



# The FRB St Louis New Economic Narrative and Negative Rates

CENTRAL  
*to*  
AMERICA'S  
ECONOMY™

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

# The U.S. Economy Recently

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- The U.S. economy has been in an expansion for more than **7 years**.
- However, this post-Great Recession expansion has been characterized by relatively **low growth and inflation**, although unemployment has fallen to roughly the level believed to be its natural rate.

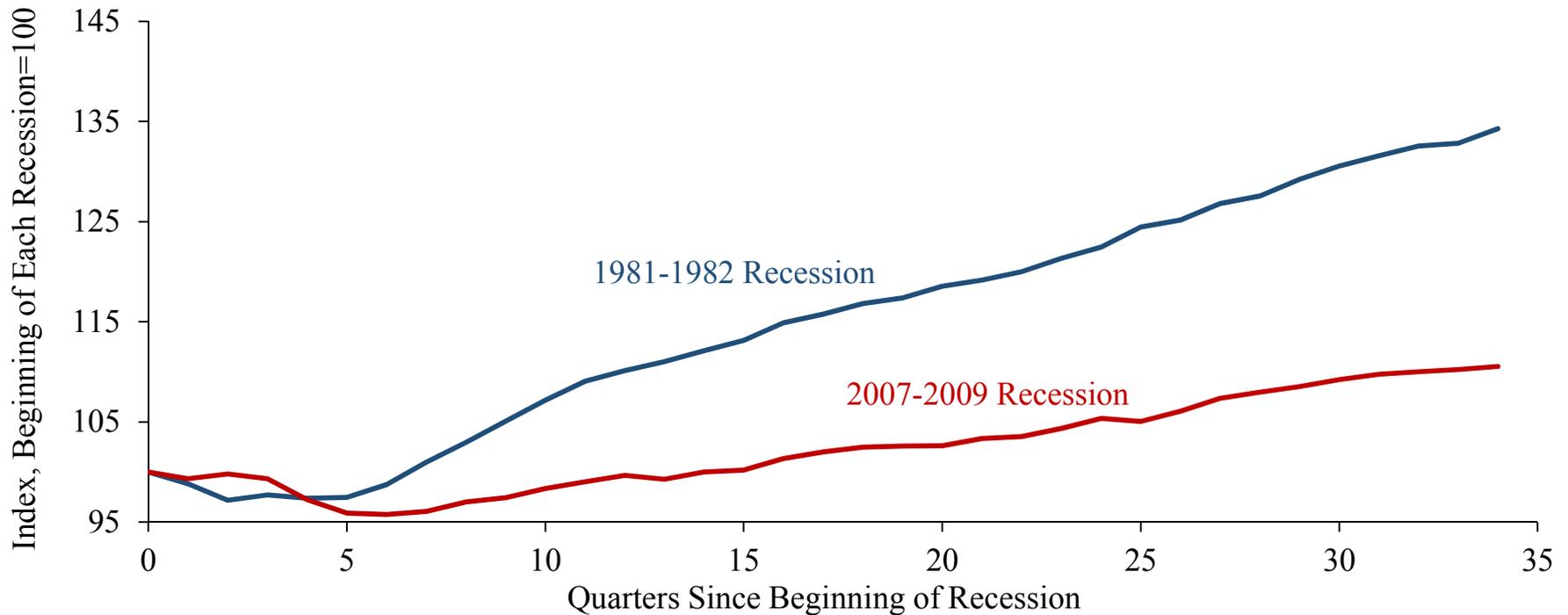
## The U.S. Economy Recently

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- Particularly, average annualized GDP growth during this time has been **2.1%**.
- Inflation, as measured by the price index for personal consumption expenditures, has averaged **1.6%**, which is notably lower than the Federal Reserve target of **2%**.

# The U.S. Economy Recently

## Post-Recession Real GDP Growth Has Been Much Lower This Time



Source: Bureau of Economic Analysis/FRED

# Expectations for the Future

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## **Economic Projections of FOMC Meeting Participants**

Median of September 2016 Projections

Variable	2016	2017	2018	Longer Run
Real GDP Growth	1.8	2.0	2.0	1.8
Unemployment Rate	4.8	4.6	4.5	4.8
PCE Inflation	1.3	1.9	2.0	2.0
Core PCE Inflation	1.7	1.8	2.0	
Federal Funds Rate	0.6	1.1	1.9	2.9

## The St. Louis Narrative

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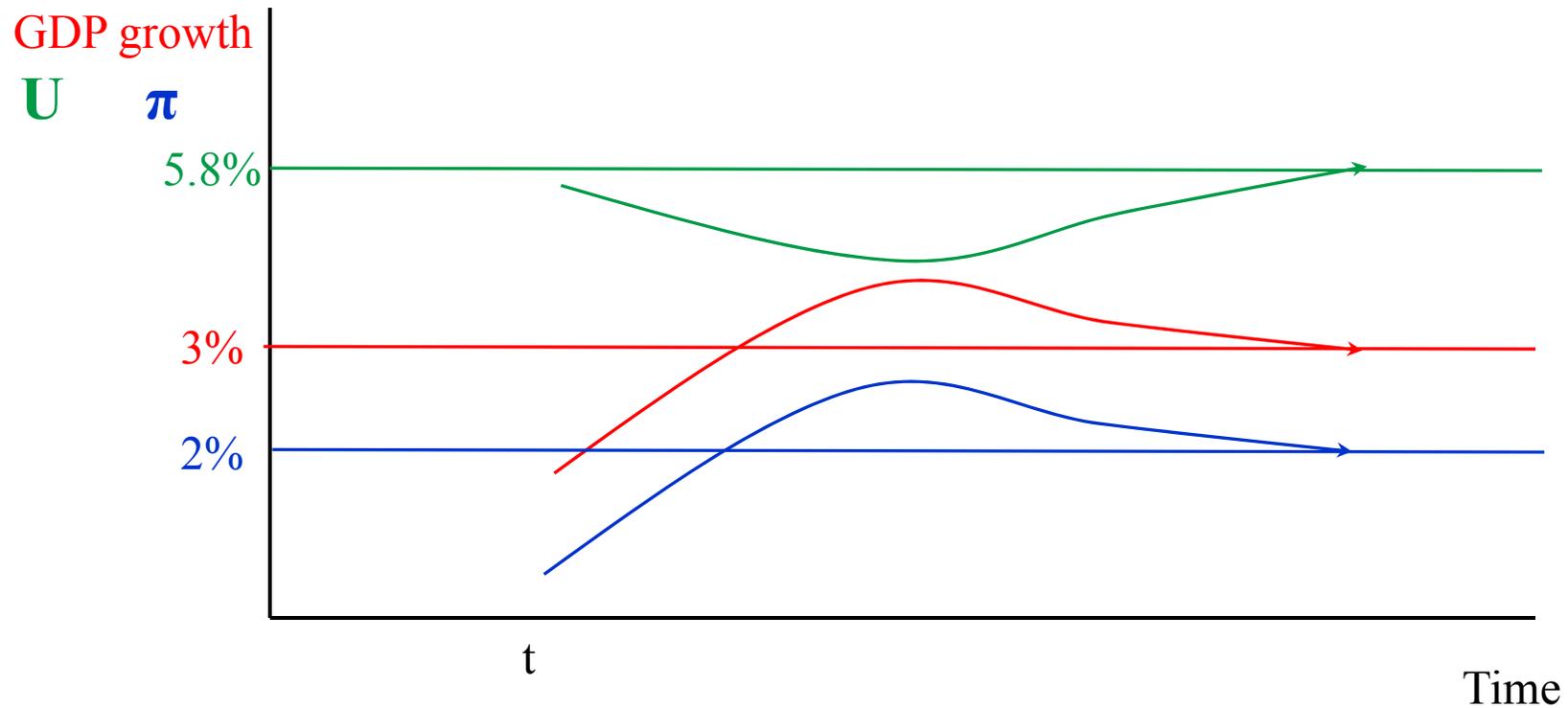
- The St. Louis Fed has recently adopted a unique view of the U.S. economy and its future path.
- This view has largely been influenced by the way the economy has behaved during the current expansion.
- Unlike the forecasts provided by the FOMC participants, this view is **not** conducive to the belief that there are long-run values for key economic variables.

## Our Previous Narrative

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- Like most forecasters, we assumed a **steady convergence to our long-run projections** of key economic variables.
- But over the **short run**, we thought that there would be a burst of above-trend growth that would continue to drive the unemployment rate **below its long-run value**.
- We also thought that the combination of stronger growth and very easy policy would cause an **overshooting of inflation** (temporarily above the 2% target).

# Old Forecast



## Our Previous Narrative

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- The forecasted overshooting was the main reason we pushed for raising interest rates over the last year.
- Rate changes affect the economy with a lag so we felt we needed to get ahead of the curve.
- We also felt that short-term **real** interest rates would move up, which would mean we also had to raise the nominal interest rate.

## Our New Narrative

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- The economy can shift between “states” (think sunny and cloudy), depending on the fundamentals of the economy.
- States are generally viewed as persistent, and optimal monetary policy varies across these states.
- There is not a unique state of the world that the economy will converge to.
- We call these different states *regimes*.

## Our New Narrative

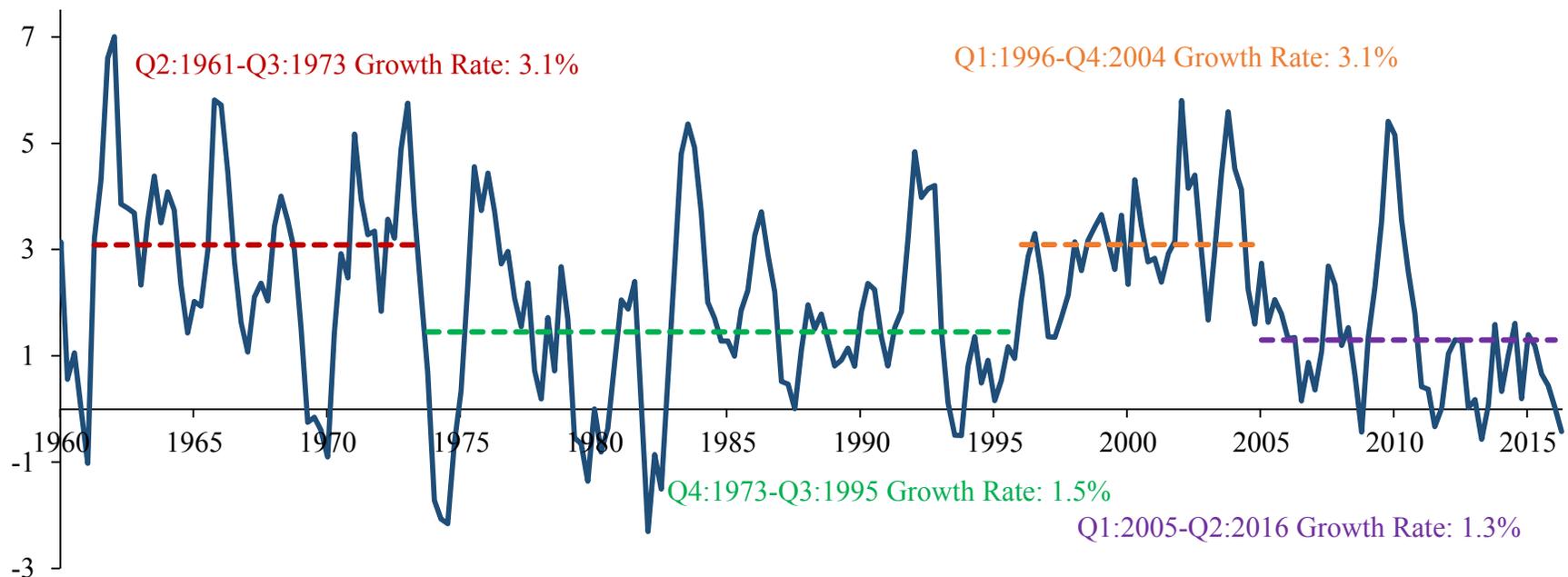
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- The economy can settle down into a regime that can persist for several years.
- The economy's growth path during these regimes depends crucially on labor productivity growth (output per hour).
- Labor productivity growth seems to exhibit regime switching from high to low and back again. It also appears to be very persistent.

# Labor Productivity Growth

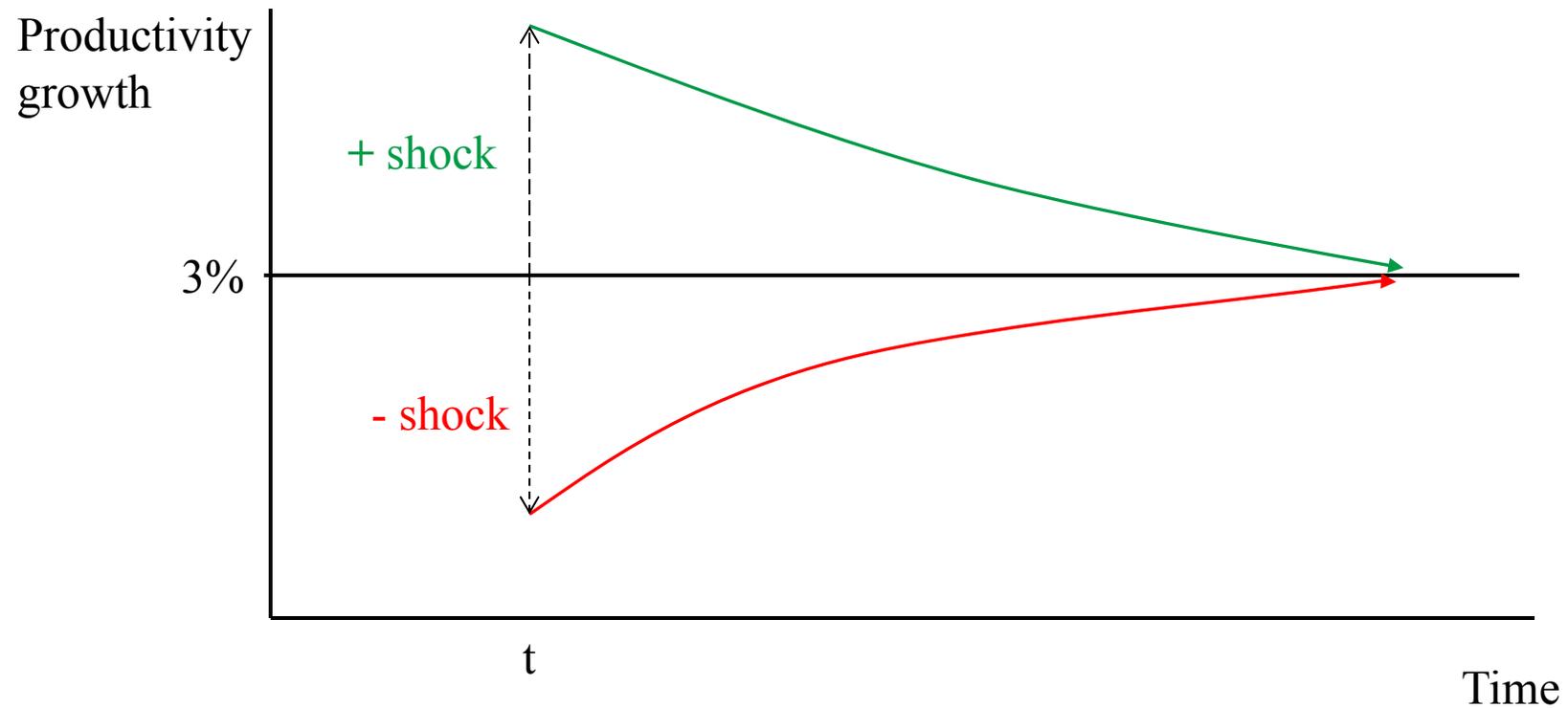
## Labor Productivity Regimes

Year-Over-Year Percent Change in Real Nonfarm Business Output per Worker Hour

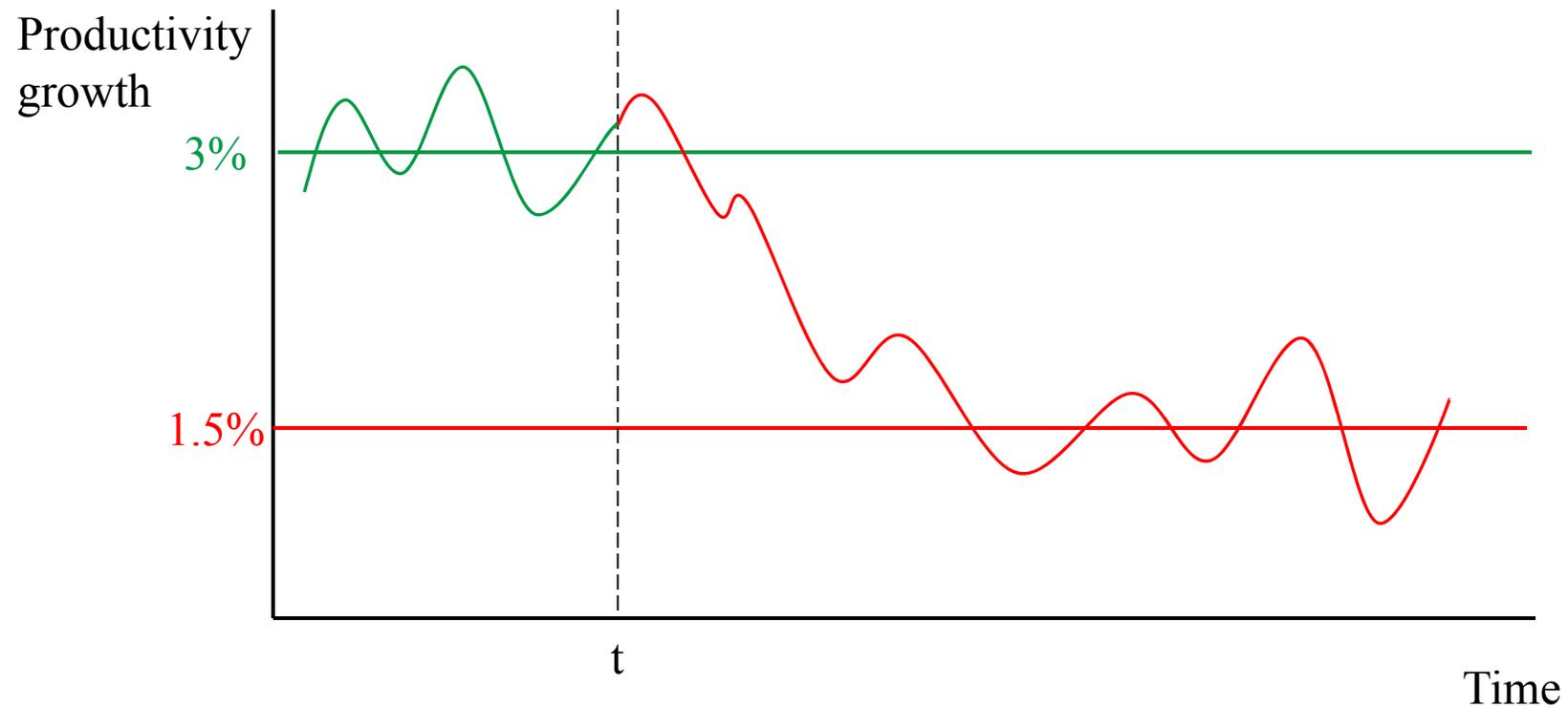


Source: Bureau of Labor Statistics/FRED

# An Illustration – Old view



# An Illustration – New view



## Key Points

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- Shocks bounce the economy around the regime growth rate and policy responds as usual *within* a regime but can differ *across* regimes.
- When the economy is close to the regime averages in terms of GDP growth, inflation and unemployment (all “gaps” are closed), then interest rate policy should be “neutral”.
- This produces a very simple forecast: **More of the same.**

## Two Other Fundamental Factors

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- Labor productivity growth is highly volatile and recognizing shifts to new regimes is often difficult.
- There are two other fundamental factors that we need to look at to assess the current regime's persistent low growth.
- These are: (1) the short-term real interest rate on safe liquid government debt; and (2) the risk of recession.

## Fundamental Factor #1: *r-dagger*

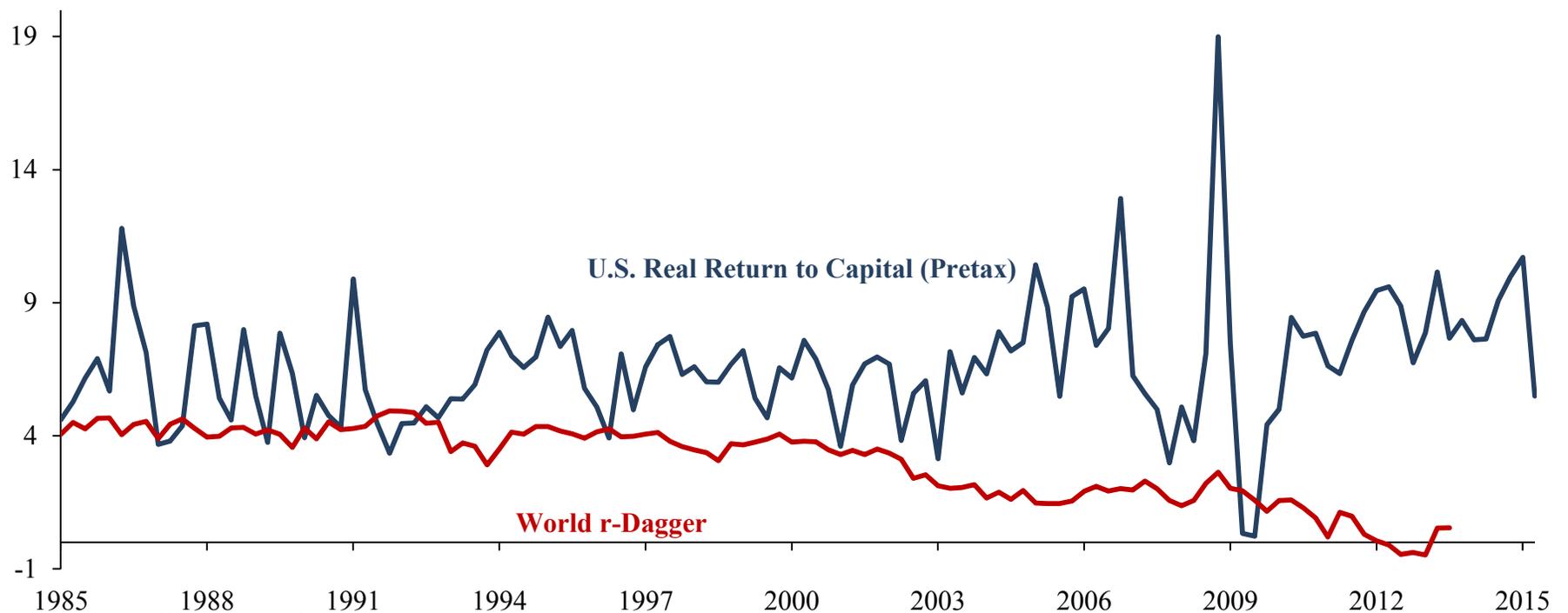
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- r-dagger ( $r^\dagger$ ) is the **real** rate of return on short-term government debt ( $r = i - \pi^e$ )
- It is important to distinguish  $r^\dagger$  from another key real interest: The real rate of return on capital ( $r^K$ ).
- Since reserves are close substitutes for short-term government debt (not plants and equipment), we do not use  $r^K$  for setting our policy rate.

# *r-dagger* Appears to be Abnormally Low

## The Real Return to Capital Hasn't Fallen with *r-Dagger*

Percent Per Annum



Sources: Ravikumar, et. al; King & Low

## Why is *r-dagger* ( $r^\dagger$ ) Abnormally Low?

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- One hypothesis is that there is a large liquidity premium on safe liquid government debt that has made  $r^\dagger$  is abnormally low -- in fact it's negative!
- We argue that there has been a large increase in the demand for government debt because of (1) global savings glut, (2) demographics, (3) regulatory changes and (4) geopolitical uncertainty.

## Fundamental Factor #2: Recession Risks

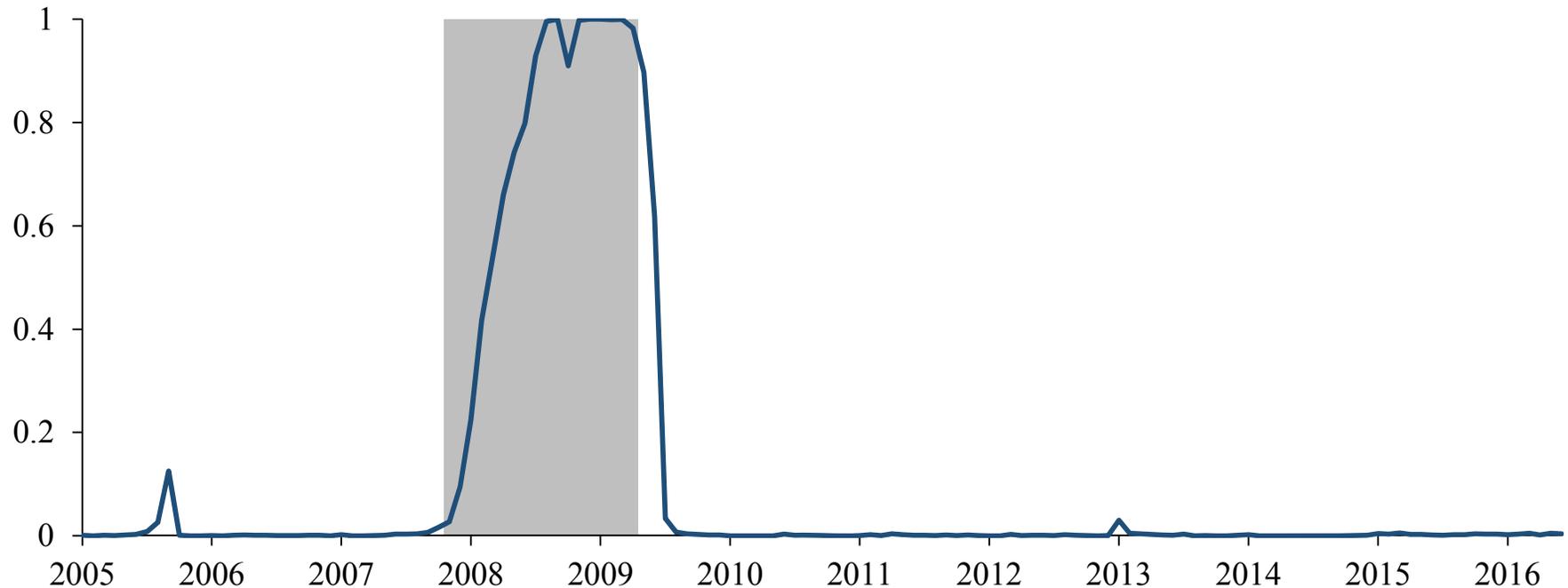
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- Recessions cause real GDP growth to go **negative** – they can happen in either regime. They are low probability events, but it's more likely to happen in the low-growth rate regime.
- When recession risk increases, firms and households can reduce their expectations for future growth and incomes. This leads to lower investment and spending.
- This development becomes a risk to the forecast.

# Recession Risks Are Very Low

**A Prominent Recession Probability Model Remains Relatively Flat**

1=100% Chance of Recession



Source: Piger and Chauvet/FRED

Last Observation: June 2016

# The Last Piece of the Narrative

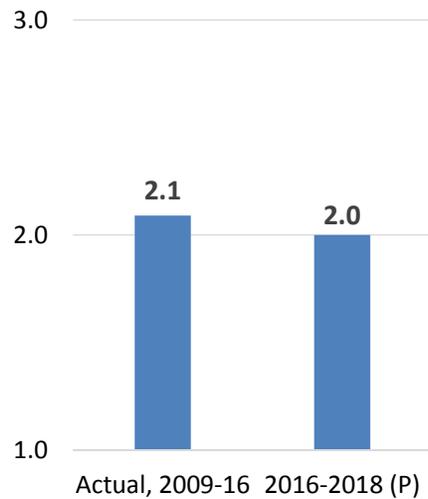
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- We believe that the economy's regime is characterized by:
  - Low productivity growth;
  - Low real rate interest rates on safe government debt ( $r^f$ );
  - Continued low economic growth (no recession);
  - Variables near targets (gaps are zero).

# The St. Louis Fed's Economic Projections

## The St. Louis Fed's Projection for Real GDP Growth, 2016-2018

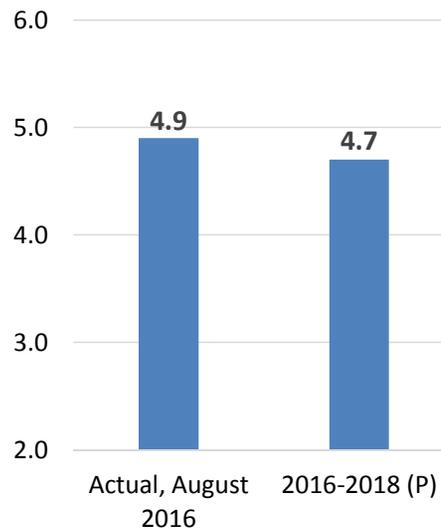
Percent changes at compounded annual rates



Source: Author's calculations using BEA data.

## The St. Louis Fed's Projection for the Unemployment Rate, 2016-2018

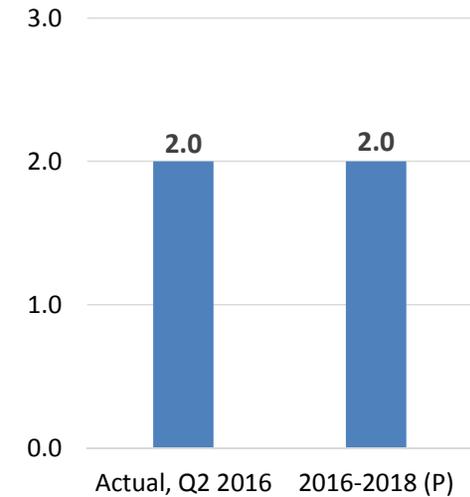
Percent of civilian labor force



Source: Bureau of Labor Statistics.

## The St. Louis Fed's Projection for the Inflation Rate, 2016-2018

Percent changes at compounded annual rates



Source: BEA.

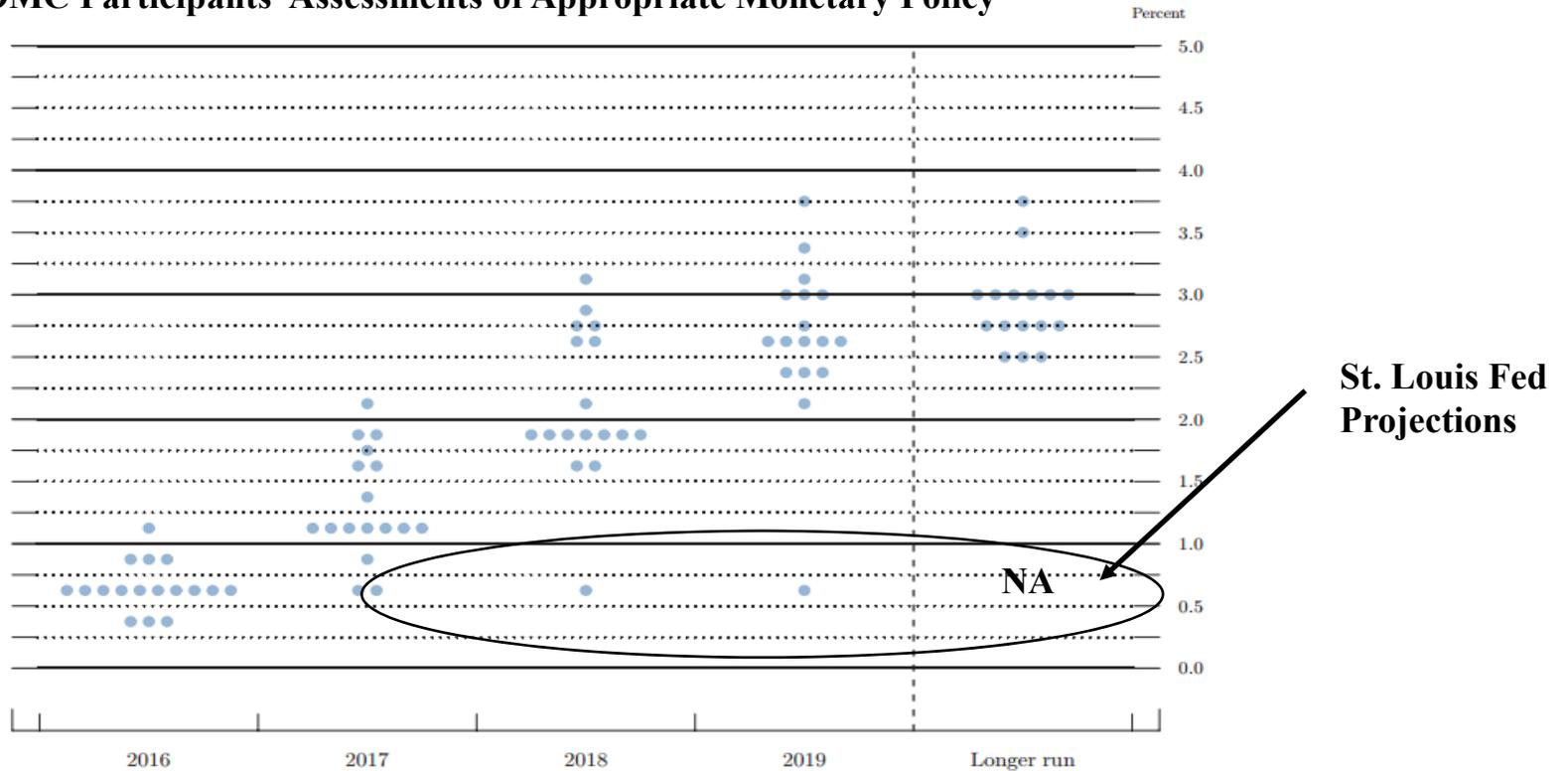
## The Last Piece of the Narrative

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- This is where we bring in the policy path.
- With the gaps closed, no overshooting expected and real rates on short-term government debt expected to stay negative for the next couple of years, we see no reason to forecast a rise in the policy rate.
- Our mandate is not to raise rates for the sake of raising rates.

# The St. Louis Fed's Policy Rate Projections

FOMC Participants' Assessments of Appropriate Monetary Policy



## Why 63 Basis Points?

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- With the gaps closed,  $r^{\dagger} \approx -1.4\%$  and  $\pi \approx \pi^e \approx 2\%$  the Fed's *neutral* policy rate is about **0.6%**. (a range for the fed funds rate of 0.5% to 0.75%)
- We will be at that value in one more move.
- The gaps are likely to stay closed or nearly so for the next 2.5 years.
- So no more hikes are needed unless shocks hit us.

## A Cause for Concern

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- So, due to a low  $r$ -dagger, the St. Louis Fed and other forecasters expect the federal funds rate to remain relatively **low**.
- The problem with a lower federal funds rate is that there is **less room to stimulate the economy** during a recession by dropping the rate.
- The question of whether a **negative federal funds rate** is a viable option arises.

# Negative Rate Rationale

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- The idea behind a negative interest rate policy (NIRP) is similar to the idea behind any interest rate drop by a central bank.
- **Lower interest rates** should **drive up investment** as borrowing costs fall, and **drive up consumption** as saving becomes less appealing.
- The resultant economic expansion will hopefully **increase inflation**.

# Negative Rate Rationale

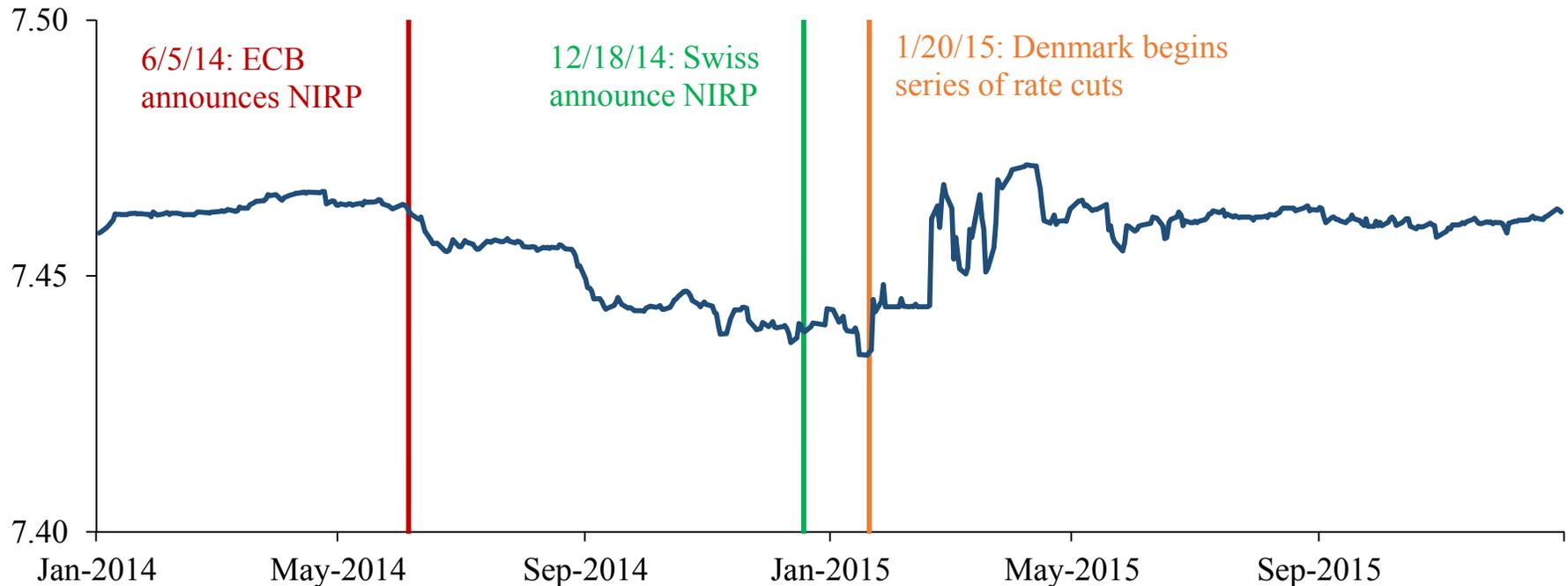
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- Another consequence of a lower interest rate is a **depreciation** of the exchange rate, which expands exports and GDP.
- This consequence explains the actions of some countries currently under NIRP.
- In particular, appreciation of the Danish kroner after the Swiss and ECB NIRP enactments led Denmark to go negative.

# Negative Rate Rationale

## NIRP Used to Stop Danish Kroner Appreciation

Kroners/Euro, ↓=Appreciation



Sources: Danmarks Nationalbank/Haver

# NIRP Implementation

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- Implementing NIRP is not as simple as implementing ZIRP.
- Negative rates bring about a new set of concerning incentives.
- Banks are incentivized to **hold cash** instead of reserves if rates go too low, which would mean no credit expansion.
- If banks pass through too much of the “**tax**” to customers, the customers may start hoarding cash.

## NIRP Implementation

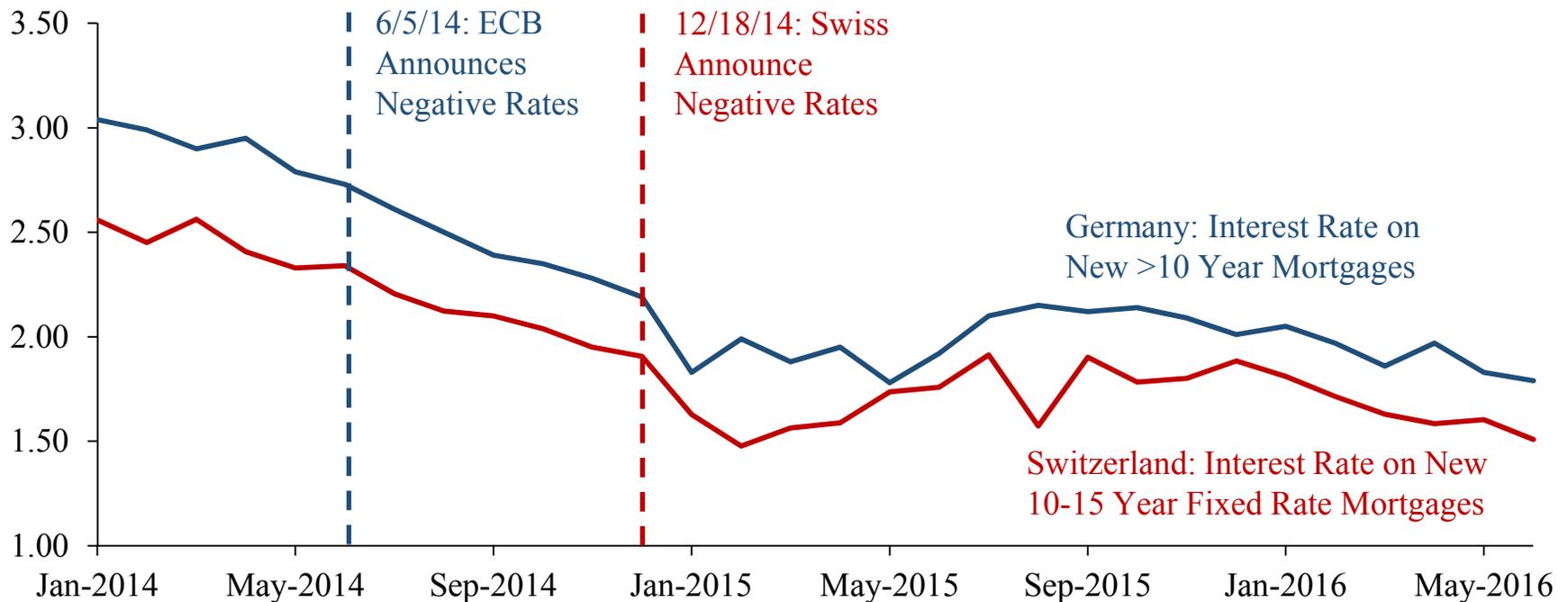
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- But negative rates hurt bank profitability if part of this “**tax**” cannot be passed through to customers.
- So banks have a few options: absorb some of the costs, hold more cash, pass negative rates on to depositors, and/or increase interest rates on the funds they lend.
- **None** of those options sound very “**stimulative**” for the economy.

# NIRP Implementation

## Mortgage Rates Rose Against Negative Policy Rates in 2015

Percent

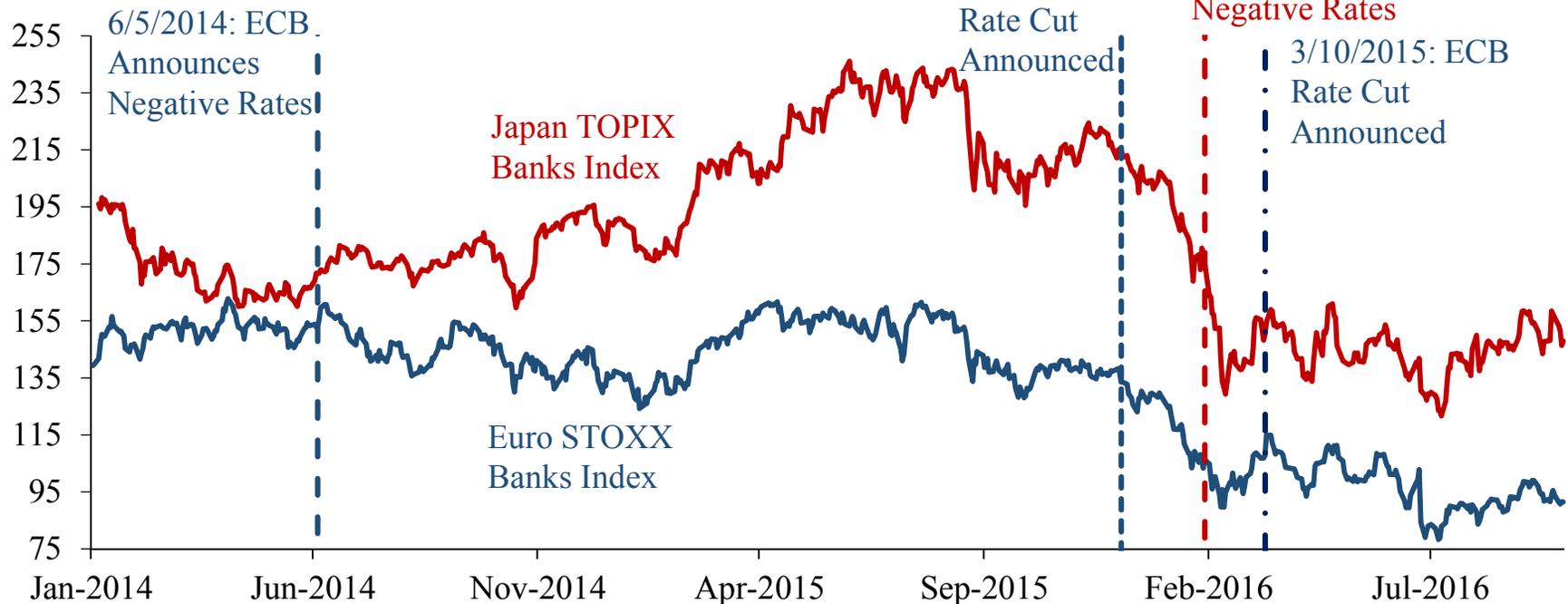


Sources: ECB/Haver Analytics & Swiss National Bank

# NIRP Implementation

## Negative Rates Among the Reasons for Bank Stock Declines

Indices



Sources: STOXX and Tokyo Stock Exchange/Bloomberg Financial

# Neo-Fisherism and Inflation

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- The theory behind NIRP may be flawed.
- Standard orthodox theory says that **lower interest rates** should **increase inflation** due to economic expansion, Neo-Fisherites argue the **opposite**.
- The latter group focuses on the Fisher Equation:

# Neo-Fisherism and Inflation

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$$i = r + \pi^e$$

$r$  = real interest rate

$i$  = nominal interest rate

$\pi^e$  = expected inflation

- If  $i$  is held at zero and  $r$  rises, then  $\pi$  and  $\pi^e$  fall.
- Thus, after a long period of ZIRP,  $i$  must be increased to raise inflation, not the other way around.

## NIRP Consequences

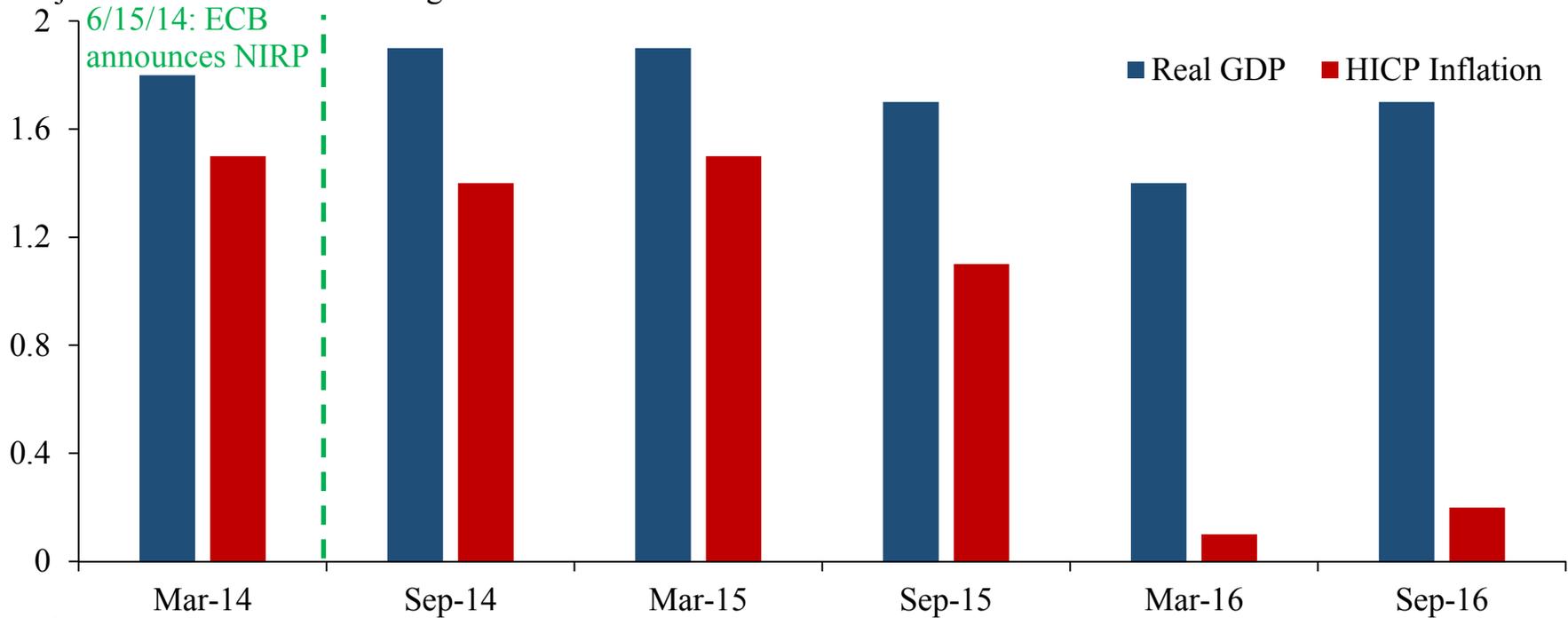
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- So which theory is prevailing?
- Japan has had  $i = 0$  for 20 years, yet faces deflation. US has been at zero for 7 years and we can't hit 2%. ECB has been at zero for several years and faces deflation.
- Why would things be any different with negative rates?
- Nevertheless, how has NIRP affected GDP and inflation?

# NIRP Consequences

## EU's 2016 Growth and Inflation Concerns Have Increased Under NIRP

Projected Annual Percent Change for 2016



Source: ECB

## Takeaways

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- The U.S. economy is in a relatively **long expansion**, but one characterized by **low growth**.
- The St. Louis Fed view is that the economy is in a **low-growth regime**.
- With a low real interest rate on government debt, a recession opens the door for a **negative fed funds** debate.

# Takeaways

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- But negative interest rates are a **tax** on the banking sector that has to be borne by someone. Taxes are **never** “**stimulative**”.
- ZIRP has **not** caused inflation to rise or GDP to grow rapidly.
- Why would things be any different with negative rates?



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