

# **Monetary Policy & the GFC: Lessons & Challenges**

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**Panel on Monetary Policy & Inflation Targeting  
A Conference in Honor of Governor Karnit Flug  
Jerusalem, Israel November 4-5, 2018**

# **MONETARY POLICY & THE GFC: LESSONS AND CHALLENGES**

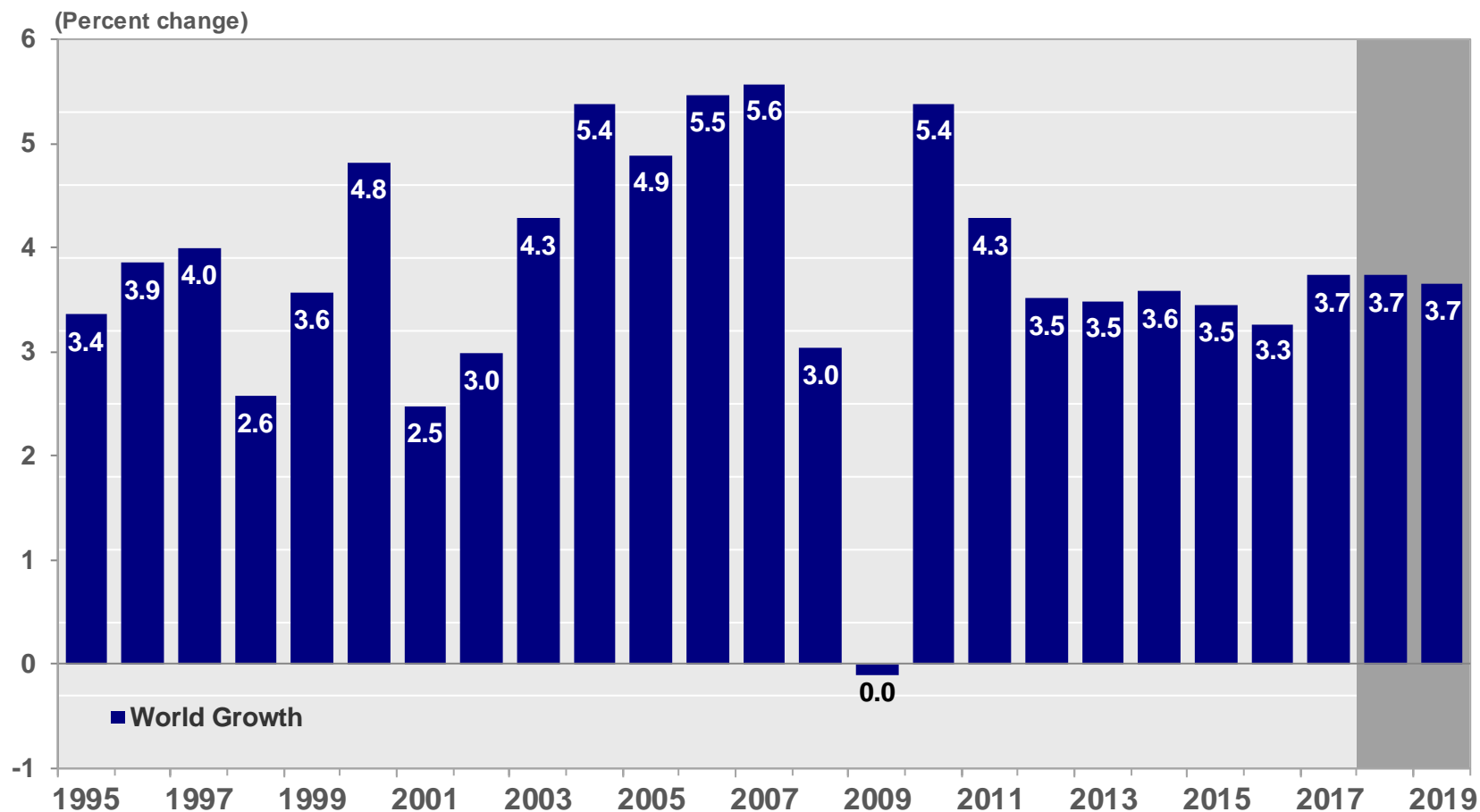
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- **Economic Growth**
- **Monetary Policy & the GFC**
- **Guidance & Inflation Targets**
- **Normalization: US & Europe**
- **Back to Inflation Targets**

# ECONOMIC GROWTH

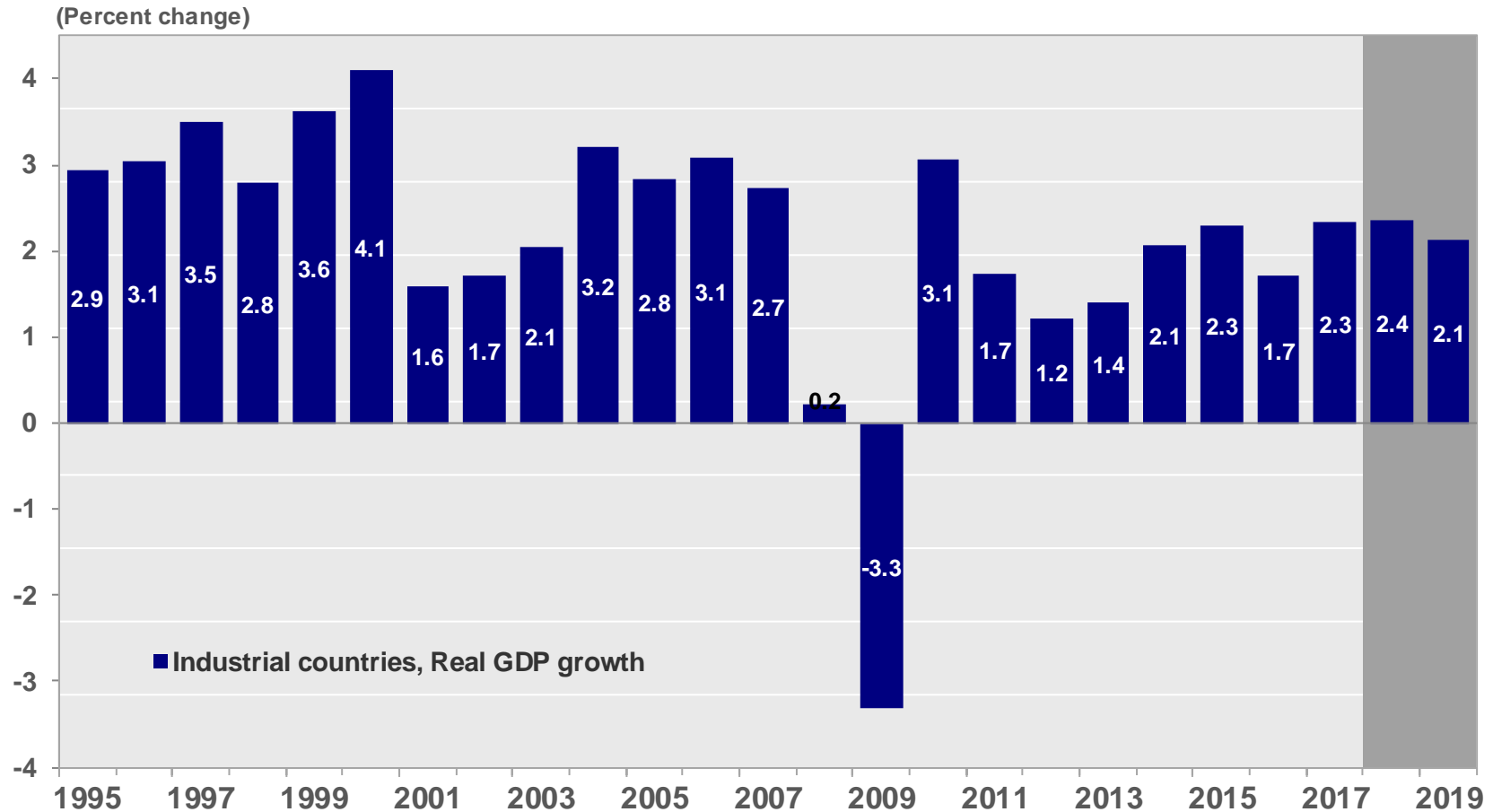
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# Global GDP Growth



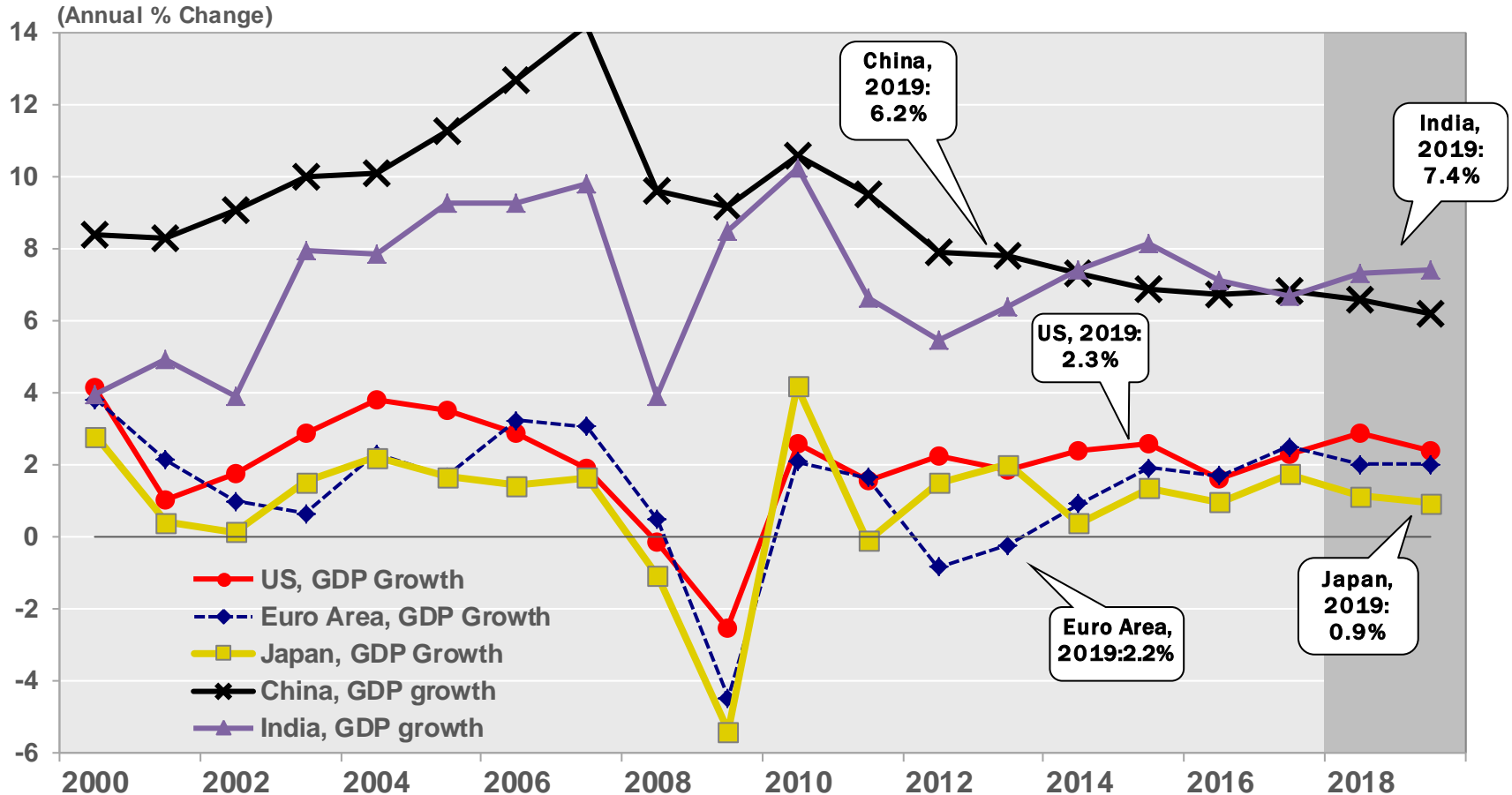
Source: IMF, last update Oct 09 2018, WEO (2018,& 2019 Forecast)

# Industrial Countries, GDP Growth



Source: IMF, last update Oct 09 2018, WEO (2018 & 2019 Forecast)

# Real GDP Growth, Select Countries



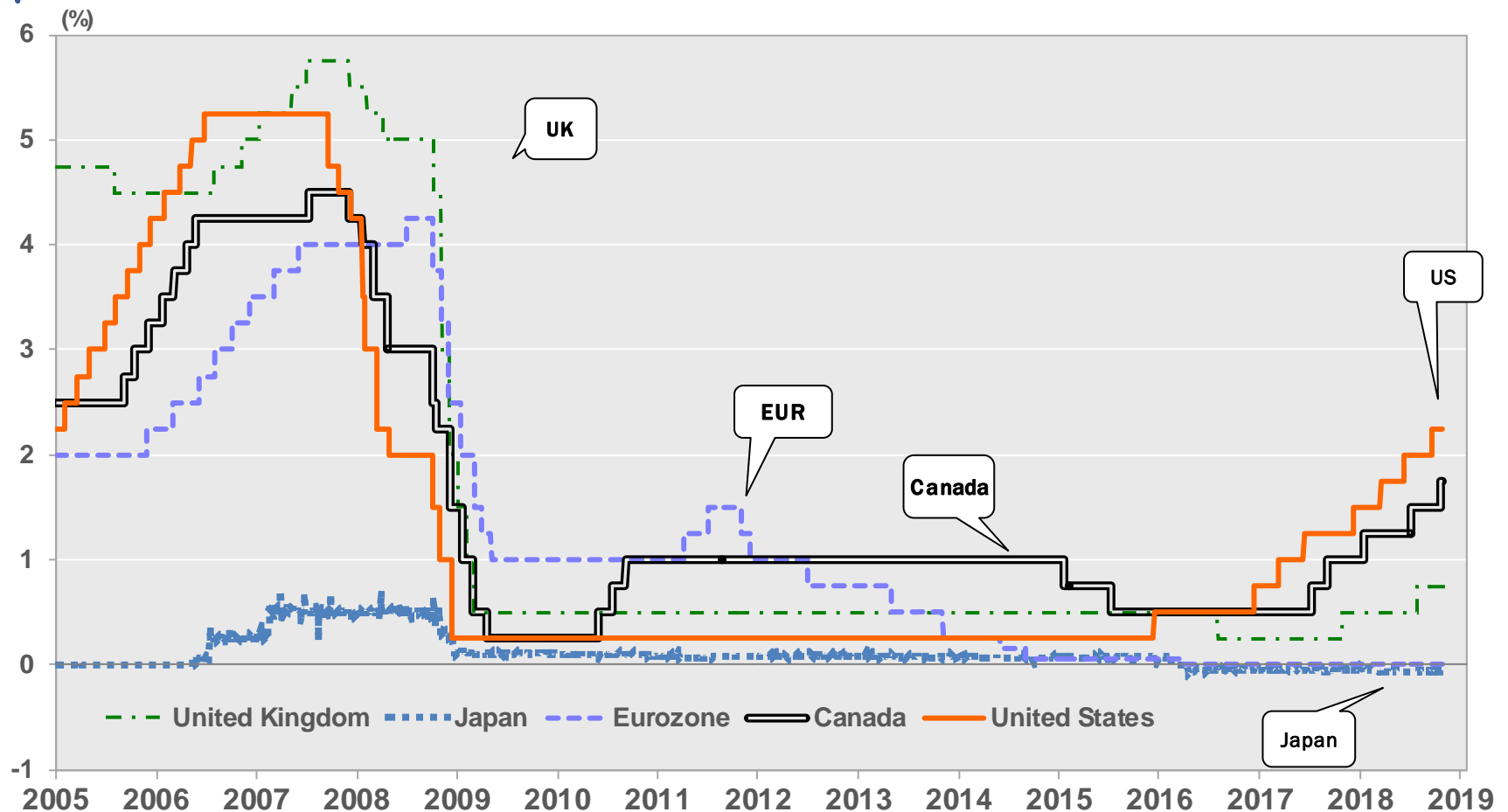
Source: IMF, last update Oct 9 2018, WEO (2018 & 2019 are forecast); For US and Euro area 2018 & 2019 are JPM forecast, last update October 26, 2018.

# **MONETARY POLICY & THE GFC**

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- **Central Banks' Policy Rates**
- **Central Banks' Balance Sheets**

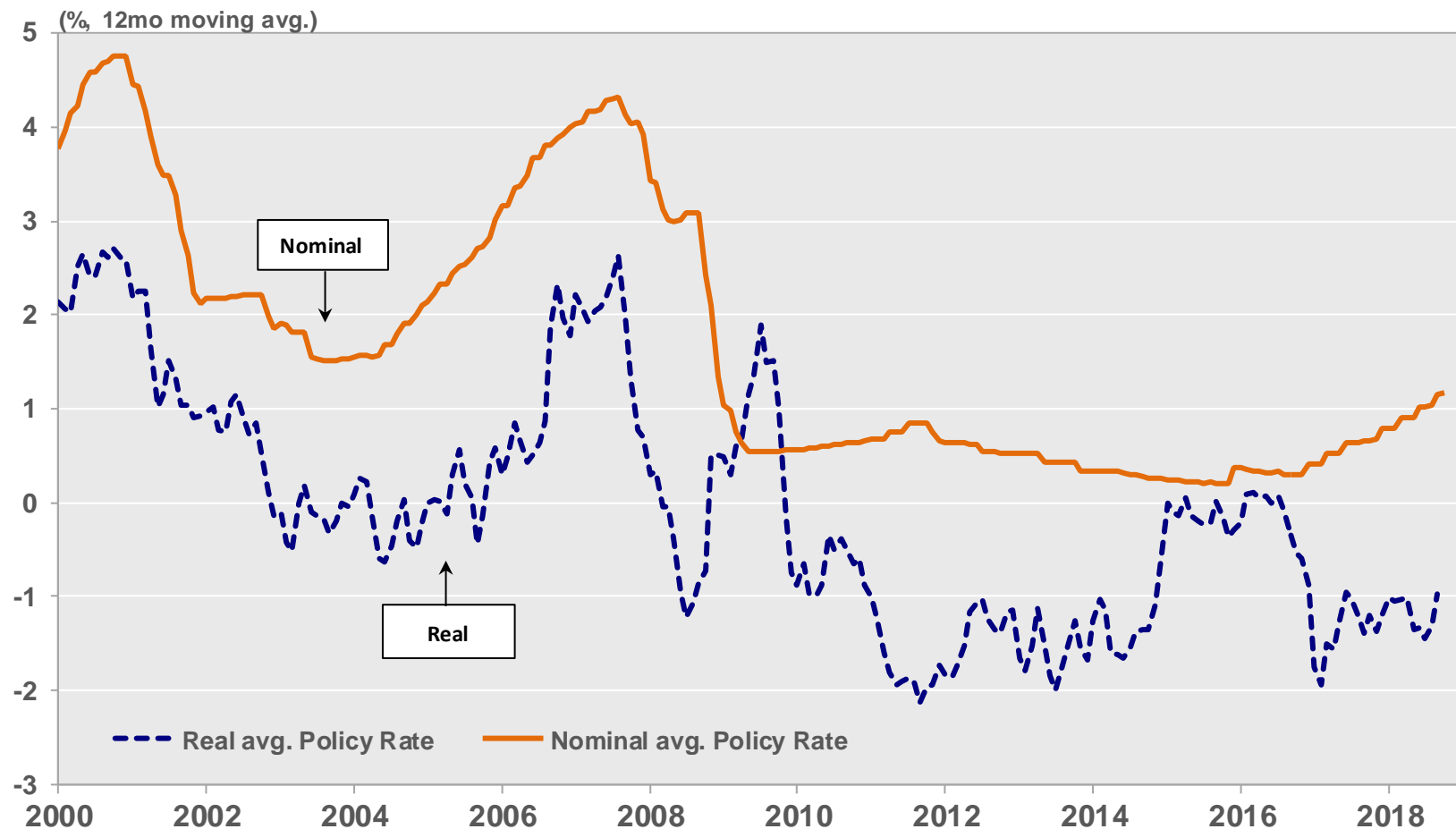
# Central Bank Policy Interest Rate



Source: Bloomberg Market Data, Last observation: 1 Nov, 2018

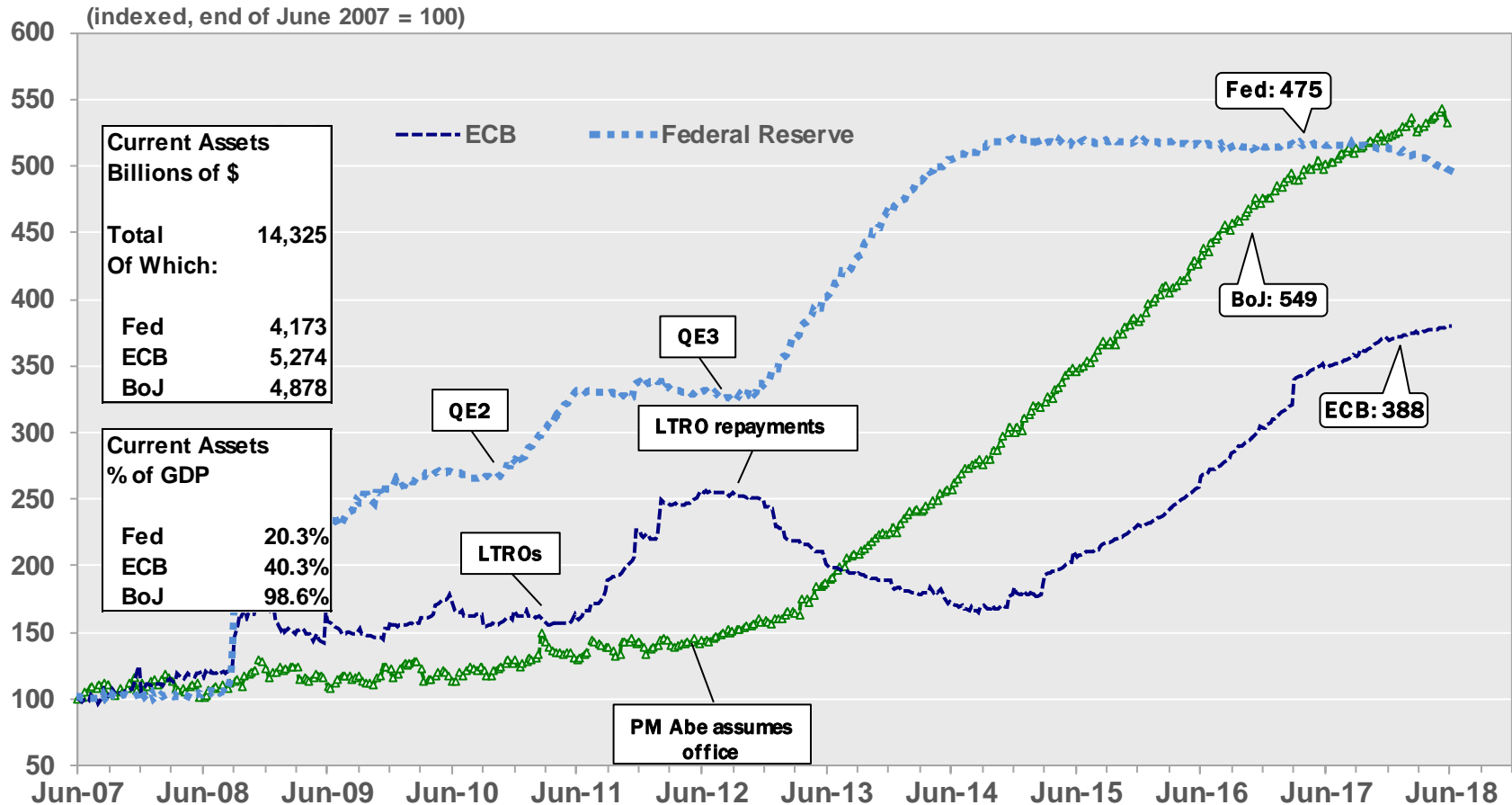


# Global Policy Rates: Developed Markets



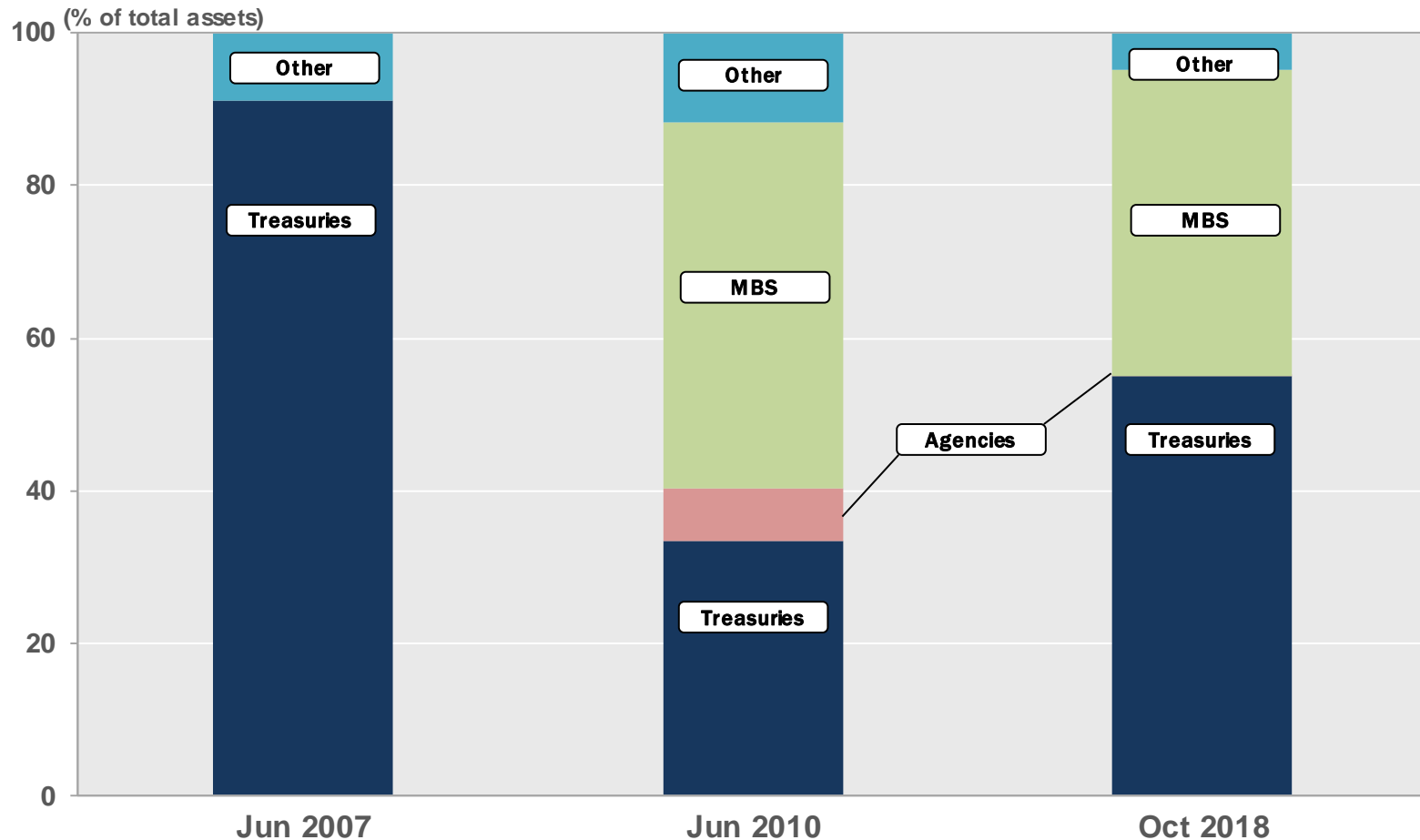
Source: JPMorgan Chase, National Statistical Institutes, Last Observation: Nominal - October 2018; Real - September 2018

# Total Assets of Key Central Banks (indexed levels)



Source: Bloomberg; Last Observation: Fed: Oct 24, 2018; ECB: Oct 26, 2018; BoJ: Oct 20, 2018.

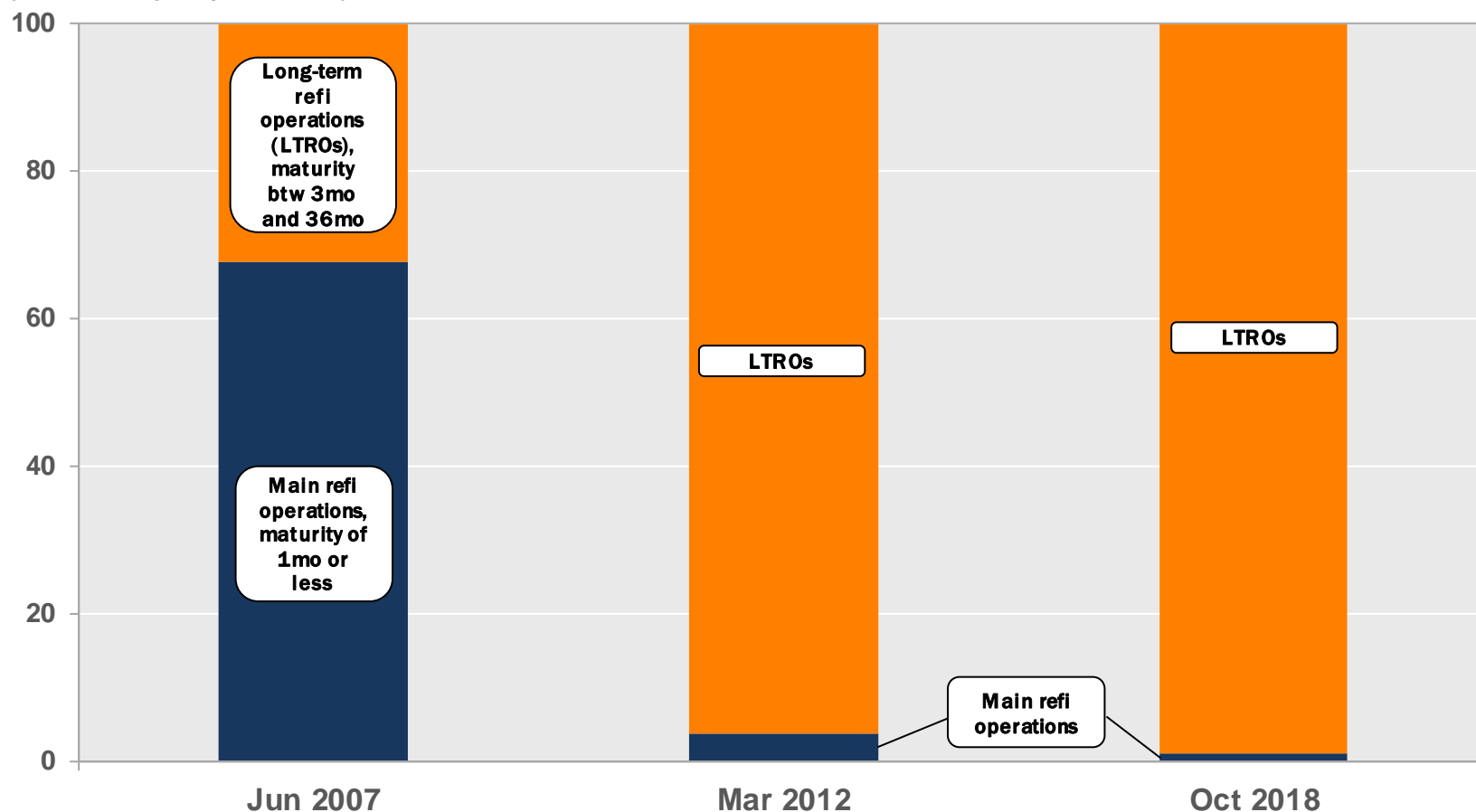
# Composition of Federal Reserve Assets



Source: Federal Reserve, Bloomberg, Last Observation: October 24, 2018.

# Composition of ECB Liquidity Facilities

(% of total liquidity measures)

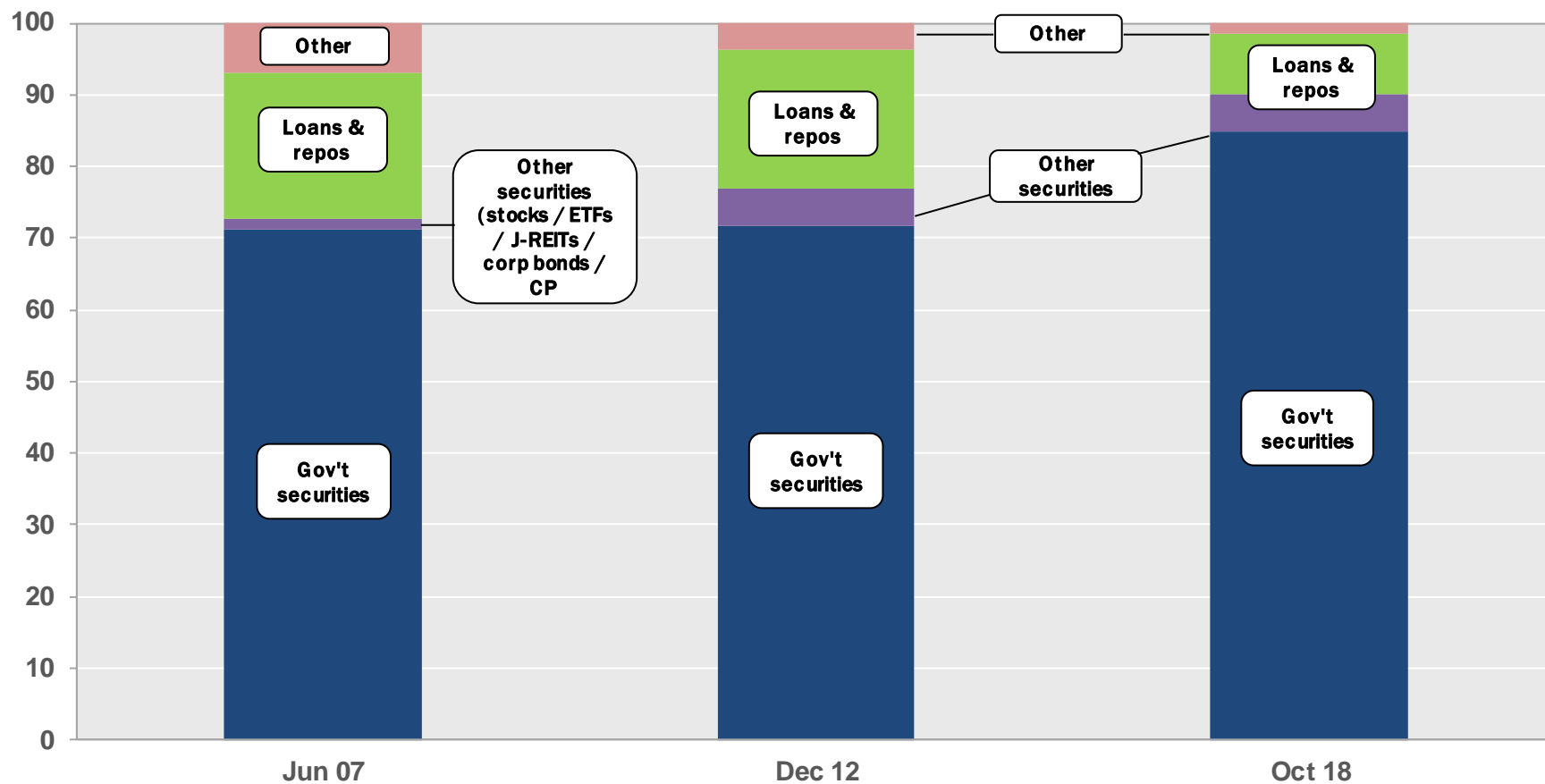


Note: March 2012 follows two rounds of 36-month LTRO auctions that occurred December 21, 2011 and February 29, 2012.

Source: ECB, Last Observation: October 26, 2018

# Composition of BoJ Assets

(% of total assets)



Note: Prime Minister Abe assumed office in December 2012

Source: BoJ, Last Observation: October 2018

# **GUIDANCE & INFLATION TARGETS**

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- **Central Banks Policy Statements**
- **The FED's Forward Guidance:**
  - "Dot Plots" & Market Pricing**

# Evolution of Fed Forward Guidance

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## September 26, 2018

*“The Committee expects that 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...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.” –FOMC meeting*

## September 26, 2017

*“...my colleagues and I currently think that this year's low inflation is probably temporary, so we continue to anticipate that inflation is likely to stabilize around 2 percent over the next few years. But our understanding of the forces driving inflation is imperfect, and we recognize that something more persistent may be responsible for the current undershooting of our longer-run objective....given that monetary policy affects economic activity and inflation with a substantial lag, it would be imprudent to keep monetary policy on hold until inflation is back to 2 percent” - Chair Yellen – “Inflation, Uncertainty, and Monetary Policy”*

## January 28, 2015

*“Based on its current assessment, the Committee judges that **it can be patient** in beginning to normalize the stance of monetary policy. However, if incoming information indicates faster progress toward the Committee's employment and inflation objectives than the Committee now expects, then increases in the target range for the federal funds rate are likely to occur sooner than currently.” –FOMC meeting*

## December 12, 2012

*“the Committee...currently anticipates that this exceptionally low range for the federal funds rate will be appropriate **at least as long as the unemployment rate remains above 6-1/2 percent**, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored.” –FOMC meeting*

# Federal Reserve's Forward Guidance

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***“Information received since the Federal Open Market Committee met in June indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate....Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee expects that 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. Risks to the economic outlook appear roughly balanced.”***

***FOMC statement, September 26, 2018***



# ECB's Forward Guidance

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***“Within our mandate, the ECB is ready to do whatever it takes to preserve the euro, and believe me it will be enough”***  
***ECB President Mario Draghi, July 26, 2012***

***“We continue to expect them [rates] to remain at their present levels at least through the summer of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels that are below, but close to, 2% over the medium term... Governing Council stands ready to adjust all of its instruments as appropriate to ensure that inflation continues to move towards the Governing Council's inflation aim in a sustained manner.”***

***-ECB President Mario Draghi, Introductory statement, October 25, 2018***

# Bank of Japan's Forward Guidance

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***“The Bank will continue with "Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control," aiming to achieve the price stability target of 2 percent, as long as it is necessary for maintaining that target in a stable manner...As for policy rates, the Bank intends to maintain the current extremely low levels of short-and long-term interest rates for an extended period of time...It will examine the risks considered most relevant to the conduct of monetary policy and make policy adjustments as appropriate, taking account of developments in economic activity and prices as well as financial conditions, with a view to maintaining the momentum toward achieving the price stability target.***

***-Statement of Monetary Policy, October 31, 2018***

# Bank of England's Forward Guidance

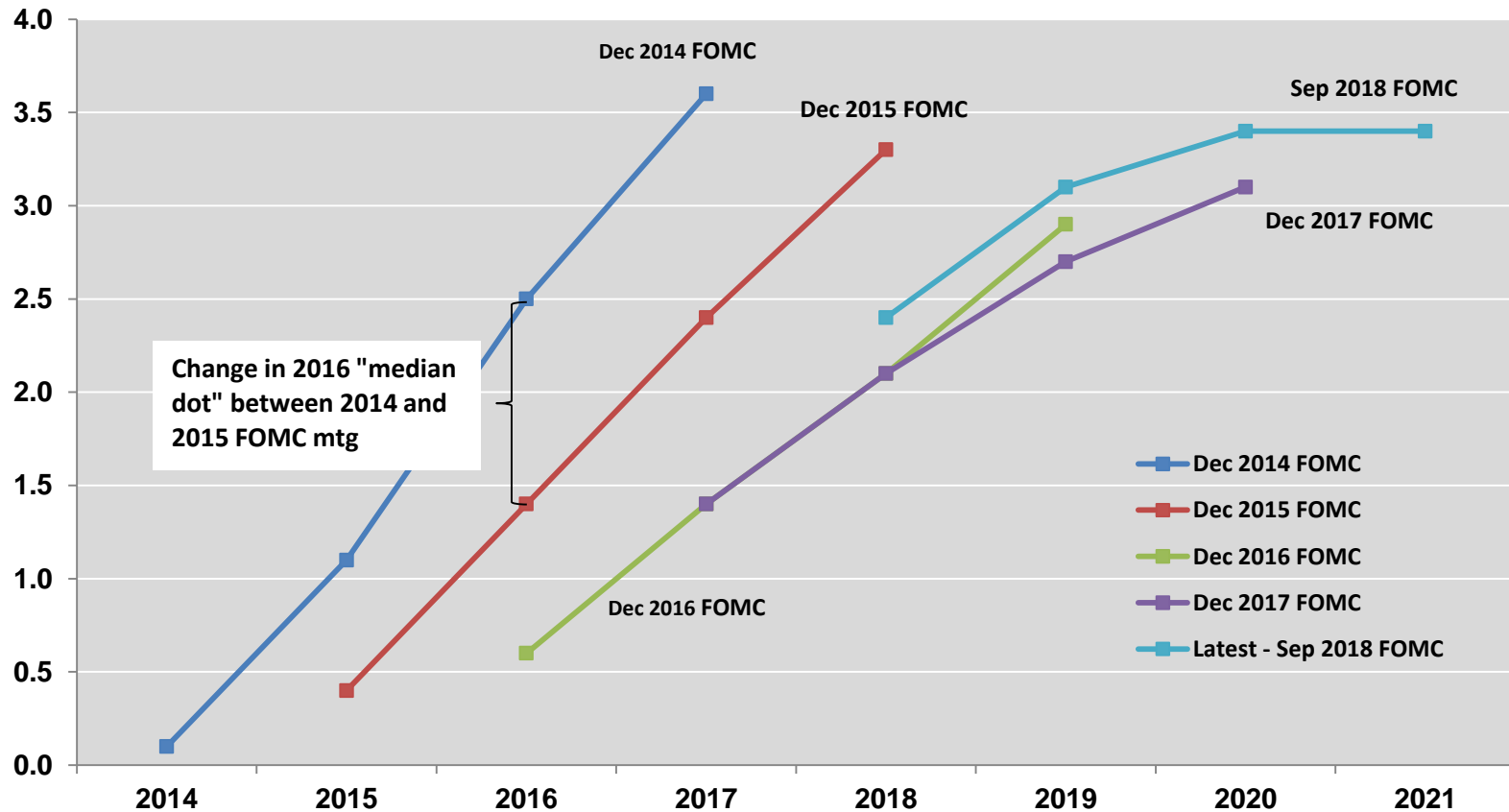
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***“The Bank of England’s Monetary Policy Committee (MPC) sets monetary policy to meet the 2% inflation target, and in a way that helps to sustain growth and employment... The economic outlook will depend significantly on the nature of EU withdrawal, in particular the form of new trading arrangements, the smoothness of the transition to them and the responses of households, businesses and financial markets. The implications for the appropriate path of monetary policy will depend on the balance of the effects on demand, supply and the exchange rate... The Committee also judges that, were the economy to continue to develop broadly in line with the November Inflation Report projections, an ongoing tightening of monetary policy over the forecast period would be appropriate to return inflation sustainably to the 2% target at a conventional horizon. Any future increases in Bank Rate are likely to be at a gradual pace and to a limited extent.”***

***-Minutes of the MPC meeting November 1, 2018***

# Fed Funds Path from FOMC Economic Projections

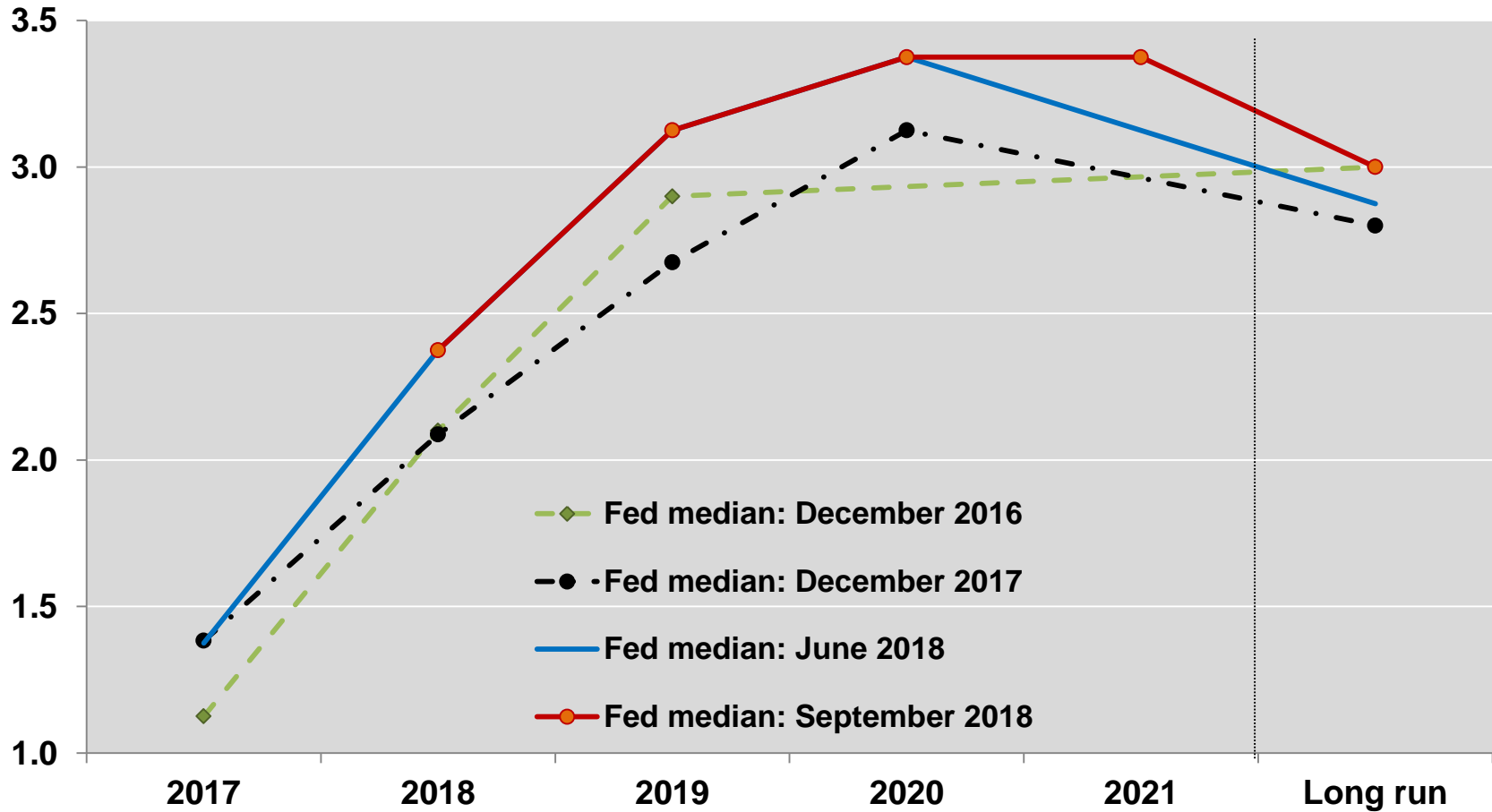
Percent, midpoint of target range or level



Source: Federal Reserve Board

# Evolution of Fed Dot Plot Median

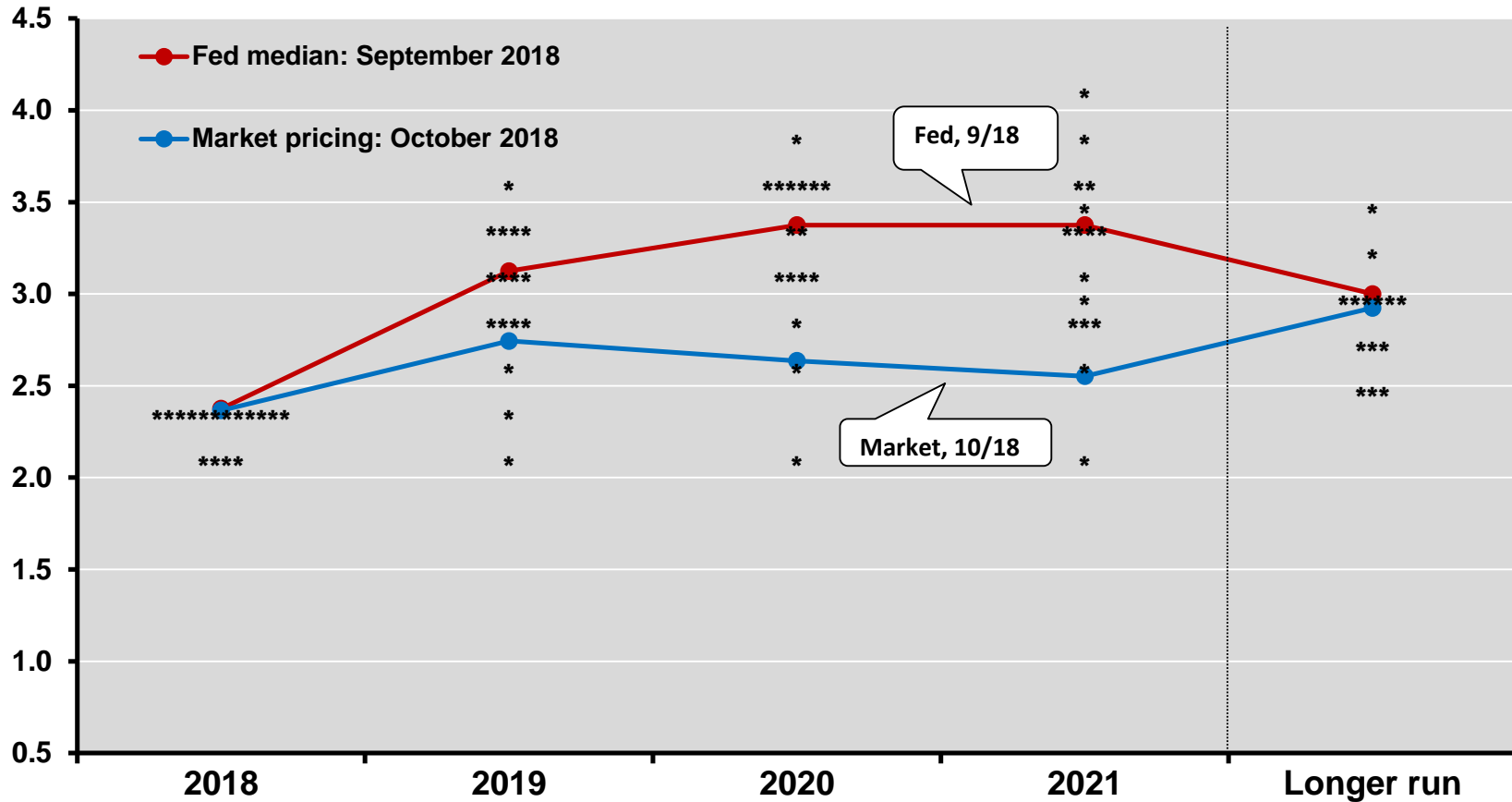
Percent, midpoint of target range or target level



Source: Federal Reserve and Bloomberg

# Fed Dot Plot (September 2018) and Latest Market Pricing

Percent, midpoint of target range or target level

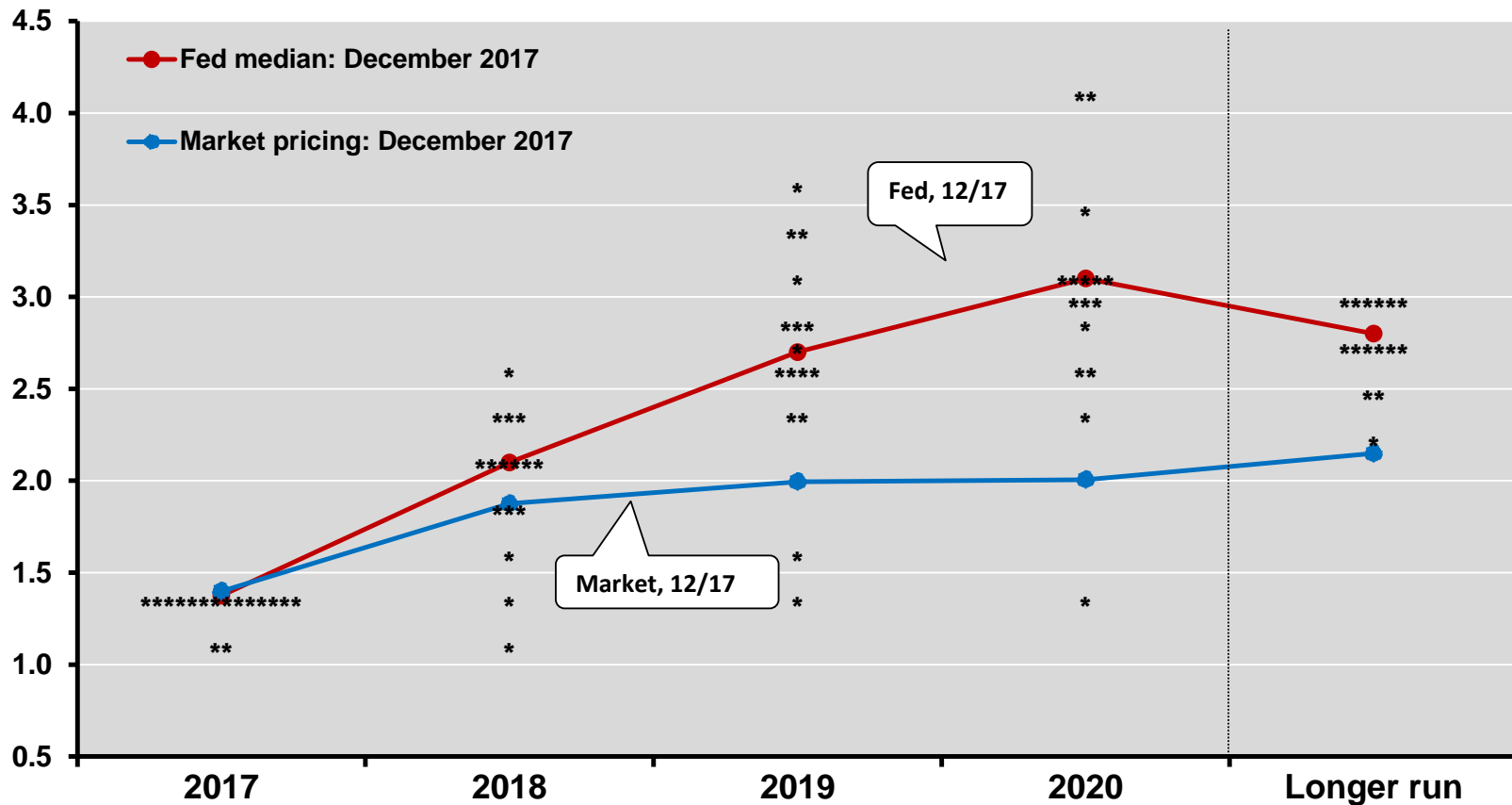


Note: Market expectations are derived from USD 1-month overnight-indexed-swap (OIS) forward rates

Source: Federal Reserve and Bloomberg

# Fed Dot Plot and Market Pricing (December 2017)

Percent, midpoint of target range or target level

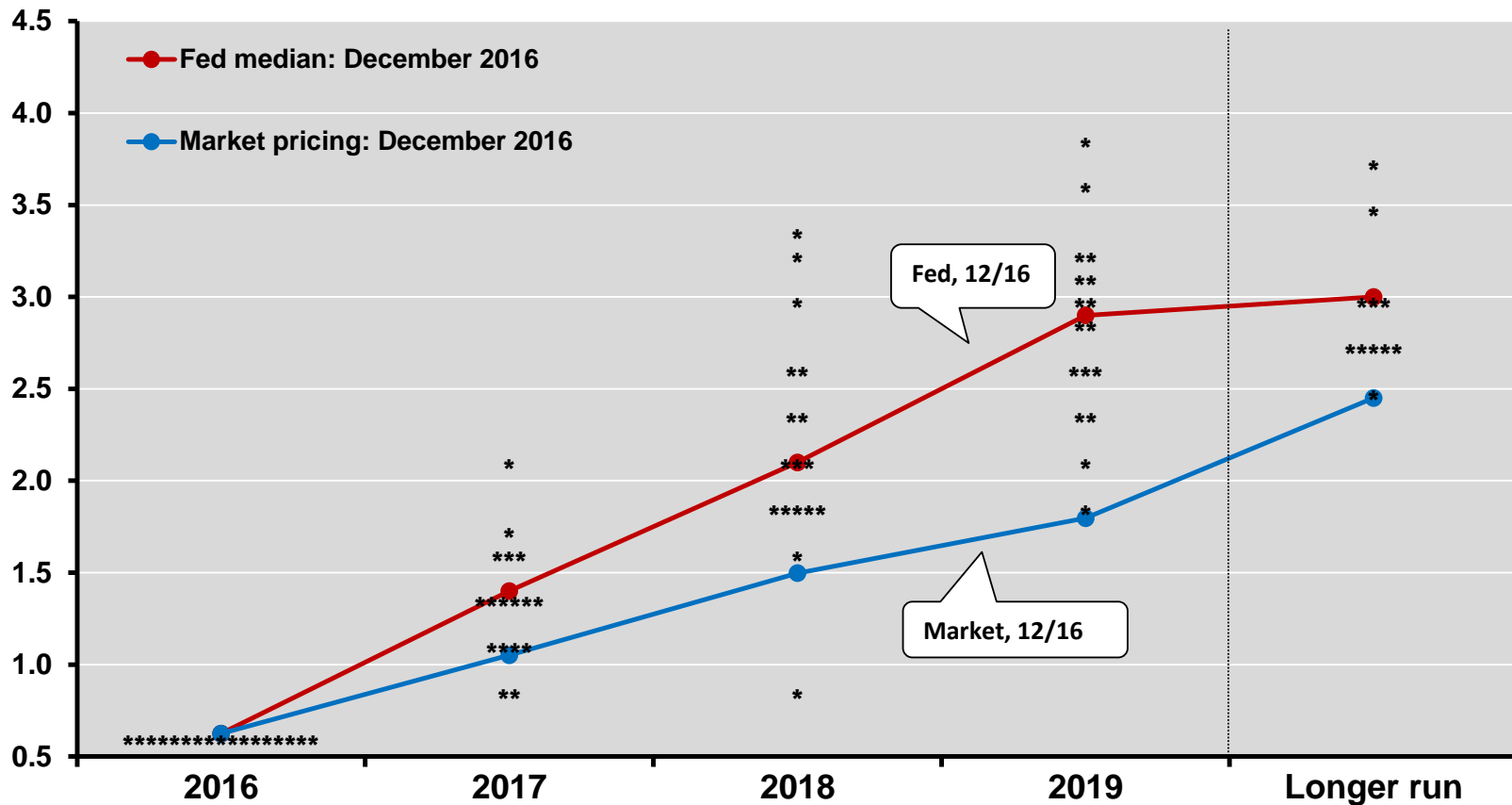


Note: Market expectations are derived from USD 1-month overnight-indexed-swap (OIS) forward rates

Source: Federal Reserve and Bloomberg

# Fed Dot Plot and Market Pricing (December 2016)

Percent, midpoint of target range or target level

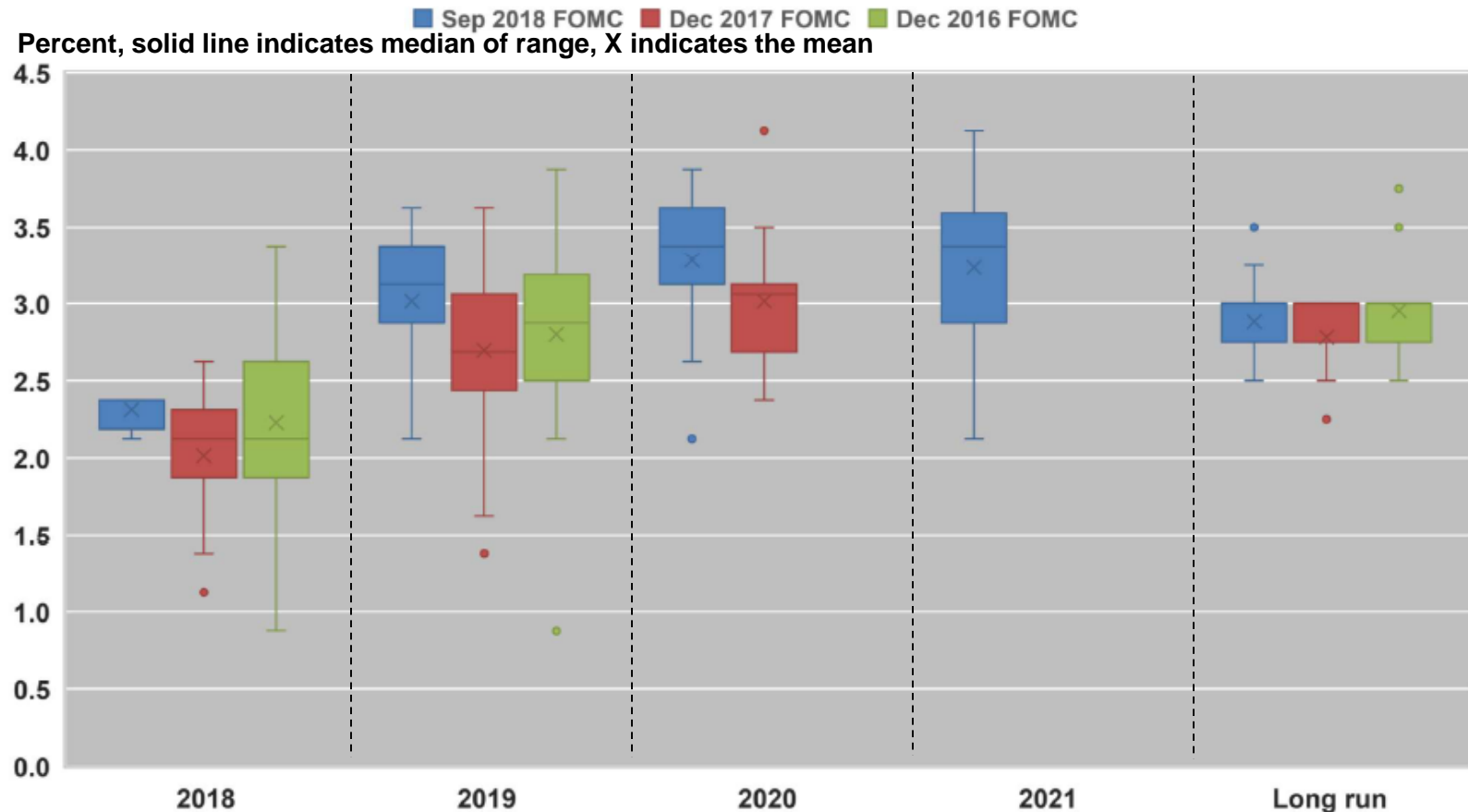


Note: Market expectations are derived from USD 1-month overnight-indexed-swap (OIS) forward rates

Source: Federal Reserve and Bloomberg



# Dispersion of “Dots” in Fed Dot Plot over time



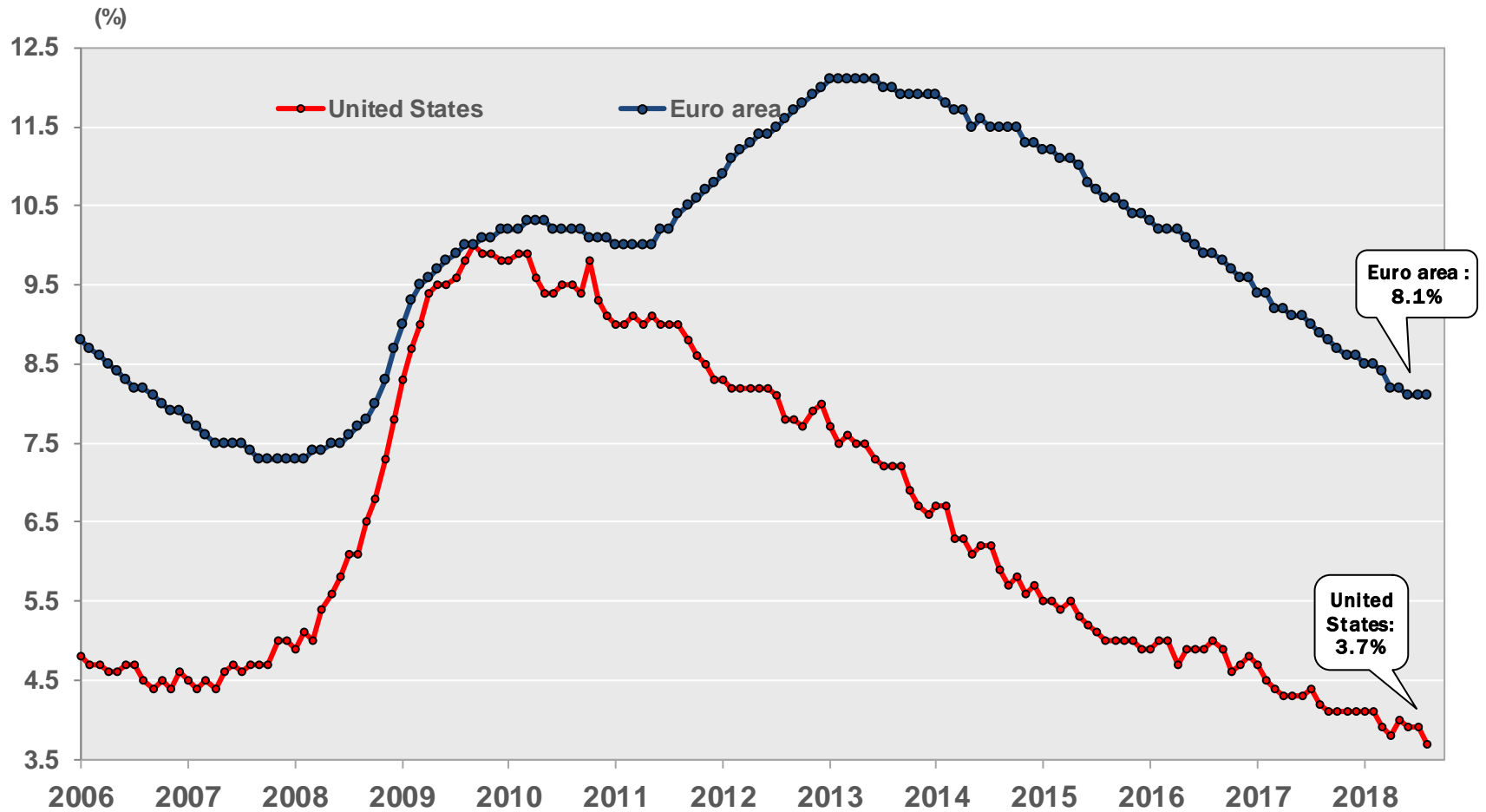
Source: Federal Reserve Board

# **NORMALIZATION: US & EUROPE**

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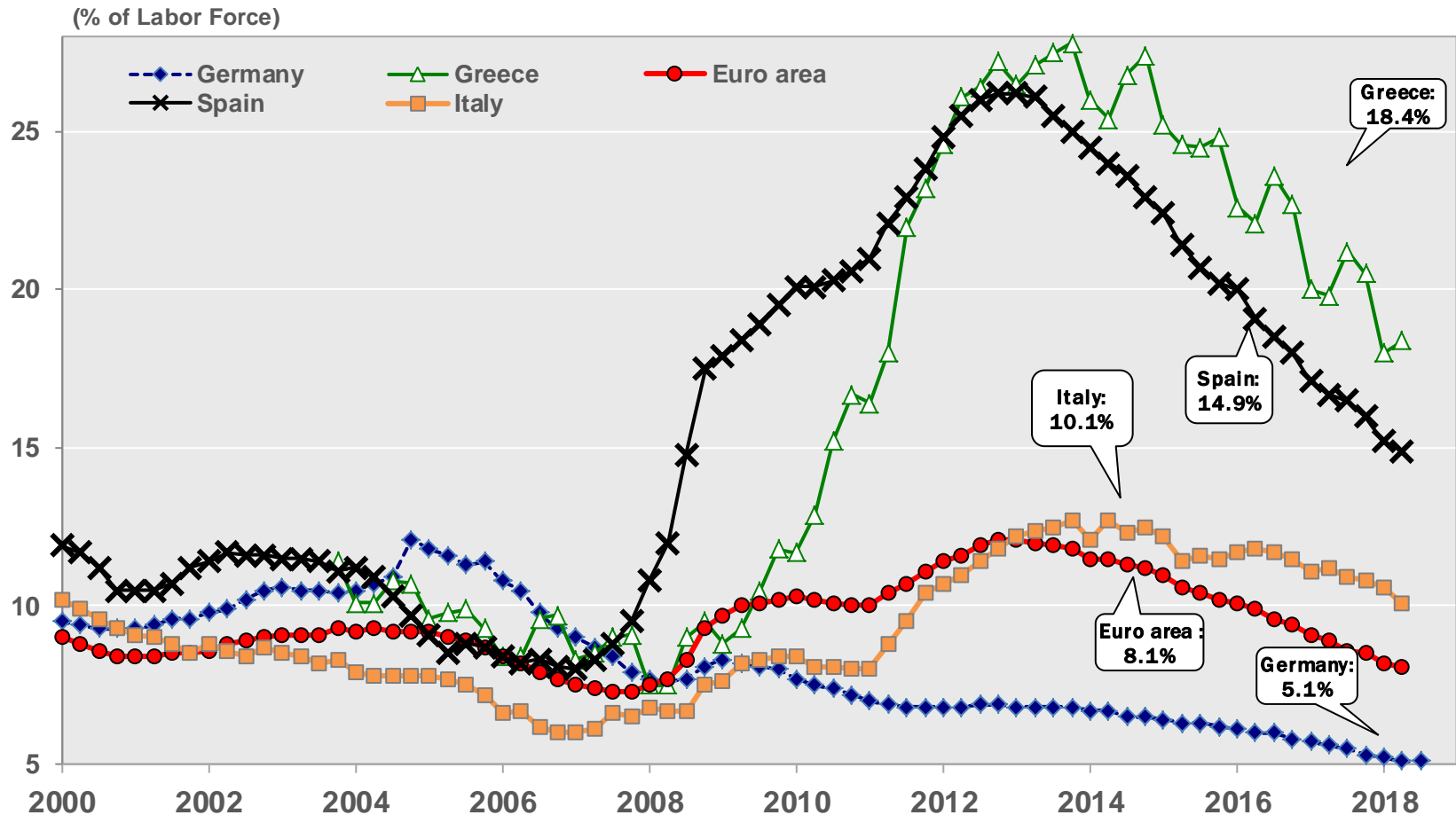
- **Unemployment**
- **Inflation**
- **Cost of Delayed Normalization**
- **Leverage**

# Unemployment Rate: US and Euro Area



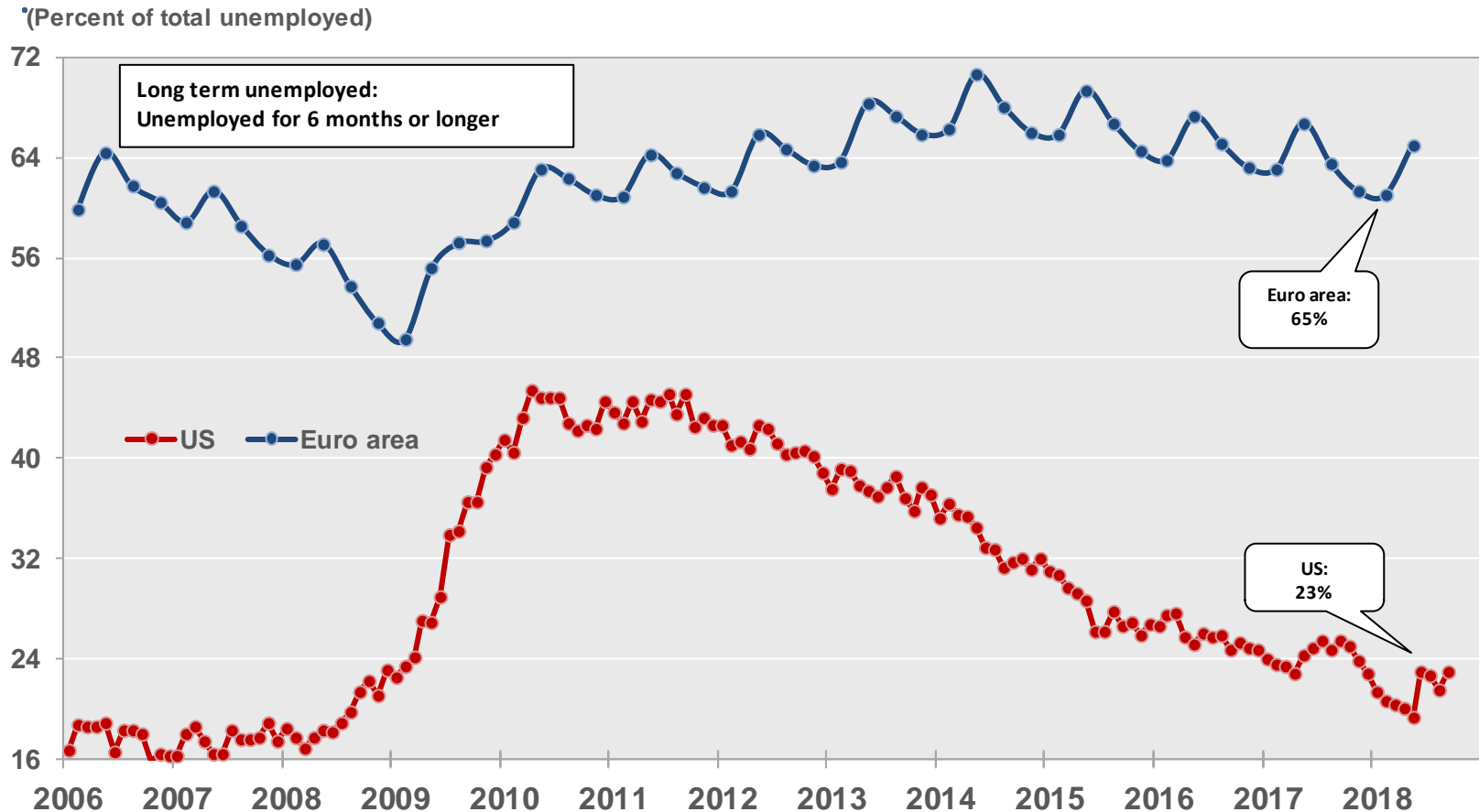
Source: Eurostat and BLS; Last observation for Euro area September 2018, For US, September 2018

# Unemployment Rate: Euro Area Countries



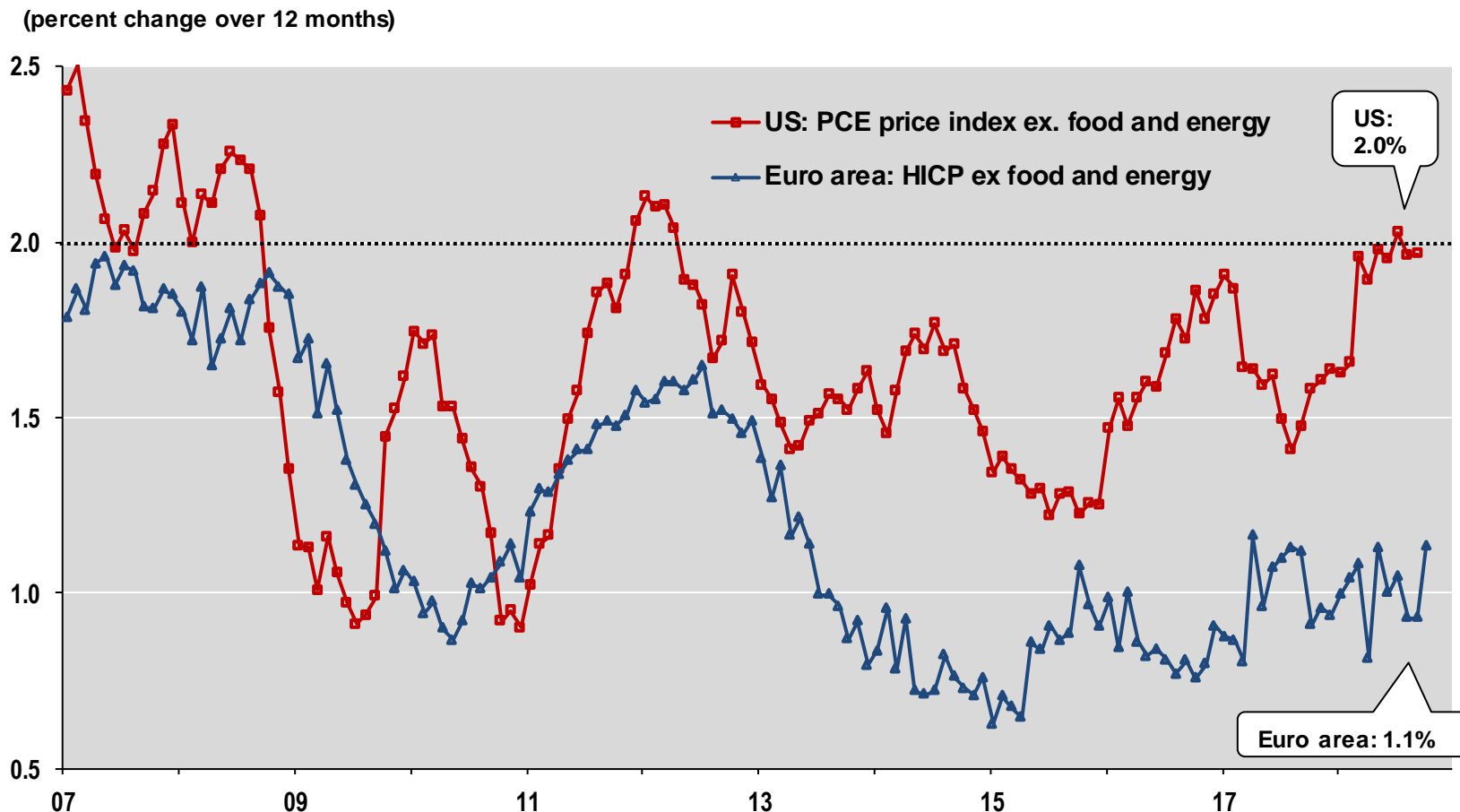
Source: Eurostat, Last Observation: Germany (10/18); Italy, Spain, Euro area (9/18); Greece (7/18)

# Long Term Unemployed: US and Euro Area



Source: Eurostat and BLS. Last observation: Euro area (2Q18), US (September 2018)

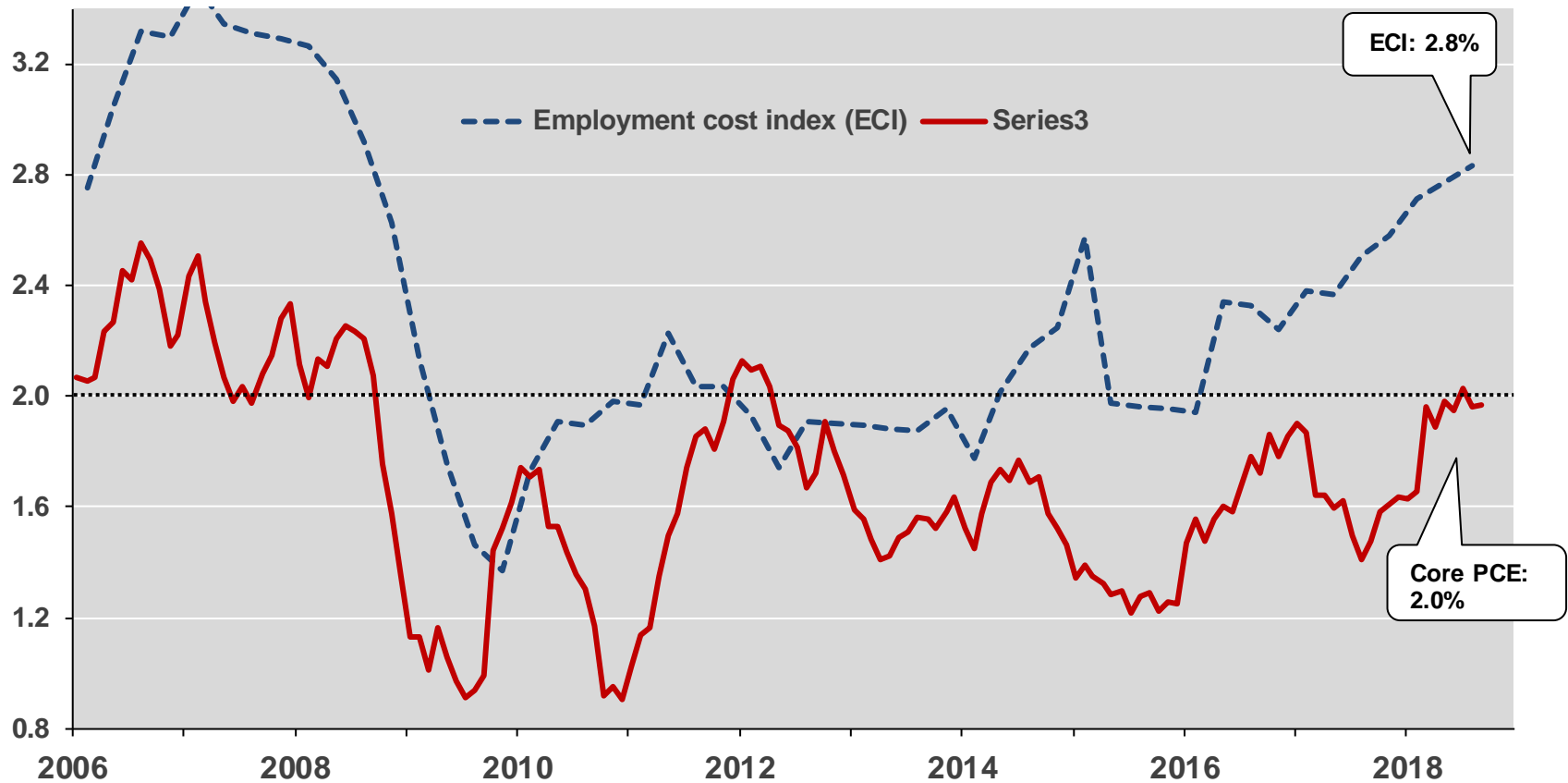
# Core Inflation: U.S. and Euro Area



Source: Bureau of Economic Analysis, ECB. Last observation US: September 2018, Euro area: October 2018

# U.S. Price and Wage Inflation

(% change over a year ago)



Source: Bureau of Economic Analysis, Bureau of Labor Statistics. Last Observation: Core PCE (9/18), ECI (2018 3Q).

# **Cost of Delayed Normalization – I**

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- **Chase After Yield Raises Risk**
- **Inflates Stock prices (Bubbles)**
- **Encourages Stock buybacks**
- **Discourages Real Investment**
- **Disconnects Financial/Real Sectors**
- **Encourages Increased Leverage**
- **Endangers Financial Stability**

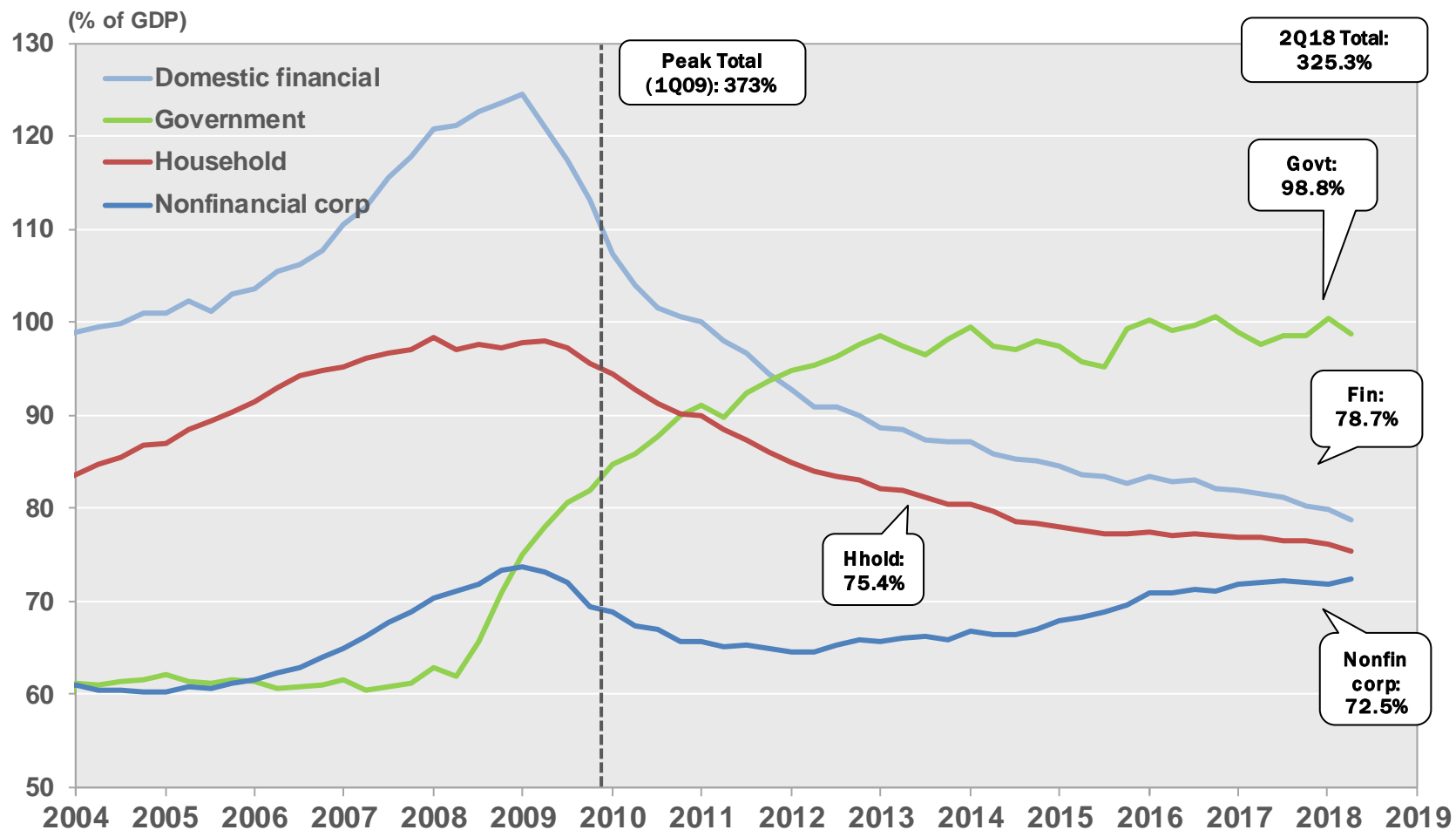


# **Cost of Delayed Normalization – II**

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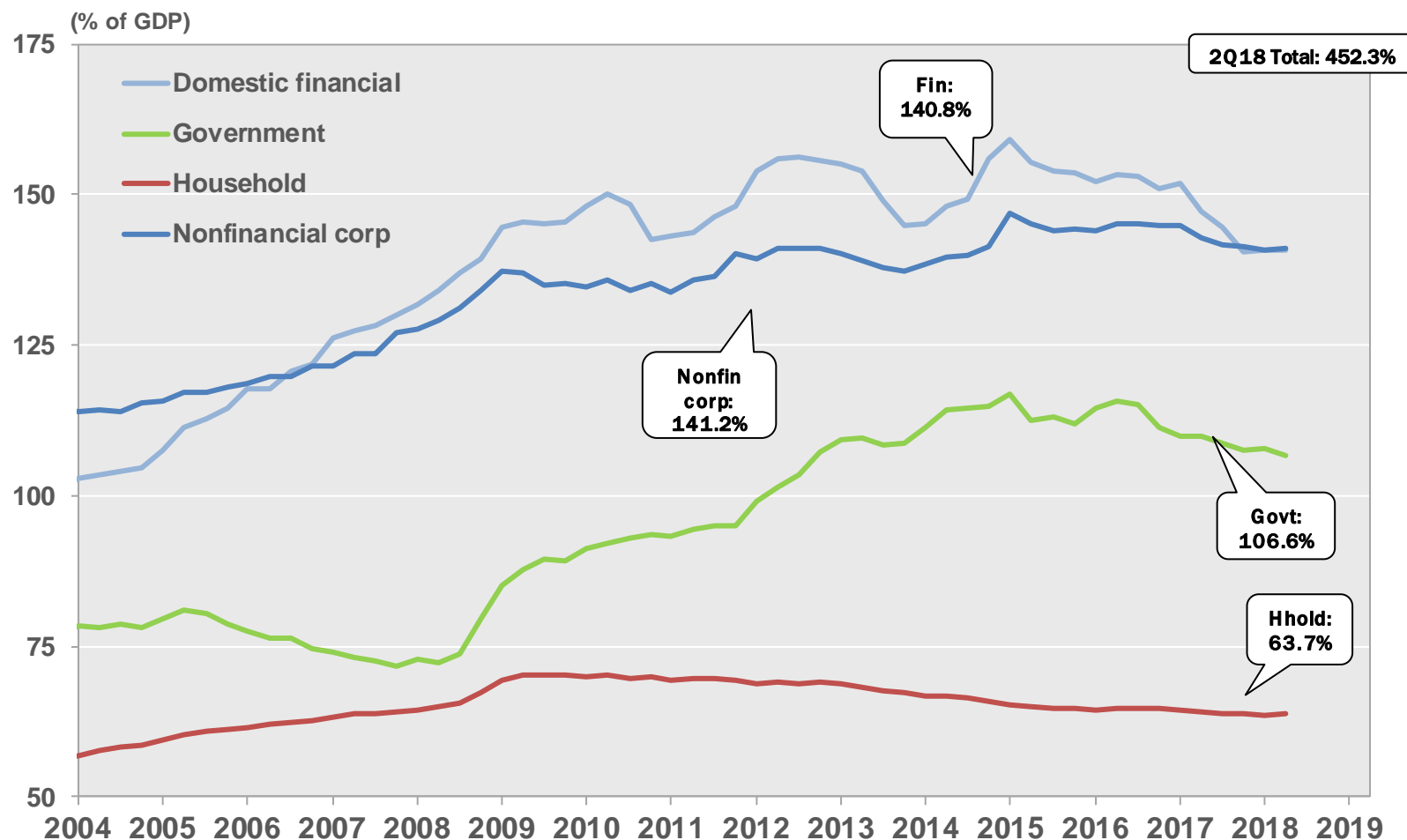
- **Weakens the Financial Services Industry (e.g., Banking, Insurance, Pensions)**
- **Weakens the Transmission and Effectiveness of Monetary Policy**
- **Stimulates Investment in Interest-Sensitive Low-Productivity Sectors**
- **Postpones Fiscal/Structural Policies**
- **Reduces Productivity and Growth**

# US: Gross Debt Outstanding by Sector



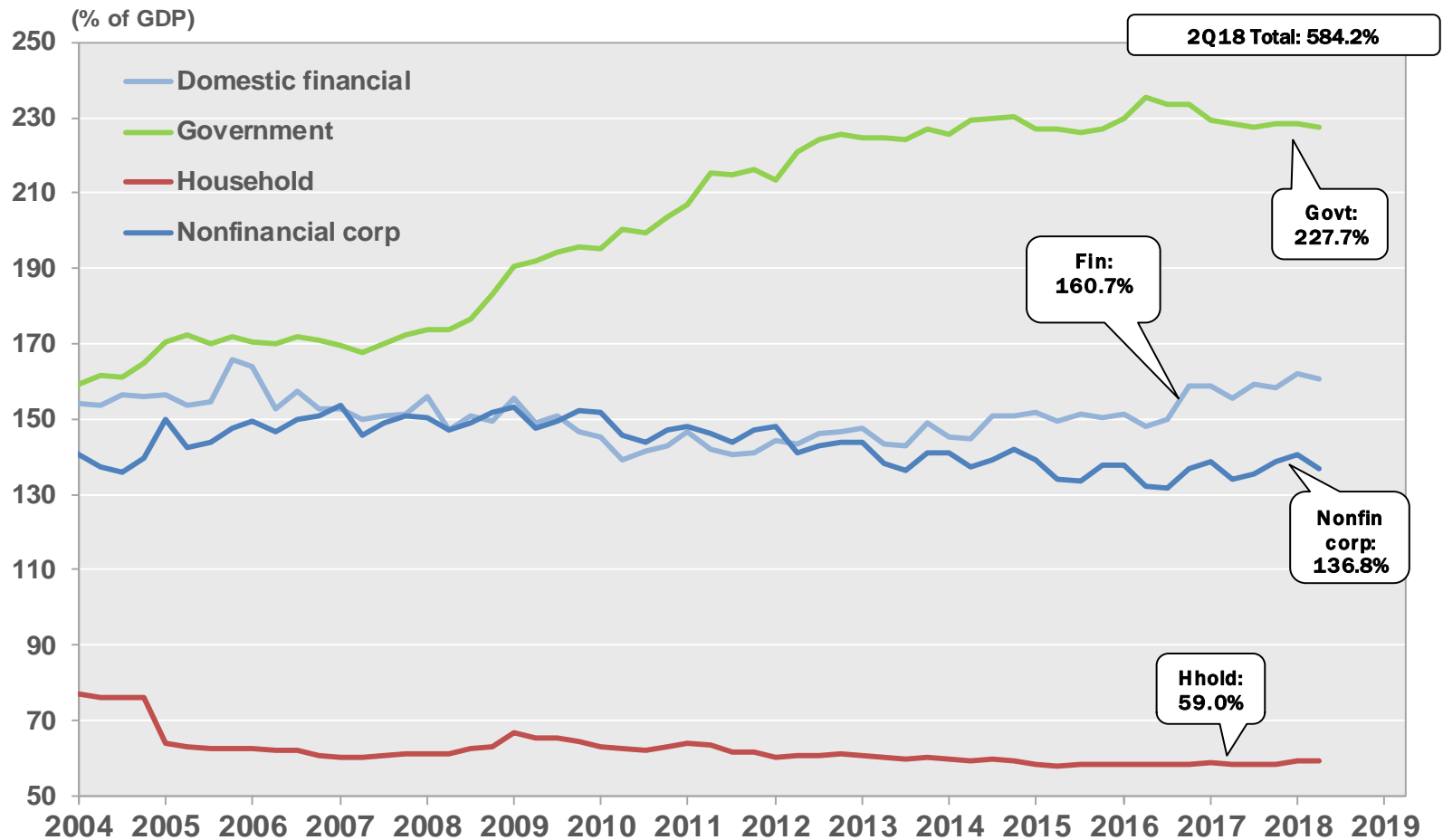
Source: Haver analytics; last observation Q2 2018.

# Euro Area: Gross Debt Outstanding by Sector



Source: Eurostat; last observation Q2 2018.

# Japan: Gross Debt Outstanding by Sector



Source: Haver analytics; last observation Q2 2018.

# **Back to Inflation Targets**

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- **Key Operational Decisions**
- **Important Conditions for Success**

# Key Operational Decisions

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## **1. Which Price Index?**

- WPI or CPI**
- Headline or Core**

## **2. Target Point or Target Range?**

## **3. Single-Year or Multi-Year Target?**

## **4. Who Sets the Target and When?**

## **5. When Should the Target Change?**

# Important Conditions for Success

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- 1. A Solid Fiscal System**
- 2. A Functioning Foreign-Exchange Market**
- 3. A Flexible Exchange-Rate Regime**
- 4. Available Instruments of Monetary Policy**
- 5. Central-Bank Independence**
- 6. A strong Banking & Financial System**
- 7. A Functioning Capital Market**
- 8. A Flexible Economic System (Goods, Services and Labor Markets)**
- 9. A Lender of Last Resort**