The Path Forward for U.S. Monetary Policy in a Global Context

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OMFIF City Lecture
June 29, 2017
London, United Kingdom

Any opinions expressed here are my own and do not necessarily reflect those of the Federal Open Market Committee.

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Introduction

Key themes in this talk

- The U.S. economy remains in a low-growth, low-inflation, low-interest-rate regime.
- The current level of the U.S. policy rate is appropriate for this regime.
- The most likely outcome over the forecast horizon is that the regime persists and, hence, the current level of the policy rate remains appropriate.
- Many future developments could impact this policy path, but the Fed does not need to act pre-emptively with respect to any of them.

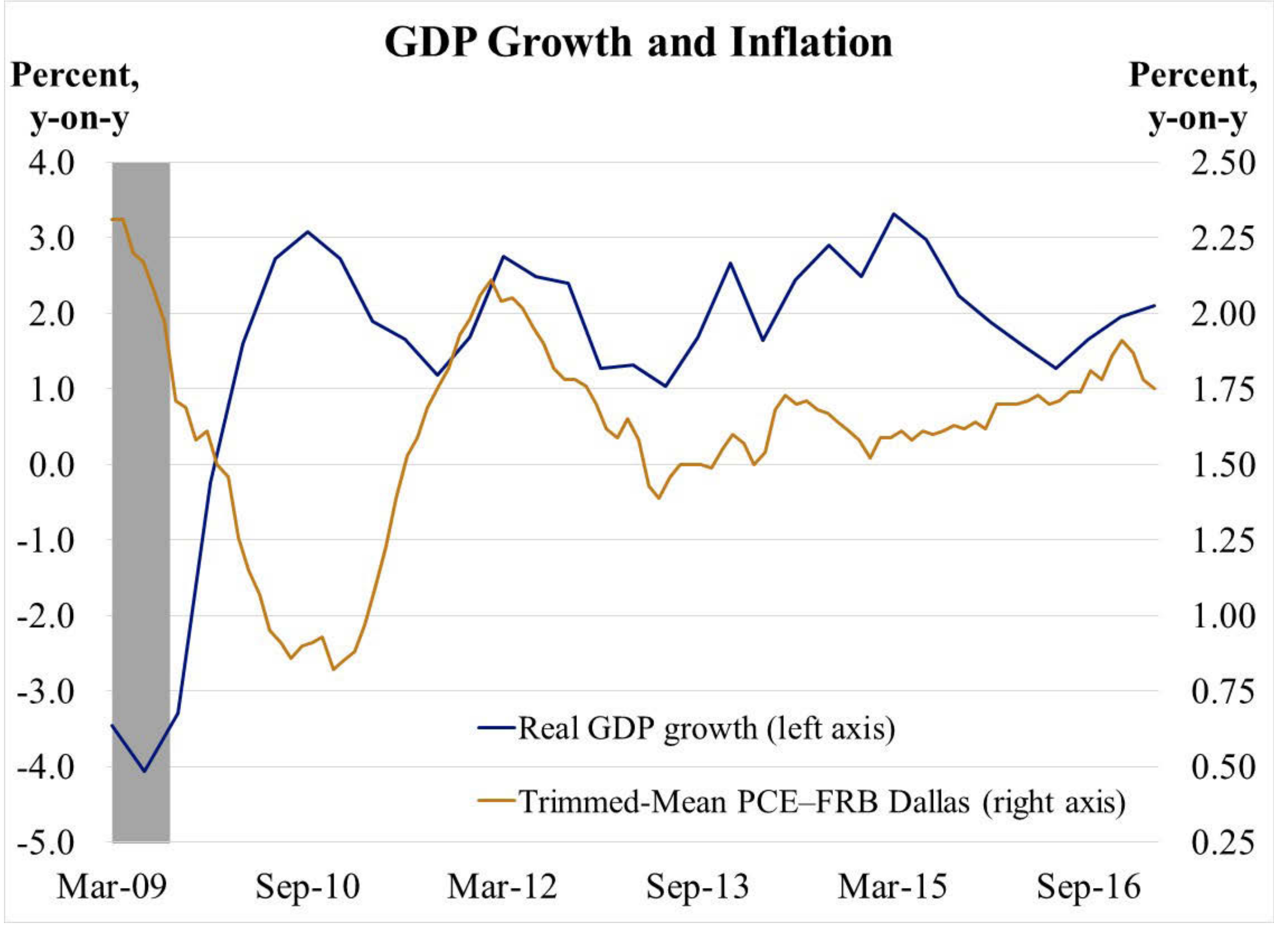
Low Growth

U.S. real GDP growth in 2017

- The empirical impulse response since the financial crisis suggests that the U.S. has converged to 2 percent real GDP growth.
- The current estimate for U.S. real GDP growth in the first quarter of 2017 is 1.4 percent at an annual rate.*
- Tracking estimates for second-quarter real GDP growth now suggest some improvement from the first quarter, but not enough to move the U.S. economy away from a regime characterized by 2 percent trend growth.
- The 2 percent growth regime appears to remain intact.

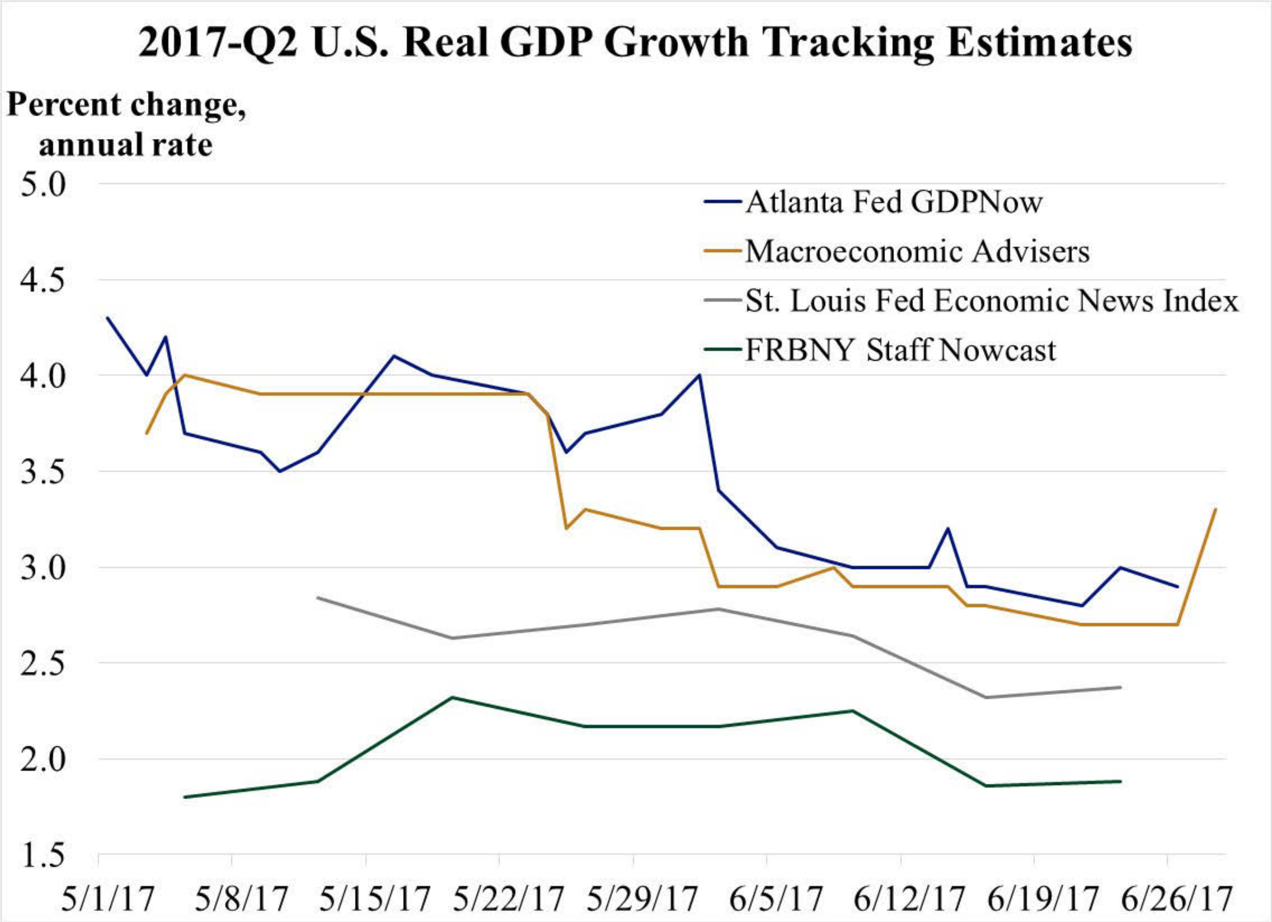
** This is the Bureau of Economic Analysis' final estimate released on June 29.*

The empirical impulse response



Source: Bureau of Economic Analysis and FRB of Dallas. Last observation: 2017-Q1 (final estimate) and April 2017. The shaded area indicates NBER recession.

Forecasts for 2017-Q2 growth have declined



Source: FRB of Atlanta, FRB of New York, FRB of St. Louis, Macroeconomic Advisers. Last observation: See table on p. 8.

Tracking estimates for 2017-Q2 U.S. real GDP growth and H1 average

Source	Date	Estimate*	2017-H1†
Blue Chip Consensus	June 10	3.0%	2.2%
St. Louis Fed Economic News Index	June 23	2.4%	1.9%
FRBNY Staff Nowcast	June 23	1.9%	1.7%
Atlanta Fed GDPNow	June 26	2.9%	2.2%
Macroeconomic Advisers	June 28	3.3%	2.4%
CNBC Moody's Consensus (median)	June 28	2.9%	2.2%

* *percent change from the previous quarter, annualized*

† *average of Bureau of Economic Analysis' 2017-Q1 final estimate (1.4%) and 2017-Q2 estimates*

Low Inflation

U.S. inflation in 2017

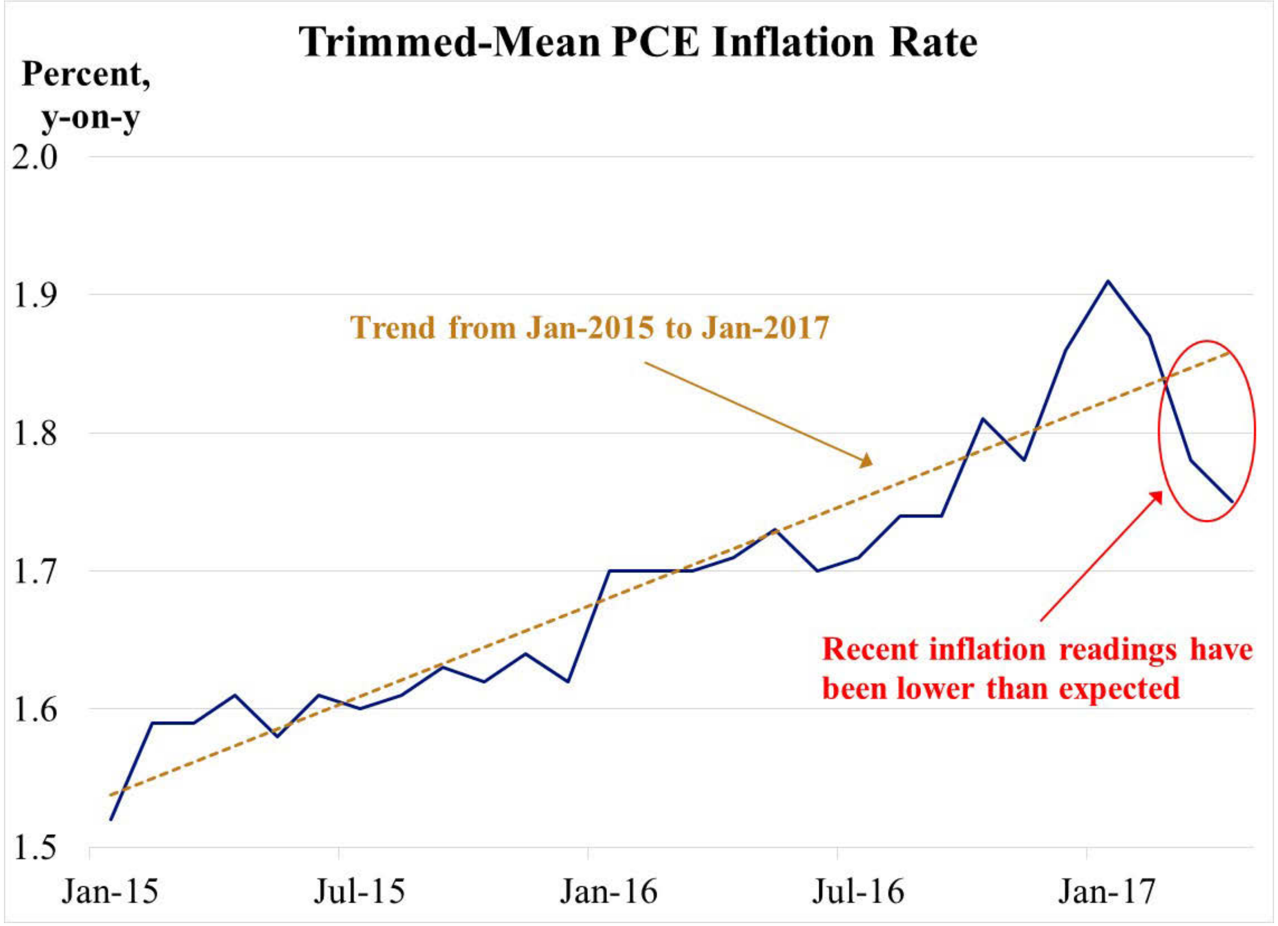
- The FOMC's inflation target is 2 percent.
- The U.S. inflation rate has been below the inflation target since 2012.
- Recent inflation data have surprised to the downside and call into question the idea that U.S. inflation is reliably returning toward target.

Inflation readings are lower

Inflation measure	Dec-2016	Last obs.	Difference
Sticky CPI (FRB of Atlanta)	258	214	-44
Median CPI (FRB of Cleveland)	250	228	-22
Core CPI	220	170	-50
Trimmed-mean PCE (FRB of Dallas)	186	175	-11
Core PCE	175	154	-21

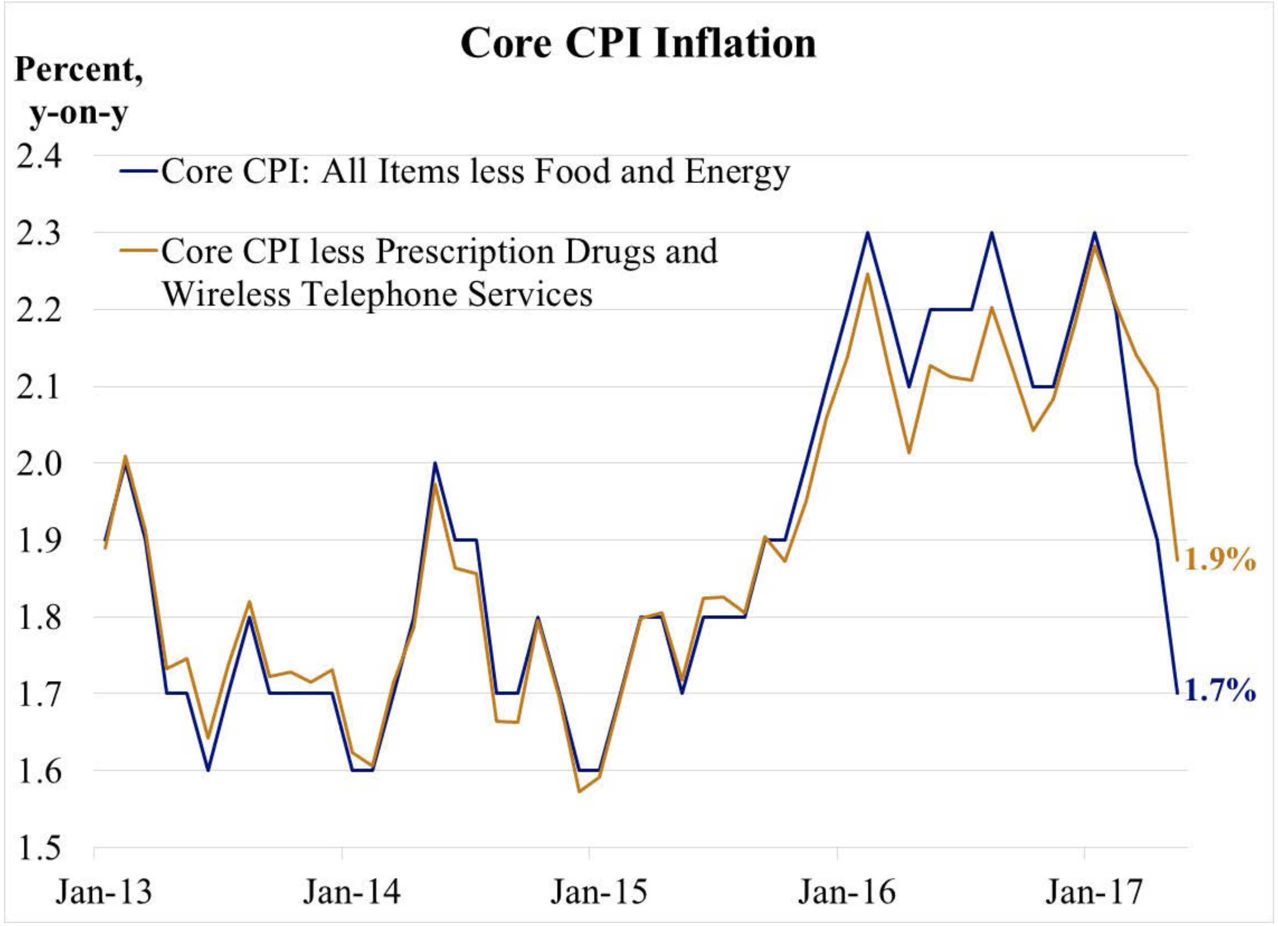
Values are expressed in basis points. Inflation rates are measured as percent changes from one year earlier.
Source: Bureau of Labor Statistics, FRB of Cleveland, FRB of Atlanta, Bureau of Economic Analysis, FRB of Dallas and author's calculations. Last observations: April 2017 (PCE) and May 2017 (CPI).

Trimmed-mean PCE inflation lower



Source: FRB of Dallas and author's calculations. Last observations: April 2017.

Effect of declines in the price of cell services and prescription drugs



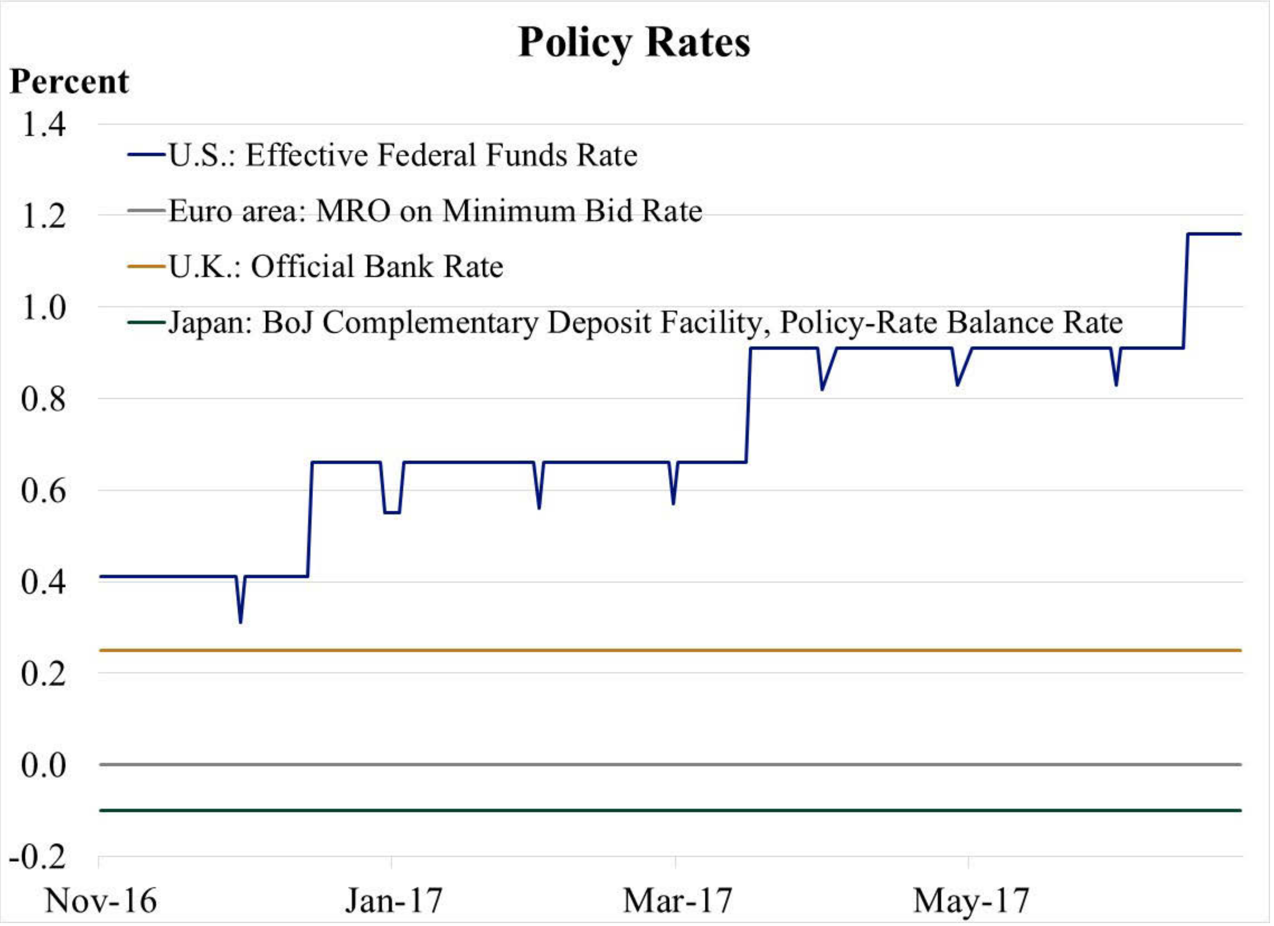
Source: Bureau of Labor Statistics and author's calculations. Last observation: May 2017.

Low Interest Rates

Monetary policy normalization

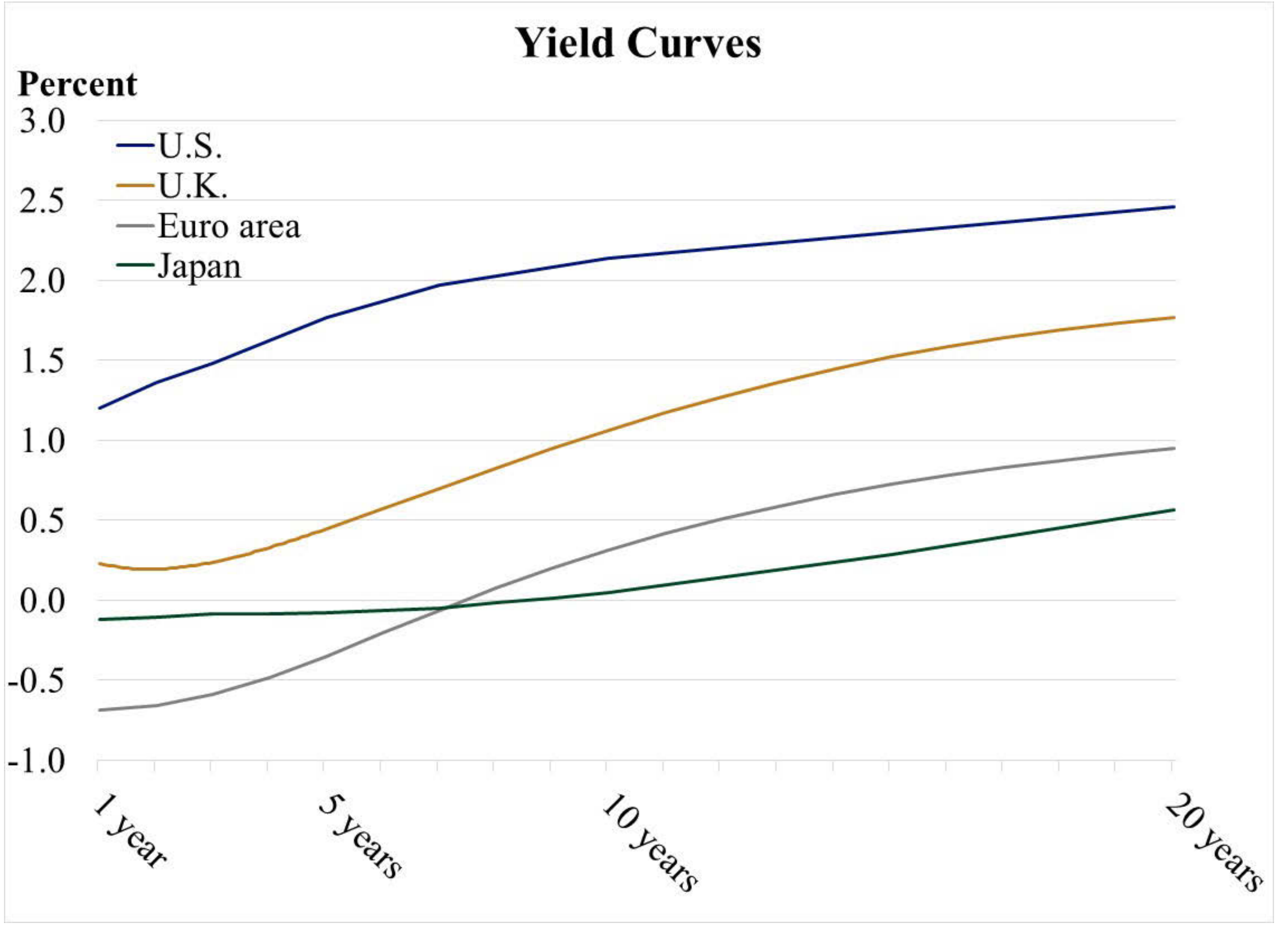
- U.S. monetary policy has been normalizing by increasing the policy rate, but against the backdrop of:
  - relatively weak U.S. real GDP growth,
  - downside U.S. inflation surprises and
  - a global regime of low policy rates.
- The financial market reaction has been reflected in:
  - a lower U.S. 10-year Treasury yield,
  - lower market-based U.S. inflation expectations and
  - an implied policy rate path closer to the St. Louis Fed path for 2017 and 2018 of 113 basis points.

U.S. policy rate is rising while other key policy rates remain low and fixed



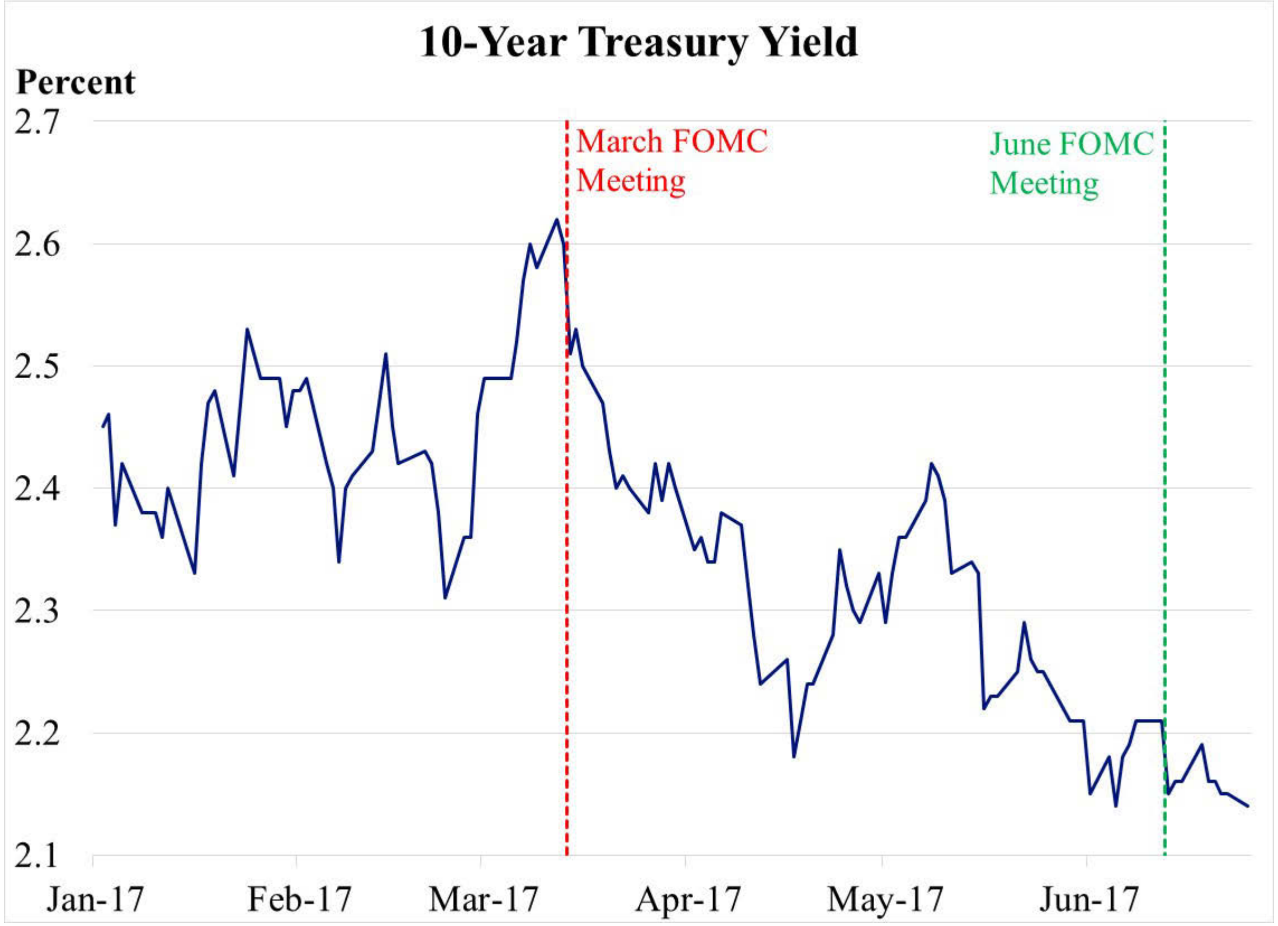
Source: Federal Reserve Board, European Central Bank, Bank of England and Bank of Japan. Last observation: June 26, 2017.

The U.S. Treasury yield curve is above foreign counterparts



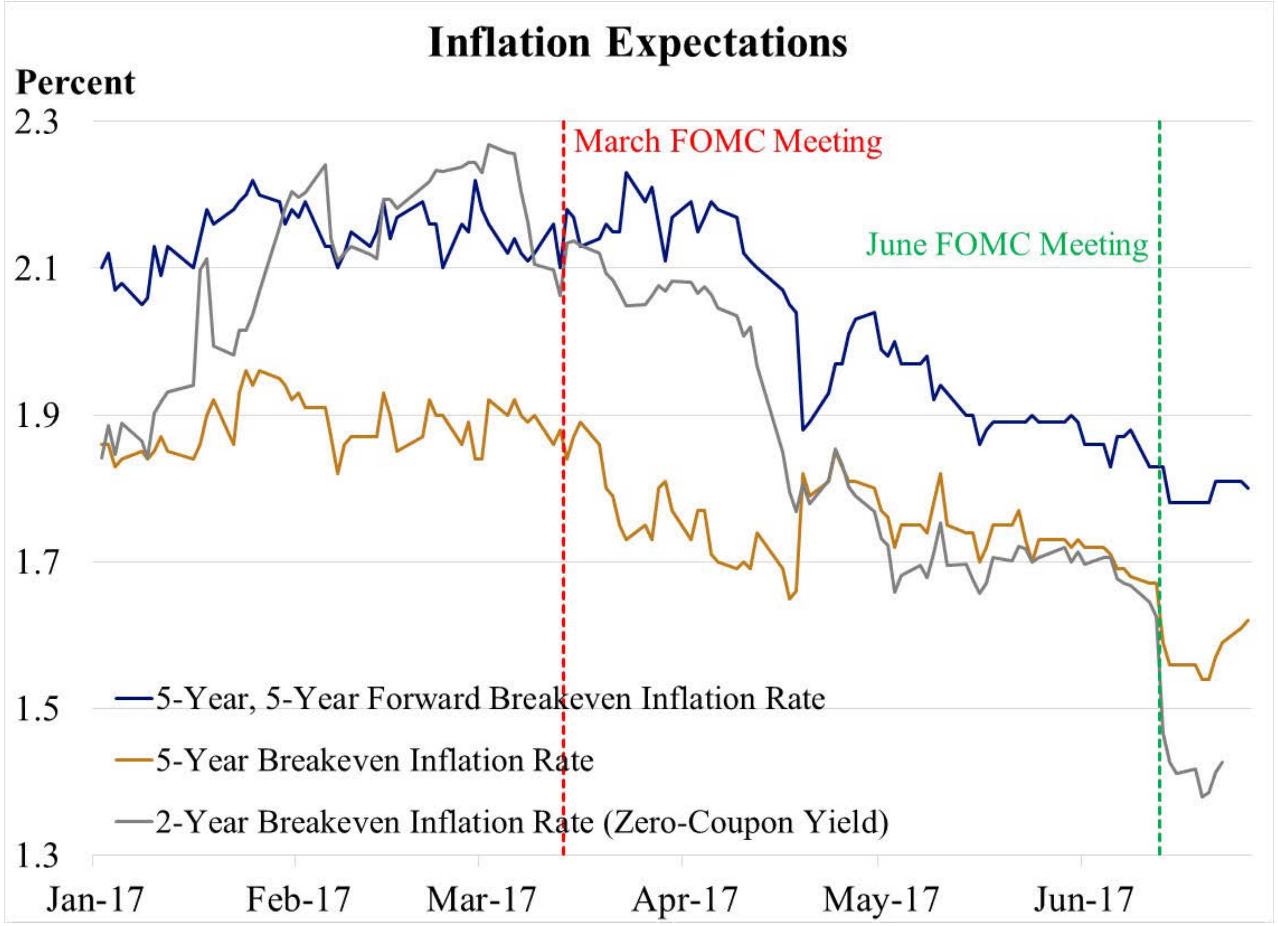
Source: U.S. Department of the Treasury, Bank of England, European Central Bank and Japan's Ministry of Finance. Last observation: June 26, 2017.

Longer-term U.S. yields have declined since March, flattening the yield curve



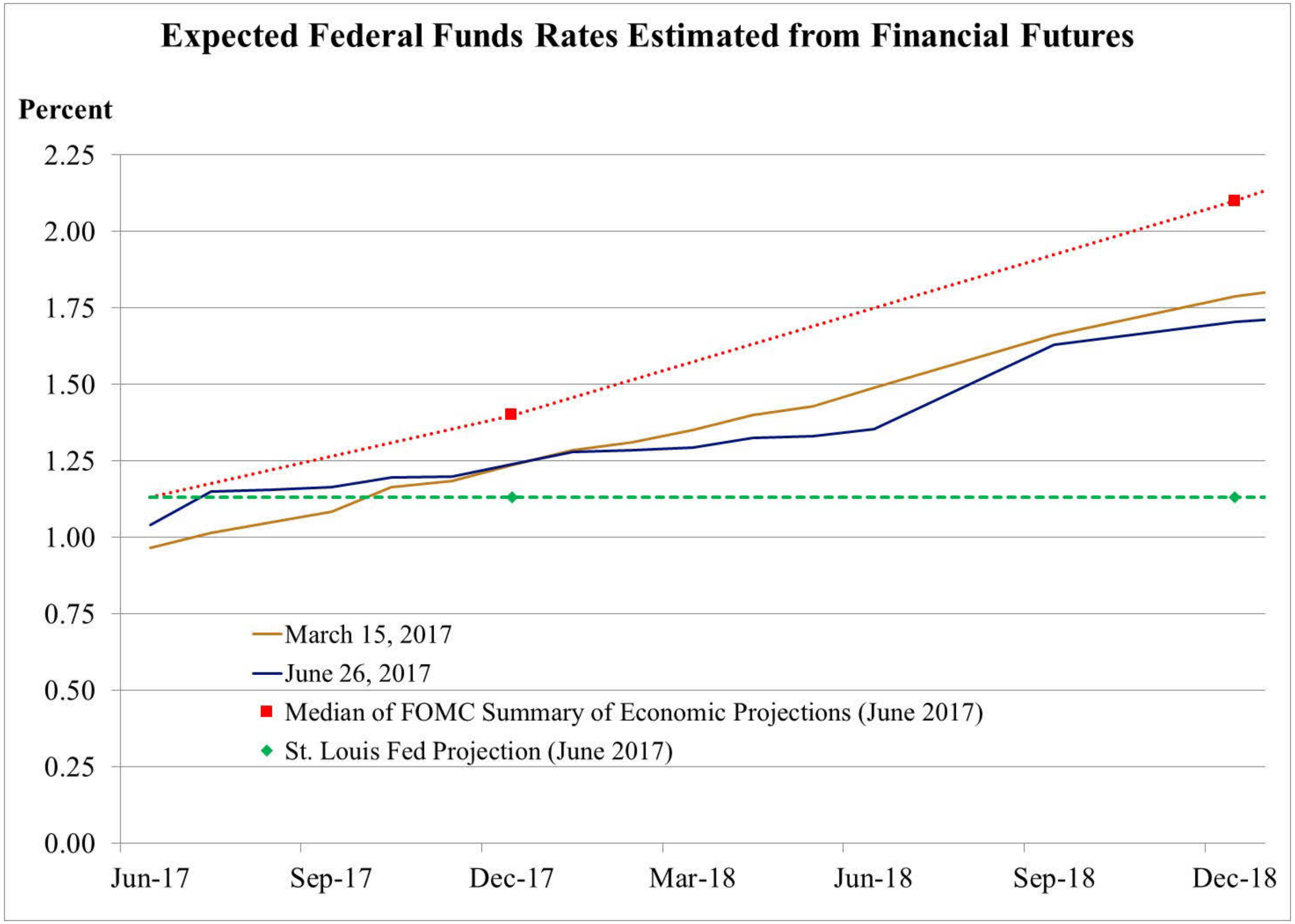
Source: Federal Reserve Board. Last observation: June 26, 2017.

Inflation breakevens have weakened



Source: Federal Reserve Board. Last observation: June 27, 2017.

Market expectations of the policy rate path remain below FOMC projections



Source: Bloomberg and author's calculations. Last observation: June 26, 2017.

Additional Developments

Remarks on additional developments

- I want to now focus on a few additional developments concerning the U.S. macroeconomic outlook:
  - **Unemployment** in the U.S. is relatively low and may head lower—how will this affect the U.S. inflation outlook?
  - The **U.S. fiscal situation** may be altered by pending legislation—how will this affect the U.S. macroeconomic outlook?
  - The **global growth outlook** has brightened—how will this affect the U.S. macroeconomic outlook?
  - **U.S. financial conditions** are easier than they were at the time of the December 2016 FOMC meeting—how should we interpret this?

Does the Low U.S. Unemployment Rate Signal a Meaningful Rise in Inflation?

Unemployment is low

- The U.S. unemployment rate declined to 4.3 percent in the May reading.
- Does this mean that U.S. inflation is about to increase substantially?
- The short answer is no.

The estimated influence of unemployment on inflation

- Let's consider one study, Blanchard (2016), which estimates a Phillips curve relationship for the U.S.*
- Let's suppose the unemployment rate continued to fall from current levels.
- How much would the inflation rate increase according to these estimates?

** See O. Blanchard, 2016, "The U.S. Phillips Curve: Back to the 60s?" Peterson Institute for International Economics,* Policy Brief No. PB16-1.

The estimated influence of unemployment on inflation

If the unemployment rate was …	The predicted core PCE inflation rate would be …
4.3% *	1.5% *
4.0%	1.6%
3.5%	1.7%
3.0%	1.8%
2.5%	1.9%

* *current value (May 2017 for unemployment, April 2017 for inflation)*

- Bottom line: Even if the U.S. unemployment rate declines substantially further, current estimates suggest the effects on U.S. inflation are likely to be small.

Low unemployment coexists with low inflation in many countries

	Unemployment rate	Price inflation	Core price inflation	Wage inflation
U.S.	4.3%	1.9%	1.7%	2.5%
Germany	3.9%	1.4%	1.1%	1.1%
U.K.	4.6%	2.7%	2.5%	2.1%
Japan	2.8%	0.4%	0.0%	0.4%

Inflation rates are year-over-year percentage changes.
Sources: Bureau of Labor Statistics, Eurostat, Office for National Statistics, Statistics Japan and Ministry of Health, Labour and Welfare. Last observations: various.

Impact of New U.S. Fiscal and Regulatory Policies

The prospect of higher growth

- Will the new fiscal and regulatory policies move the U.S. into a higher-growth regime? The Fed can wait and see.
- Here are two considerations:
  - The economy is not in recession today, so fiscal policies should not be viewed as countercyclical measures. They should be viewed as supply-side improvements.
  - U.S. productivity growth is low and could be improved considerably.
    - Deregulation could improve productivity growth.
    - Infrastructure spending could improve productivity growth.
    - Tax reform could improve productivity growth.

Global Growth

The impact of better global growth prospects on the U.S. economy

- The global growth outlook has improved since last year.
- The International Monetary Fund (IMF) upgraded its world economic outlook for 2017 this spring.
- Key upgrades occurred for Japan, Europe and China.
- Nevertheless, these upgrades are too small and too uncertain to have a meaningful impact on U.S. macroeconomic performance.

Global growth: Forecasts for 2017 have improved since last fall

2017 Real GDP Growth	Apr-2017	Oct-2016	Difference
World Output	3.5%	3.4%	0.1
U.S.	2.3%	2.2%	0.1
Euro area	1.7%	1.5%	0.2
U.K.	2.0%	1.1%	0.9
Japan	1.2%	0.6%	0.6
China	6.6%	6.2%	0.4

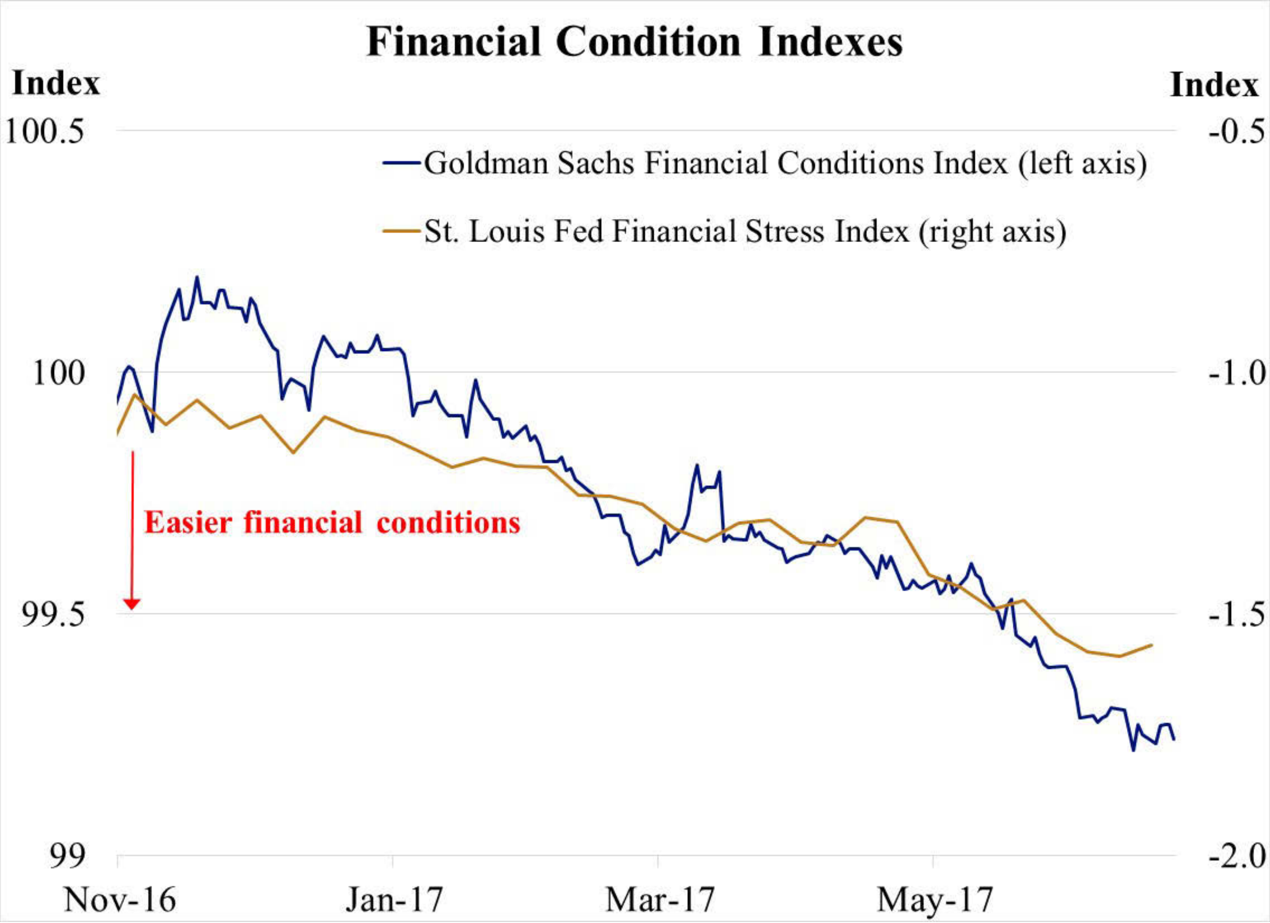
Growth rates are year-over-year; differences are expressed in percentage points.
Source: International Monetary Fund, World Economic Outlook.

Financial Conditions Indexes

U.S. financial conditions indexes suggest improvement

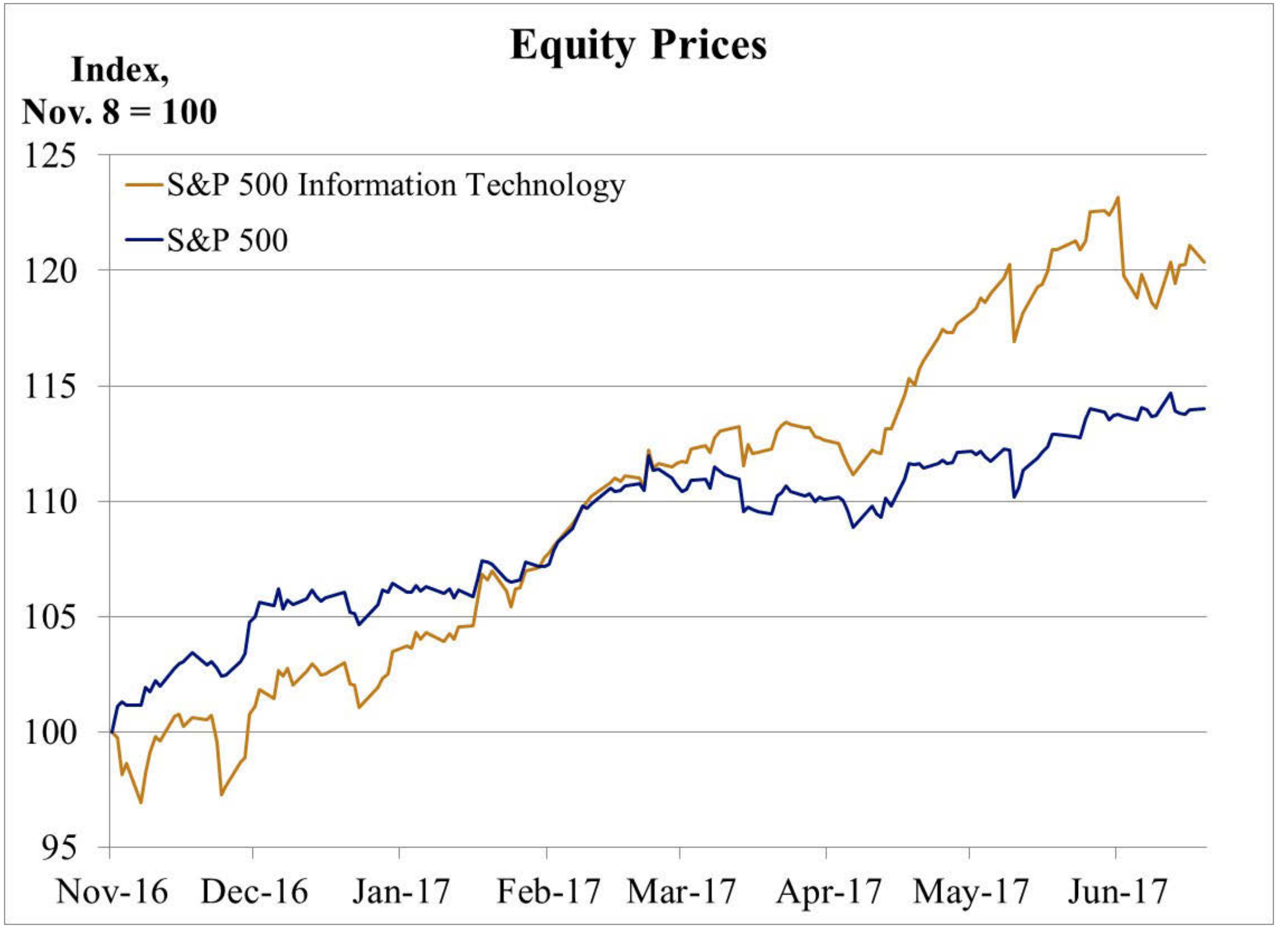
- Standard financial conditions indexes (FCI) suggest that financial conditions have improved since the December 2016 FOMC meeting.
- This is sometimes interpreted to mean that the FOMC decisions to increase the policy rate are not having any effect.
- Some of the drivers of FCI movements include low volatility as measured by the VIX, higher equity valuations and lower credit spreads.
- The FOMC has not historically targeted these types of variables when making monetary policy.

Financial conditions have improved since last November



Source: FRB of St. Louis and Goldman Sachs. Last observation: week of June 16, 2017, and June 23, 2017.
Note: Lower readings mean improved financial conditions.

Higher equity valuations driven in part by technology stocks



Source: Bloomberg and author's calculations. Last observation: June 26, 2017.

Conclusion

Conclusion

- The U.S. economy remains in the low-growth, low-inflation, low-interest-rate regime that has characterized recent years.
- U.S. inflation and market-based inflation expectations have surprised to the downside in recent months.
- Low unemployment readings are probably not an indicator of meaningfully higher inflation over the forecast horizon.
- The current level of the policy rate is appropriate given current macroeconomic data.

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