* and *communication challenges.*

Exhibit 14 (Last)

If you would like to comment, it would be helpful if you would address some or all of the following questions:

1. What does your estimate of the current level of r* imply for the degree of accommodation provided by current monetary policy?
2. How, in your view, has r* been affected by recent changes in financial conditions, especially by movements in the exchange value of the dollar?
3. How do you expect r* to evolve, and what are the implications for the appropriate path of policy going forward?

Appendix 2: Materials used by Ms. Logan

Class II FOMC – Restricted (FR)

Material for Briefing on

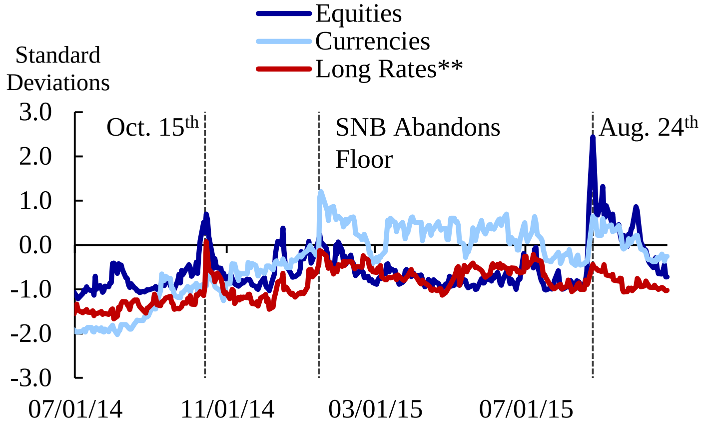
Financial Developments and Open Market Operations

Lorie Logan
October 27, 2015

Class II FOMC – Restricted (FR)

Exhibit 1

(1) Standardized Implied Volatility Indices*

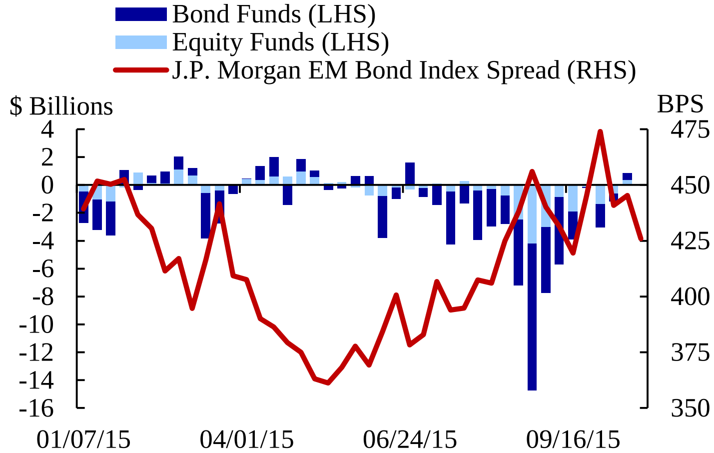


*Standardized 1-month implied volatilities since June 1994.

**Swaption with 10-year underlying.

Source: Bloomberg, CBOE, Deutsche Bank, Barclays, Federal Reserve Bank of New York Desk Calculations

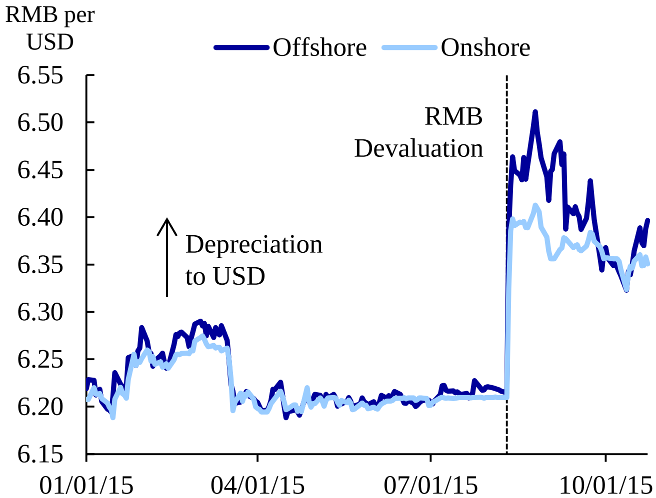
(2) Emerging Market Flows and Spreads*



*Flow data is weekly.

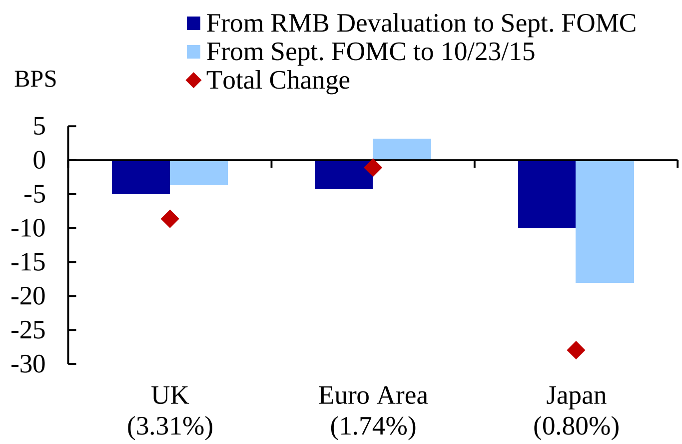
Source: Emerging Portfolio Fund Research. Excludes intra-China flows.

(3) Renminbi-U.S. Dollar Exchange Rate



Source: Bloomberg

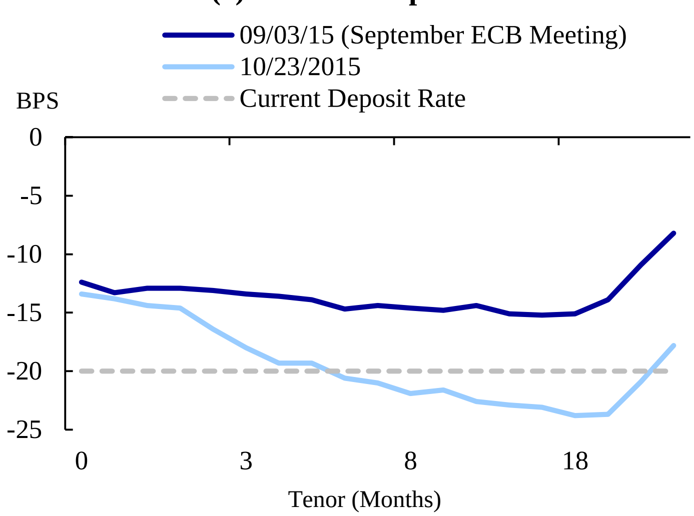
(4) Changes in Five-Year, Five-Year Forward Inflation Swaps*



*Levels as of 10/23/15 in parentheses.

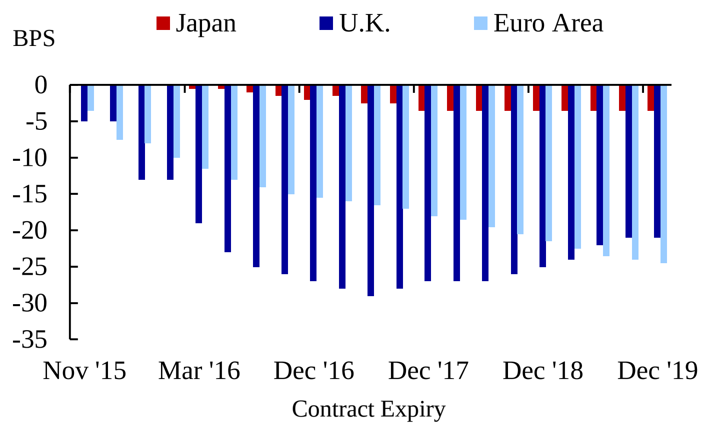
Source: Barclays

(5) EONIA Swaps Curve



Source: Bloomberg

(6) Intermeeting Changes in Money Market Futures Rates*

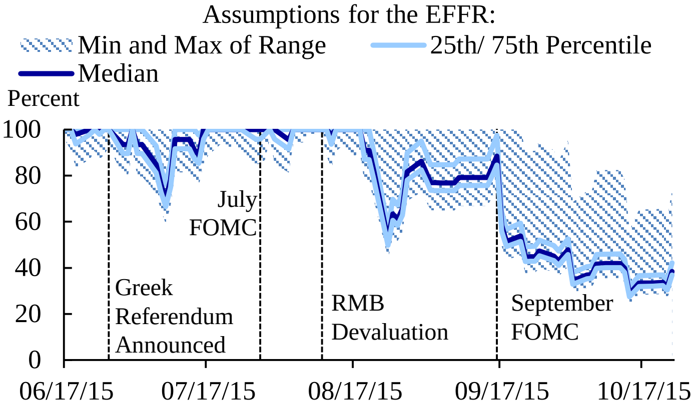


*Changes in Tibor, Short Sterling and Euribor futures-implied rates for the Japan, U.K., and Euro Area, respectively.

Source: Bloomberg

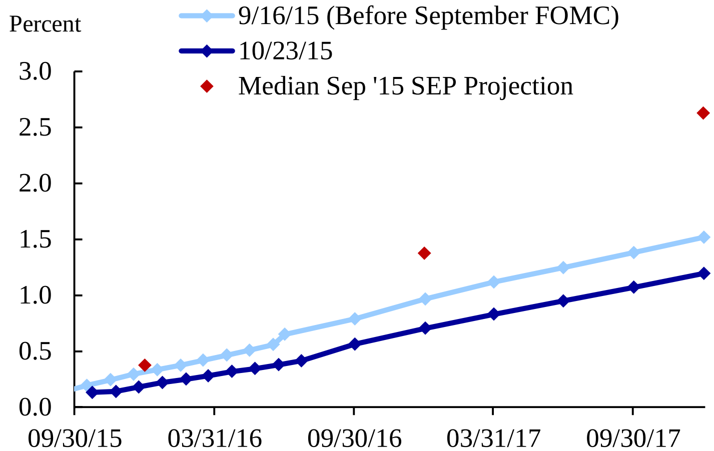
Class II FOMC – Restricted (FR) Exhibit 2

(7) Market-Implied Probability of a Rate Hike At or Before December FOMC*



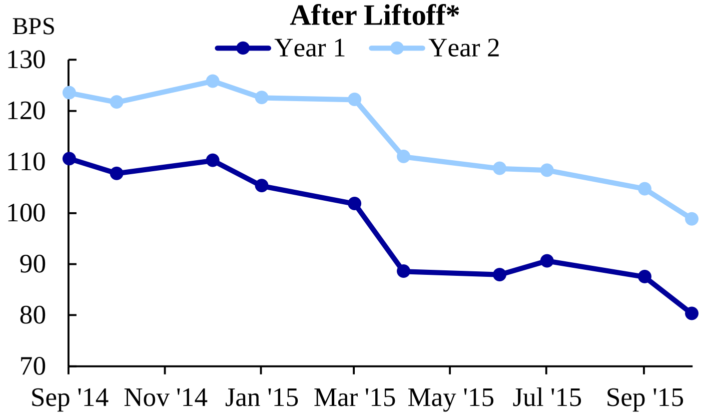
*Assumptions from the Surveys of Primary Dealers and Market Participants' PDF-implied means for the EFFR immediately after liftoff. Probabilities are derived from January fed funds futures contract and are capped at 100%.
Source: Bloomberg, Federal Reserve Bank of New York Desk Calculations

(8) Implied Federal Funds Rate Path*



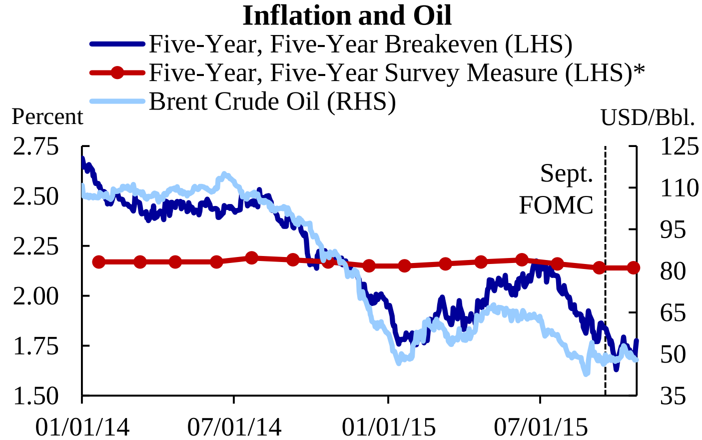
*Derived from federal funds futures and Eurodollar futures.
Source: Bloomberg, Federal Reserve Bank of New York, Federal Reserve Board of Governors

(9) Average Expected Pace of Tightening After Liftoff*



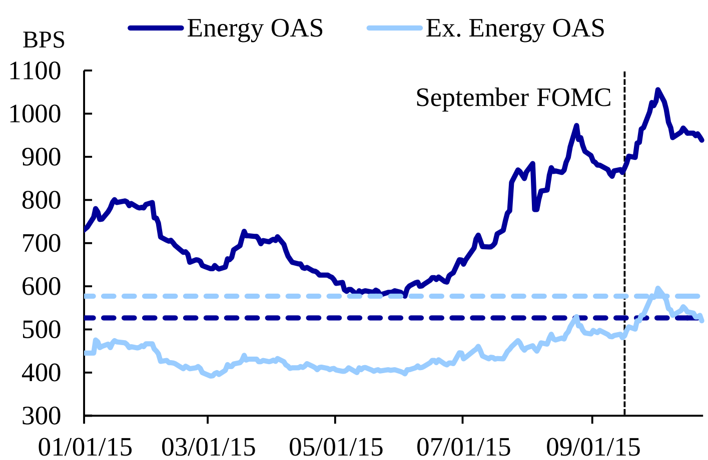
*Averages from the Surveys of Primary Dealers and Market Participants' PDF-implied means for the expected pace of tightening for the first and second year following liftoff. Responses are conditioned on not returning to the zero lower bound.
Source: Federal Reserve Bank of New York

(10) Five-Year, Five-Year Breakeven Inflation and Oil



*Computed as average of PDF-implied CPI inflation rate 5-years to 10-years ahead from the Surveys of Primary Dealers.
Source: Federal Reserve Board of Governors, Bloomberg, Federal Reserve Bank of New York

(11) High-Yield Credit OAS*



*Dashed lines show respective ten year averages.
Source: Bloomberg, Barclays

(12) Asset Price Changes over Intermeeting Period and Since RMB Devaluation*

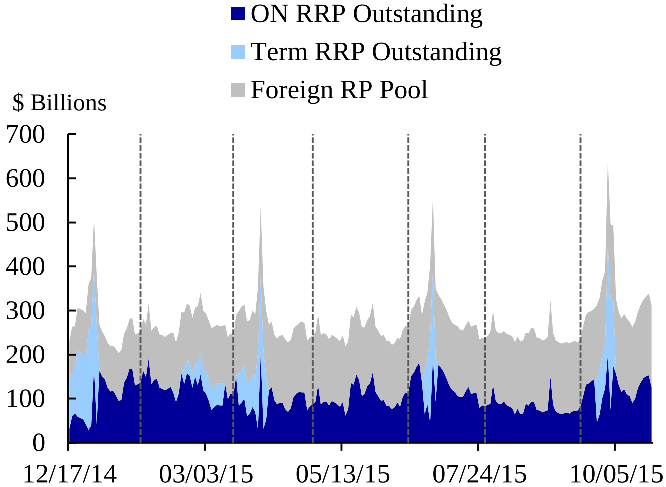
	Since RMB Deval	Since Sept. FOMC
S&P 500	-1 %	+4 %
10-Year TIPS Yield	+3 bps	-14 bps
U.S. TW Dollar	+0 %	+0 %
High Yield OAS	+59 bps	+38 bps

*Red implies a tightening in financial conditions.
Source: Bloomberg, Barclays, Federal Reserve Board of Governors

Class II FOMC – Restricted (FR)

Exhibit 3

(13) RRPs Outstanding and Foreign Repo Pool*



*Dashed lines indicate intermeeting periods.
Source: Federal Reserve Bank of New York

(14) Changes in Money Market Volumes on Quarter-Ends (Percent)*

Period	Brokered Eurodollars	Brokered Fed Funds	Overnight Treasury Repo**	Total RRP Volumes
Q4 '13	-58%	-60%	-14%	+409%
Q1 '14	-59	-32	-11	+170
Q2 '14	-66	-56	-14	+231
Q3 '14	-63	-56	-14	+78
Q4 '14	-58	-32	-13	+106
Q1 '15	-59	-41	-5	+146
Q2 '15	-65	-25	-8	+142
Q3 '15	**-76**	**-55**	**-7**	**+205**

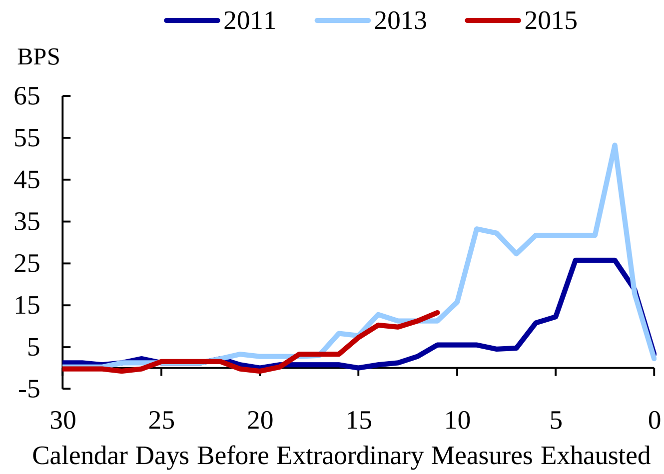
*Percent change between the quarter-end value and the average value over the previous ten business days.
**Daily survey of primary dealers.
Source: Federal Reserve Bank of New York

(15) Summary of Securities Potentially at Risk due to Debt Ceiling

Date	Number of Issues	Principal ($ Billions)	Interest ($ Billions)	Total ($ Billions)
11/05/2015	1	$56	-	$56
11/12/2015	1	$78	-	$78
11/16/2015*	56	$61	$34	$95
11/19/2015	1	$53	-	$53
11/27/2015	1	$53	-	$53
11/30/2015*	26	$68	$6	$74
Total	***86***	***$369***	***$40***	***$409***

*Coupon securities maturing on 11/16 and 11/30, all other dates represent T-bill maturities.
Source: U.S. Treasury, Federal Reserve Bank of New York Desk Calculations

(16) Yield on Bill Most Impacted by Debt Ceiling*



*Day zero reflects announced date at which Treasury expects to exhaust its borrowing authority. Bills shown mature(d) on 08/11/11, 10/31/13, 11/12/15.
Source: Bloomberg

(17) December Term RRP Announcement

- Desk intends to release statement shortly after October minutes announcing:
  - Plan to offer $300 bn. of term RRPs over year-end

Operation Date	Maturity Date	Term	Amount Offered	Max. Rate
Dec 18	Jan 04	17 Days	TBA	TBA
Dec 23	Jan 04	12 Days	TBA	TBA
Dec 31	Jan 05	5 Days	TBA	TBA

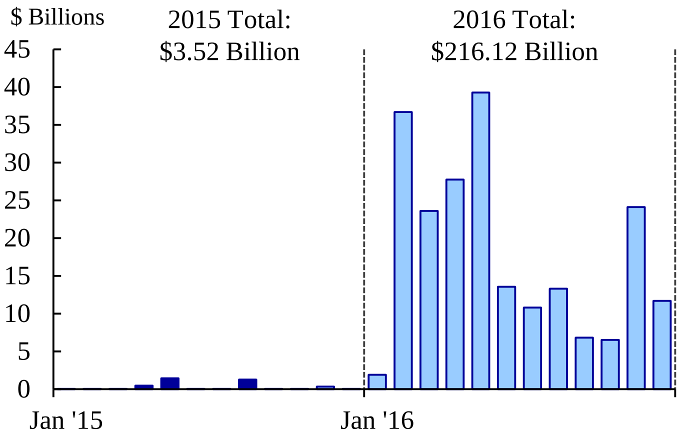
  - Release of the remaining details shortly after December FOMC meeting

(18) Recent Changes to FR 2420 Data Collection

- To improve data quality in advance of production of FR 2420 rates, staff:
  - Expanded Eurodollar collection
  - Expanded panel of domestic banks reporting fed funds
- Respondents began submitting revised data on October 20
  - Data collected thus far have been in line with expectations
  - On track to start publishing revised fed funds and OBFR in early 2016

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

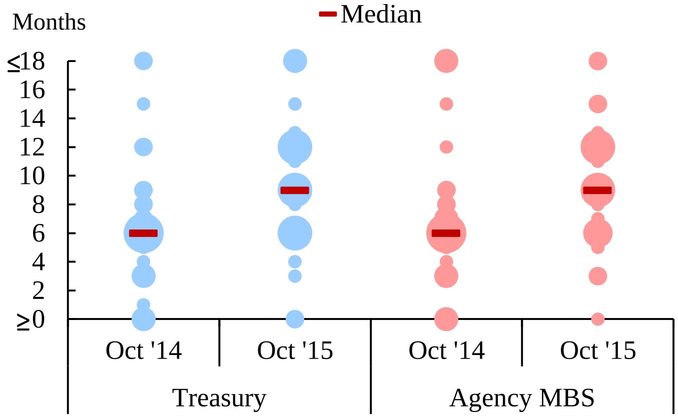
(19) SOMA Treasury Security Maturities*



*Year-to-date the Desk has rolled $3.18 billion of $3.51 billion of eligible securities maturing in 2015.

Source: Federal Reserve Bank of New York

(20) Expected Timing of End to Some or All Reinvestments Relative to Liftoff*



*Dots scaled by percent of respondents from the Surveys of Primary Dealers and Market Participants.

Source: Federal Reserve Bank of New York

Appendix 3: Materials used by Ms. Ihrig

Class I FOMC – Restricted Controlled (FR)

Material for Briefing on

Issues Related to the Debt Ceiling

Jane Ihrig

October 27, 2015

Selected points from the minutes of FOMC videoconference meeting of October 16, 2013

- Operations involving delayed payments on Treasury Securities
  - No legal or operational need to make changes to the conduct or procedures employed in open market operations, securities lending, or to the operation of the discount window.
  - Continue to employ prevailing market values of securities in all its transactions and operations, under the usual terms.
- Supervisory policy would take into account and make appropriate allowance for unusual market conditions.
- Steps to address market issues resulting from a delay in payments
  - Appropriate responses would depend importantly on the actual conditions observed in financial markets.
  - While the Federal Reserve should take whatever steps it could, the risks posed to the financial system and to the broader economy by a delay in payments on Treasury securities would be potentially catastrophic, and thus such a situation should be avoided at all costs.

Minutes of FOMC videoconference meeting of October 16, 2013

“On October 16, 2013, the Committee met by videoconference to discuss issues associated with contingencies in the event that the Treasury was temporarily unable to meet its obligations because the statutory federal debt limit was not raised. The meeting covered issues similar to those discussed at the Committee's videoconference meeting of August 1, 2011. The staff provided an update on legislative developments bearing on the debt ceiling and the funding of the federal government, recent conditions in financial markets, technical aspects of the processing of federal payments, potential implications for bank supervision and regulatory policies, and possible actions that the Federal Reserve could take if disruptions to market functioning posed a threat to the Federal Reserve's economic objectives. Meeting participants saw no legal or operational need in the event of delayed payments on Treasury securities to make changes to the conduct or procedures employed in currently authorized Desk operations, such as open market operations, large-scale asset purchases, or securities lending, or to the operation of the discount window. They also generally agreed that the Federal Reserve would continue to employ prevailing market values of securities in all its transactions and operations, under the usual terms. With respect to potential additional actions, participants noted that the appropriate responses would depend importantly on the actual conditions observed in financial markets. Under certain circumstances, the Desk might act to facilitate the smooth transmission of monetary policy through money markets and to address disruptions in market functioning and liquidity. Supervisory policy would take into account and make appropriate allowance for unusual market conditions. The need to maintain the traditional separation of the Federal Reserve's actions from the Treasury's debt management decisions was noted. Participants agreed that while the Federal Reserve should take whatever steps it could, the risks posed to the financial system and to the broader economy by a delay in payments on Treasury securities would be potentially catastrophic, and thus such a situation should be avoided at all costs.”

Appendix 4: Materials used by Mr. Lebow

Class II FOMC – Restricted (FR)

Material for

The U.S. Outlook

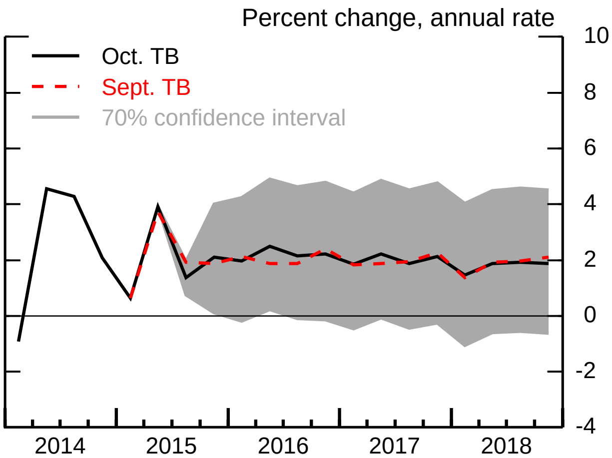
David E. Lebow

October 27, 2015

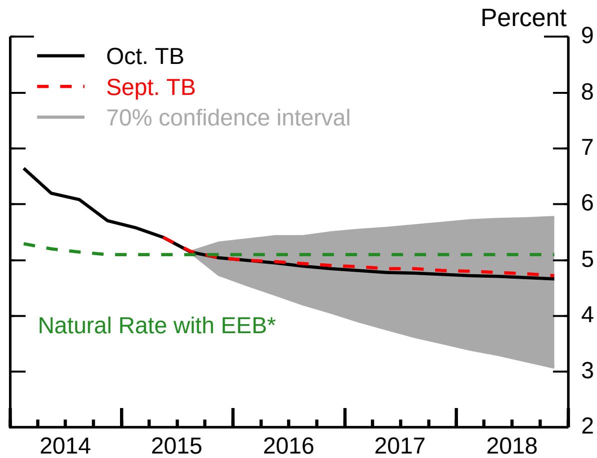
Forecast Summary

Confidence Intervals Based on FRB/US Stochastic Simulations

1. Real GDP

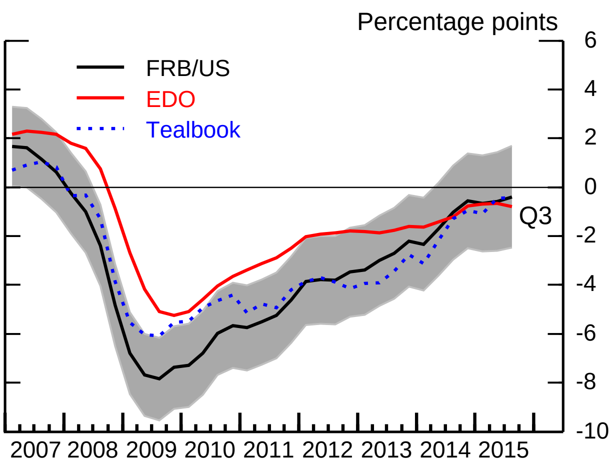


2. Unemployment Rate



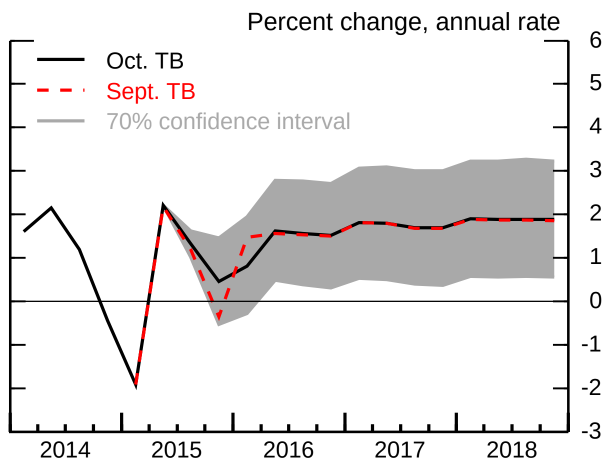
*Effect of emergency unemployment compensation and state-federal extended benefit programs.

3. Output Gap Estimates

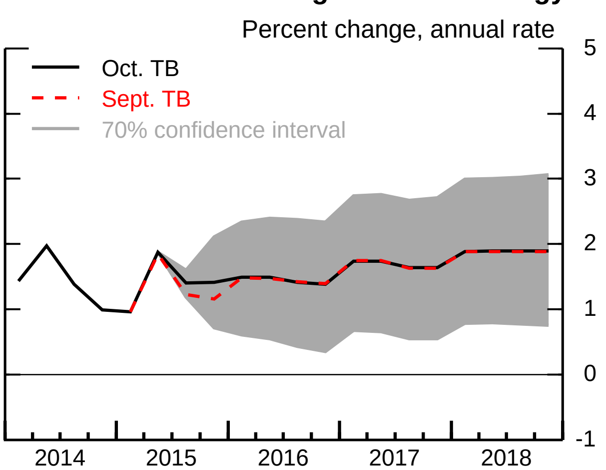


Note: The shaded region is the 2-standard deviation band around the FRB/US output gap, reflecting only filtering uncertainty.

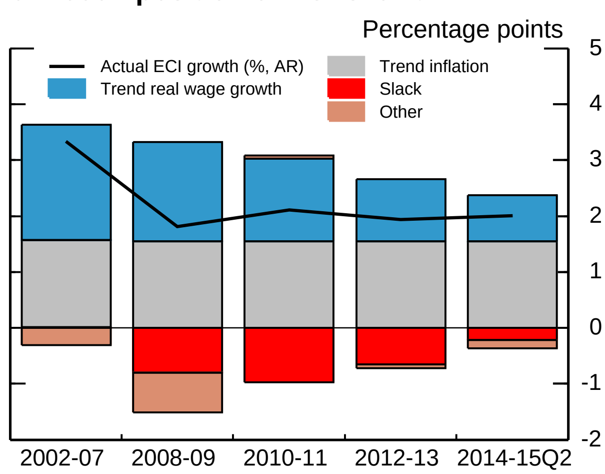
4. PCE Prices



5. PCE Prices Excluding Food and Energy



6. Decomposition of ECI Growth



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

(Percent change at annual rate, except as noted)

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total PCE price index							
3-month change	2.4	2.5	1.3	0.2	0.3	0.4	0.6
September Tealbook	*2.4*	*2.5*	*1.1*	*0.0*	*-0.7*	*-0.5*	*0.1*
12-month change	0.3	0.3	0.3	0.2	0.3	0.5	0.7
September Tealbook	*0.3*	*0.3*	*0.3*	*0.2*	*0.0*	*0.2*	*0.5*
Core PCE price index							
3-month change	1.7	1.4	1.3	1.5	1.5	1.5	1.2
September Tealbook	*1.7*	*1.4*	*1.3*	*1.1*	*1.1*	*1.2*	*1.2*
12-month change	1.3	1.2	1.3	1.4	1.4	1.4	1.5
September Tealbook	*1.3*	*1.2*	*1.3*	*1.3*	*1.3*	*1.3*	*1.4*
Unemployment rate (percent)	5.3	5.3	5.1	5.1	5.1	5.0	5.0
September Tealbook	*5.3*	*5.3*	*5.1*	*5.1*	*5.1*	*5.0*	*5.0*
Payroll employment (change in 000s)	245	223	136	142	185	180	175
September Tealbook	*245*	*245*	*173*	*272*	*209*	*205*	*201*
				3rd Q2 est.		2nd Q3 est.	3rd Q3 est.
Gross Domestic Product				3.9		1.4	1.4
September Tealbook				*3.7*		*1.9*	*1.9*

<u>Key</u>: Estimate first available at:

October meeting (blue) — December meeting (yellow) — January meeting (pink)

<u>Notes</u>: September TB projection for September payroll employment change included anticipated revision to initially reported August figure. The November CPI will be released on the first day of the December FOMC meeting; the December CPI should be available prior to the January FOMC meeting.

Appendix 5: Materials used by Mr. Kamin

Class II FOMC – Restricted (FR)

Material for

The International Outlook

Steven B. Kamin

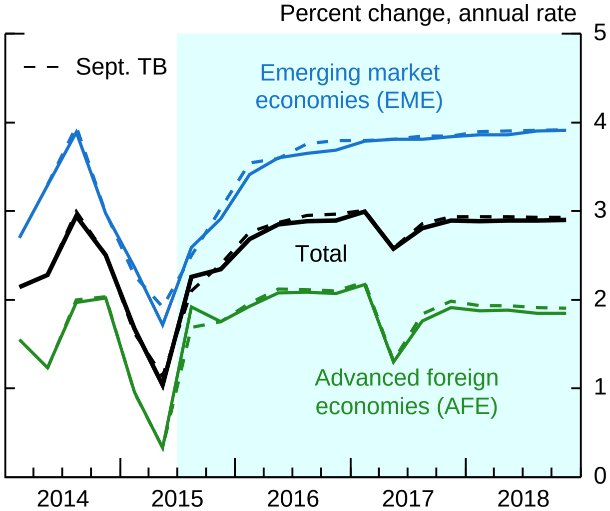
October 27, 2015

Class II FOMC - Restricted (FR)

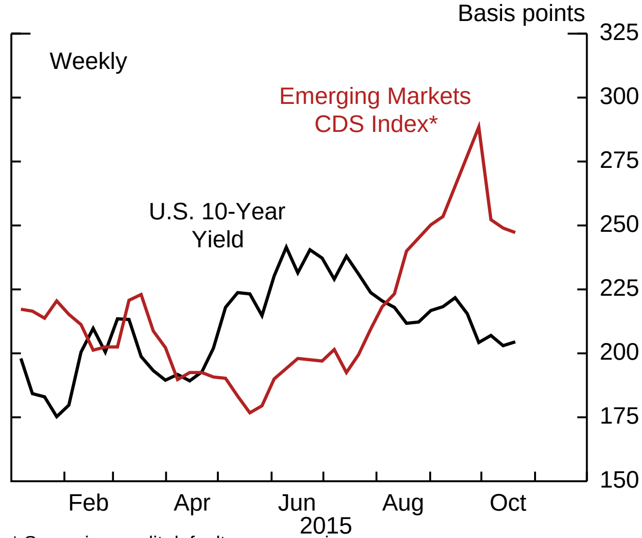
Exhibit 1

The International Outlook

1. Foreign GDP

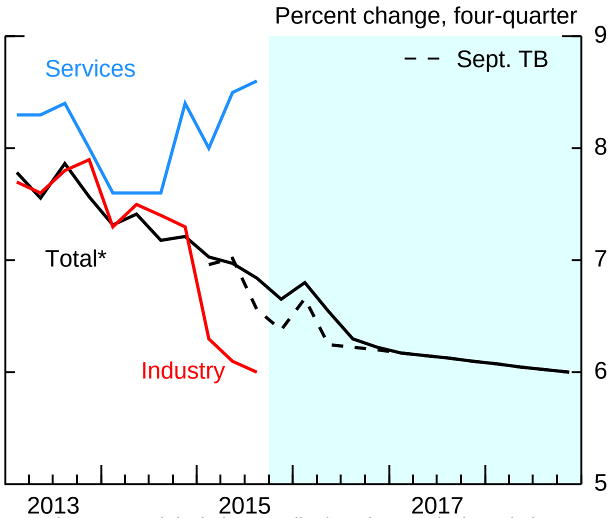


2. EME Financial Stresses



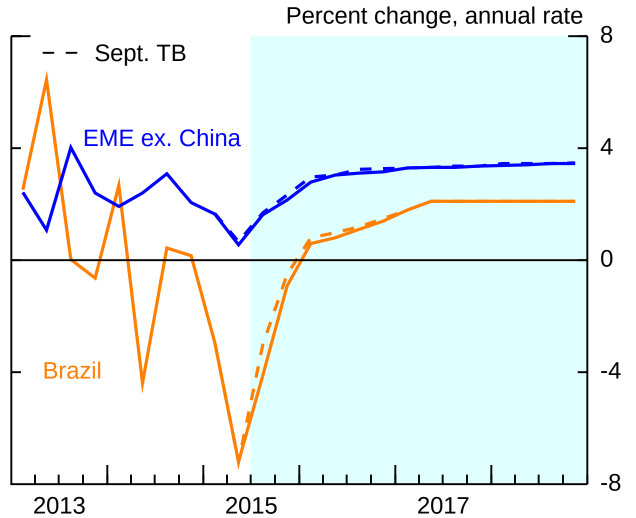
* Sovereign credit default swap premiums.

3. Chinese GDP Growth

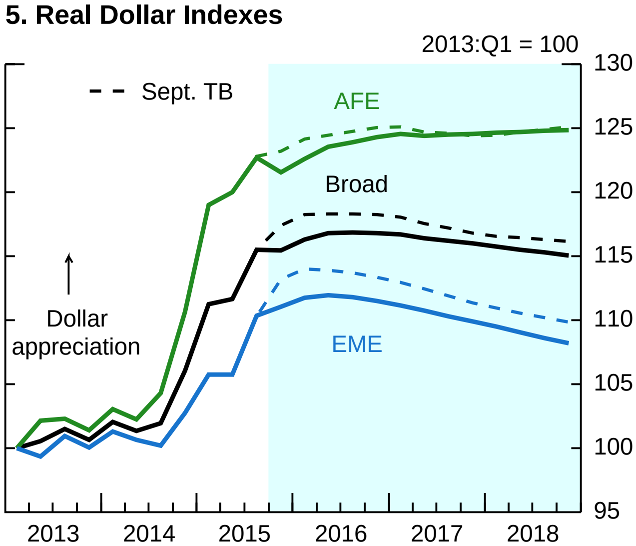


* Total GDP growth includes contributions from agriculture, industry, and services.

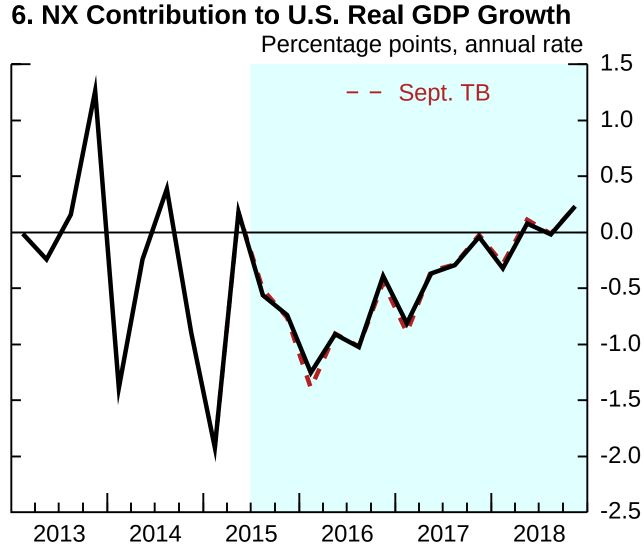
4. EME GDP



5. Real Dollar Indexes



6. NX Contribution to U.S. Real GDP Growth



Appendix 6: Materials used by Mr. Lehnert

Class II FOMC – Restricted (FR)

Material for Briefing on

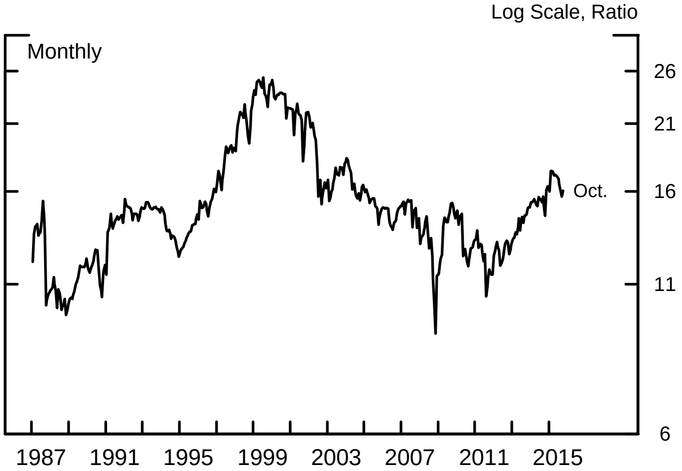
Financial Stability Developments

Andreas Lehnert

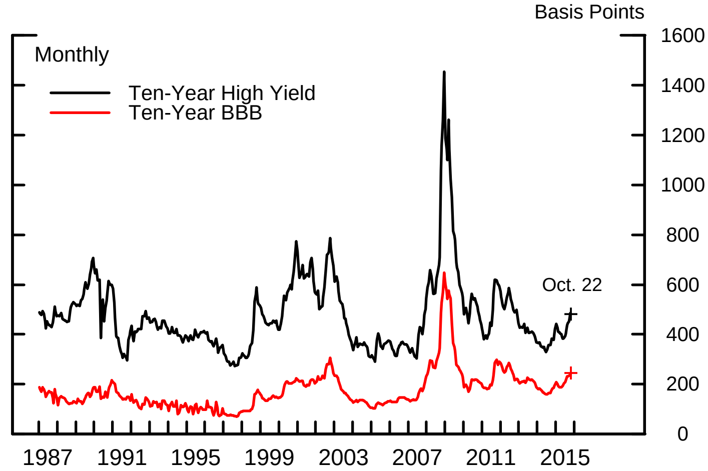
October 27, 2015

Financial Stability Presentation

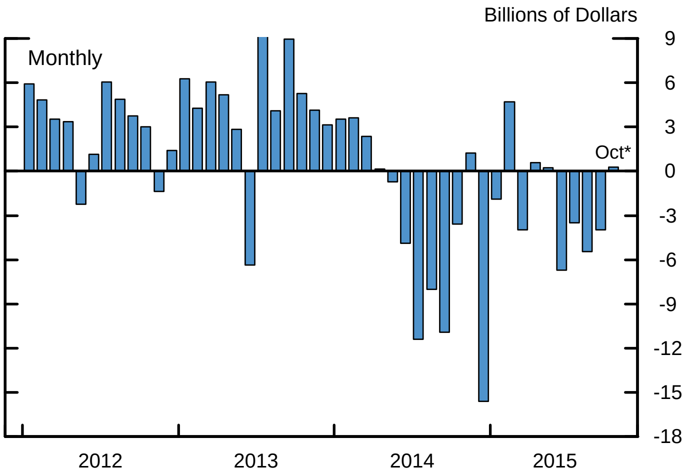
1. S&P 500 Forward Price-to-Earnings



2. Corporate Bond Spreads to Similar Maturity Treasury Security



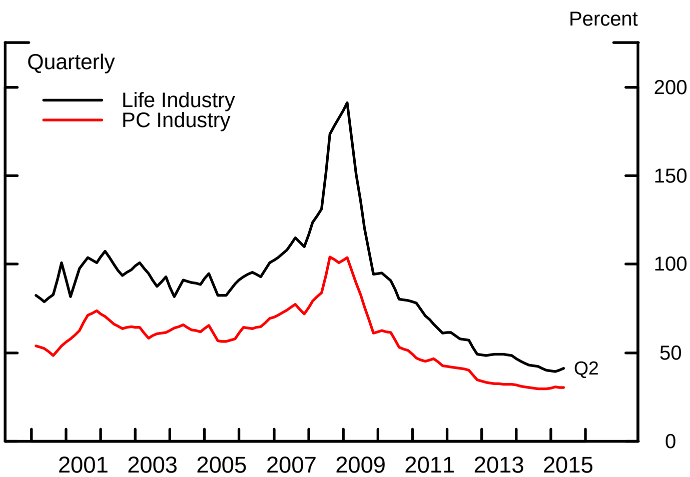
3. High Yield Bond and Bank Loan Mutual Fund Flows



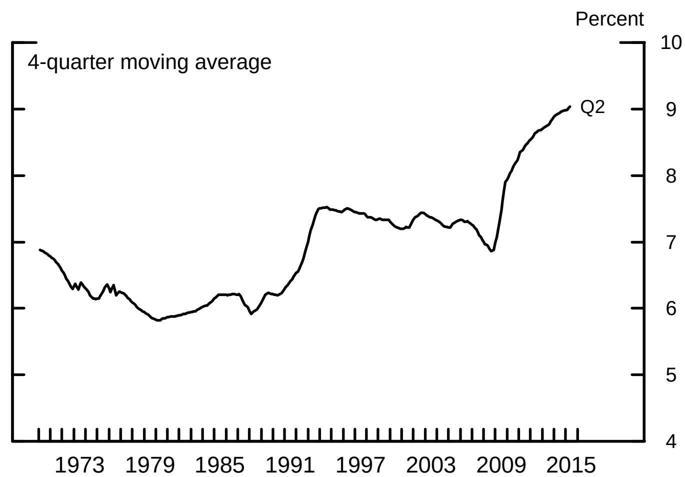
4. SEC Proposed Rules on Liquidity Risk Management

- Each mutual fund and ETF would have to:
  - Adopt liquidity risk management program
  - Disclose liquidity of portfolio positions
  - Set 3-day liquid asset minimum
- Mutual funds also would be given option to use swing pricing

5. Debt-to-Equity Ratios at Insurance Companies

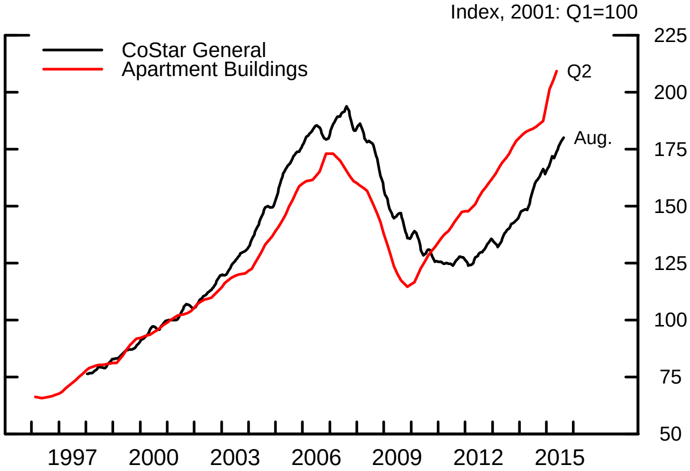


6. Tangible Common Equity to Tangible Total Assets

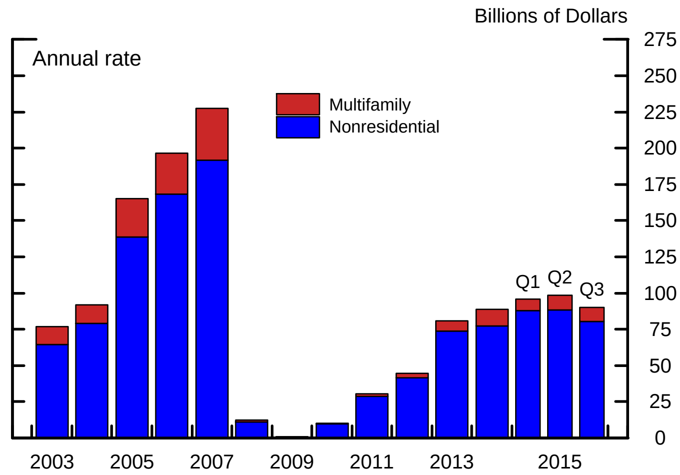


Financial Stability Presentation

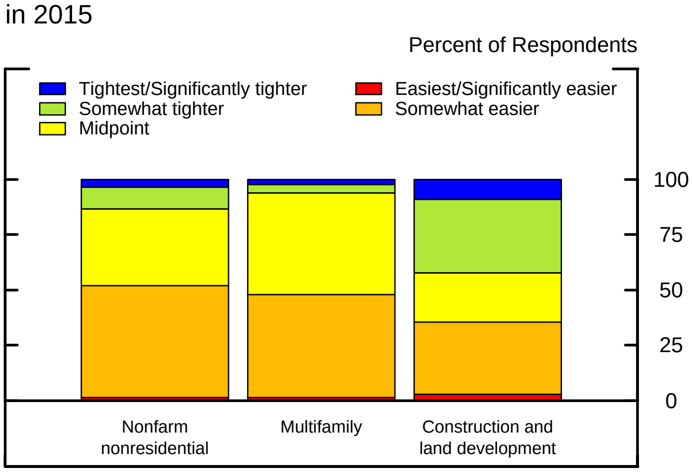
7. Commercial Real Estate Price Indices



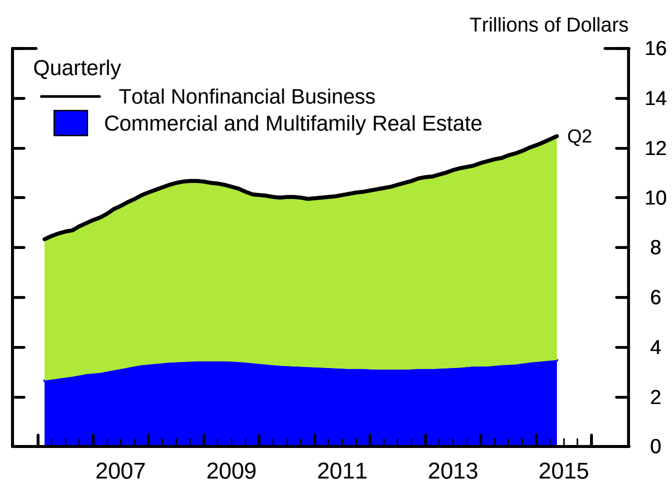
8. CMBS Issuance



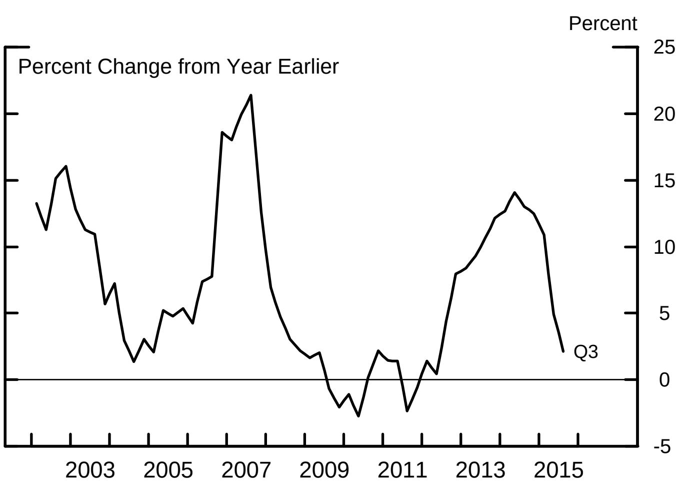
9. Level of Standards on Commercial Real Estate Loans in 2015



10. Debt Outstanding



11. Growth in Total Risky Corporate Debt



12. Private Nonfinancial Sector Credit-to-GDP Ratio

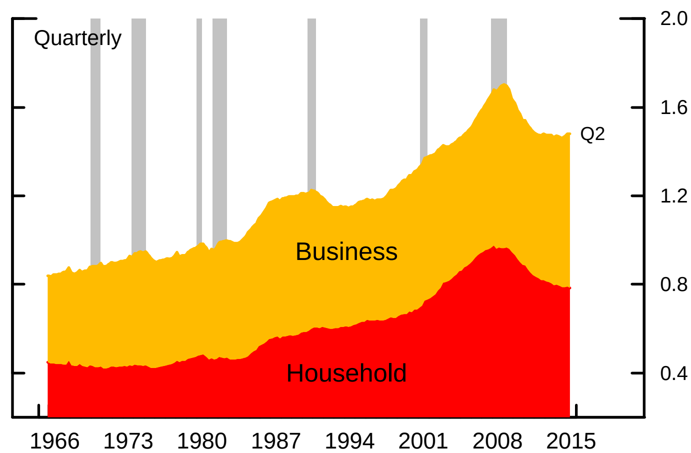


 Exhibit 3

Staff Judgment on Levels of Vulnerabilities

Key: Extremely subdued Low Moderate Notable Elevated

Notes: Heat map color assignments were made by staff judgment. In the absence of significant structural changes, we would expect vulnerabilities to spend roughly equal proportions of time in each of the colored risk buckets.

	1H2004	October 2014	October 2015
Valuation Pressures	• Valuation pressures in corporate bonds and some equity segments • Real and implied volatility is low • Building valuation pressures in housing markets	• Pockets of overvaluations remain in the equity markets • Pressures remain elevated in speculative corporate debt markets • Valuation pressures in CRE are moderate but increasing	• The balance of indicators suggest moderate valuation pressures in equity and corporate debt markets, down from previous assessments • Term premiums remain very low • CRE valuation pressures increased further
Private Nonfinancial Sector Leverage	• Credit-to-GDP ratio above estimated trend • Bank lending standards had been loosening for most loan categories since 1H2003	• Credit to GDP ratio below estimated trend • Rapid debt growth at riskier firms if continued could leave sector vulnerable to adverse macroeconomic shock • Signs of erosion in LTVs in non-agency CMBS and debt multiples in CLOs	• Aggregate measures of leverage for nonfinancial businesses are rising and are now slightly above their long-run averages • The rapid pace of debt growth for riskier firms is showing signs of cooling, but leverage remains historically high for these firms • The modest increases in household debt continues to be driven mostly by prime borrowers
Financial Sector Leverage	• With hindsight, banks were undercapitalized for risks that were undertaken and overly reliant on low quality capital • Moderate use of leverage by nonbanks	• Regulatory capital ratios at LISCC BHCs continue improvement • Nonbank leverage appears moderate overall	• Regulatory capital ratios remained close to recent highs • Available measures point to moderate leverage in the nonbank sector • Insurance industry is well capitalized and balance sheet risk appears manageable
Maturity and Liquidity Transformation	• Maturity transformation at banks is moderate but growing • Short-term wholesale funding in financial markets is high (including via money funds) • Limited liquidity transformation through open-end mutual funds • High securitization issuance	• Short-term wholesale funding in markets is moderate, but liquidity mismatch building (esp. mutual funds and ETFs) • Maturity transformation at banks is low with some growth at smaller firms • Large BHCs are improving asset liquidity	• Large BHC liquidity buffers remain robust • Aggregate amount of runnable private money-like instruments remain stable relative to nominal GDP • Structural vulnerabilities in MMFs persist • Bond mutual funds' outflows could cause excess volatility in bond markets
Overall Assessment			

Notes and Sources

Panel 1
Aggregate forward price-to-earnings ratio.

Source: Thomson Reuters Financial.

Panel 2
Estimated from curve fit to Merrill Lynch bond yields. Treasury yields from smoothed yield curve estimated from off-the-run securities. '+' denotes last daily observation."
Source: Staff estimates.

Panel 3
*Observation contains aggregate flows for the first three weeks of October.

Source: ICI.

Panel 5
Aggregate Leverage ratio = total debt/total equity. Excludes reserves.

Source: SNL Financial. Data reported quarterly.

Panel 6
Source: Call Reports.

Panel 7
Source: CoStar.

Panel 8
Multifamily excludes agency issuance.

Source: Commercial Mortgage Alert.

Panel 9
Banks were asked to describe their current level of standards in relation to the midpoint of the range of standards at their bank between 2005 and the present. Responses were weighted by survey respondents' holdings of the relevant loan types, as reported on the Q1 Call Reports from 2015 where relevant.

Source: Senior Loan Officer Opinion Survey, July 2015.

Panel 10
Source: FOFA.

Panel 11
Total risky debt is the sum of speculative grade and unrated bonds and leveraged loans. The growth in total risky debt is deflated by subtracting the growth rate of the price deflator for nonfinancial business sector output.

Source: Mergent Fixed Investment Securities Database, Standard and Poor's.

Panel 12
Source: FOFA and NIPA.

Appendix 7: Materials used by Mr. Laubach

Class I FOMC – Restricted Controlled (FR)

Material for

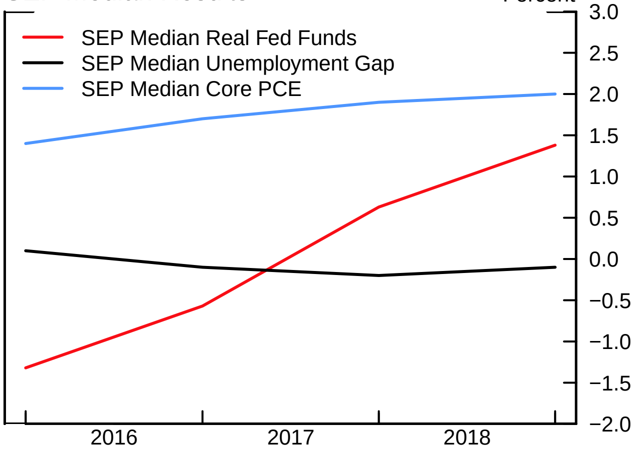
Briefing on Monetary Policy Alternatives

Thomas Laubach

October 27–28, 2015

Exhibit 1: Monetary Policy Expectations

SEP Median Results



Source: September SEP.

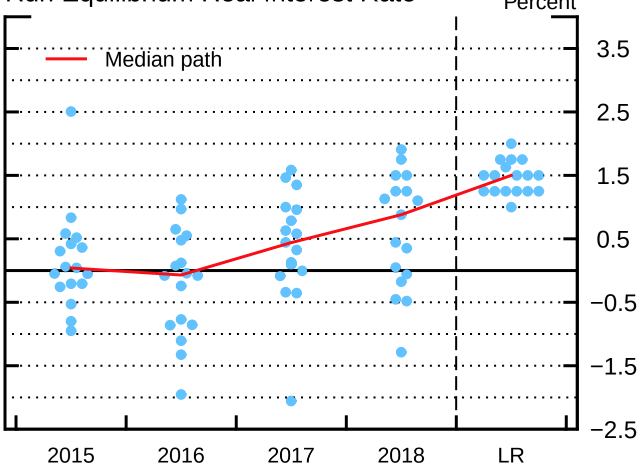
Estimates of Time−varying r* Implied by Participants' Projections

- IS equation relates the unemployment gap to the real interest gap as follows:

$$(u_t - u_t^*) = \alpha \times (u_{t-1} - u_{t-1}^*) + \beta \times (r_{t-1} - r_{t-1}^*)$$

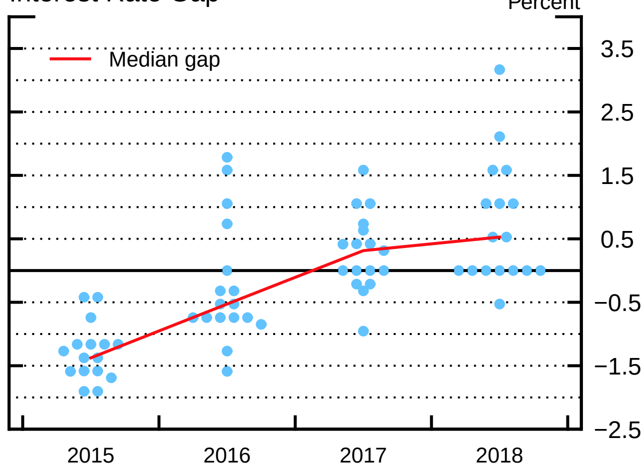
- Estimate coefficients α and β using data from the 4th quarter of each year, staff's estimate of u*, and Laubach−Williams estimates of r*
- Insert participants' estimates of the longer−run unemployment rate and projections for the unemployment rate and real federal funds rate to solve for their implied time−varying r*.

SEP Projected r*: Implicit Year−End and Longer−Run Equilibrium Real Interest Rate



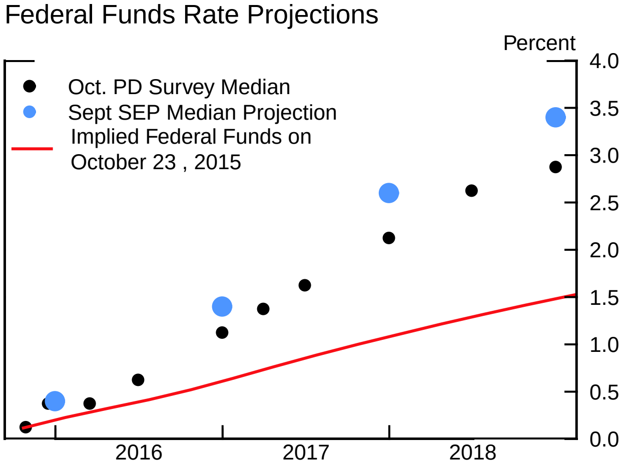
Note: 2018 values assume that participants' projections for the unemployment rate in 2019 are equal to their longer−run values, and that core PCE is equal to 2 percent by year−end 2019.
Source: September SEP.

SEP Projected r−r*: Implicit Year−End Real Interest Rate Gap



Note: 2018 values assume that participants' projections for the unemployment rate in 2019 are equal to their longer−run values, and that core PCE is equal to 2 percent by year−end 2019.
Source: September 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 sell−side results, September 2015 SEP, and staff calculations.

Possible Reasons for the Discrepancy in Expectations

- Investors hold more pessimistic outlook than economists at primary dealers
- Difference between modal and mean outcomes
- Negative term premiums: Contracts offer insurance against adverse economic outcomes

Exhibit 2: Alternatives A, B, and C

Alternative B

- Real GDP has been expanding at a moderate rate
  - Supported by "solid" gain in household and business spending
- Despite softer data, labor underutilization has diminished
- Assessment of recent and expected inflation trends largely unchanged
- Less concern about implications of developments abroad
  - But monitoring global economic and financial developments
- Update communications about the timing of the first increase in the target range for the funds rate
  - Shift focus from "how long to maintain" to "whether it will be appropriate to raise the target range" "later this year" or "at its next meeting," "based on incoming data"
  - Leaves wide latitude at the December meeting, but could lead some to see a higher likelihood of liftoff in December

Alternative A

- Would push out the most probable liftoff date and shift down the expected path
- Less sanguine reading of recent data
- Developments abroad have tilted the risks to the outlook to the downside
- Much greater concern about the outlook for inflation

Alternative C

- Would announce the beginning of policy normalization
- Confident assessment that economic conditions meet the criteria for liftoff
  - Labor market indicators will "reach" mandate−consistent levels
  - Risks to outlook "balanced"
  - Effects of declines in prices of energy and non−energy commodities "will dissipate"
  - "Reasonably confident that inflation will rise to 2 percent over the medium term"
- Timing and size of future adjustments will depend on progress toward objectives
- Option to add "balanced approach" language

SEPTEMBER 2015 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in July suggests that economic activity is expanding at a moderate pace. Household spending and business fixed investment have been increasing moderately, and the housing sector has improved further; however, net exports have been soft. The labor market continued to improve, with solid job gains and declining unemployment. On balance, labor market indicators show that underutilization of labor resources has diminished since early this year. Inflation has continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation moved lower; 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. Recent global economic and financial developments may restrain economic activity somewhat and are likely to put further downward pressure on inflation in the near term. Nonetheless, 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 but is monitoring developments abroad. 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 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 A FOR OCTOBER 2015

1. Information received since the Federal Open Market Committee met in ~~July~~ **September** suggests that economic activity ~~is~~ **has been** expanding at a moderate pace. Household spending and business fixed investment have been increasing ~~moderately~~ **at solid rates in recent months**, and the housing sector has improved further; however, net exports ~~have been soft~~ **and inventory investment have been a drag on economic growth**. ~~The labor market continued to improve, with solid job gains and declining unemployment.~~ On balance, labor market indicators show that underutilization of labor resources has diminished since early this year**, but the pace of job gains has slowed and the unemployment rate has leveled out**. **Both overall and core** inflation ~~has~~ **have** continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation ~~moved lower~~ **are [at | near] multiyear lows**; 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. Recent global economic and financial developments may restrain economic activity somewhat and are likely to put further downward pressure on inflation in the near term. Nonetheless, 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. **However, in light of economic and financial developments abroad,** the Committee ~~continues to see~~ **sees** the risks to the outlook for economic activity and the labor market as ~~nearly balanced~~ **tilted somewhat to the downside** ~~but is monitoring developments abroad~~. 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 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~~ **With inflation, core inflation, and gains in labor compensation all subdued, and with market-based measures of inflation compensation very low**, the Committee ~~today reaffirmed its view~~ **judges** 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.~~ **If incoming information does not soon indicate that inflation is beginning to move back toward 2 percent, the Committee is prepared to use all tools necessary to return inflation to 2 percent 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.

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 OCTOBER 2015

1. Information received since the Federal Open Market Committee met in ~~July~~ **September** suggests that economic activity ~~is~~ **has been** expanding at a moderate pace. Household spending and business fixed investment have been increasing ~~moderately~~ **at solid rates in recent months**, and the housing sector has improved further; however, net exports have been soft. The ~~labor market continued to improve, with solid~~ **pace of** job gains **slowed** and ~~declining~~ **the** unemployment **rate held steady**. ~~On balance~~ **Nonetheless**, labor market indicators**, on balance,** show that underutilization of labor resources has diminished since early this year. Inflation has continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. Market-based measures of inflation compensation moved **[slightly]** lower; 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. ~~Recent global economic and financial developments may restrain economic activity somewhat and are likely to put further downward pressure on inflation in the near term. Nonetheless,~~ 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 but is monitoring **global economic and financial** developments ~~abroad~~. 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 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~~ **whether it will be appropriate to raise the target range [later this year | at its next meeting]**, the Committee will**, based on incoming data,** 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 OCTOBER 2015

1. Information received since the Federal Open Market Committee met in ~~July~~ **September** suggests that economic activity ~~is~~ **has been** expanding at a moderate pace. Household spending and business fixed investment have been increasing ~~moderately~~ **at solid rates in recent months**, and the housing sector has improved further; however, net exports have been soft. ~~The labor market continued to improve, with solid job gains and declining unemployment. On balance, labor market indicators show~~ **A range of recent labor market indicators, including ongoing job gains, shows further improvement and confirms** that underutilization of labor resources has diminished **appreciably** since early this year. Inflation has continued to run below the Committee's longer-run objective, partly reflecting declines in energy prices and in prices of non-energy imports. **Although** market-based measures of inflation compensation ~~moved lower;~~ **remain near the low end of the range seen in recent years,** 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. ~~Recent global economic and financial developments may restrain economic activity somewhat and are likely to put further downward pressure on inflation in the near term. Nonetheless,~~ The Committee expects that, with appropriate **adjustments in the stance of monetary** policy ~~accommodation~~, economic activity will expand at a moderate pace~~, with~~ **and** labor market indicators ~~continuing to move toward~~ **will reach** levels the Committee judges consistent with its dual mandate. The Committee ~~continues to see~~ **sees** the risks to the outlook for **both** economic activity and the labor market as ~~nearly~~ balanced ~~but is monitoring developments abroad~~. Inflation is anticipated to remain near its recent low level in the near term**, reflecting declines in energy prices and in prices of non-energy imports,** but the **transitory effects on inflation of these declines will dissipate. With the labor market continuing to improve, and with survey measures of longer-term inflation expectations remaining stable, 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 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 improvement in labor market conditions this year, 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 rate to ¼ to ½ percent.**

4. In determining ~~how long to maintain this~~ **the timing and size of future adjustments to the** target range, the Committee will assess ~~progress—both~~ realized and expected~~—toward~~ **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 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.~~ 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**, and anticipates doing so at least during the early stages of normalizing the level of the federal funds rate**. 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.~~

SEPTEMBER 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 OCTOBER 2015 ALTERNATIVE A AND ALTERNATIVE 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 AND DESK STATEMENT FOR OCTOBER 2015 ALTERNATIVE C

The draft directive for Alternative C, which raises the target range, is included in an implementation note, shown on the next page, that would be released with the FOMC's policy statement to communicate actions the Federal Reserve was taking to implement the Committee's decision.[1] This implementation note is the same as the note that was shown in the July Tealbook for Alternative C, except that the dates have been changed from July to October. (Struck-out text indicates language deleted from the current directive; bold-red-underlined text indicates language added to the current directive.) The Desk would release, separately, a statement regarding overnight reverse repurchase agreements; a draft of the Desk statement is shown on a following page.

[1] The July Tealbook was the first to include a draft implementation note for Alternative C, and that Tealbook included some explanatory information regarding the evolution of the text of the note since it was first proposed to the Committee in June (see the memo sent to the Committee on June 10, 2015, titled "Proposal for Communicating Details Regarding the Implementation of Monetary Policy at Liftoff and After" by Deborah Leonard and Gretchen Weinbach).

Implementation Note for October 2015 Alternative C

Release Date: October 28, 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 October 28, 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 October 29, 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 October 29, 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.[1]

- 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 October 29, 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.

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

Desk Statement for October 2015 Alternative C

Release Date: October 28, 2015

Statement Regarding Overnight Reverse Repurchase Agreements

During its meeting on October 27-28, 2015, the Federal Open Market Committee (FOMC) authorized and directed the Open Market Trading Desk (the Desk) at the Federal Reserve Bank of New York, effective October 29, 2015, to undertake open market operations as necessary to maintain the federal funds rate in a target range of ¼ to ½ percent, including overnight reverse repurchase operations (ON RRPs) 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 (SOMA) that are available for such operations.

To determine the value of Treasury securities available for such operations, several factors need to be taken into account, as not all Treasury securities held outright in the SOMA will be available for use in ON RRP operations. First, some of the Treasury securities held outright in the SOMA are needed to conduct reverse repurchase agreements with foreign official and international accounts.[1] Second, some Treasury securities are needed to support the securities lending operations[2] conducted by the Desk. Additionally, buffers are needed to provide for possible changes in demand for these activities and for possible changes in the market value of the SOMA's holdings of Treasury securities.

After estimating the effects of these factors, the Desk anticipates that around $2 trillion of Treasury securities will be available for ON RRP operations to fulfill the FOMC's domestic policy directive.[3] In the highly unlikely event that the value of bids received in an ON RRP operation exceeds the amount of available collateral, the Desk will allocate awards using a single-price auction based on the "stop-out" rate at which the overall size limit is reached, with all bids below this rate awarded in full at the stop-out rate and all bids at this rate awarded on a pro rata basis at the stop-out rate.

The operations will be open to all eligible RRP counterparties, will settle same-day, and will have an overnight tenor unless a longer term is warranted to accommodate weekend, holiday, and similar trading conventions. Each day, individual counterparties are permitted to submit one proposition in a size not to exceed $30 billion and at a rate not to exceed the specified offering rate. The operations will take place from 12:45 p.m. to 1:15 p.m. (Eastern Time). Any changes to these terms will be announced with at least one business day's prior notice on the New York Fed's website.

The results of these operations will be posted on the New York Fed's website. The outstanding amount of RRPs is reported on the Federal Reserve's H.4.1 statistical release as a factor absorbing reserves in Table 1 and as a liability item in Tables 5 and 6.

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[1] The outstanding amount of RRPs with foreign official and international accounts is reported as a factor absorbing reserves in Table 1 in the Federal Reserve's H.4.1 statistical release and as a liability item in Tables 5 and 6 of that release.

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

[3] This amount will be reduced by any term RRP operations outstanding at the time of each ON RRP operation.