Appendix 1: Materials used by Ms. Logan

Material for Briefing on

Financial Developments and Open Market Operations

Lorie Logan
Exhibits by Ashley Rhodes
January 29, 2019

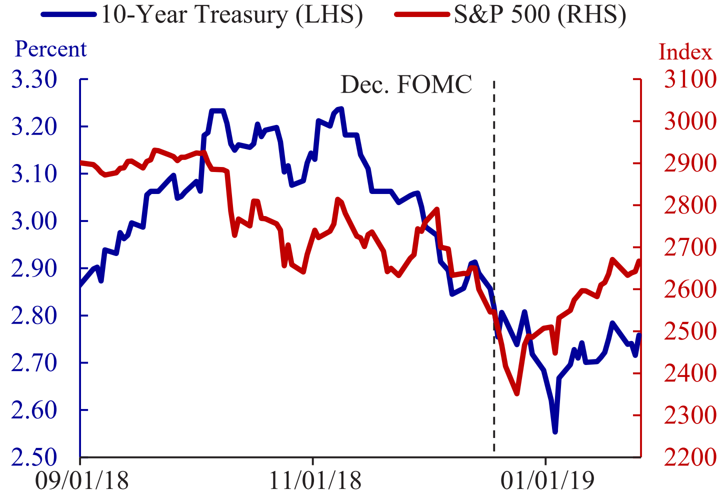
Class II FOMC – Restricted (FR) Exhibit 1

(1) Asset Price Changes*

	Since Sep. FOMC	Since Dec. FOMC	Current Level
S&P 500 Index	-8.6%	+4.7%	2665
HY Credit Spreads	+112 bps	-35 bps	429 bps
2-year Nominal Treasury	-23 bps	-4 bps	2.61%
10-year Nominal Treasury	-34 bps	-6 bps	2.76%
Fed 5Y5Y Breakeven	-35 bps	-5 bps	1.80%
Brent Crude Oil	-24.7%	+9.6%	$61.64
VIX Index	+5 ppts	-8 ppts	17 ppts
Bloomberg Dollar Index	+0.5%	-2.0%	1183

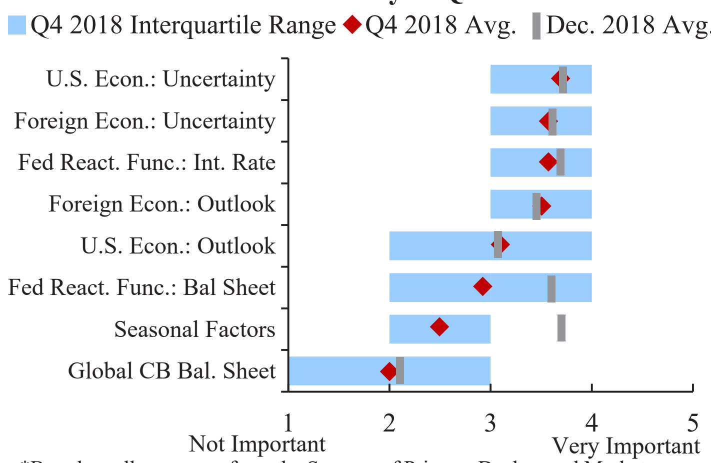
*Red indicates tightening in financial conditions, blue indicates loosening.
Source: Barclays, Bloomberg, Federal Reserve Board

(2) 10-Year Treasury Yield and S&P 500 Index



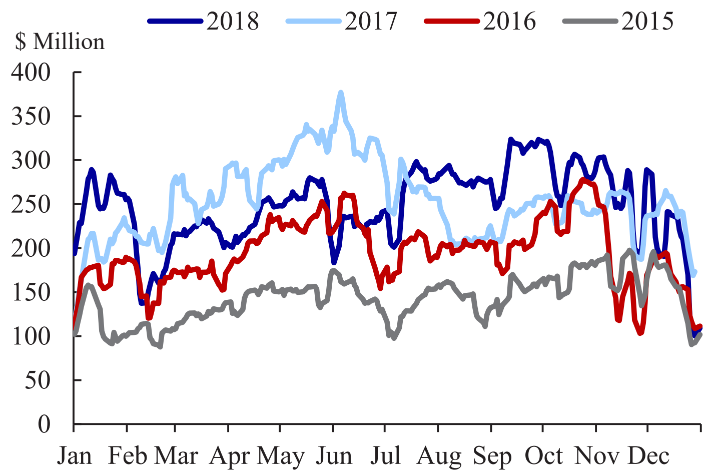
Source: Bloomberg

(3) Importance of Selected Factors in Driving Increased Volatility in Q4 2018*



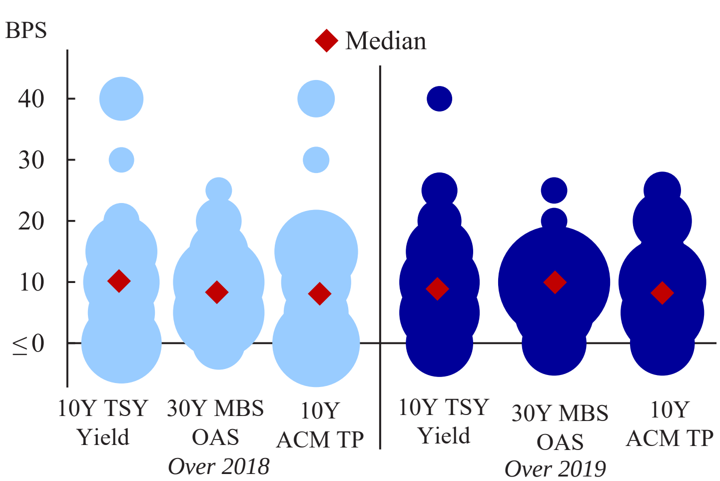
*Based on all responses from the Surveys of Primary Dealers and Market Participants.
Source: FRBNY

(4) 10-Year Cash Treasury Market Depth by Year*



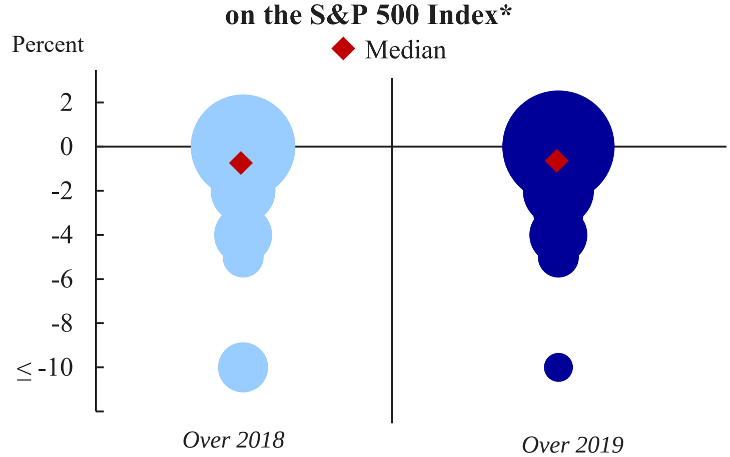
*5-day rolling average of 5-level depth. Market depth measures U.S. dollar value of securities available for sale or purchase at the five best bid and offer prices.
Source: BrokerTec, Desk Calculations

(5) Impact of Implementation of Reinvestment Policy*



*Based on all responses from the Surveys of Primary Dealers and Market Participants. Bubbles scaled by share of respondents.
Source: FRBNY

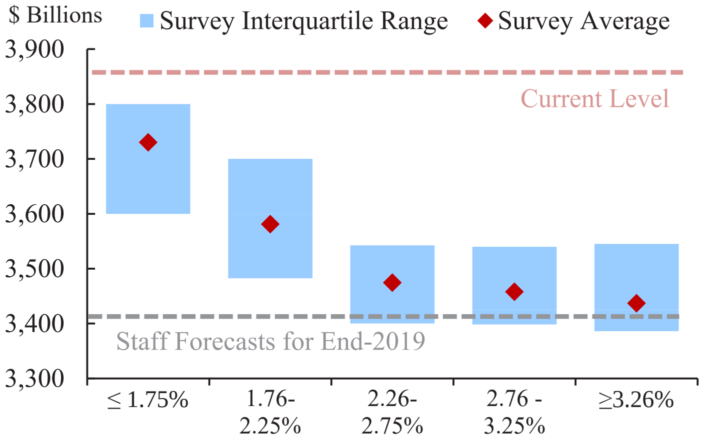
(6) Impact of Implementation of Reinvestment Policy on the S&P 500 Index*



*Based on all responses from the Survey of Primary Dealers and Market Participants. Bubbles scaled by share of respondents.
Source: FRBNY

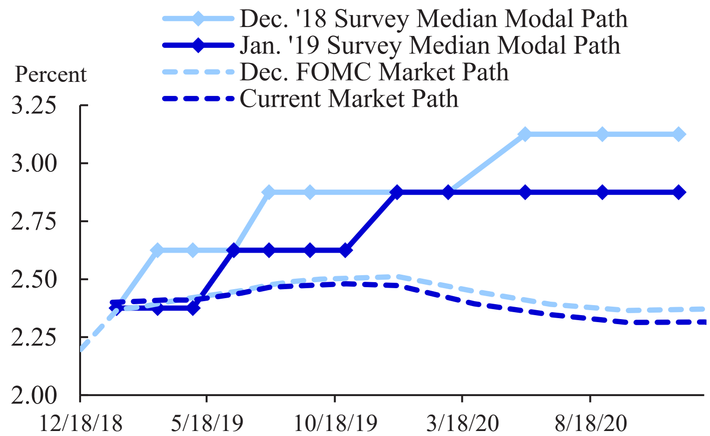
Class II FOMC – Restricted (FR) Exhibit 2

(7) SOMA Portfolio at Year-End 2019, Conditional on Different Levels of the Target Fed Funds Range*



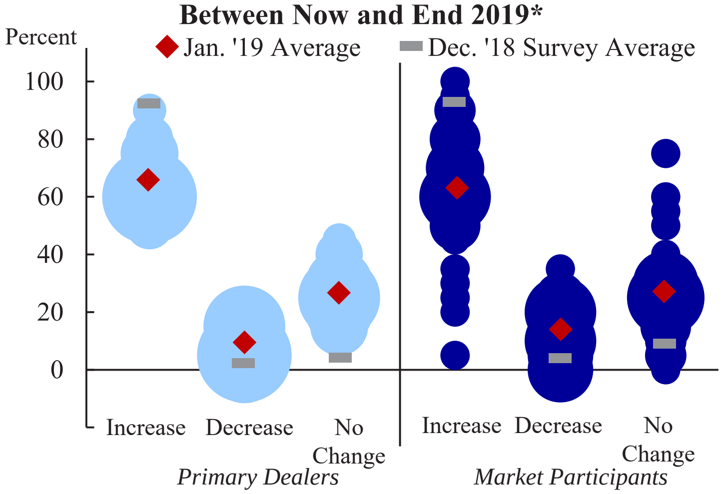
*Based on all responses from the Surveys of Primary Dealers and Market Participants.
Source: FRBNY

(8) Survey- and Market-Implied Path of the Policy Rate*



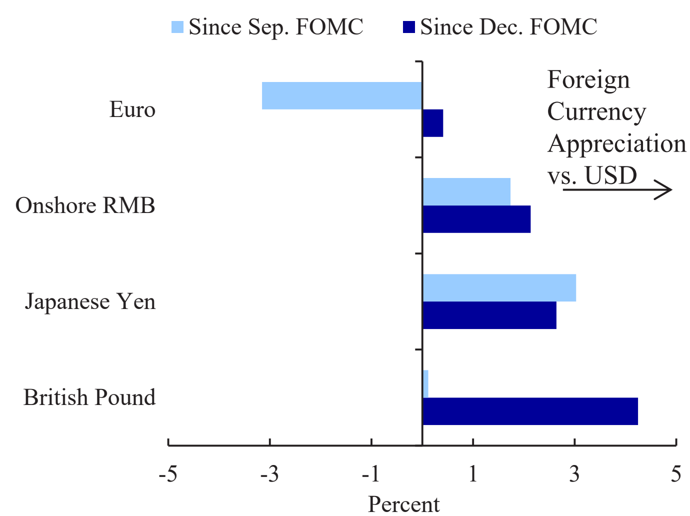
*Based on all responses to the Surveys of Primary Dealers and Market Participants.
Source: FRBNY

(9) Expected Probability of Next Policy Action Between Now and End 2019*



*Based on all responses from the Surveys of Primary Dealers and Market Participants. Bubbles scaled by share of respondents.
Source: FRBNY

(10) Currency Performance Against U.S. Dollar



Source: Bloomberg

(11) Expectations for FOMC Statement and Press Conference

Statement

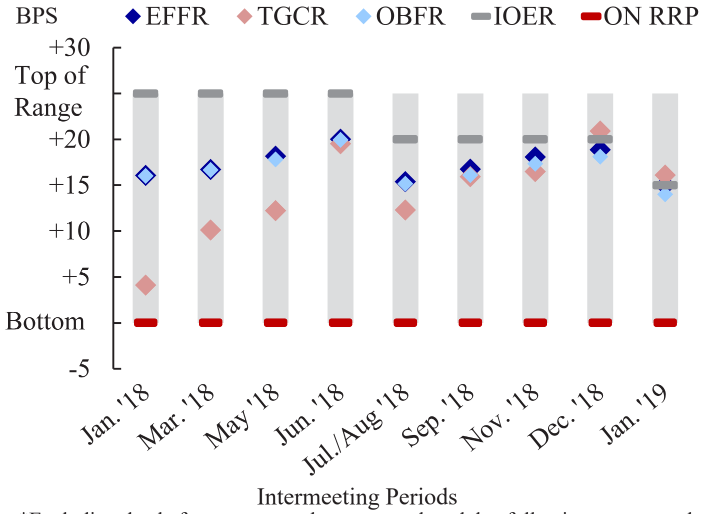
- Forward guidance
  - Many expect "some further gradual increases" to remain; some expect it to be removed
  - Many expect emphasis on patience and/or data dependence
- Balance of risks
  - Many expect no change, or for "roughly balanced" to remain; some expect acknowledgement of downside risks

Press Conference

- Stress patience and/or data dependence
- Reiterate the flexibility of monetary policy
- Adopt similar tone as recent communications

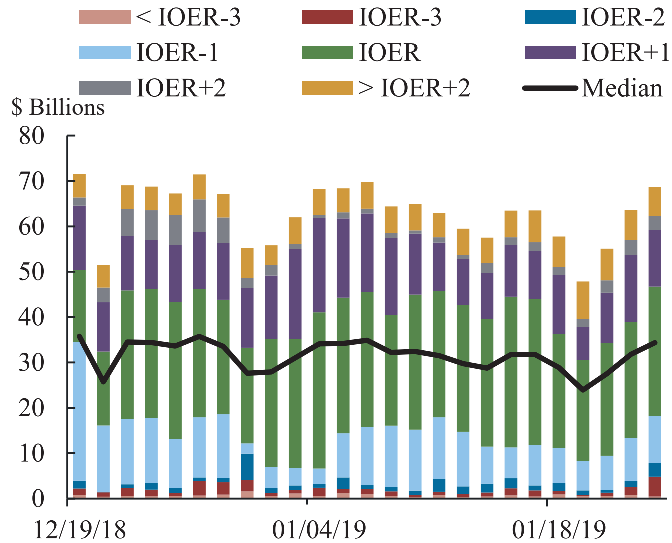
Class II FOMC – Restricted (FR) Exhibit 3

(12) Rates within the Fed Funds Target Range*



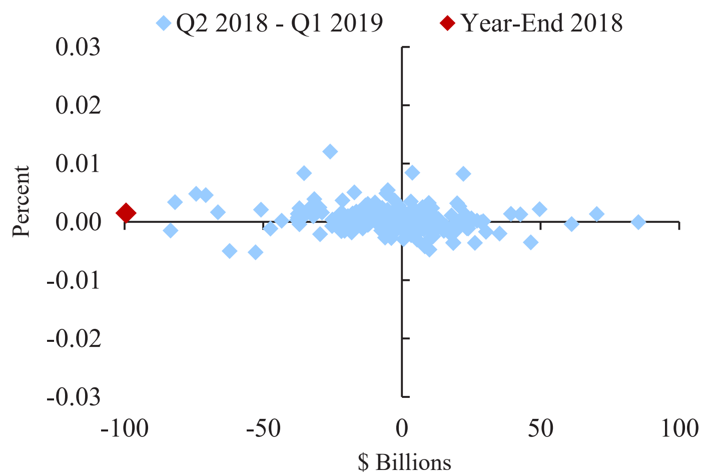
*Excluding day before quarter-end, quarter-end, and day following quarter-end.
Source: Bloomberg, Board of Governors, FRBNY

(13) Distribution of Fed Funds Volumes by Rate



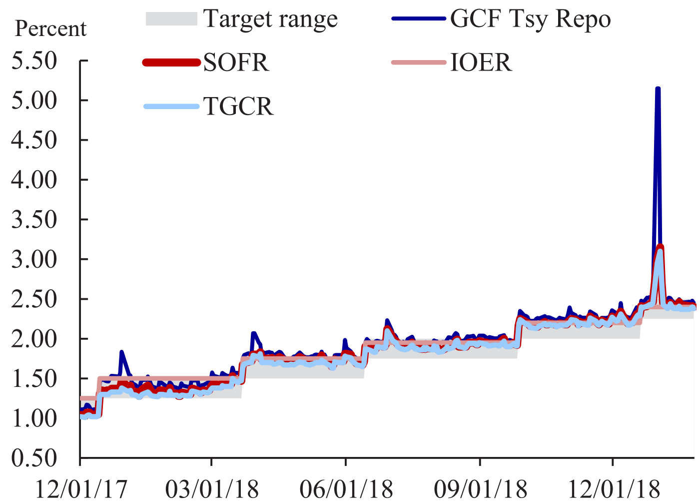
Source: Federal Reserve Board, FRBNY

(14) Daily Change in Reserve Balances versus Daily Change in Fed Funds - IOER Spread*



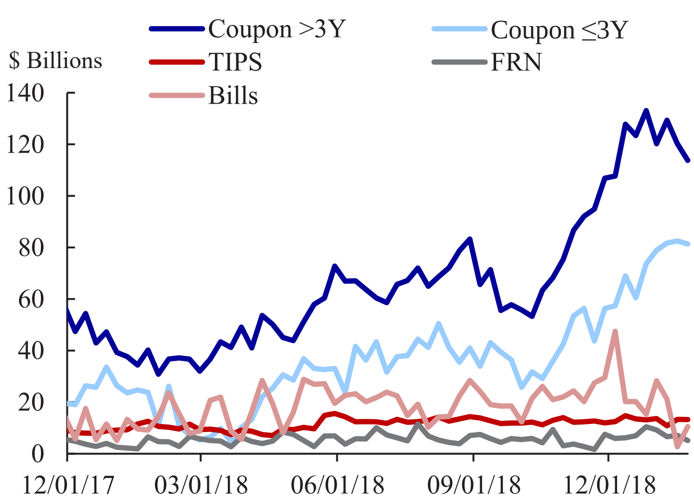
*Fed funds is volume-weighted average.
Source: FRBNY

(15) Overnight Treasury Repo Rates



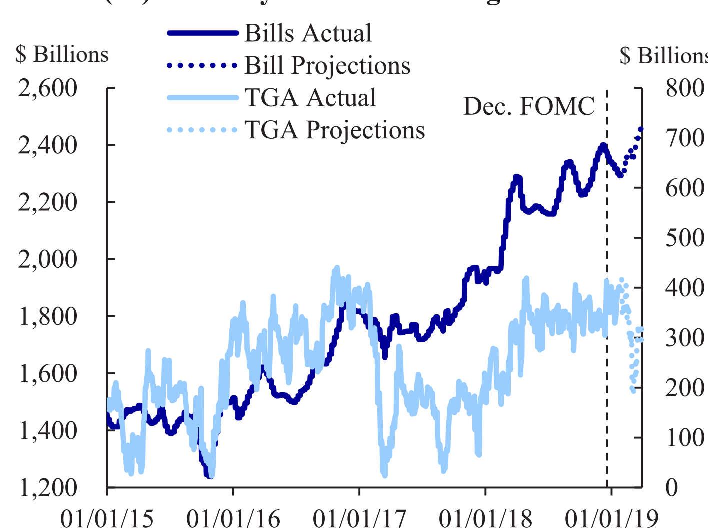
Source: FRBNY

(16) Primary Dealer Net Positioning in Treasury Securities



Source: FRBNY

(17) Treasury Bills Outstanding and TGA



Source: Desk Calculations, U.S. Treasury

Appendix 1

(1) Summary of Operational Testing

Summary of Operational Tests in prior period:

- Domestic Authorization
    - December 20 to January 23: Outright MBS TBA purchases for a total of $327 million

Upcoming Operational Tests:

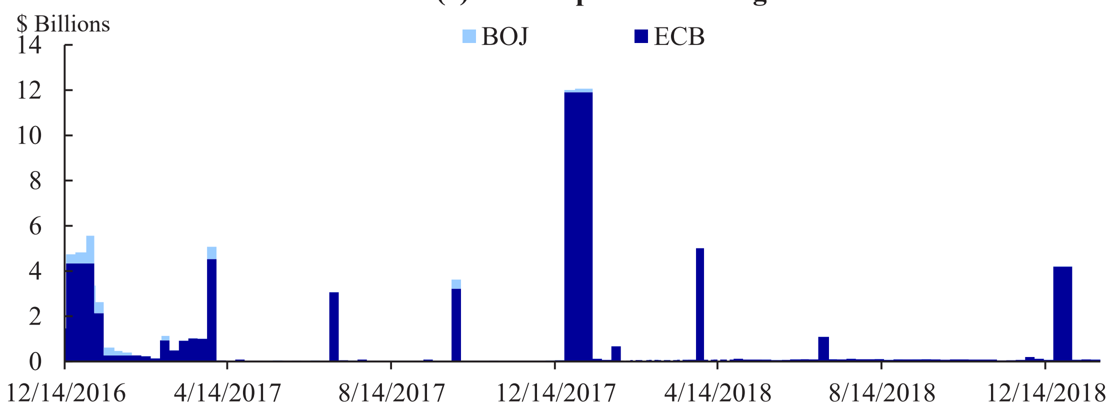
- Two tests scheduled under the Domestic Authorization
    - March 7: Securities lending (using the backup tool) for up to $115 million
    - TBD: Outright MBS TBA purchases*
- Two tests scheduled under the Foreign Authorization
    - February 5: Euro-denominated repo with private counterparties for €1 million
    - February 14: Euro liquidity swap for €51,000

*For monthly Agency MBS reinvestment periods where principal receipts are below the cap, the Desk will conduct up to $300 million of small value outright purchases, though due to our operational planning timeline the first calendar of purchases for the next intermeeting period will be published on January 29th. Monthly reinvestment periods run from the 10th business day of the current month to the 9th business day of the following month.

(2) MBS Purchase Summary Since Cap Implementation Through 01/25/2019 ($ Millions)

Period	Cumulative Actual Paydowns	Cumulative Reinvestment Purchases	Cumulative Net Deviations
Oct. 2017 - Sep. 2018	272,235	152,295	60

(3) FX Swaps Outstanding



Source: FRBNY

(4) FX Intervention

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

Appendix 2: Materials used by Messrs. Potter and Reeve

Material for Briefing on

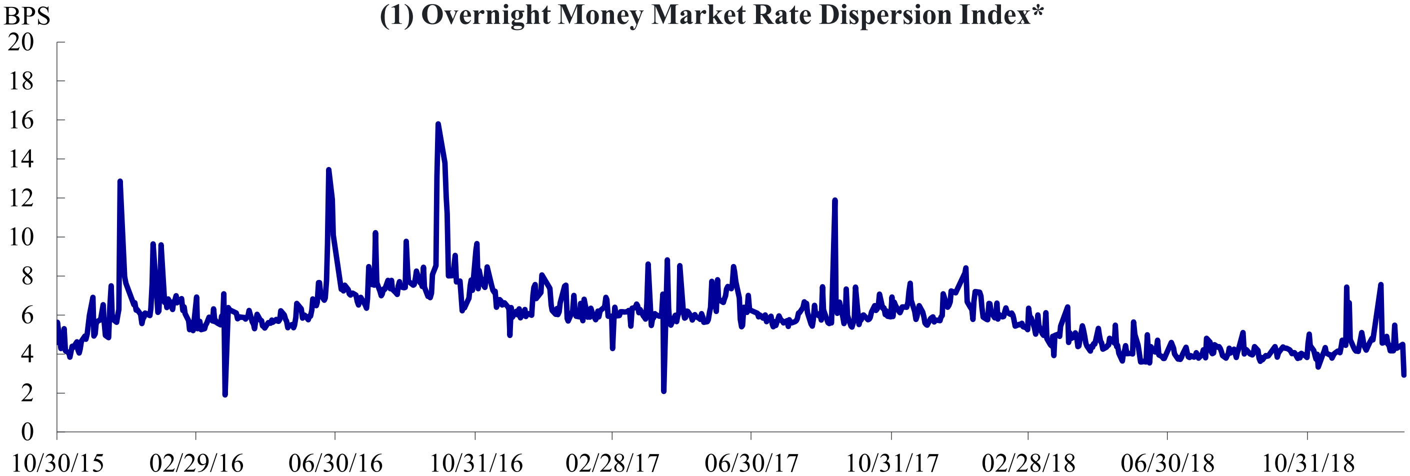
Long-Run Framework for Policy Implementation and Transition Plan

Simon Potter and Trevor Reeve
Exhibits by Marcus Petersen, Ashley Rhodes, and Margaret Sabelhaus
January 29, 2019

Class I FOMC - Restricted Controlled (FR)

Exhibit 1

(1) Overnight Money Market Rate Dispersion Index*



*Excluding day before, the day of, and day following quarter-end. The index is calculated as the volume-weighted average absolute deviation from the volume-weighted average rate on overnight federal funds, Eurodollar and repo transactions, and captures how much each market rate deviates from the average rate across markets. Lower values of the index indicate more effective control.
Source: Desk Calculations, FRBNY

(2) Federal Reserve Assets and Liabilities ($ Billions)

	Assets				Liabilities					
	Treasuries	MBS and Agency Debt	Other Assets	Total Assets	Fed Reserve Notes	Reserve Balances	TGA	RRPs*	Other Liab. and Capital	Total Liabilities
10/15/2014	2,455	1,753	266	4,474	1,252	2,821	101	221	79	4,474
9/27/2017	2,465	1,775	215	4,456	1,533	2,179	155	455	133	4,456
1/23/2019	2,220	1,631	196	4,047	1,657	1,612	402	254	122	4,047
Realized Change Since 10/15/14	**-235**	**-122**	**-70**	**-427**	**405**	**-1,209**	**301**	**32**	**44**	**-427**
Realized Change Since 9/27/17	**-245**	**-144**	**-20**	**-409**	**124**	**-567**	**247**	**-201**	**-11**	**-409**
Change Since 09/2017 under Constant Asset Scenario	-	-	-	-	124	-159	247	-201	-11	0

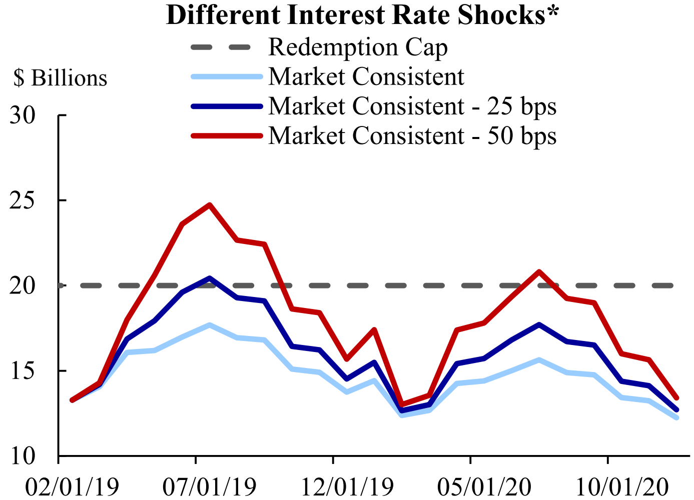
*Includes the Overnight RRP as well as the Foreign Repo Pool.
Source: Desk Calculations, FRBNY

(3) Projected Reserve Levels

Stopping Date	Average Reserve Level in Month Before Redemptions End	Month in Which Average Reserves Reach $1 Trillion
6/30/2019	$1.3 Trillion	12/2021
9/30/2019	$1.2 Trillion	3/2021
12/31/2019	$1.1 Trillion	6/2020

Source: Board Staff Projections

(4) MBS Paydown Projections at Different Interest Rate Shocks*



*Path is based on market consistent rates.
Source: Desk Calculations, FRBNY

Communications Regarding Monetary Policy Implementation and the Transition to the Longer Run

Previous Communications on Normalization

- September 2014 Policy Normalization Principles and Plans
- March 2015 Addendum
- June 2017 Addendum

"Statement Regarding Monetary Policy Implementation"

- Announces intention to continue to implement policy with the current framework.
- Reaffirms and modifies some important principles.
    - Interest rate policy is the active tool.
    - Prepared to adjust details of balance sheet normalization in light of economic and financial developments.
    - Prepared to use full range of tools, including the balance sheet, if justified by circumstances.
- Substance of Statement unlikely to be surprising.

Draft "Revised Policy Normalization Principles and Plans"

- Explain transition to the longer-run size of the balance sheet and quantity of reserves.
- Announce date for when balance sheet will stop shrinking.
- Issues to settle before issuing guidance about the transition:
    - Date for stopping balance sheet reduction.
    - Inclusion of cap on MBS paydowns.
- Key policy issues remaining:
    - Longer-run level of reserves consistent with efficient and effective implementation.
    - Longer-run composition of asset holdings.
- Continuity with previous communications:
    - Intention to hold primarily Treasury securities in the longer run.
    - Hold no more securities than necessary for efficient and effective policy implementation.
    - Limited sales of agency MBS might be warranted in the longer run.

Statement Regarding Monetary Policy Implementation

After extensive deliberations and thorough review of experience to date, the Committee judges that it is appropriate at this time to provide additional information regarding its plans to implement monetary policy over the longer run. Additionally, the Committee is revising its earlier guidance regarding the conditions under which it could adjust the details of its balance sheet normalization program. Accordingly, [all] participants agreed to the following:

- The Committee intends to continue to implement monetary policy in a regime in which the quantity of reserves is sufficient to ensure that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the setting of the Federal Reserve's administered rates, and in which active management of the supply of reserves is not required.

- The Committee continues to view changes in the target range for the federal funds rate as its primary means of adjusting the stance of monetary policy. However, the Committee is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments. Moreover, the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate.

DRAFT: Revised Policy Normalization Principles and Plans

In light of its discussions at previous meetings and the ongoing progress in normalizing the size of the Federal Reserve's securities holdings, the Committee judges that it is appropriate at this time to provide additional information regarding its plans for the size of its securities holdings and the transition to the longer-run operating regime. At its January meeting, the Committee noted that it intends to continue to implement monetary policy in a regime in which the quantity of reserves is sufficient to ensure that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the setting of the Federal Reserve's administered rates and in which active management of the supply of reserves is not required. The January statement on monetary policy implementation and the balance sheet normalization plans and principles listed below together revise and replace the Committee's earlier Policy Normalization Principles and Plans.

- The appropriate longer-run level of reserves consistent with efficient and effective policy implementation in this framework is below current levels. To ensure a smooth transition to this longer-run reserve level, the Committee intends to slow the pace of reserve decline over coming quarters. Provided that the economy and money market conditions evolve as expected, the Committee will conclude the reduction of its aggregate securities holdings in the System Open Market Account (SOMA) at the end of [June | September | December] 2019. The average level of reserves at this point will likely still be somewhat above the level of reserves necessary to efficiently and effectively implement monetary policy.

    - Thereafter, the Committee currently anticipates that it will likely hold the size of the SOMA portfolio roughly constant for a time. During such a period, persistent gradual increases in currency and other non-reserve liabilities would be accompanied by corresponding gradual declines in reserve balances to a level consistent with efficient and effective implementation of monetary policy.

    - When the Committee judges that reserve balances have declined to this level, the SOMA portfolio will hold no more securities than necessary for efficient and effective policy implementation. Once that point is reached, the Committee will begin very gradually increasing its securities holdings to keep pace with trend growth of the Federal Reserve's non-reserve liabilities in order maintain the appropriate level of reserves in the system.

- The Committee will continue to allow its holdings of agency mortgage-backed securities to decline, consistent with the aim of holding primarily Treasury securities in the longer run. Beginning in [July 2019 | October 2019 | January 2020], principal payments received from agency mortgage-backed securities will be reinvested in Treasury securities [, subject to a maximum amount of $20 billion per month; any proceeds in excess of that maximum will continue to be reinvested in agency mortgage-backed securities]. It continues to be the Committee's view that limited sales of agency mortgage-backed securities might be warranted in the longer run to reduce or eliminate residual holdings. The timing and pace of any sales would be communicated to the public well in advance.

Questions for Discussion

1. Would you support an FOMC statement at the conclusion of the January meeting indicating that it has reached a decision that it will continue to implement monetary policy over the longer-run in the current framework?

2. In connection with the decision regarding the operating framework, what are your views regarding the proposed transition plan for slowing the pace of reserve decline by specifying a date for the end of balance sheet reduction? If you support specifying a date, which date would you prefer?

3. As part of that transition plan, would you like to retain the redemption cap for agency MBS after the conclusion of the reduction in the SOMA portfolio? (Retention of the cap would imply that any residual portion of principal payments from agency MBS above the $20 billion cap in any given month would be reinvested in agency MBS.)

Appendix 3: Materials used by Mr. Wascher

Class II FOMC - Restricted (FR)

Material for Briefing on

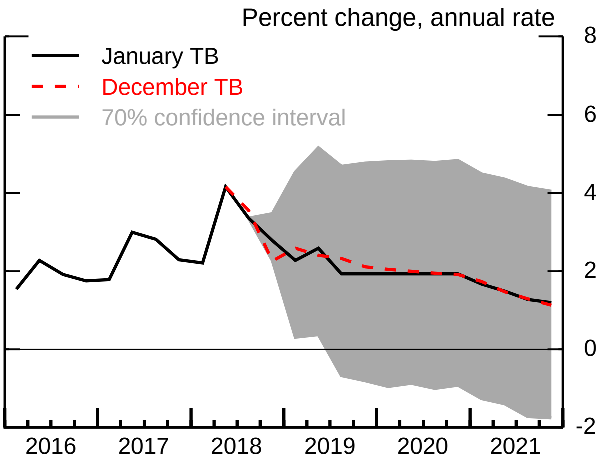
The U.S. Outlook

William Wascher
Exhibits by Bo Yeon Jang and Rosemary Rhodes
January 29, 2019

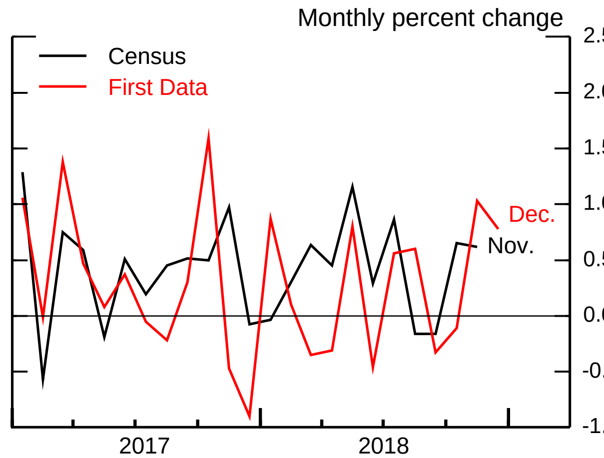
Forecast Summary

Confidence Intervals for Panels 1, 6, 9, and 10 Based on FRB/US Stochastic Simulations

1. Real GDP

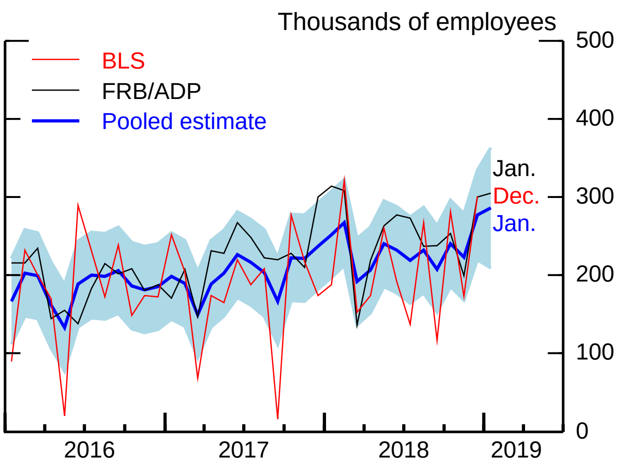


2. Estimates of Nominal Retail Spending



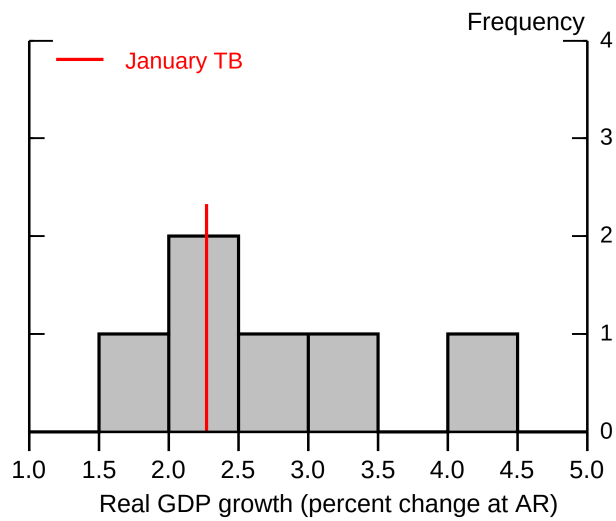
Note: Data cover the retail sales group (retail trade and food services establishments excluding motor vehicle dealers, building material and supply stores, and gasoline stations).

3. Estimates of Private Nonfarm Payroll Gains



Note: Shaded region denotes 90% confidence interval for pooled estimate. Jan. FRB/ADP value includes data through 1/19; Jan. pooled estimate treats Jan. BLS observation as missing.

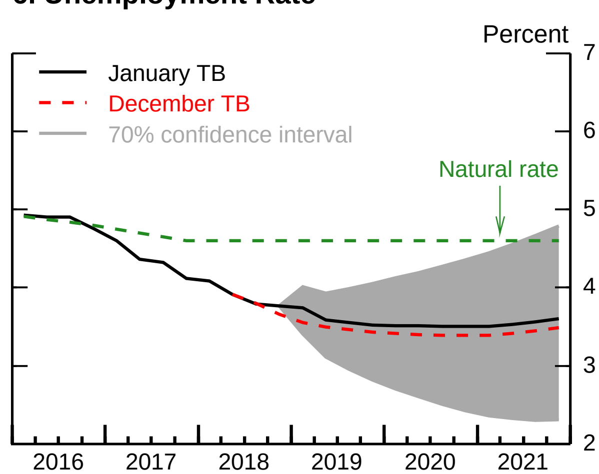
4. Nowcasts of 2019:Q1 Real GDP Growth



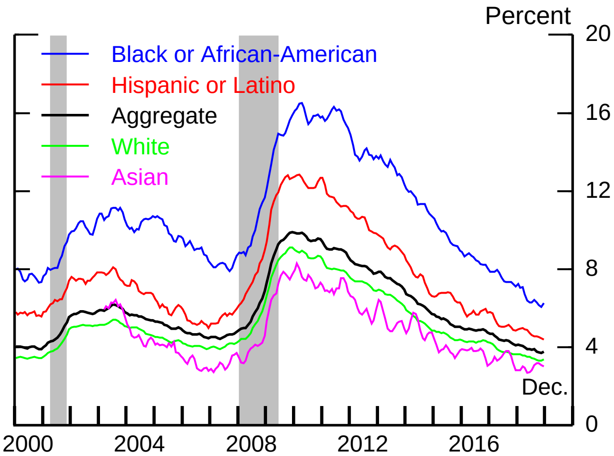
5. Economic Effects of Partial Government Shutdown

- Shutdown ended (temporarily) on January 25 (5 weeks total, 1 week less than we assumed).
- Lowers 2018:Q4 real GDP growth by 0.05 pp, lowers 2019:Q1 growth by 0.25 pp, and boosts 2019:Q2 growth by 0.30 pp.
- No effect on government payroll employment; January unemployment rate temporarily raised by 0.1 to 0.2 pp.

6. Unemployment Rate

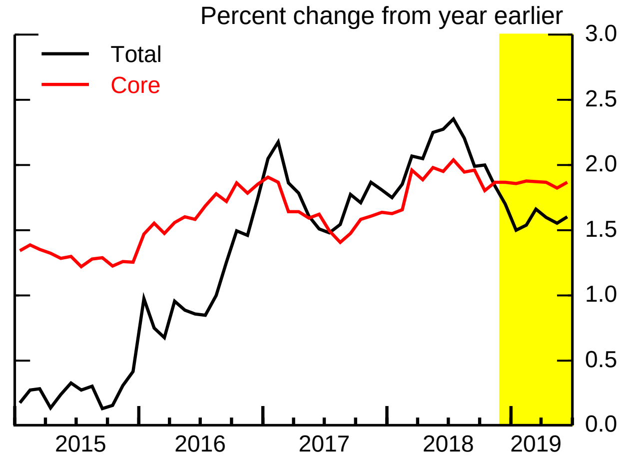


7. Unemployment Rates by Race or Ethnicity



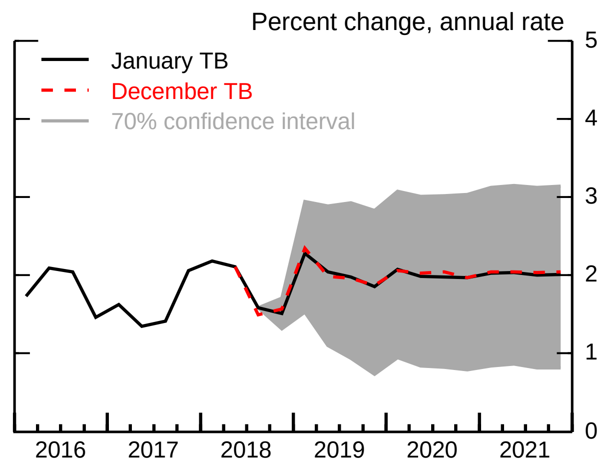
Note: Three-month moving averages. Shaded bars indicate a period of business recession as defined by the NBER.

8. Monthly PCE Price Inflation

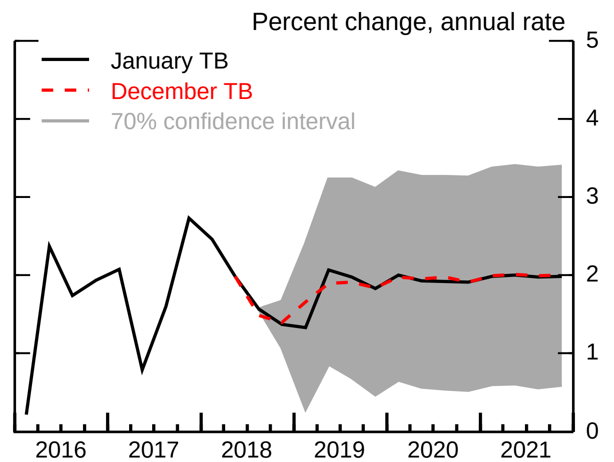


Note: Shaded yellow region indicates forecast period.

9. PCE Prices Excluding Food and Energy



10. Total PCE Prices



11. Revisions to Real GDP since the September TB

Cumulative effect on level of real GDP in 2021 (percent)

1. Total	**-0.35**
2. Household wealth	-0.55
3. Interest rates	0.30
4. Dollar	0.05
5. Other	-0.15

Appendix 4: Materials used by Mr. Kamin

Class II FOMC - Restricted (FR)

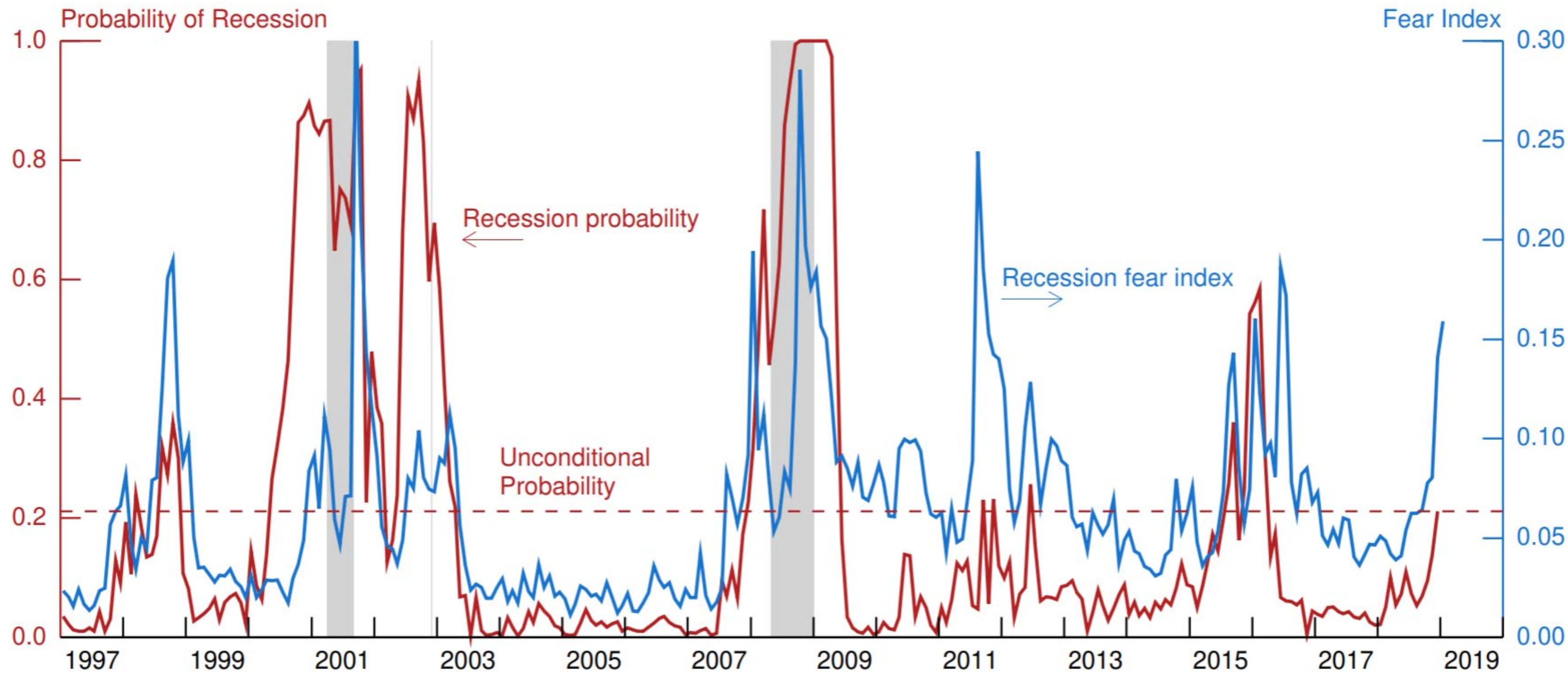
Material for Briefing on

The International Outlook

Steve Kamin
Exhibits by Mandy Bowers
January 29, 2019

Foreign recession fears pick up

- Recession fear index has risen, although not quite to levels in 2011 and 2015-2016.
- Estimated probability of foreign recession is lower, near its unconditional level.

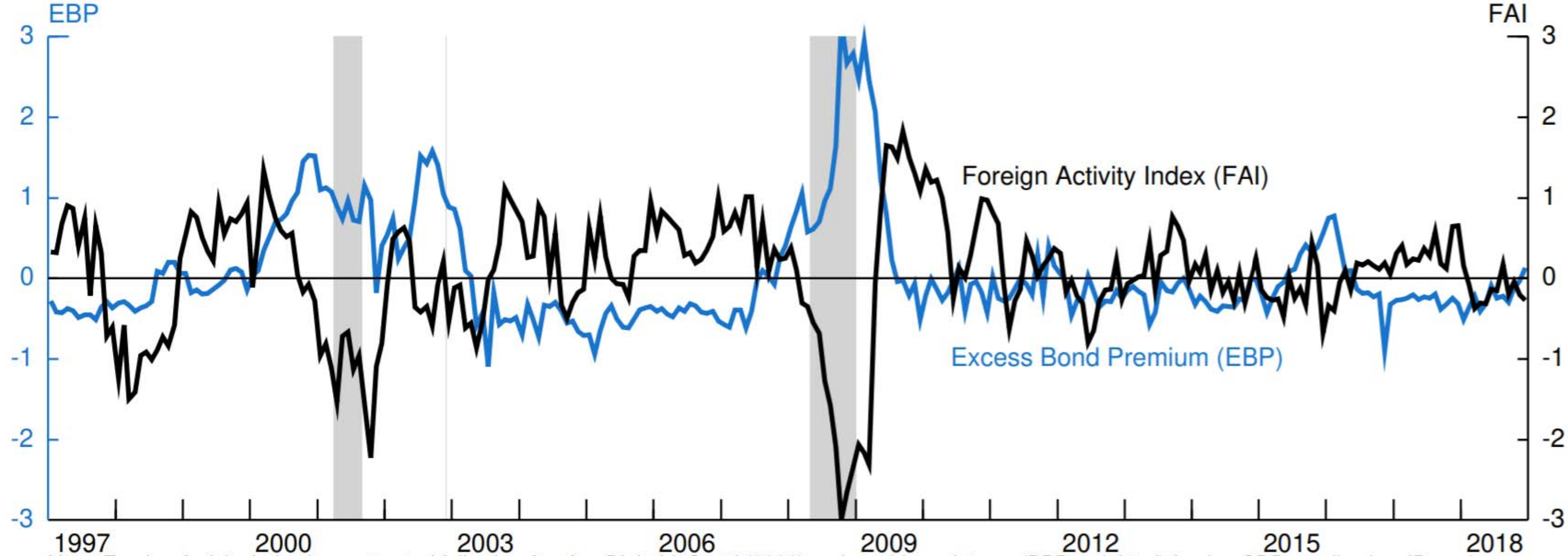


Note: Recession fear index represents the share of newspaper articles discussing concerns about foreign recessions, downturns, slowdowns, or slumps. The probability of recession is estimated using a probit model that combines indicators of macroeconomic and financial conditions. Shading indicates that countries representing 55% of foreign GDP are classified as in recession. Source: Staff calculations.

Components of estimated probability of recession abroad are near trend levels

- Foreign Activity Index: Aggregation of movements in macro variables.
- Excess Bond Premium: Measure of investor sentiment and risk appetite in the U.S. corporate bond market.

Macroeconomic and Financial Conditions

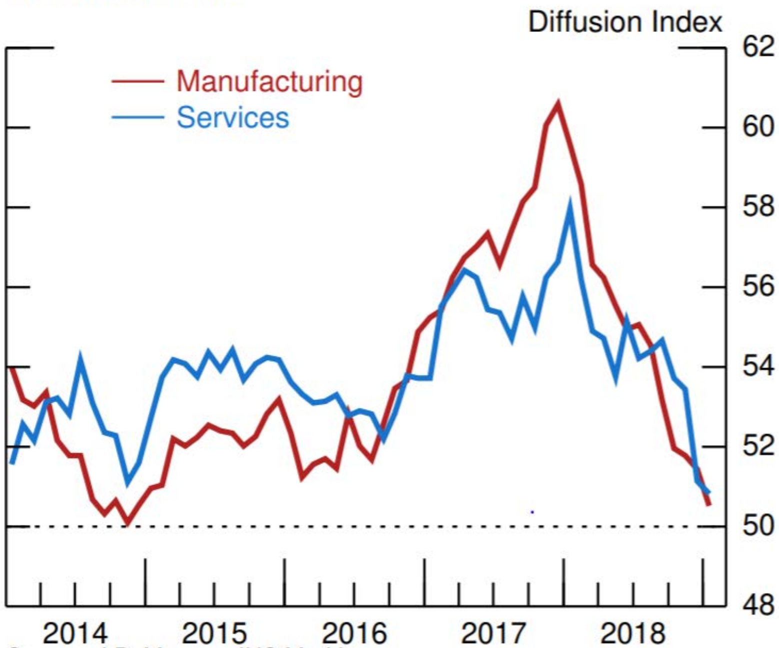


Note: Foreign Activity Index is constructed following Aruoba, Diebold, Scotti (2009) and combines data on (PPP-weighted) foreign GDP, retail sales, IP, and new export orders. The excess bond premium (EBP) is an indicator introduced by Gilchrist and Zakrajsek (2012) that captures the yield demanded by investors above and beyond expected default. Shading indicates that countries representing 55% of foreign GDP are classified as in recession.

Baseline foreign outlook remains sanguine but hardly upbeat

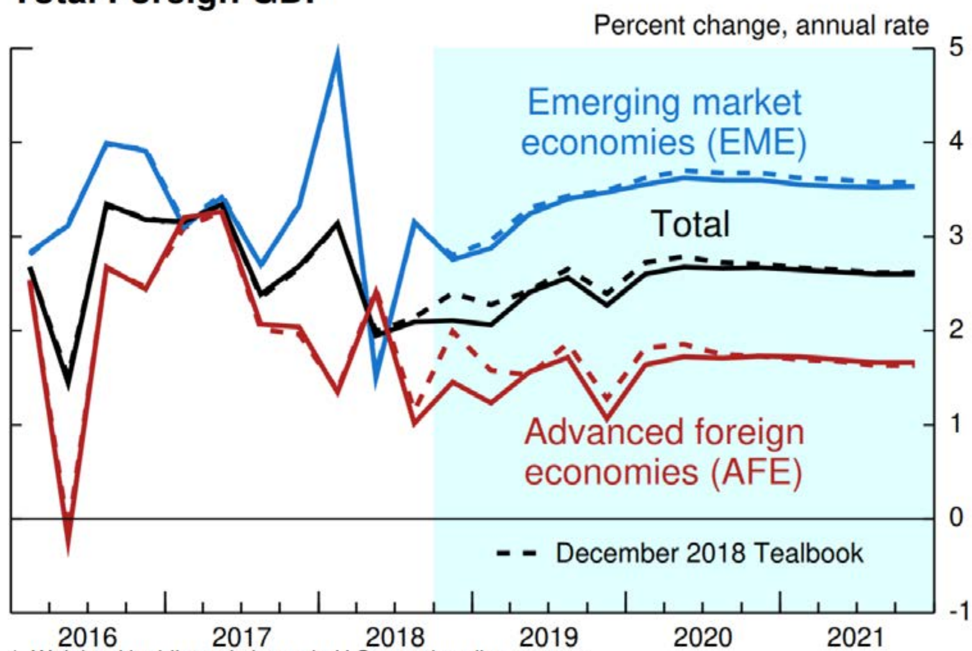
- Though disappointing economic news has caused another downward revision in our forecast.

Euro Area PMI



Source: J.P. Morgan, IHS Markit.

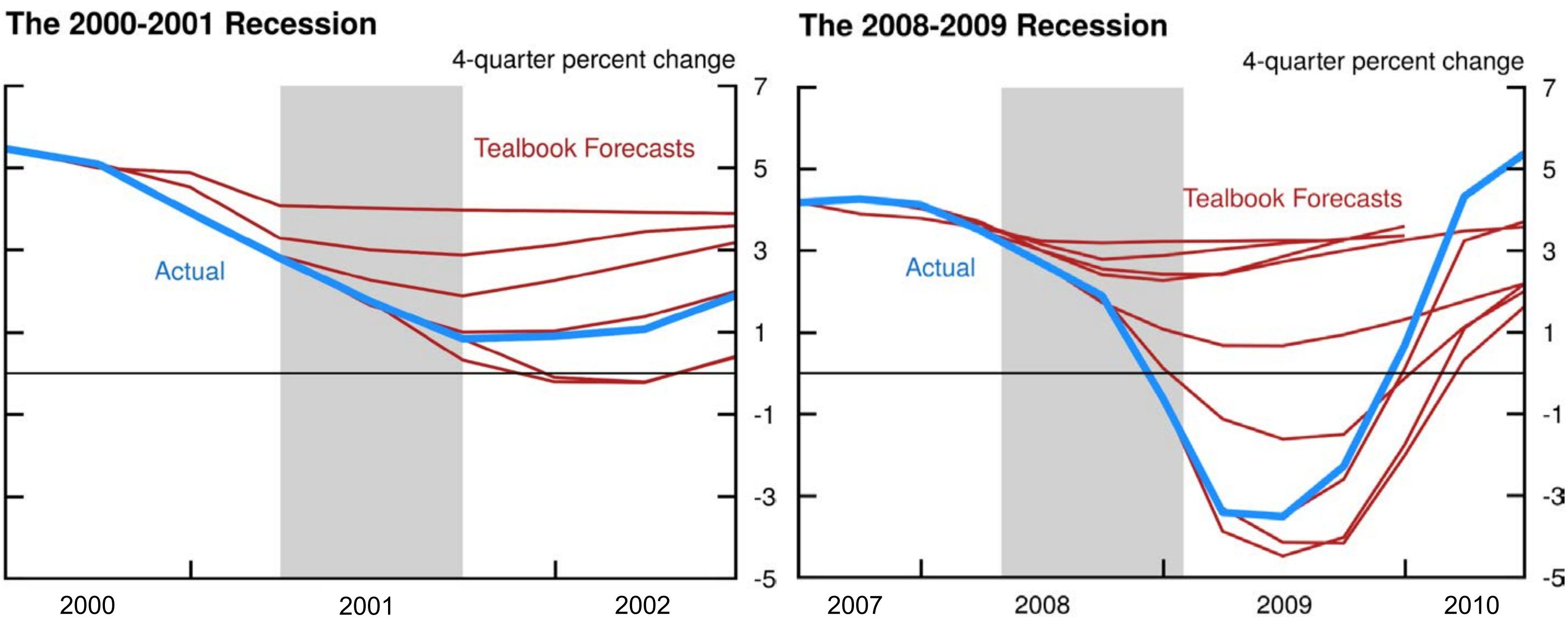
Total Foreign GDP*



* Weighted by bilateral shares in U.S. merchandise exports.

We are not very good at predicting recessions

Tealbook Forecasting of Foreign GDP Growth



Source: Staff calculations.

Source: Staff calculations.

The Long and Winding Road to Brexit

Jan. 15: Parliament Rejects Prime Minister May's Agreement with the EU

General Election

Extend Deadline, Eventual Agreement

Second Referendum

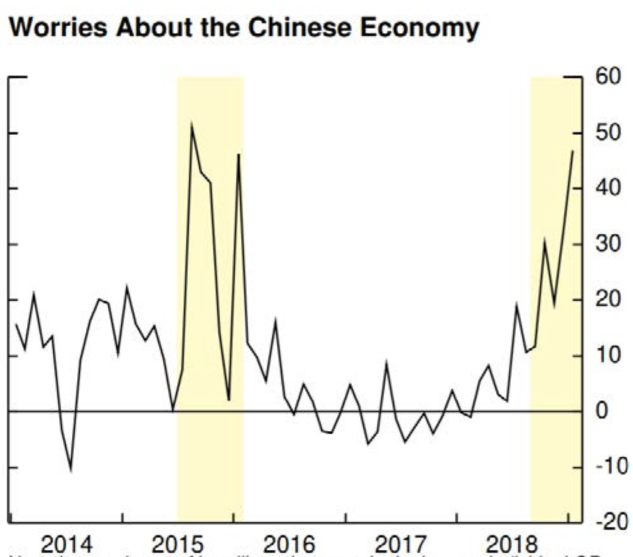
March 29: Exit

With deal

No deal

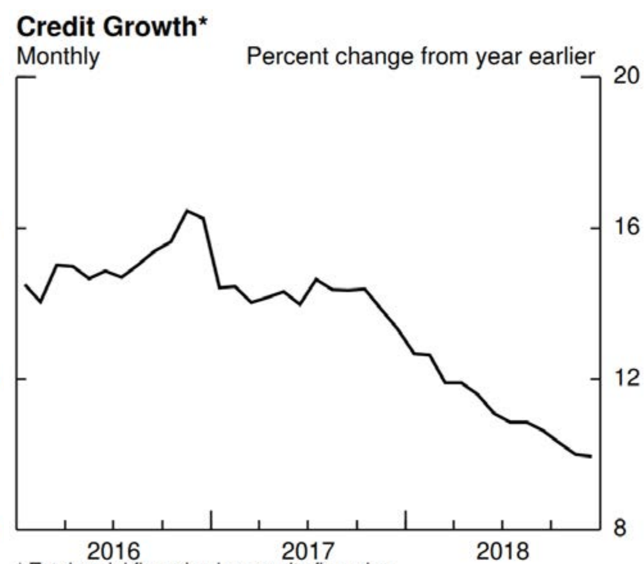
China: no hard landing...probably

- Surge in worries triggered by slowing growth.
- We don’t expect further deterioration, as the government is easing up on deleveraging campaign.



Negative sentiment of headlines that contain the keywords ('china' OR 'chinese') AND the keywords ('growth' OR 'economy' OR 'economic').
Data Source: Ravenpack (headlines), staff computation.

Source: Staff estimates.

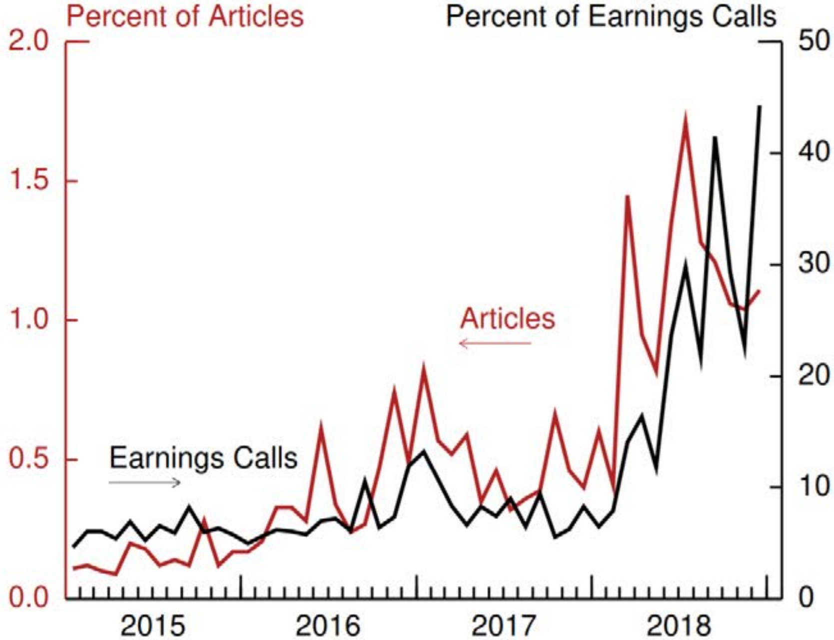


* Total social financing less equity financing

Trade Policy: How Great a Risk?

- Trade policy is popularly described as one of the key uncertainties facing the U.S. and global economy.
- However, it is challenging to square this with the quantitative analysis.

Mentions of Trade Policy Uncertainty (TPU)



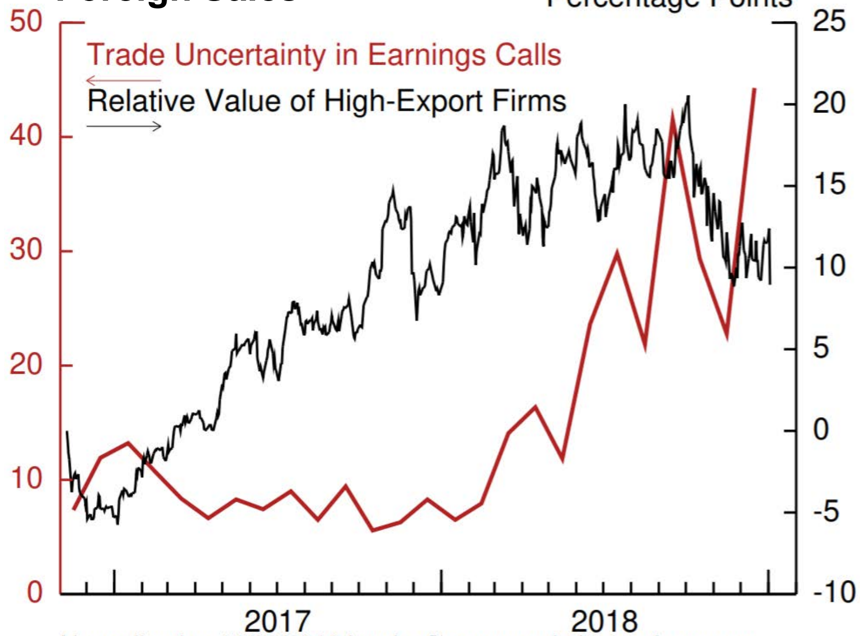
Note: Share of articles/calls in major daily U.S., U.K., and Canadian newspapers/company earnings calls that mention uncertainty and an additional trade-policy-related word. Source: Staff calculations.

	General Equilibrium Effect on U.S. Real GDP Level (bps)		
	FRB	**BOC**	**IMF**
Implemented*	-24	-20	-20
Proposed**	-62	-64	-55
Confidence and Financial Effects	-25	NA	-25
Total	-111	-84	-100

*Implemented includes all tariff increases during 2018.
**Proposed includes further tariffs on imports from China and auto tariffs.
BOC is the Bank of Canada.

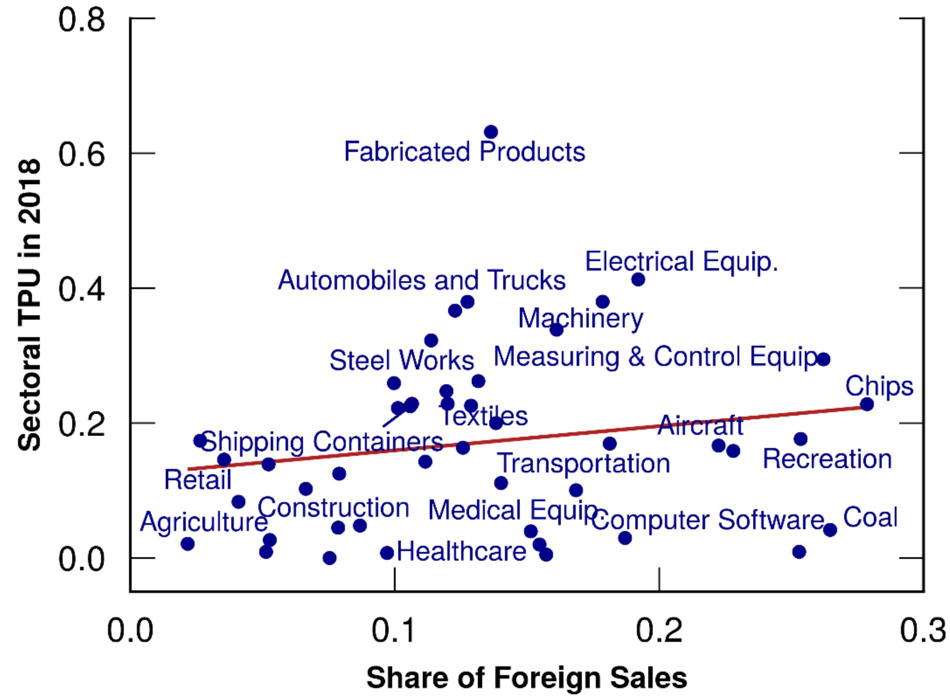
Concerns appear only loosely related to trade exposure

Relative Equity Values: High minus Low Foreign Sales



Normalized to 11/08/2016 levels. Captures relative performance between two portfolios (positive indicates outperformance of high foreign sales portfolio). Source: Staff calculations.

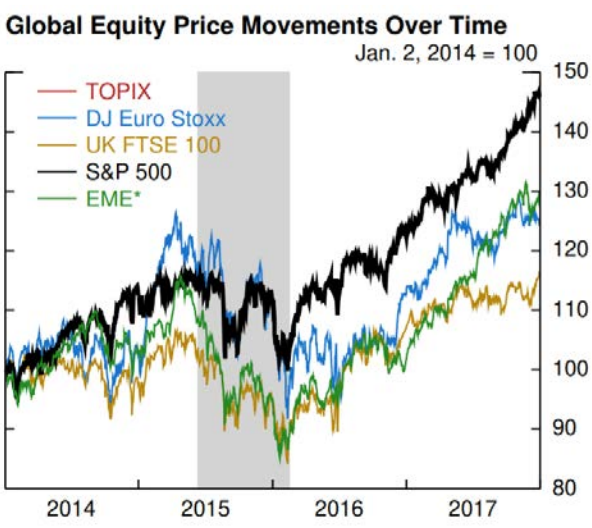
Trade Uncertainty by Industry Foreign Sales



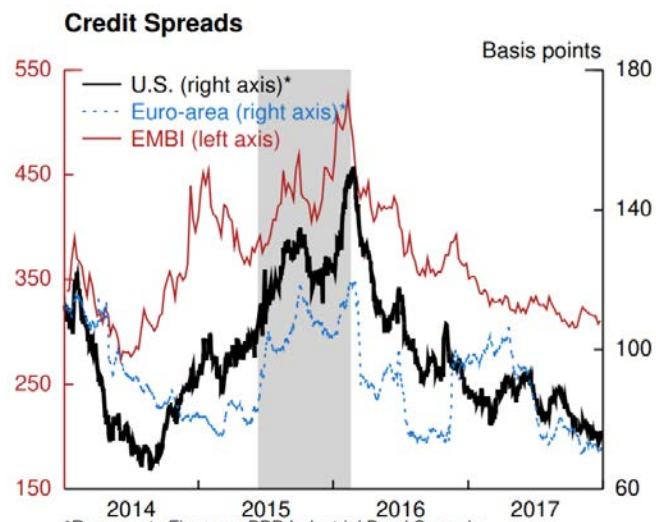
Source: Staff Calculations, Compustat, Fair Disclosure Wire. TPU is fraction of firms mentioning trade-related words in proximity to uncertainty-related words in 2018 earnings calls. Foreign sales share is sector average of foreign to total sales ratio. Firms grouped by Fama-French industry classification.

2016 China hard-landing fears led to tighter financial conditions

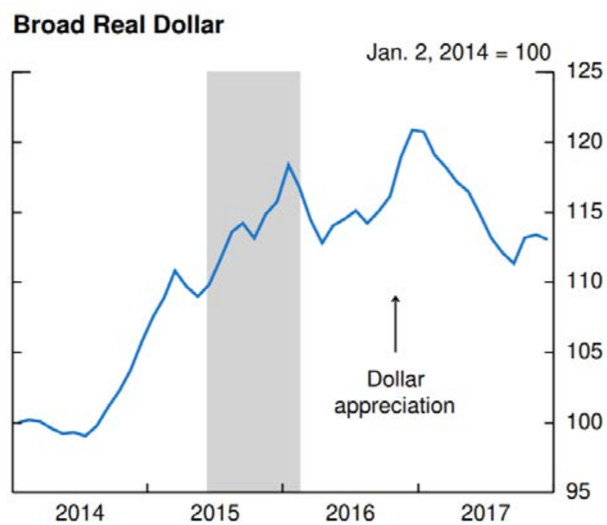
- Between mid-2015 and February 2016 in the U.S.:
  - Equity prices fell 8 percent.
  - Credit spreads rose 42 bp.
  - The broad dollar rose 6.3 percent.



* MSCI local-currency indexes.



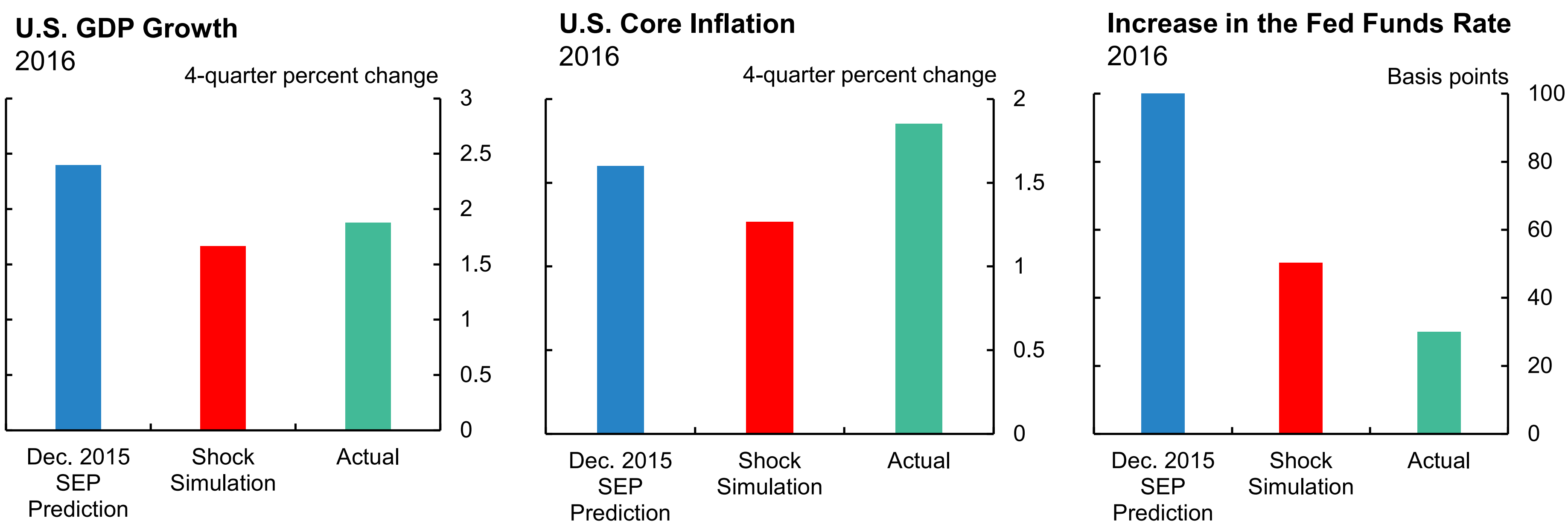
*Represents Five-year BBB Industrial Bond Spreads.



Note: Shading denotes the period between June 12, 2015, when the Shanghai Stock Exchange crashed, and February 17, 2016, when OPEC agreed to a tentative deal to freeze oil output.

Impact of China Fears on U.S. Economy in 2016

- Inserting these financial movements from 2015:Q3-2016:Q1 into our SIGMA DSGE model shows the following for 2016:
  - U.S. GDP growth lower by .7 percentage points
  - Reduced inflation by .3 percentage points
  - Fed funds rate rises only 50 basis points



Appendix 5: Materials used by Mr. Kiley

Class II FOMC - Restricted (FR)

Material for Briefing on

Financial Stability Developments

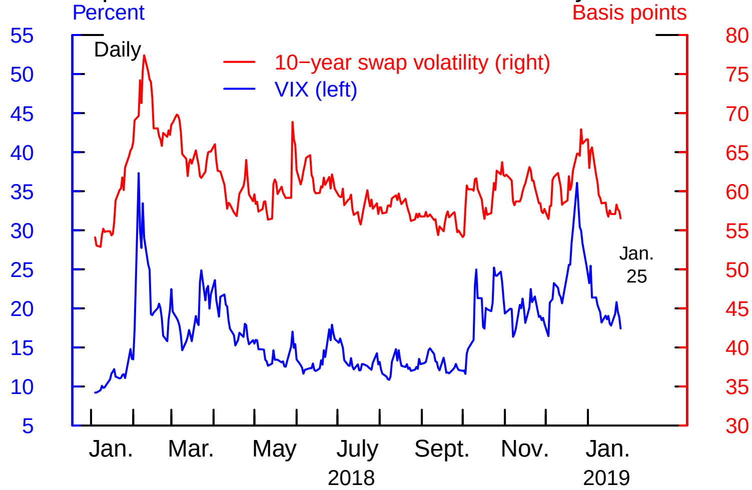
Michael T. Kiley
Exhibits by Maddie White
January 29, 2019

Class II FOMC - Restricted FR

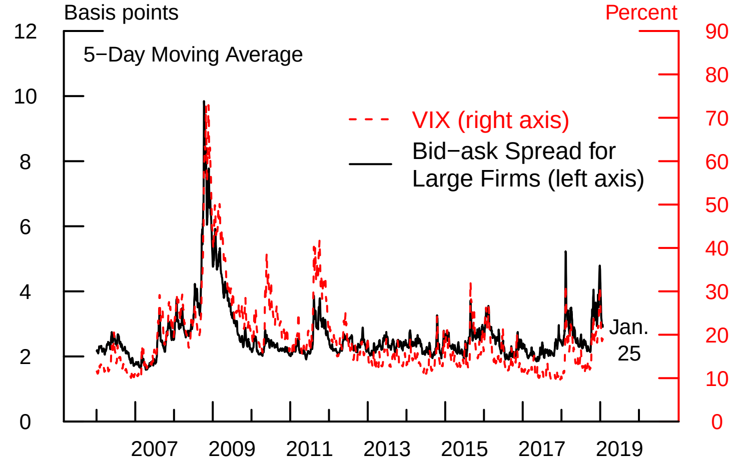
Exhibit 1: Implied Volatilities
Market Valuations and Risky Debt

January 29, 2019

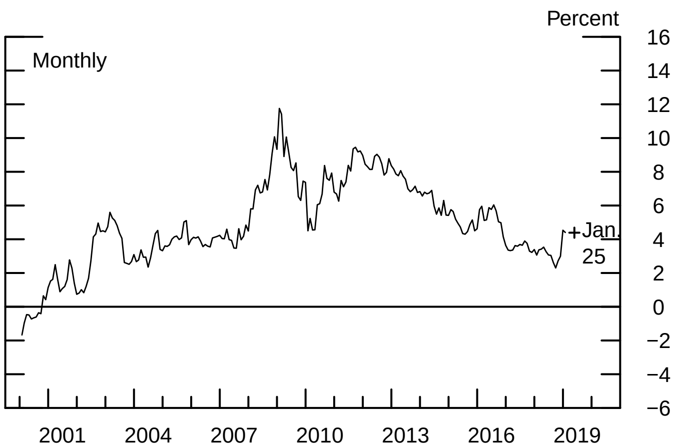
1−1
Implied Volatilities of S&P 500 and Treasury Yields



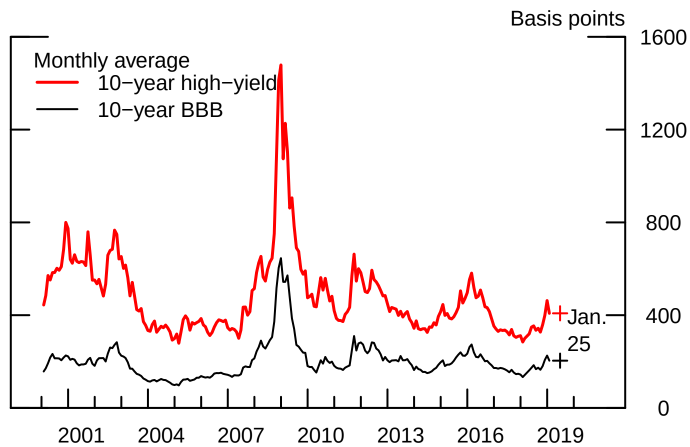
1−2
Bid−Ask Spread in Equity Markets



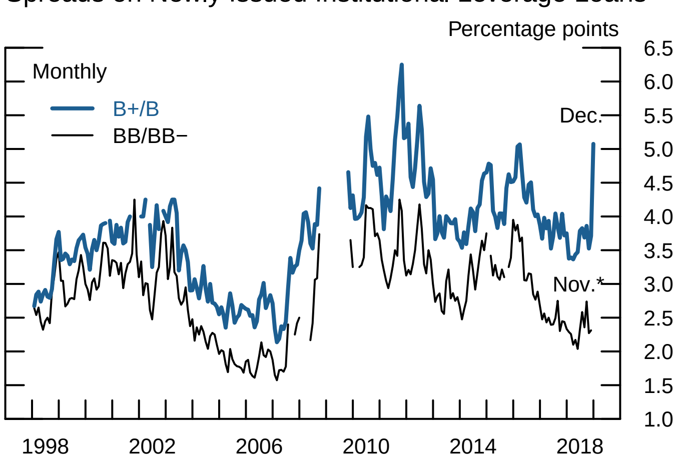
1−3
Equity Risk Premium



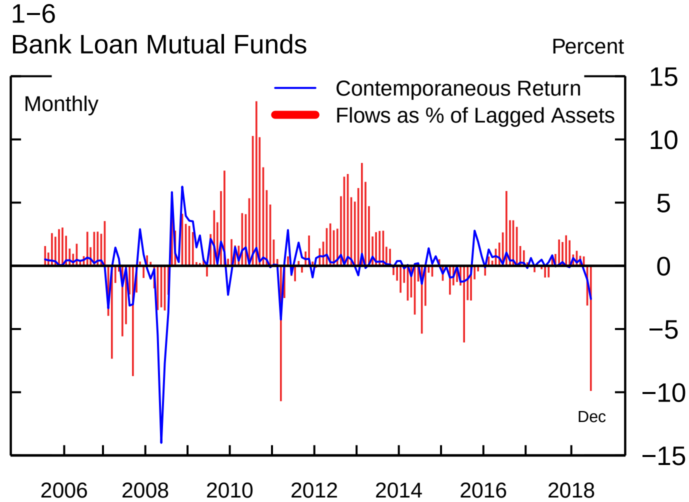
1−4
Corporate Bond Spreads



1−5
Spreads on Newly Issued Institutional Leverage Loans



1−6
Bank Loan Mutual Funds

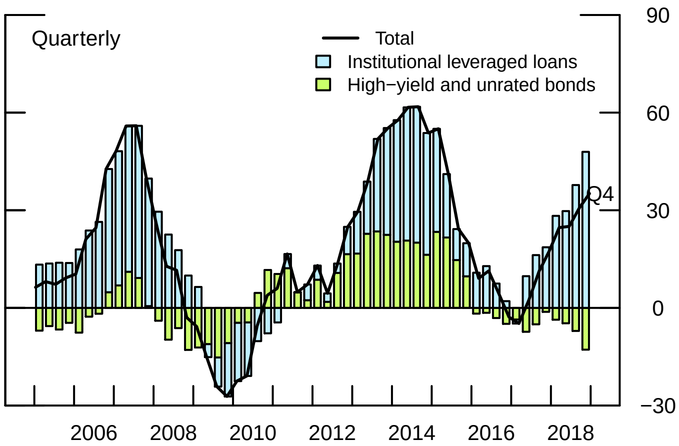


Class II FOMC - Restricted FR

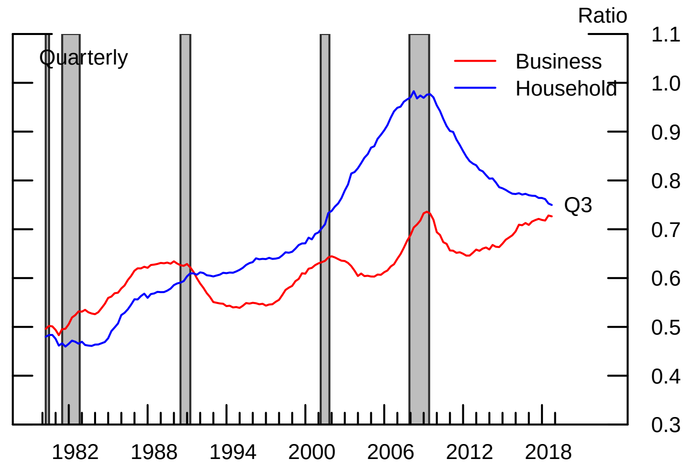
Exhibit 2: Credit, Leverage, and Maturity Transformation

January 29, 2019

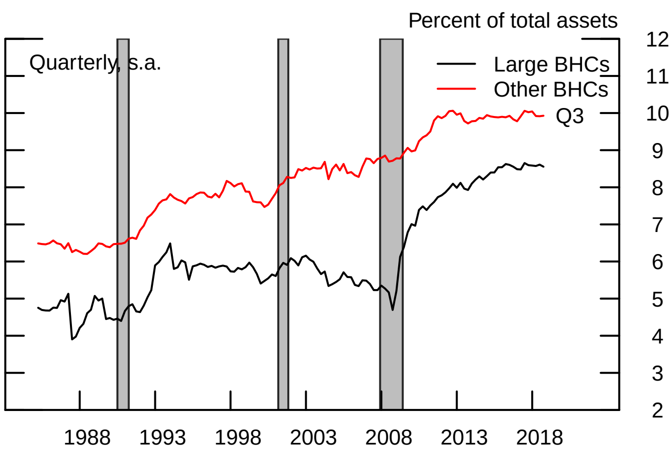
2−1
Total Net Issuance of Nonfinancial Risky Debt



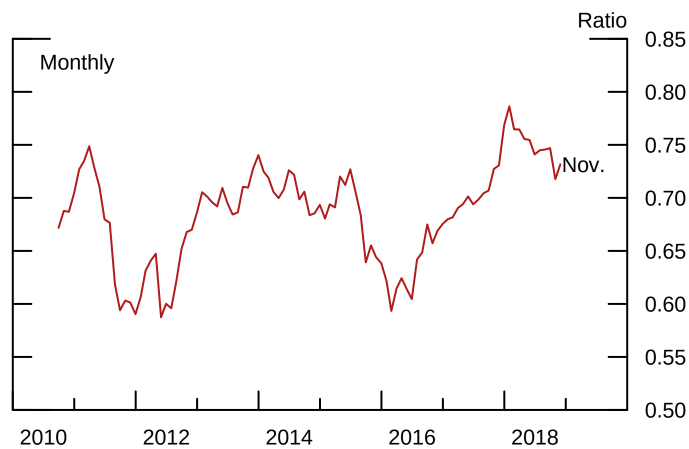
2−2
Business and Household Credit−to−GDP Ratios



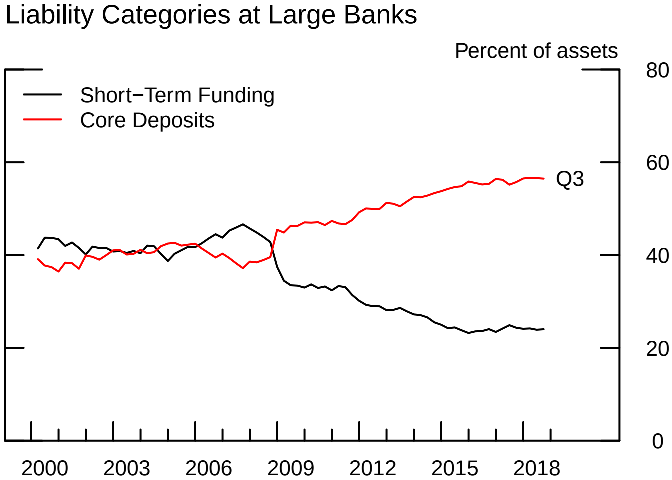
2−3
Common−Equity−to−Assets Ratio for Commercial Banks



2−4
Hedge Fund Net Leverage



2−5
Liability Categories at Large Banks



2−6
Cumulative Change in Money Market Fund
Assets Under Management Since 2017

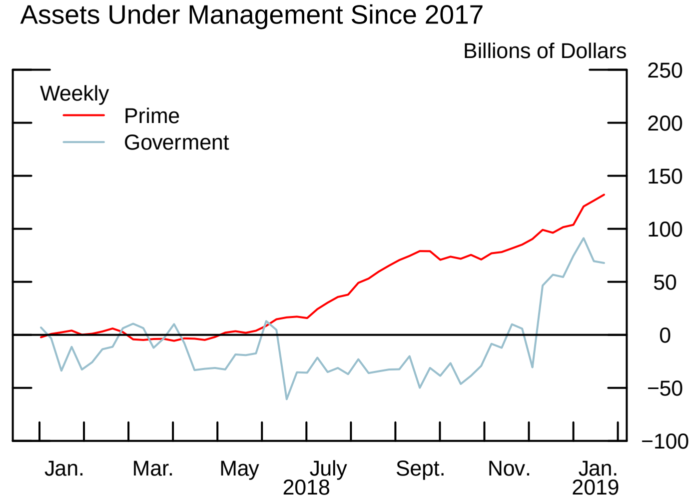


Exhibit 1:

1: Source: Bloomberg; Board staff calculations.
2: Note: Bid-Ask Spread Definition (in basis points): (ask-bid) / mid quote
Source: Tickhistory SP1500
3: Note: Based on the historical relationship between the log dividend yield of the S&P 500, the 10-year Treasury Yield, and the spread between the 10-year and the 3-month Treasury Yield.
+ Denotes the latest daily observation using daily interest rates and stock prices.
Source: Staff projection.
4: Note: Spreads over 10-year Treasury yield. Plot includes data up to Jan 25th.
Source: Staff estimates of smother corporate yield curves based on Merrill Lynch data and smoothed Treasury yield curve.
5: Note: Note: Breaks in the series represent periods with no issuance. Spreads are calculated against three−month LIBOR (London interbank offered rate). The spreads do not include up−front fees.
Note: BB/BB− series ends in November because of a lack of loan issuance.
Source: S&P Global, Leveraged Commentary & Data.
6: Source: Morningstar Direct

Exhibit 2:

1: Note: Data are a four-quarter moving average. Total net issuance of risky debt is the sum of the net issuance of speculative grade and unrated bonds and leveraged loans.
Source: Mergent Fixed Investment Securities Database, S&P.
2: Source: Financial Accounts of the United States and NIPA.
3: Note: Common equity is defined as total equity capital net of preferred equity and intangible assets, and is divided by total assets. Large BHCs are those with greater than $50 billion in total assets. The shaded bars indicate periods of business recession as defined by the National Bureau of Economic Research.
Source: Call Report.
4: Note: Net leverage is calculated as the net market value in prime broker clients' accounts (long minus short) divided by clients' total equity.
Source: Federal Reserve Bank of New York.
5: Note: Data as of 2018:Q3. Large banks include BHCs and IHCs that have $50 billion or more in average total consolidated assets. The IHCs of Credit Suisse, Barclays, and UBS are excluded due to lack of data history for comparison.
Source: FR Y-9C.
6: Source: iMoney Net, staff calculations.

Appendix 6: Materials used by Chairman Powell

Class I FOMC – Restricted Controlled (FR)

Revised Version

Statement Regarding Monetary Policy Implementation

January 30, 2019

Class I FOMC – Restricted Controlled (FR)

Statement Regarding Monetary Policy Implementation and Balance Sheet Normalization

After extensive deliberations and thorough review of experience to date, the Committee judges that it is appropriate at this time to provide additional information regarding its plans to implement monetary policy over the longer run. Additionally, the Committee is revising its earlier guidance regarding the conditions under which it could adjust the details of its balance sheet normalization program. Accordingly, [all] participants agreed to the following:

- The Committee intends to continue to implement monetary policy in a regime in which ~~the quantity~~ **an ample supply** of reserves ~~is sufficient to~~ ensure**s** that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the setting of the Federal Reserve's administered rates, and in which active management of the supply of reserves is not required.

- The Committee continues to view changes in the target range for the federal funds rate as its primary means of adjusting the stance of monetary policy. ~~However, t~~**T**he Committee is prepared to adjust any of the details for completing balance sheet normalization in light of economic and financial developments. Moreover, the Committee would be prepared to use its full range of tools, including altering the size and composition of its balance sheet, if future economic conditions were to warrant a more accommodative monetary policy than can be achieved solely by reducing the federal funds rate.

Appendix 7: Materials used by Mr. Laubach

Class I FOMC – Restricted Controlled (FR)

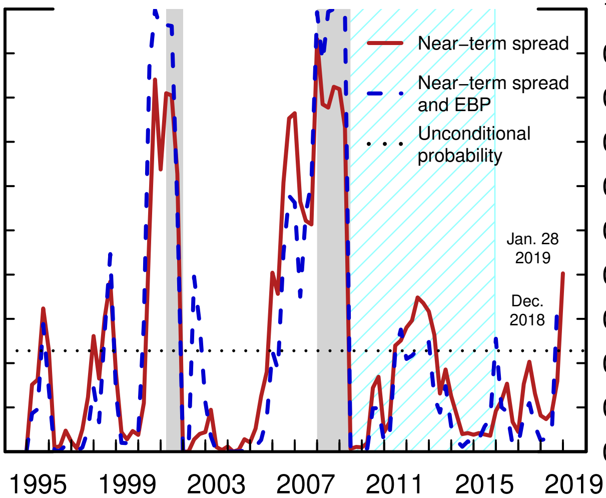
Material for the Briefing on

Monetary Policy Alternatives

Thomas Laubach
Exhibits by Gurubala Kotta
January 29-30, 2019

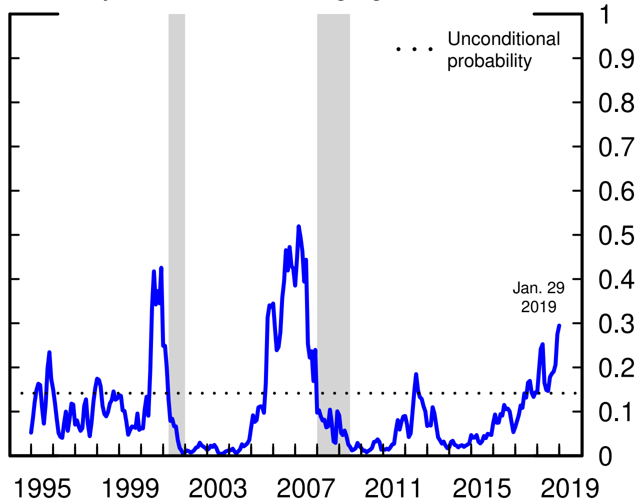
Monetary Policy Considerations

Conditional Probability of Recession Over the Next 4 Quarters from Spreads



Note: Gray shading shows NBER–dated recessions. Hatched blue area is the effective lower bound period.
Source: Board staff estimates.

Conditional Probability of Recession in 12 Months from Bayesian Model Averaging

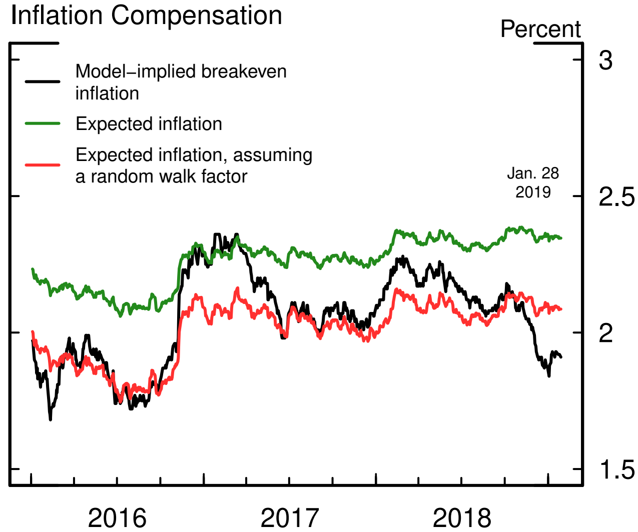


Note: Gray shading shows NBER–dated recessions. Dotted line shows the unconditional probability of NBER recession since 1973.
Source: Board staff estimates.

Reasons Why Patience is Appropriate

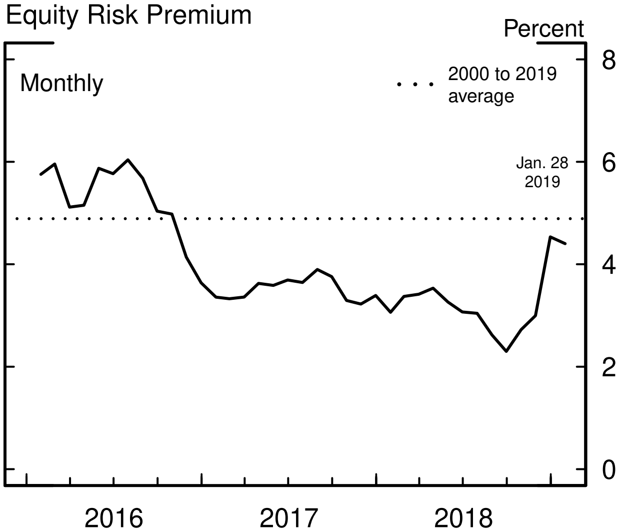
- Stance of policy is now close to longer–run neutral.
- Risk of policy remaining too loose has diminished in recent months.
  - Core inflation has been softer than expected.
  - Sizeable decline in far–forward inflation compensation.
  - Signs of stretched asset valuations have diminished.

Decomposition of 5–to–10–Year Forward Inflation Compensation



Source: Board staff estimates.

Equity Risk Premium



Source: Bloomberg, Philadelphia Fed, Board staff estimates, Thomson Reuters Financial.

Does Statement Signal Shift in Reaction Function?

- As federal funds rate approached longer–run neutral, extent and direction of rate adjustments increasingly uncertain.
- December statement indicated you would monitor global economic and financial developments.
- Communicate now comfort with current stance.

DECEMBER 2018 FOMC STATEMENT

1. Information received since the Federal Open Market Committee met in November indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has remained low. Household spending has continued to grow strongly, while growth of business fixed investment has moderated from its rapid pace earlier in the year. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee judges that some further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. The Committee judges that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 2-1/4 to 2-1/2 percent.

4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. 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.

ALTERNATIVE A FOR JANUARY 2019

1. Information received since the Federal Open Market Committee met in ~~November~~ **December** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has remained low. Household spending has continued to grow strongly, while growth of business fixed investment has moderated from its rapid pace earlier ~~in the~~ **last** year. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. ~~Indicators of longer-term inflation expectations are little changed, on balance.~~ **Although market-based measures of inflation compensation have moved lower in recent months, survey-based measures of longer-term inflation expectations are little changed.**

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. **In support of these goals, the Committee decided to maintain the target range for the federal funds rate at 2-1/4 to 2-1/2 percent.** The Committee ~~judges that some further gradual increases in the target range for the federal funds rate will be consistent with~~ **continues to view** sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective ~~over the medium term~~ **as the most likely outcomes**. **In light of global economic and financial developments and muted inflation pressures, the Committee judges that the risks to the economic outlook are tilted to the downside and that it will be patient as it determines what, if any, adjustments to the target range for the federal funds rate may be appropriate to support these outcomes.** ~~The Committee judges that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook.~~

~~3. In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 2-1/4 to 2-1/2 percent.~~

4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. 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.

ALTERNATIVE B FOR JANUARY 2019

1. Information received since the Federal Open Market Committee met in ~~November~~ **December** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has remained low. Household spending has continued to grow strongly, while growth of business fixed investment has moderated from its rapid pace earlier ~~in the~~ **last** year. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. ~~Indicators of longer-term inflation expectations are little changed, on balance.~~ **Although market-based measures of inflation compensation have moved lower in recent months, survey-based measures of longer-term inflation expectations are little changed.**

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. **In support of these goals, the Committee decided to maintain the target range for the federal funds rate at 2-1/4 to 2-1/2 percent.** The Committee ~~judges that some further gradual increases in the target range for the federal funds rate will be consistent with~~ **continues to view** sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective ~~over the medium term~~ **as the most likely outcomes**. **In light of global economic and financial developments and muted inflation pressures, the Committee will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate to support these outcomes.** ~~The Committee judges that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook.~~

3. ~~In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 2-1/4 to 2-1/2 percent.~~

4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. 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.

ALTERNATIVE C FOR JANUARY 2019

1. Information received since the Federal Open Market Committee met in ~~November~~ **December** indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been ~~strong~~ **robust**, on average, in recent months, and the unemployment rate has remained low. Household spending has continued to grow strongly, while growth of business fixed investment ~~has~~ **appears to have** ~~moderated from its rapid pace earlier in the year~~ **picked up**. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

2. Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee judges that some further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. The Committee judges that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook.

3. In view of realized and expected labor market conditions and inflation, the Committee decided to ~~raise~~ **maintain** the target range for the federal funds rate ~~to~~ **at** 2-1/4 to 2-1/2 percent.

4. In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. 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.

Implementation Note for January 2019 (all Alternatives)

Release Date: January 30, 2019

Decisions Regarding Monetary Policy Implementation

The Federal Reserve has made the following decisions to implement the monetary policy stance announced by the Federal Open Market Committee (FOMC) in its statement on ~~December 19, 2018~~ **January 30, 2019**:

- The Board of Governors of the Federal Reserve System voted **[** unanimously **]** to ~~raise~~ **maintain** the interest rate paid on required and excess reserve balances ~~to~~ **at** 2.40 percent, effective ~~December 20, 2018~~ **January 31, 2019**. ~~Setting the interest rate paid on required and excess reserve balances 10 basis points below the top of the target range for the federal funds rate is intended to foster trading in the federal funds market at rates well within the FOMC's target range.~~
- As part of its policy decision, the Federal Open Market Committee voted to authorize and direct the Open Market Desk at the Federal Reserve Bank of New York, until instructed otherwise, to execute transactions in the System Open Market Account in accordance with the following domestic policy directive:

> "Effective ~~December 20, 2018~~ **January 31, 2019**, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of 2-1/4 to 2-1/2 percent, including overnight reverse repurchase operations (and reverse repurchase operations with maturities of more than one day when necessary to accommodate weekend, holiday, or similar trading conventions) at an offering rate of 2.25 percent, in amounts limited only by the value of Treasury securities held outright in the System Open Market Account that are available for such operations and by a per-counterparty limit of $30 billion per day.
>
> The Committee directs the Desk to continue rolling over at auction the amount of principal payments from the Federal Reserve's holdings of Treasury securities maturing during each calendar month that exceeds $30 billion, and to continue reinvesting in agency mortgage-backed securities the amount of principal payments from the Federal Reserve's holdings of agency debt and agency mortgage-backed securities received during each calendar month that exceeds $20 billion. Small deviations from these amounts for operational reasons are acceptable.
>
> 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."

- In a related action, the Board of Governors of the Federal Reserve System voted **[** unanimously **]** to approve ~~a 1/4 percentage point increase in~~ **the establishment of** the primary credit rate ~~to~~ **at the existing level of** 3.00 percent~~, effective December 20, 2018. In taking this action, the Board approved requests to establish that rate submitted by the Boards of Directors of the Federal Reserve Banks of Boston, Cleveland, Richmond, Atlanta, Chicago, and San Francisco~~.

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.

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

Potential actions of the Board of Governors of the Federal Reserve System

Interest on required and excess reserve balances

> Leave the interest rates paid on required and excess reserve balances unchanged at 2.40 percent.

Establishment of the primary, secondary, and seasonal credit rates

> Approve establishment of the primary credit rate at the existing rate of 3.00 percent and establishment of the rates for secondary and seasonal credit under the existing formulas specified in the staff's January 25, 2019, memo to the Board.