



Federal Reserve
Bank of Dallas

Fed's New Inflation Targeting Policy Seeks to Maintain Well-Anchored Expectations

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Why Did the Fed Review Its Monetary Policy Framework?

The decade since the 2007-09 global financial crisis has been a period of significant challenges for policymakers in the U.S. (and abroad)

- The Federal Reserve announced in [November 2018](#) a review of its policy strategy, tools, and communication practices
 - how has monetary policy evolved during this time?
 - what lessons can be learned from the experience with near zero interest rates in the U.S. and abroad?
- The Fed announced a new monetary policy framework in [August 2020](#)—flexible inflation targeting (FAIT) to replace the flexible inflation targeting (FIT) formally introduced in 2012

Monetary Policy in a Changing Economy

Monetary Policy Tools: Learning by Doing

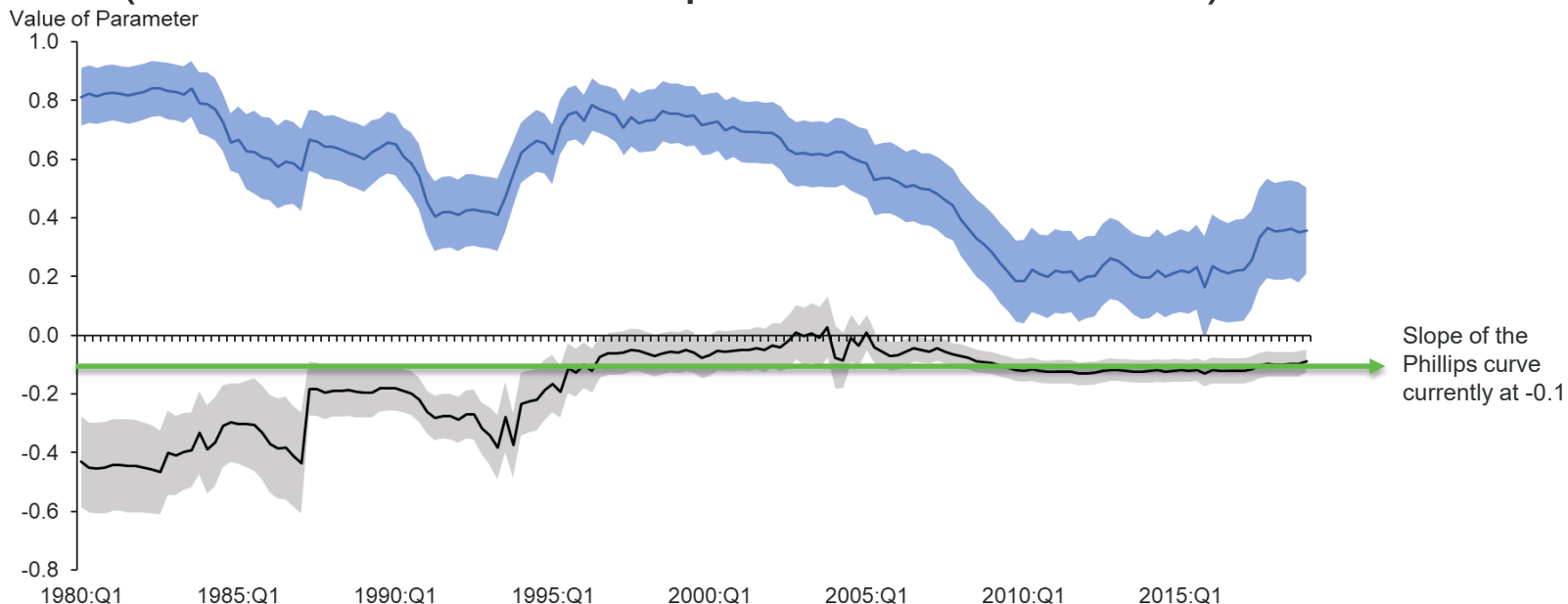
1. Monetary policy evolved to provide further accommodation after the fed funds rate became constrained near zero
 - a. provision of ample reserves to the banking system
 - b. policy tools other than the Fed's Fund rate: balance sheet policies, forward guidance
 - c. communication practices: explicit 2 percent inflation target, summary of economic projections (SEP), and Consensus Statement, etc.
2. Somewhat mixed macroeconomic performance from the crisis onward
 - a. easing financial conditions; other transmission channels: managing expectations (signaling about future policy rate to reduce policy uncertainty), improved sentiment, etc.
 - b. efficacy hinges on the credibility of the commitment; size, duration and scalability of policy actions are uncertain, can have implications for financial stability
 - c. outcomes partly affected by a changing economy, may also reflect limitations of the monetary policy framework in place (FIT)

Monetary Policy in Real Time

- Structural transformations difficult to ascertain in real time
 - Altering the trade-off between inflation and economic activity
 - diminished sensitivity of inflation to domestic resource slack
 - Decline in the longer-run real rate of interest → lower nominal rates, less monetary policy space
 - attributed to structural forces—slowdown in productivity growth, demographics, globalization, etc.—largely out of the purview of monetary policy
 - tied also to lower rate of growth in potential output, shifts in the labor market (decline in the longer-run rate of unemployment prior to the Covid19 recession)
- Similar structural shifts observed abroad

Diminished Sensitivity of Inflation to Domestic Slack

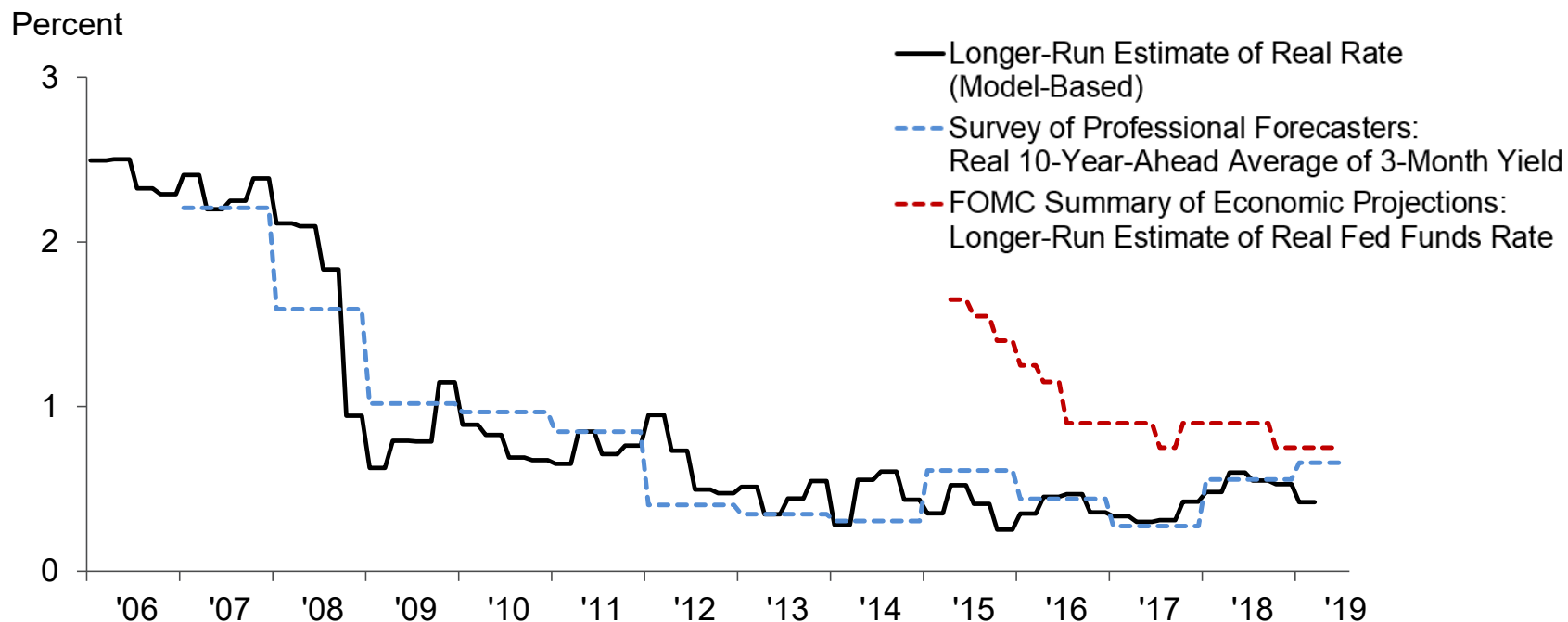
(Reduced-Form Phillips Curve Estimates)



NOTE: Shaded areas indicate the 70 percent confidence interval. The figure reports the 15-year rolling window estimate of the persistence parameter α and the slope parameter κ in the regression $\pi_t = \alpha\pi_{t-1} + (1-\alpha)\pi_{t-1}^0 + \kappa(u_t - u_t^*) + \varepsilon_t$. The variable π_t^0 represents the long-term inflation expectations. Consistent with the standard assumption in FRB/US, it is assumed that $\pi_t^0 = \pi_{t-1}^0 + \gamma(\pi_{t-1} - \pi_{t-1}^0)$ with $\gamma = 0.05$.

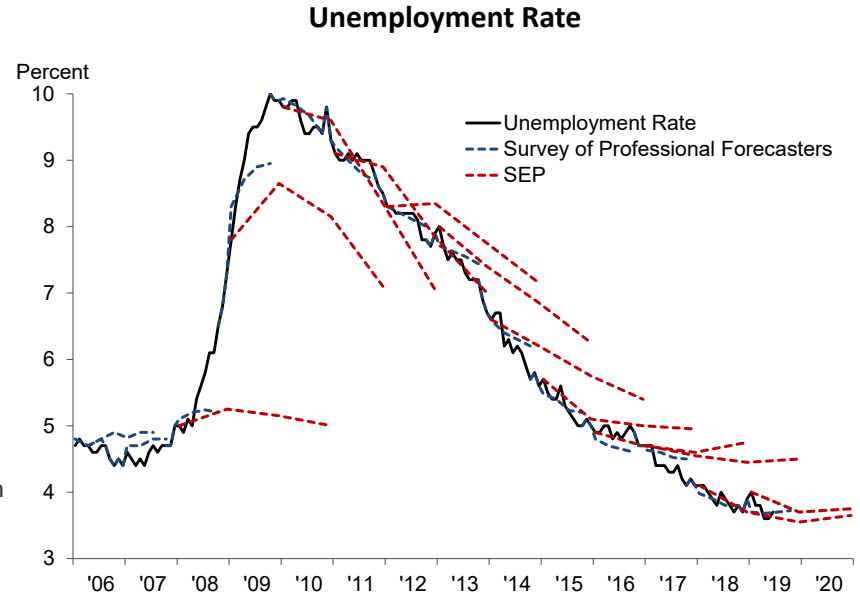
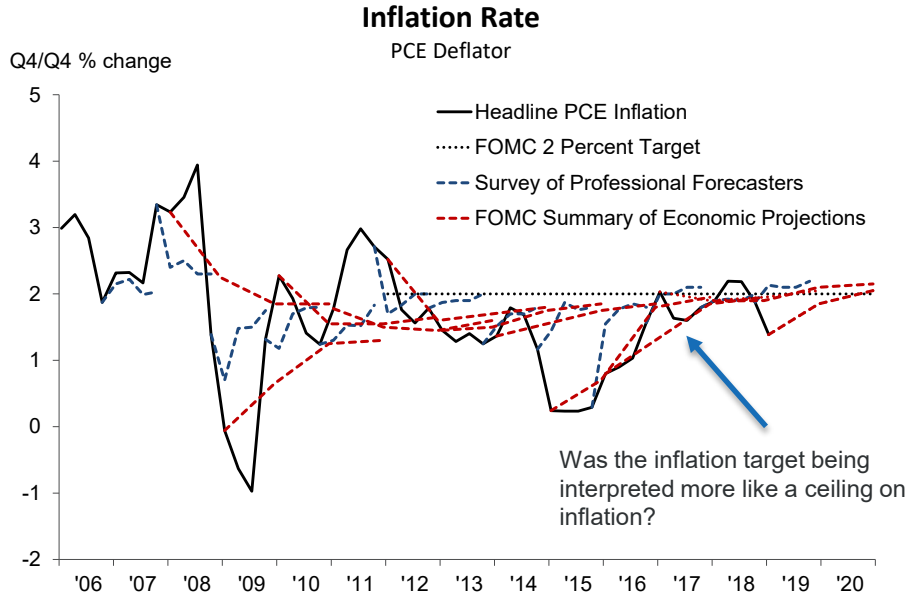
SOURCE: Author's calculations.

Downward Shift in the Longer-Run Real Rate of Interest



Sources: Holston, Laubach, and Williams (2017) (<https://doi.org/10.1016/j.jinteco.2017.01.004>), Federal Reserve Bank of St. Louis FRED Database, Federal Reserve Bank of Philadelphia Survey of Professional Forecasters, Haver Analytics, author's calculations.
Notes: The model-based estimate of Holston, Laubach, and Williams (2017) offers is for the natural rate of interest.

Inflation and Unemployment Rate Forecasting *Surprises*



Sources: Federal Reserve Bank of St. Louis FRED Database, Federal Reserve Bank of Philadelphia Survey of Professional Forecasters, Haver Analytics, author's calculations.

Inflation Expectations: A Limitation of FIT?

- Anchored longer-run inflation expectations during the crisis facilitated the pursuit of the dual mandate
- Concern about de-anchoring inflation expectations
 - Low inflation realizations can erode the public's longer-run inflation expectations, reducing incentives to raise prices and wages, thus creating a vicious circle
 - Credibility of the policy commitment is crucial
 - Bank of Japan's decades-long struggle to meet its inflation objective illustrates the difficulty of raising inflation once longer-run inflation expectations become entrenched at too low a level

A FAIT Accompli—How Has the Fed's Monetary Policy Framework Changed?

What Has Changed As a Result of the Framework Review?

Key changes incorporated into the FOMC's revised [Statement on Longer-Run Goals and Monetary Policy Strategy](#) — updating the terms of the dual mandate (inflation)

4. The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation. The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee ~~would be concerned if inflation were running persistently above or below this objective.~~ Communicating this symmetric inflation goal clearly to the public helps keep **judges that** longer-term inflation expectations firmly **that are well** anchored; ~~thereby at 2 percent~~ fostering price stability and moderate long-term interest rates and ~~enhancing~~ **enhance** the Committee's ability to promote maximum employment in the face of significant

economic disturbances. In order to anchor longer-term inflation expectations at this level, the Committee seeks to achieve inflation that averages 2 percent over time, and therefore judges that, following periods when inflation has been running persistently below 2 percent, appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time.

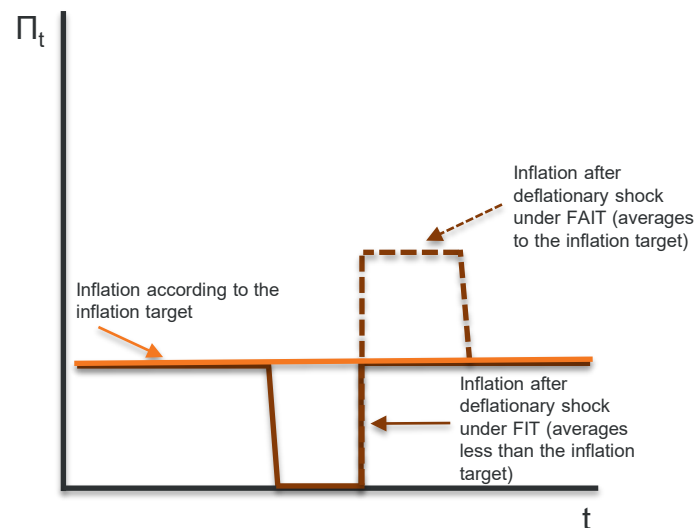
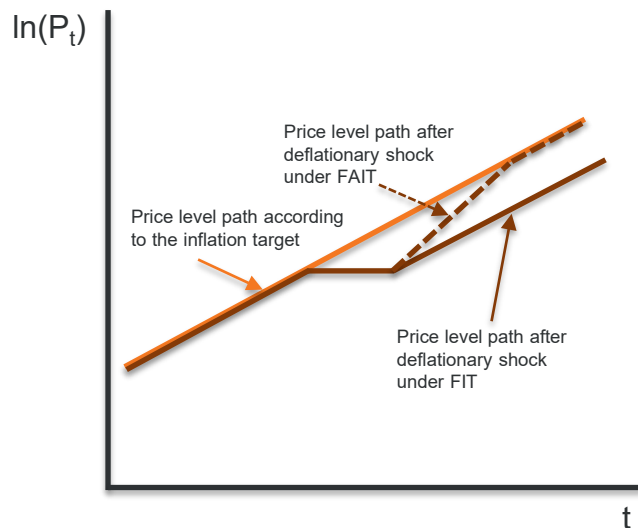
What Has Changed As a Result of the Framework Review?

Key changes incorporated into the FOMC's revised [Statement on Longer-Run Goals and Monetary Policy Strategy](#) — updating the terms of the dual mandate (employment)

3. The maximum level of employment is **a broad-based and inclusive goal that is not directly measurable and changes over time owing** largely determined by **to** nonmonetary factors that affect the structure and dynamics of the labor market. ~~These factors may change over time and may not be directly measurable.~~ Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the **shortfalls of employment from its** maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments. ~~Information about Committee participants' estimates of the longer-run normal rates of output growth and unemployment is published four times per year in the FOMC's Summary of Economic Projections. For example, in the most recent projections, the median of FOMC participants' estimates of the longer-run normal rate of unemployment was 4.4 percent.~~

How Is FAIT Different than FIT in Practice?

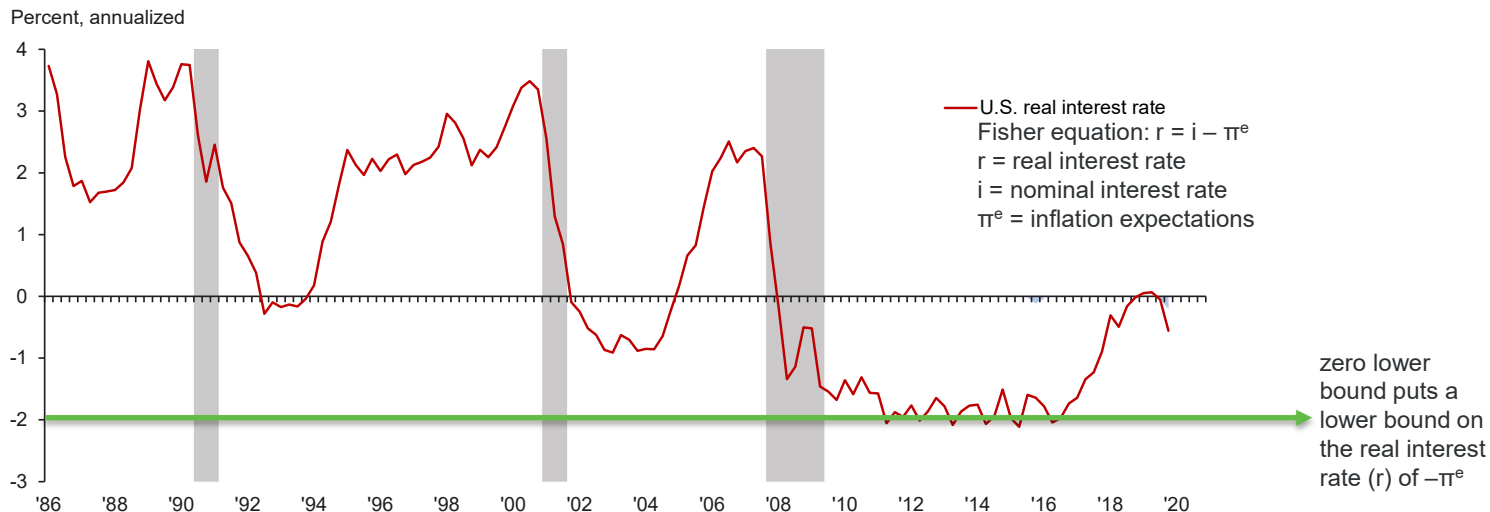
Let bygones-be-bygones (FIT) vs. allowing make-up strategies (FAIT)



What Does FAIT Have to Do with the Zero Lower Bound on Interest Rates?

Why Does The Zero Lower Bound Matter?

- Fed funds cannot be lowered further in response to adverse demand shock:
 - costly and difficult to escape (liquidity trap): Japan

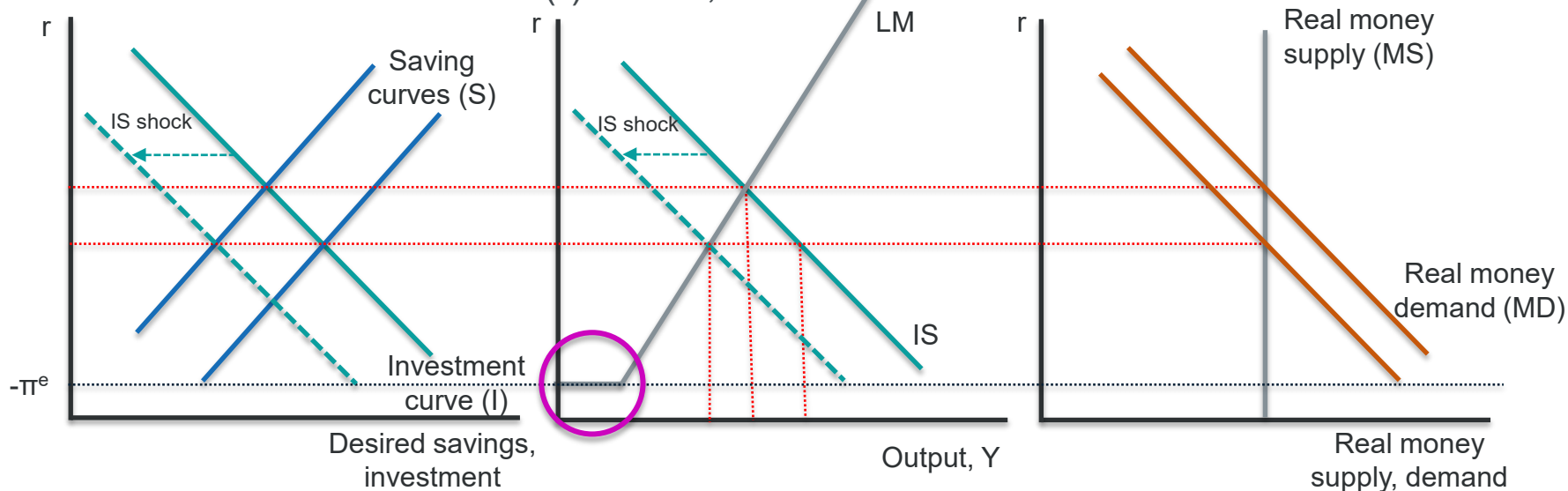


NOTES: The shaded bars indicate National Bureau of Economic Research (NBER) recessions. The U.S. real rate is the federal funds rate minus the one-quarter-ahead inflation expectations from Blue Chip Economic Indicators.

SOURCES: Blue Chip Economic Indicators; Board of Governors of the Federal Reserve System/FRED; NBER; authors' calculations.

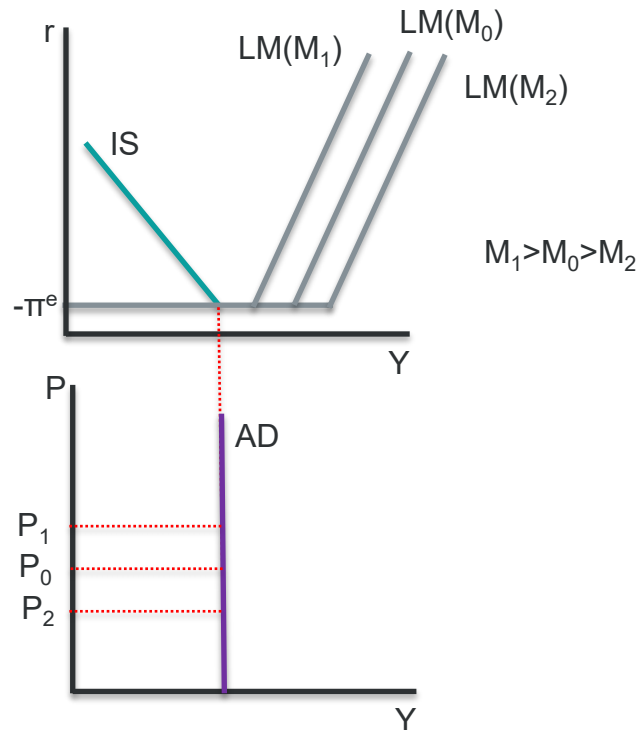
Theory Musings: IS-LM and the Zero Lower Bound

- IS curve (equilibrium in the goods market)
- LM curve (asset market equilibrium)—zero lower bound puts a lower bound on the real interest rate (r) of $-\pi^e$, introduces a kink into the LM curve



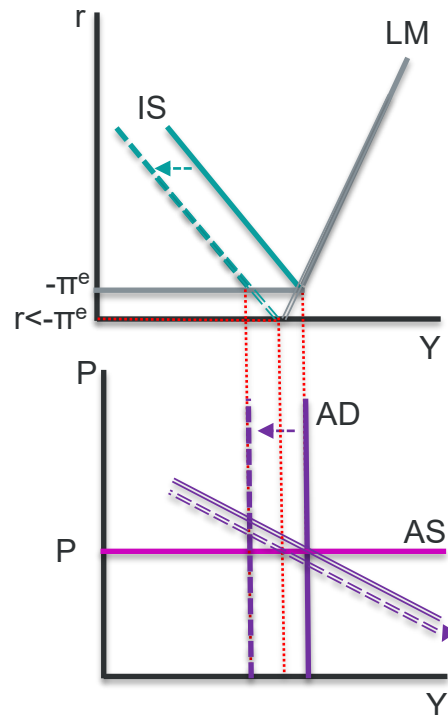
Why is the Federal Reserve Concerned About the Zero Lower Bound?

- The aggregate demand (AD) curve becomes vertical
 - monetary policy is rendered “ineffective”
 - as long the zero lower bound is still binding, if the money supply changes are not large enough & inflation expectations are exogenous and unchanged
 - higher inflation expectations (π^e) can ease the constraint



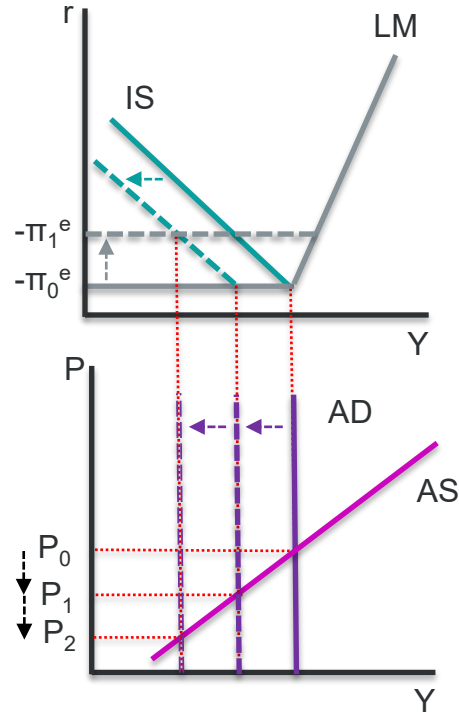
Aggregate Demand Shocks Are Amplified when the Zero Lower Bound is Binding

- Negative IS shocks have larger effects on economic activity
 - because the real rate (r) cannot react to partially offset the effects of an IS shock on aggregate demand (AD)...
 -assuming inflation expectations are exogenous and unchanged & aggregate supply (AS) is perfectly elastic

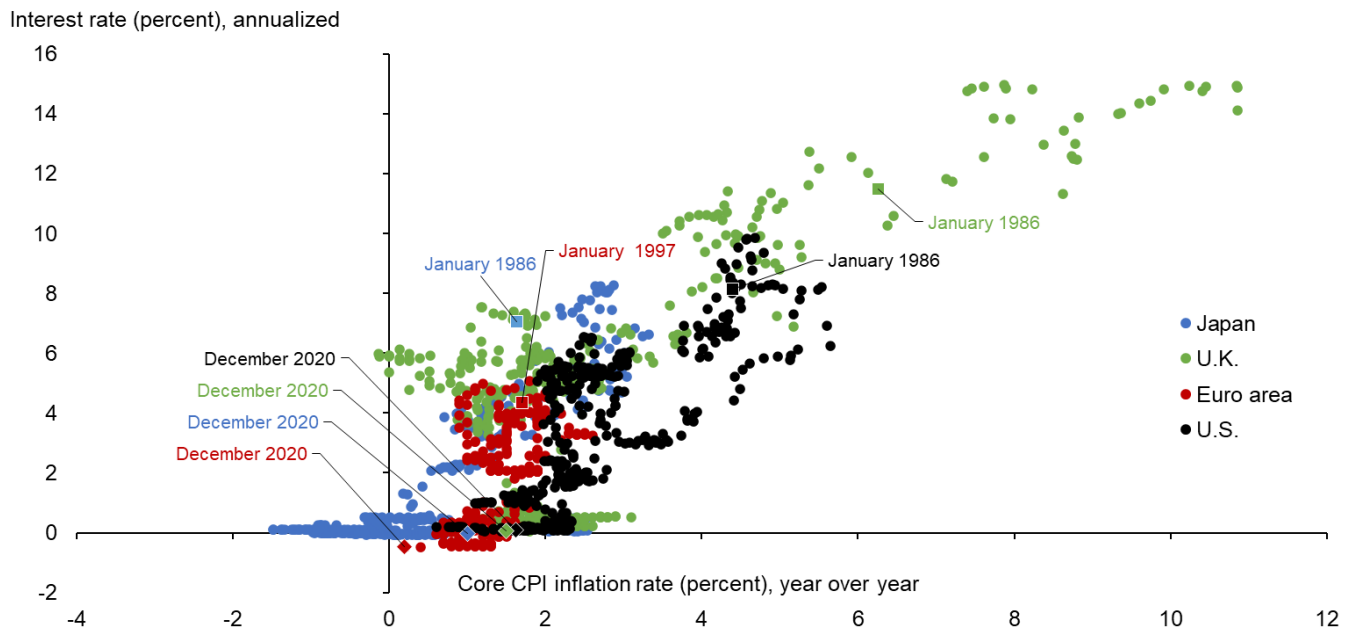


The Risk of a Liquidity Trap

- If a negative demand shock when the zero lower bound is binding causes agents to begin to expect prices to fall, lower inflation expectations increase the real interest rate lower bound
 - this makes it harder to escape the constraint
 - further reduces aggregate demand aggravating the downturn
 - if it builds on itself, it could result in a deflationary spiral



A World of Low Inflation and Low Interest Rates



NOTES: Data for the euro area begin in January 1997; all others begin in January 1986. Each dot represents a month. CPI refers to the consumer price index.
SOURCE: Organization for Economic Cooperation and Development.

FAIT and the Great Escape

- Credibility is critical to escape the zero lower bound
 - FAIT formalizes the commitment to keep inflation expectations anchored
 - ...allows make-up strategies to prevent persistent negative demand shocks and low inflation from becoming entrenched in expectations
- The Federal Reserve aims to keep inflation expectations well-anchored
 - to avoid the risks of a liquidity trap resulting from expected inflation becoming entrenched below target
 - to support broad-based, full employment while keeping prices stable—inflation expectations being key when prices are costly to adjust
- Promise “low-for-long” policies after zero lower bound (“forward guidance”)
- Buy corporate debt, longer maturity gov’t debt (“credit & quantitative easing”)

Concluding Remarks

Three Takeaways for Monetary Policy

- Low interest rates in the U.S. (and abroad) leave less space to stimulate the economy through cuts in the policy rate
- Limited monetary and fiscal policy space in the U.S. (and abroad) can exacerbate the consequences of adverse shocks, constraining domestic policy
- Balance sheet policies, forward guidance → monetary accommodation
 - can help provide monetary accommodation when policy rates are constrained near zero—but are no panacea
 - **FAIT allows** for make-up strategies, **more room to sustain well-anchored inflation expectation**

FAIT's Game Plan... (And 3 Other Ways to Play in a 4-5-1)



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Some Useful References

- On the monetary policy framework review and FAIT:
 - <https://www.dallasfed.org/research/economics/2021/0406>
 - <https://www.dallasfed.org/~media/documents/institute/wpapers/2020/0399.pdf>
 - <https://www.federalreserve.gov/newsevents/speech/powell20200827a.htm>
 - <https://www.federalreserve.gov/newsevents/speech/clarida20200831a.htm>
 - <https://www.federalreserve.gov/monetarypolicy/guide-to-changes-in-statement-on-longer-run-goals-monetary-policy-strategy.htm>
- On the IS-LM model and the zero lower bound:
 - <https://www.dallasfed.org/~media/documents/research/er/1993/er9304a.pdf>
 - <https://www.dallasfed.org/~media/documents/research/er/1993/er9304b.pdf>
 - <https://www.dallasfed.org/~media/documents/research/staff/staff1102.pdf>
- On the monetary policy toolkit and its implementation:
 - <https://www.bis.org/publ/cgfs63.htm>
 - <https://www.stlouisfed.org/open-vault/2020/august/how-does-fed-influence-interest-rates-using-new-tools>

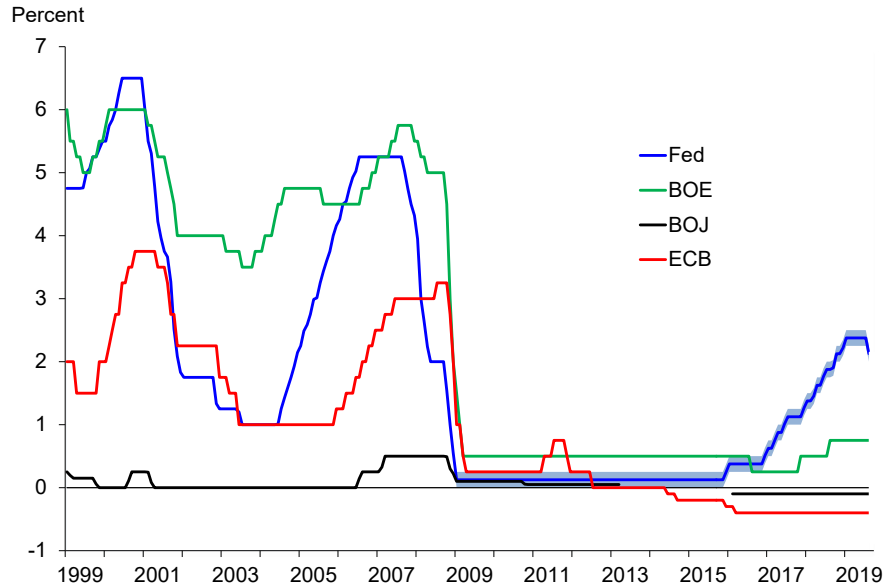
Supplementary Materials



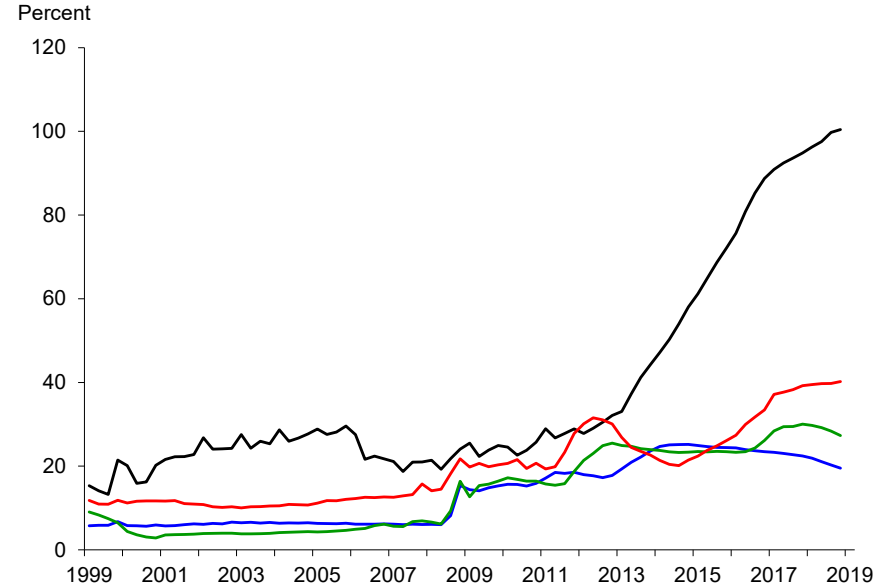
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When Cutting Policy Rates Is Not Enough

Central Bank Policy Rates



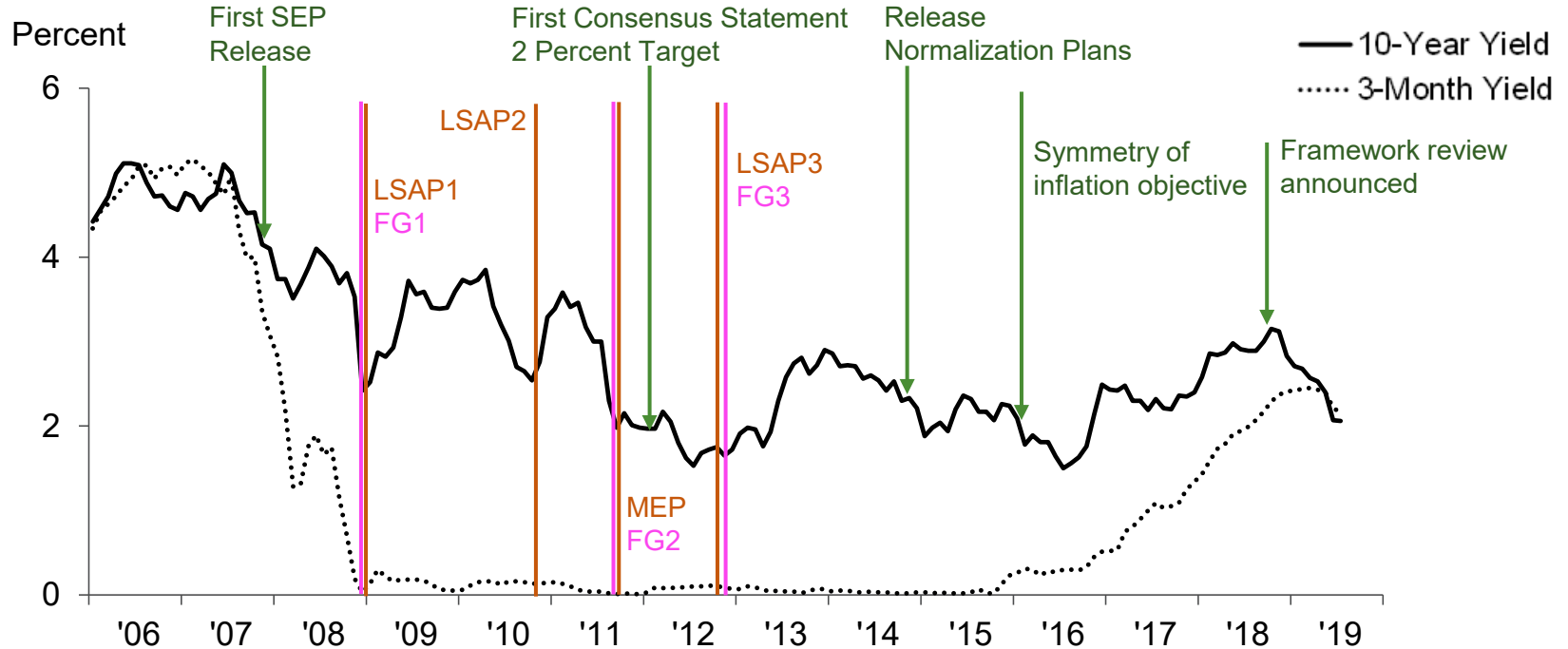
Central Bank Assets-over-GDP



Sources: Haver Analytics, author's calculations.

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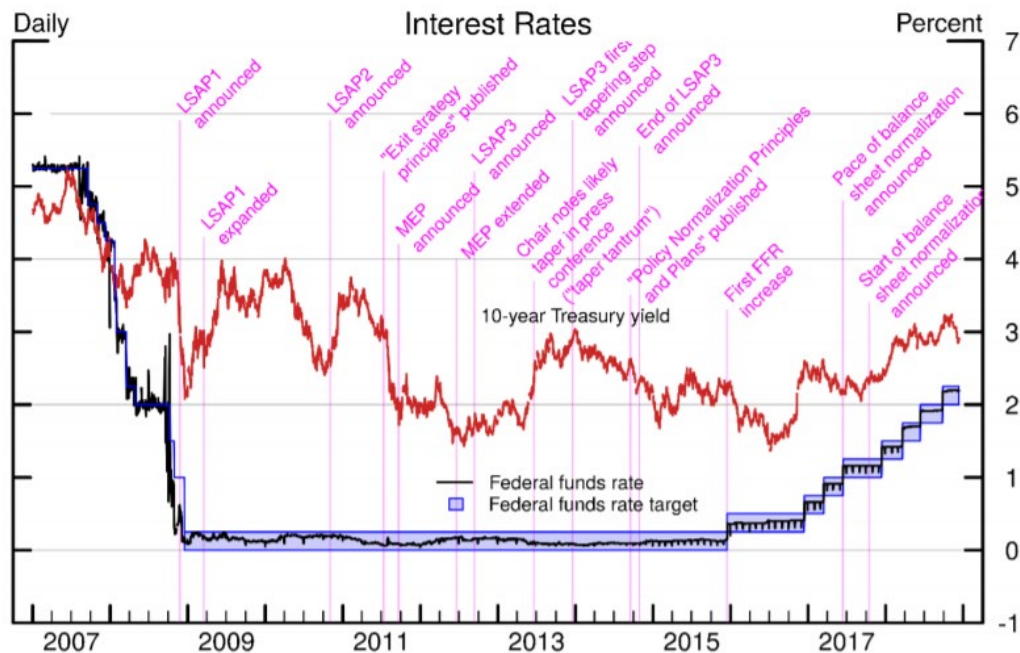
Key Monetary Policy Developments in the U.S.



Sources: Board of Governors of the Federal Reserve, Haver Analytics, author's calculations.

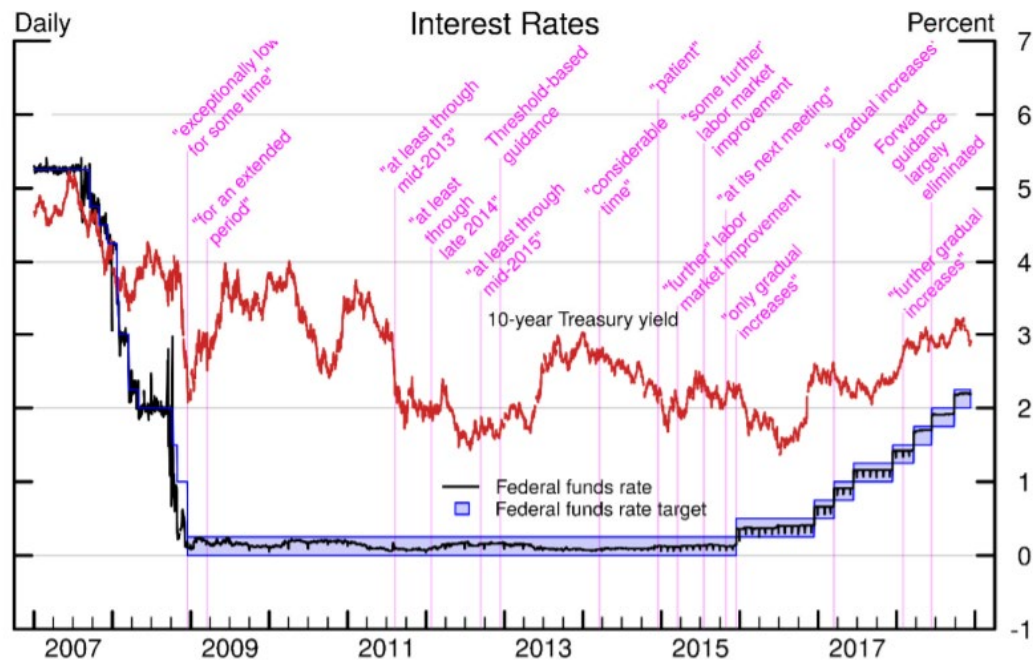
Notes: FG = Forward Guidance; SEP = FOMC Summary of Economic Projections, LSAP = large-scale asset purchases, and MEP = maturity extension program.

FOMC Timeline – Balance Sheet Policies



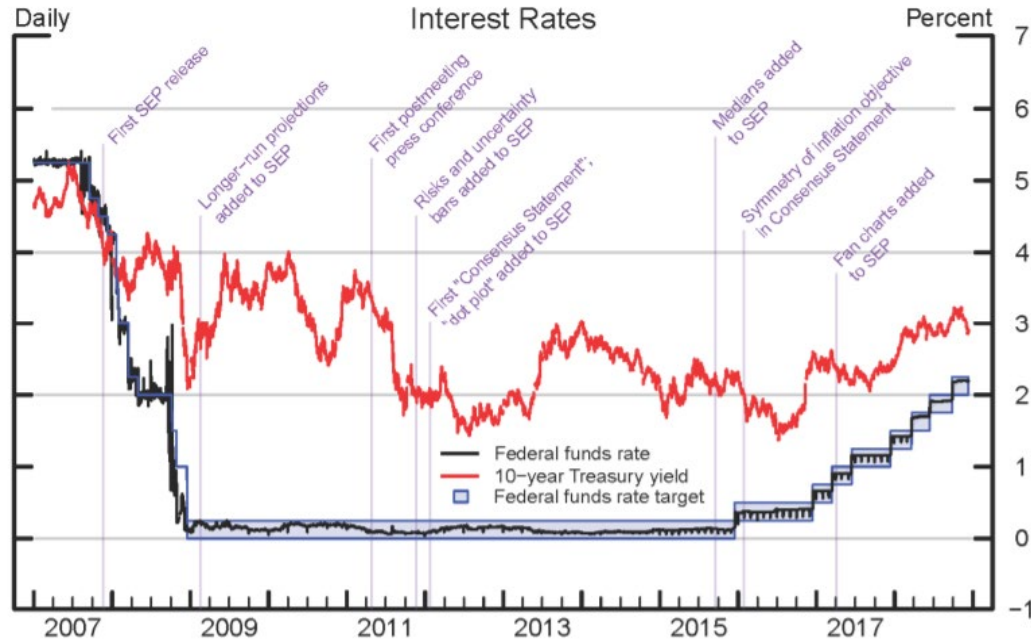
Sources: Board of Governors of the Federal Reserve System as reported in Eberly *et al.* (2019) (<https://doi.org/10.3386/w26002>).

FOMC Timeline – Forward Guidance



Sources: Board of Governors of the Federal Reserve System as reported in Eberly *et al.* (2019) (<https://doi.org/10.3386/w26002>).

FOMC Timeline – Summary of Economic Projections and Consensus Statement

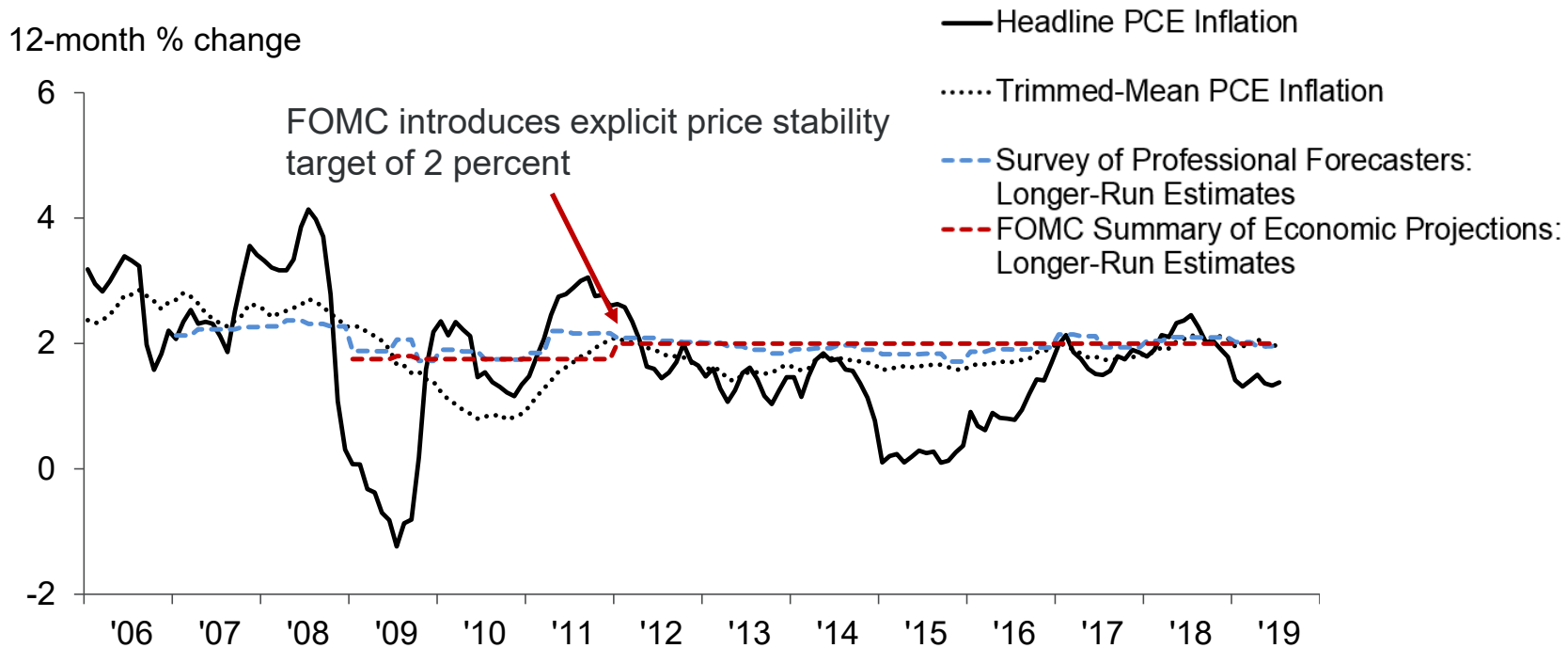


Sources: Board of Governors of the Federal Reserve System as reported in Eberly *et al.* (2019) (<https://doi.org/10.3386/w26002>).

Macroeconomic Performance Somewhat Mixed on Unemployment and Inflation

- Unemployment:
 - the unemployment rate fell from 10 percent to its lowest level since 1970, prior to Covid-19
 - the labor market recovered at a somewhat slower pace than in the historical experience, during the early part of the recovery after the 2007-09 recession
- Inflation:
 - headline PCE inflation rate has averaged only 1.4 percent—the trimmed-mean PCE, 1.8 percent—since the FOMC announced an explicit inflation target of 2 percent (January 2012)
- The macro performance during the recovery *surprised* analysts and policymakers, partly reflecting a changing economy

Longer-Run Inflation Rate Expectations Held Steady

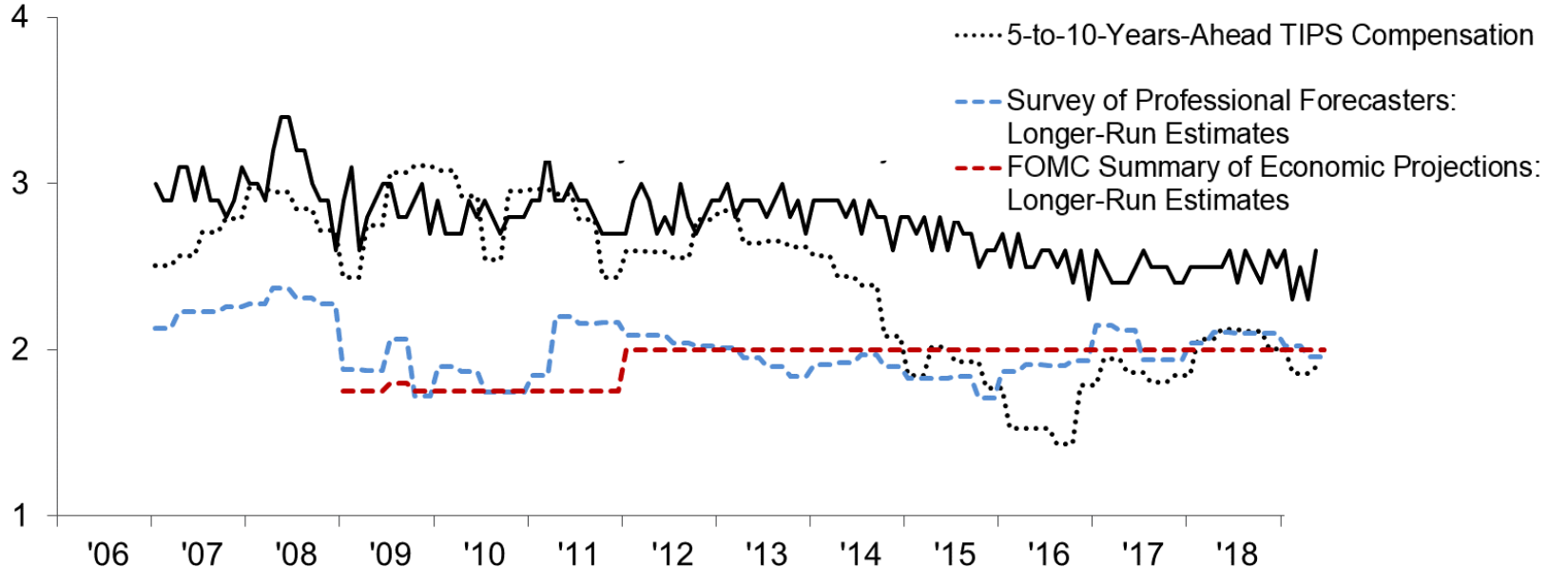


Sources: Federal Reserve Bank of St. Louis FRED Database, Federal Reserve Bank of Philadelphia Survey of Professional Forecasters, Haver Analytics, author's calculations.

Other Expectations

Long-Term Inflation Expectations and Compensation

12-month % change

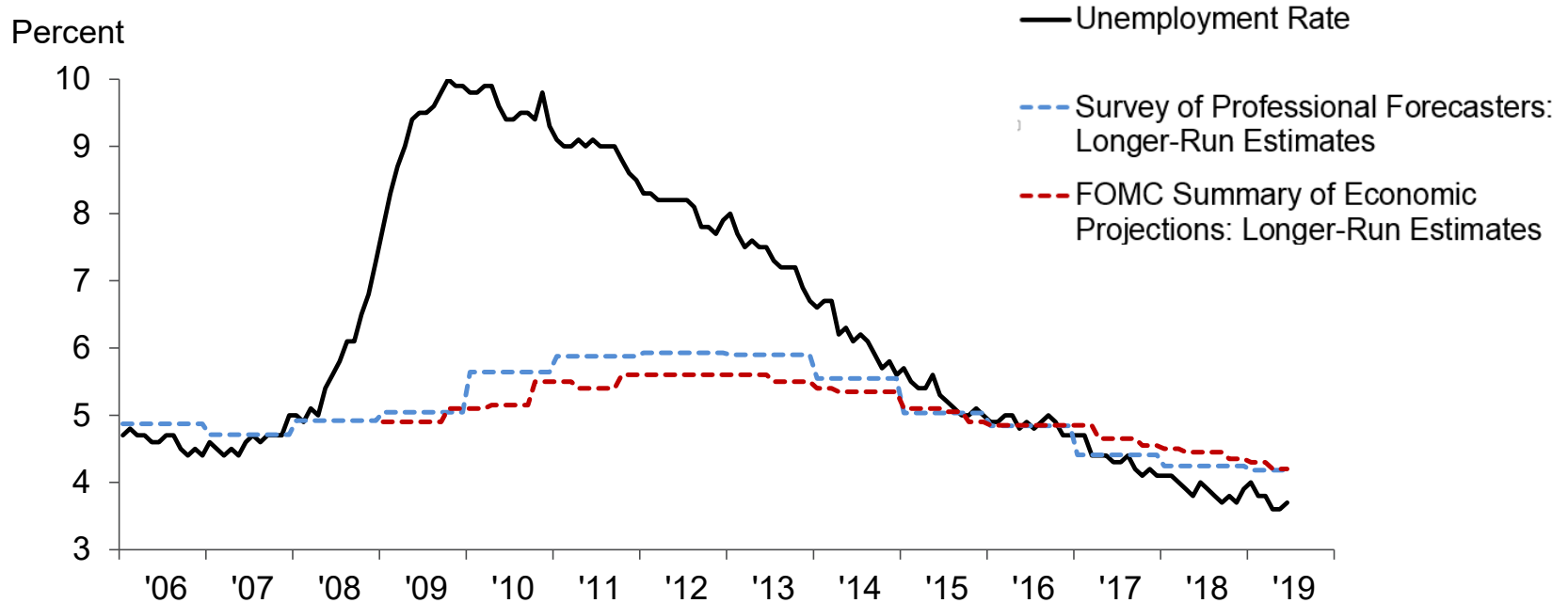


Sources: For Michigan, University of Michigan's Survey of Consumers; for Survey of Professional Forecasters (SPF), Federal Reserve Bank of Philadelphia; for Treasury Inflation-Protected Securities (TIPS), Federal Reserve Board staff calculations.

NOTES: TIPS compensation values are based on comparisons of an estimated TIPS yield curve with an estimated nominal off-the-run Treasury yield curve, with an adjustment for the indexation lag effect.

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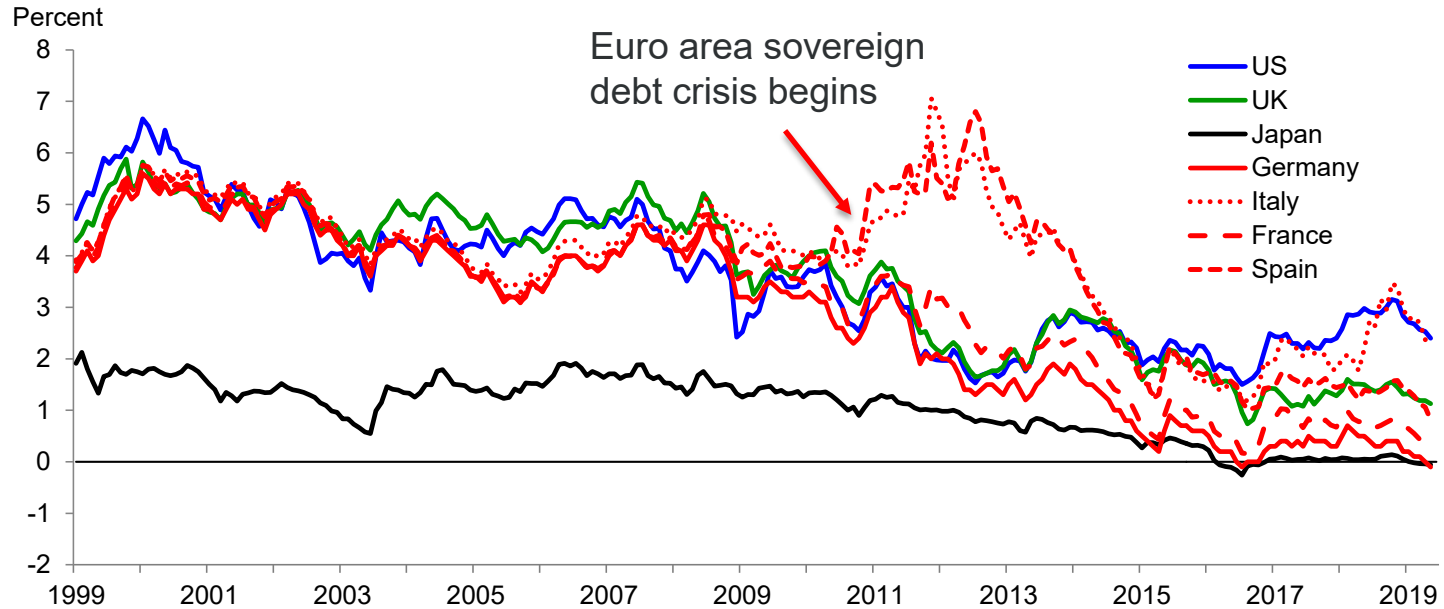
Declining Estimates of the Longer-Run Unemployment Rate Since 2013



Sources: Federal Reserve Bank of St. Louis FRED Database, Federal Reserve Bank of Philadelphia Survey of Professional Forecasters, Haver Analytics, author's calculations.

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10-Year Government Yields



Sources: Haver Analytics, author's calculations.

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Median and Range of the Estimated Impact on 10-Year Yields

Standardized to Asset Purchases of 10 Percent of GDP

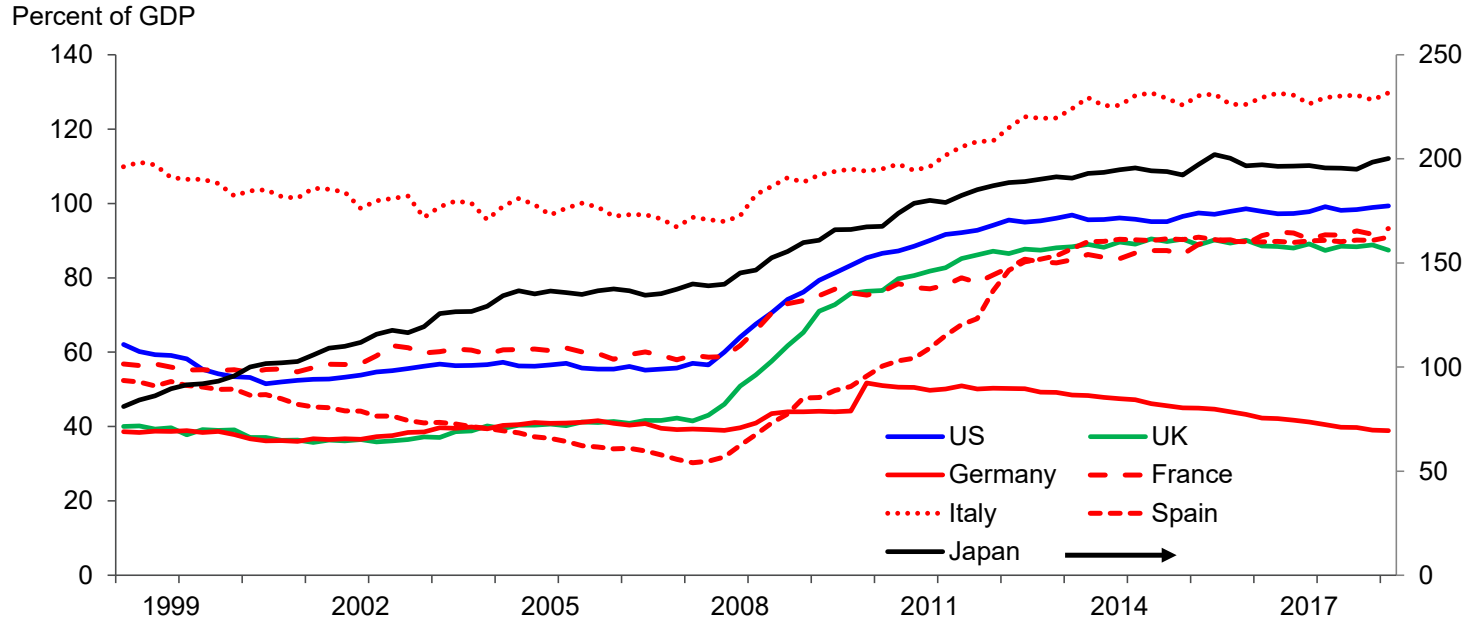
		U.S.			U.K.	Euro Area	Japan	
	All Episodes	LSAP1	LSAP2	MEP	APF1	APP	CME+	QQE
		12/08-03/10	11/10-12/12	09/11-12/12	03/09-01/10	03/15-09/16	12/08-08/11	04/13-09/14
Size (Percent of GDP)		12%	4%	3%	14%	11%	21%	23%
Median	53	76	45	60	67	43	11	20
Range	10-175	32-175	22-138	23-175	34-107	27-64	10-12	14-26

Sources: Andrade *et al.* (2016) (<https://shorturl.at/ghwzH>).

Notes: U.S.: LSAP refers to Large Scale Asset Purchases, MEP is the Maturity Extension Program; U.K.: APF refers to the Asset Purchase Facility; Euro Area: APP is the Asset Purchase Programme; Japan: CME+ denotes Comprehensive Monetary Easing (+ denotes an extended period) and QQE is Quantitative and Qualitative Easing.

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Central Government Debt-over-GDP



Sources: OECD; Haver Analytics.

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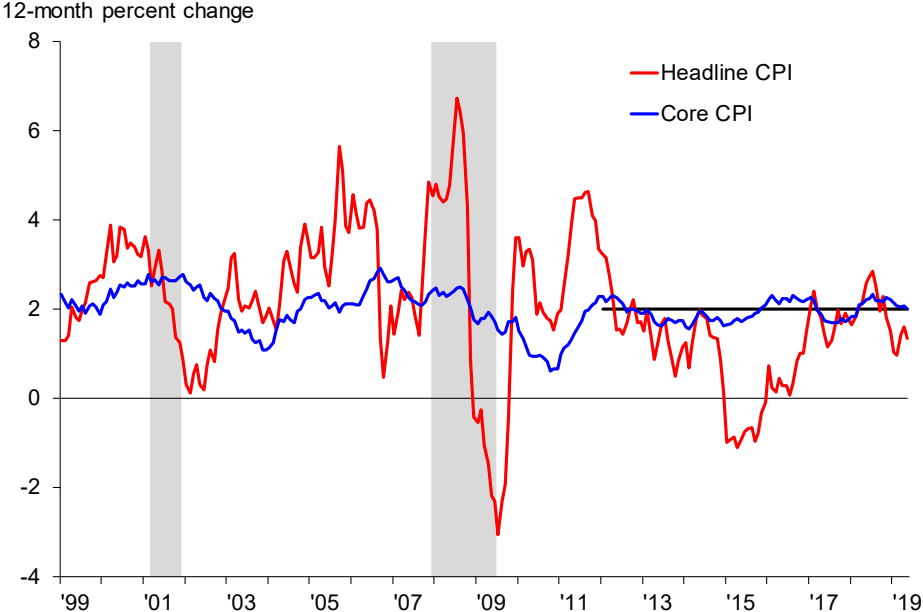
Country Background Materials



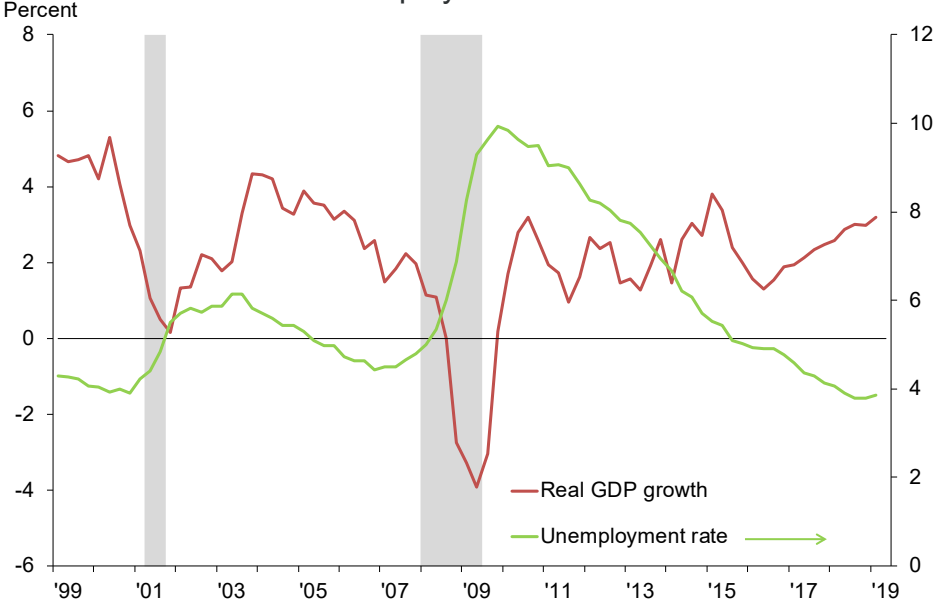
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Performance of the U.S. Economy

U.S. Inflation



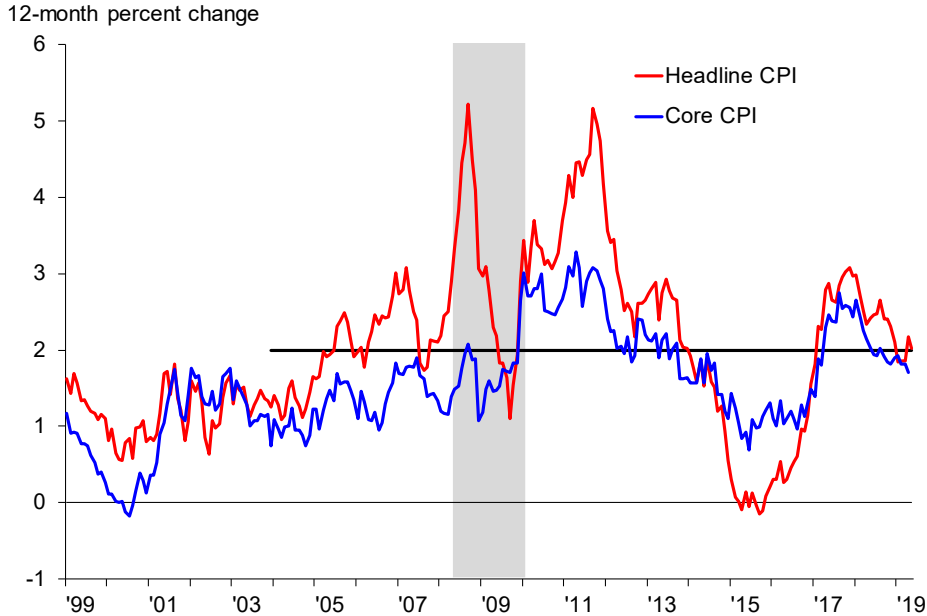
U.S. Real GDP Growth and Unemployment Rate



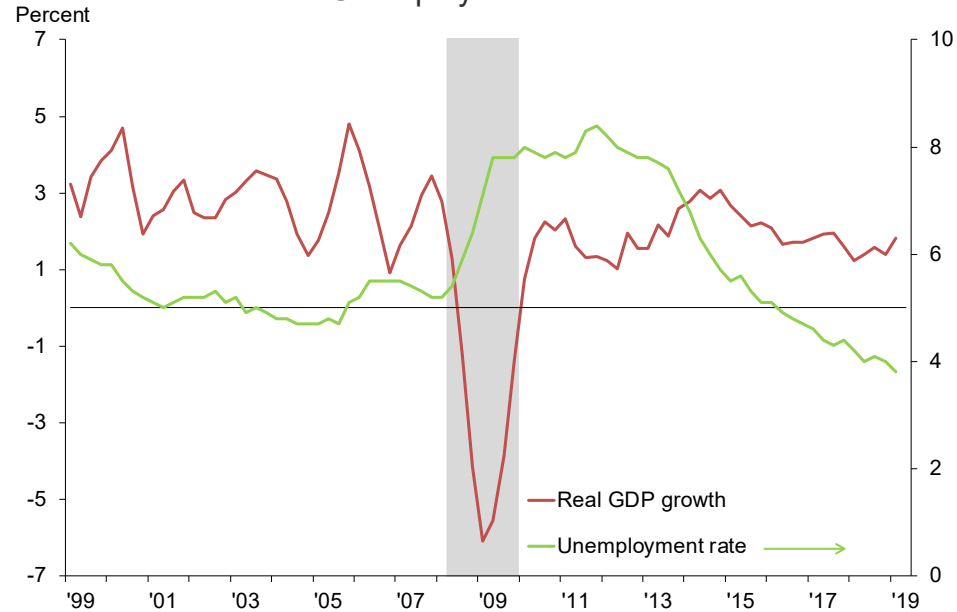
Sources: Haver Analytics; Database of Global Economic Indicators; ECRI.

Performance of the U.K. Economy

U.K. Inflation



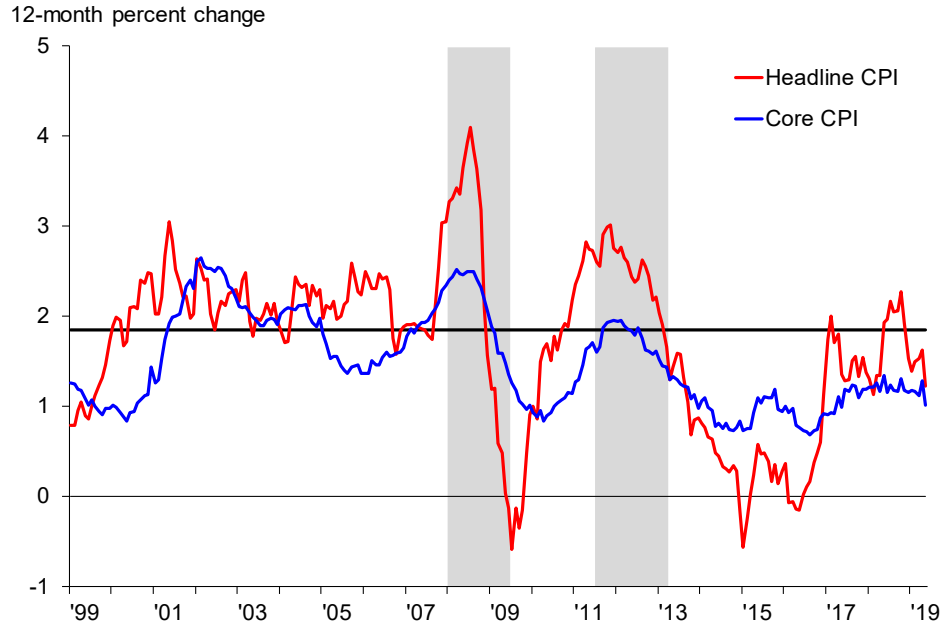
U.K. Real GDP Growth and Unemployment Rate



Sources: Haver Analytics; Database of Global Economic Indicators; ECRI.

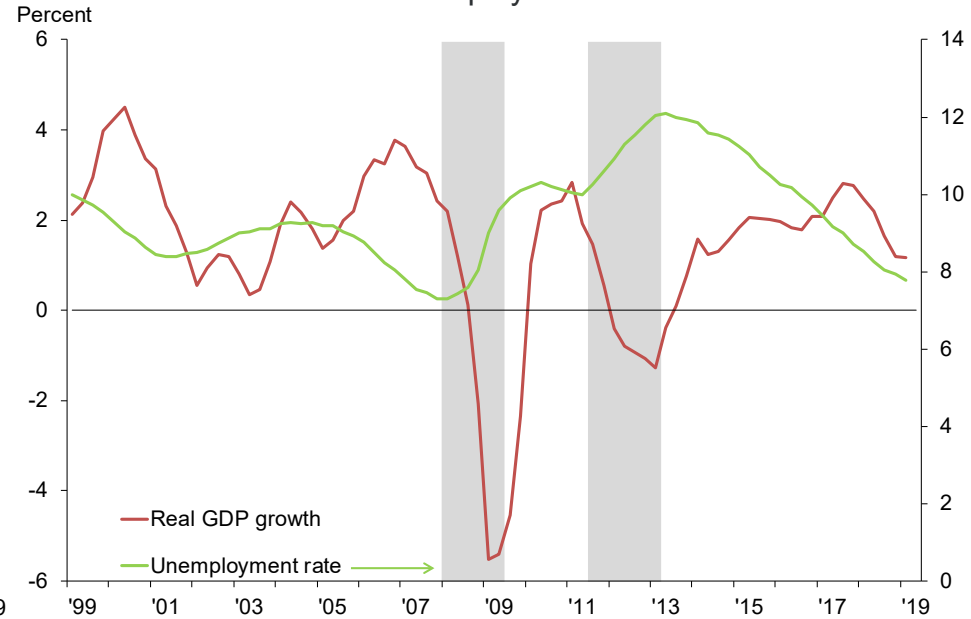
Performance of the Euro Area Economy

Euro Area Inflation



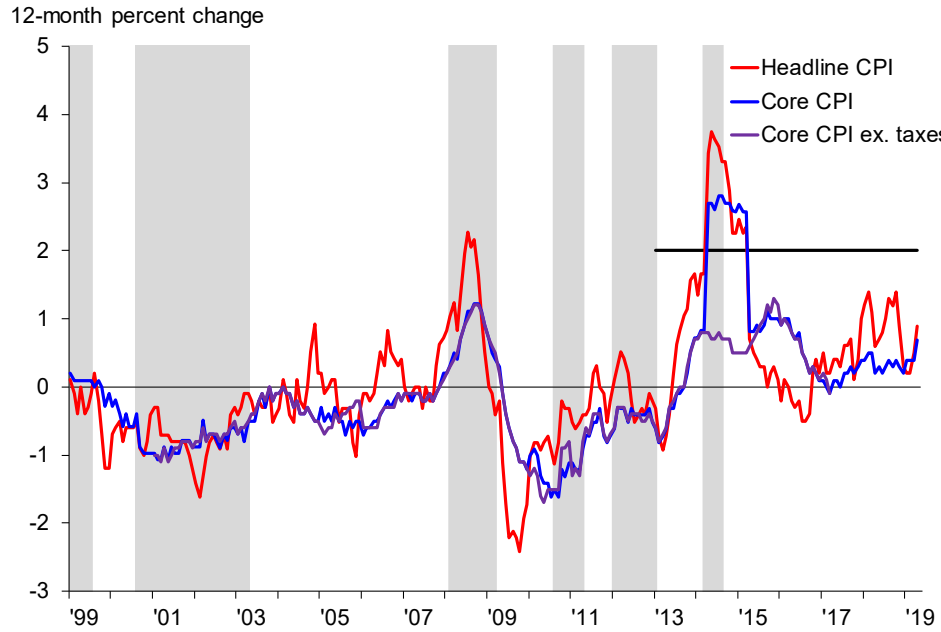
Sources: Haver Analytics; Database of Global Economic Indicators; ECRI.

Euro Area Real GDP Growth and Unemployment Rate

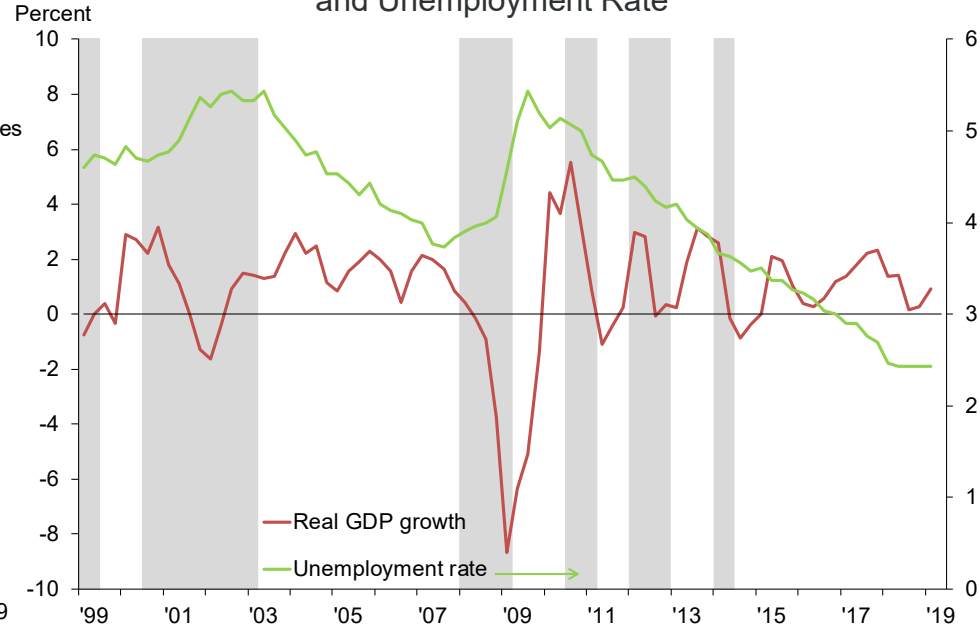


Performance of the Japanese Economy

Japan Inflation



Japan Real GDP Growth and Unemployment Rate



Sources: Haver Analytics; Database of Global Economic Indicators; ECRI.

Connections In the Classroom: The Fed's Strategy Change

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Connections In the Classroom:

Embed –

- **Discussion Question:**
 - What changes are we likely to see in the future, regarding monetary policy? Explain why those changes are being made.
- **Compare and contrast the historical inflation rates between the U.S. and other countries.**
 - Examples: Japan, Venezuela, Argentina, South Sudan, Zimbabwe.

Extend –

- [The Fed - Why does the Federal Reserve aim for inflation of 2 percent over the longer run?](#)
- [Teaching the New Tools of Monetary Policy.](#)
 - [Teacher Lecture Guide and PowerPoint Slides.](#)

