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# Economic Outlook and Monetary Policy

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Scott A. Brave

*Policy Economist*

Federal Reserve Bank of Chicago

\* The views expressed herein are those of the author and do not necessarily represent the views of the Federal Reserve System or the Federal Reserve Bank of Chicago.

# Outline

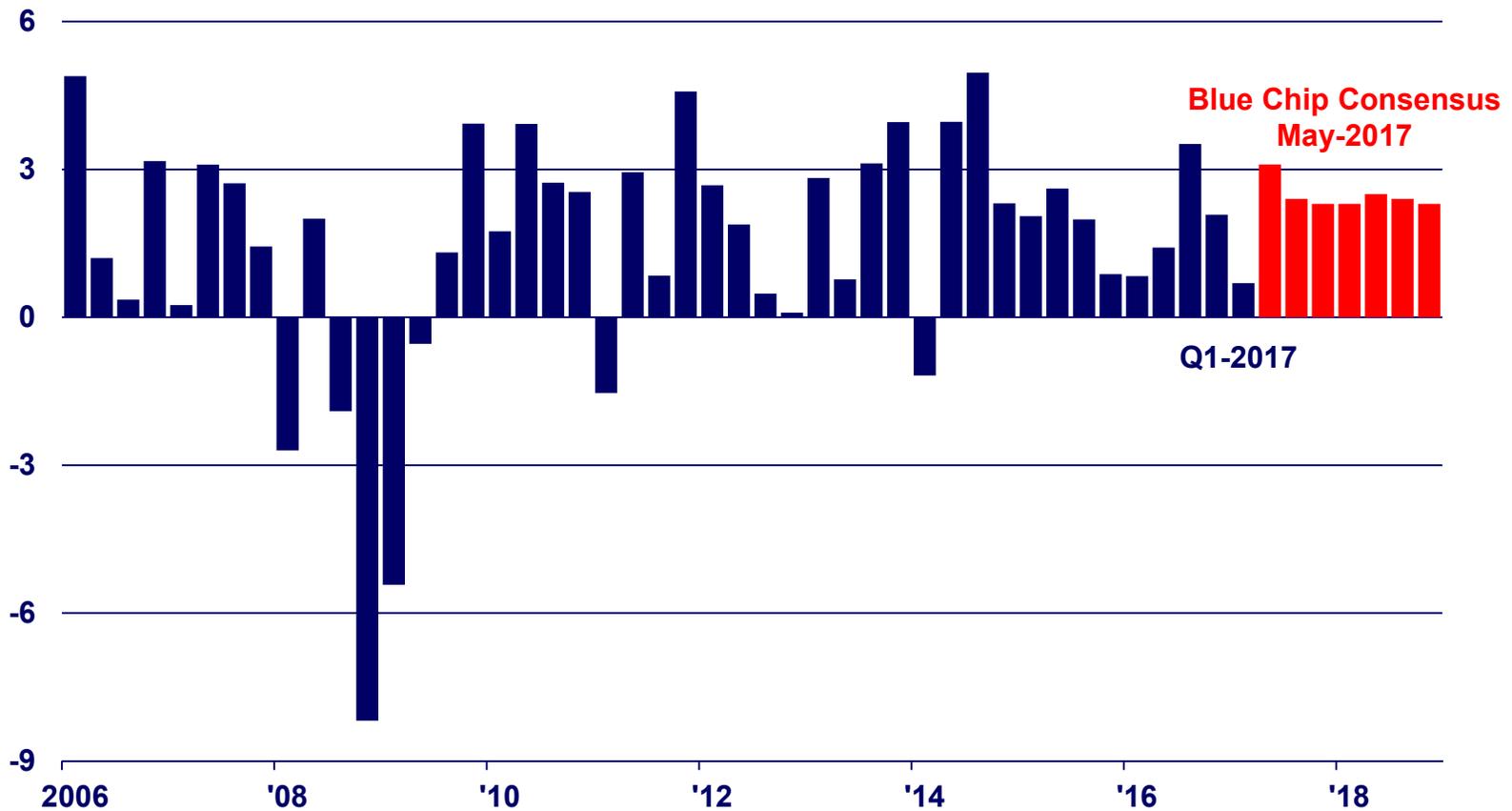
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- **Factors affecting the near-term**
  - Consumer and business spending
  
- **Factors affecting the medium-term**
  - Output and employment gaps
  - Slowdown in productivity growth
  - Demographics and labor force participation
  
- **Monetary policy in perspective**
  - The Dual Mandate
  - Summary of Economic Projections

# Economic Growth

## Real GDP Growth

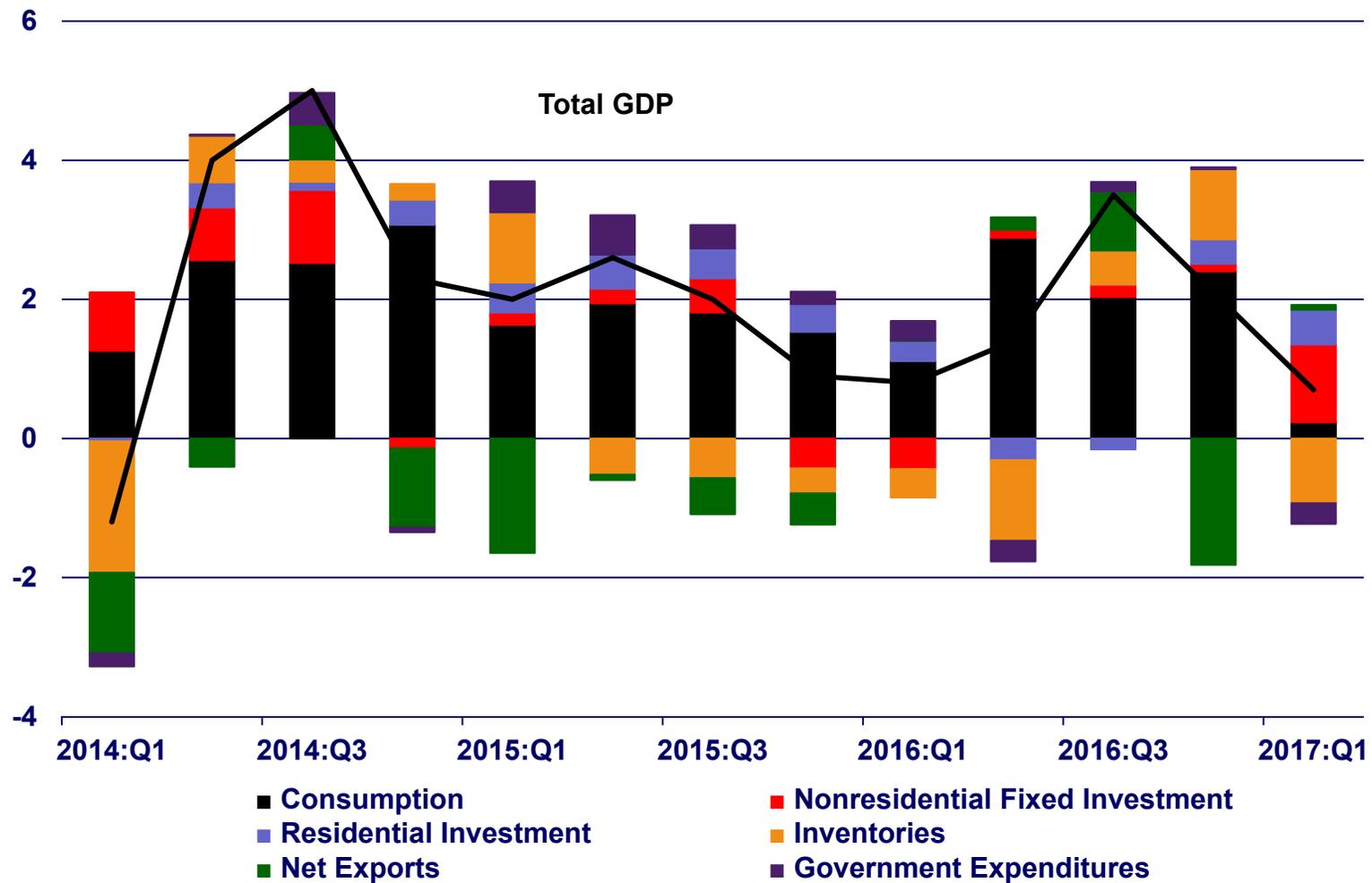
(percent change, annual rate)



Source: Data from the Bureau of Economic Analysis and Blue Chip Economic Indicators, accessed via Haver Analytics.

# Contributions to Growth

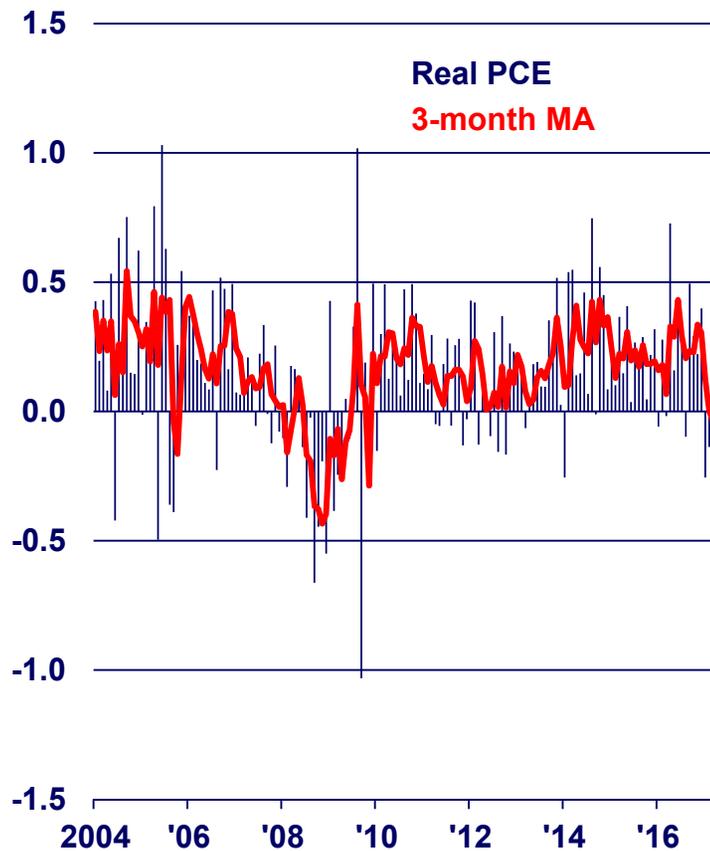
## Contributions to Real GDP Growth (percent, annual rate)



Source: Data from the Bureau of Economic Analysis, accessed via Haver Analytics.

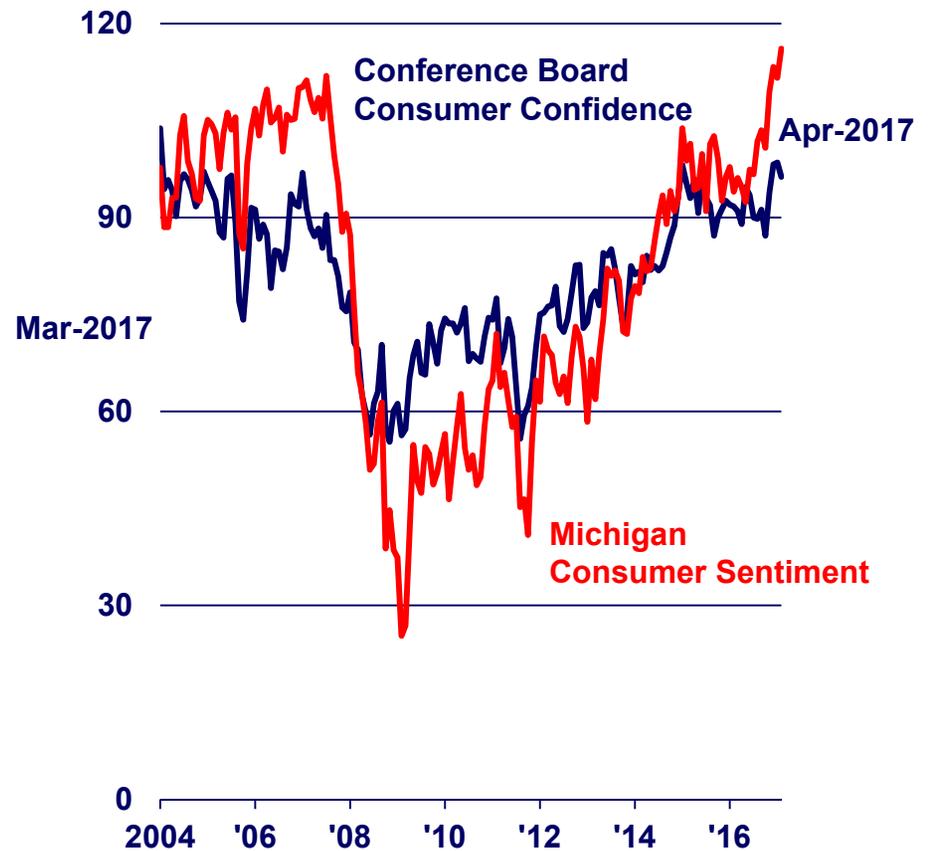
# Consumer Spending

**Personal Consumption Expenditures**  
(percent change)



Source: Data from the Bureau of Economic Analysis, accessed via Haver Analytics.

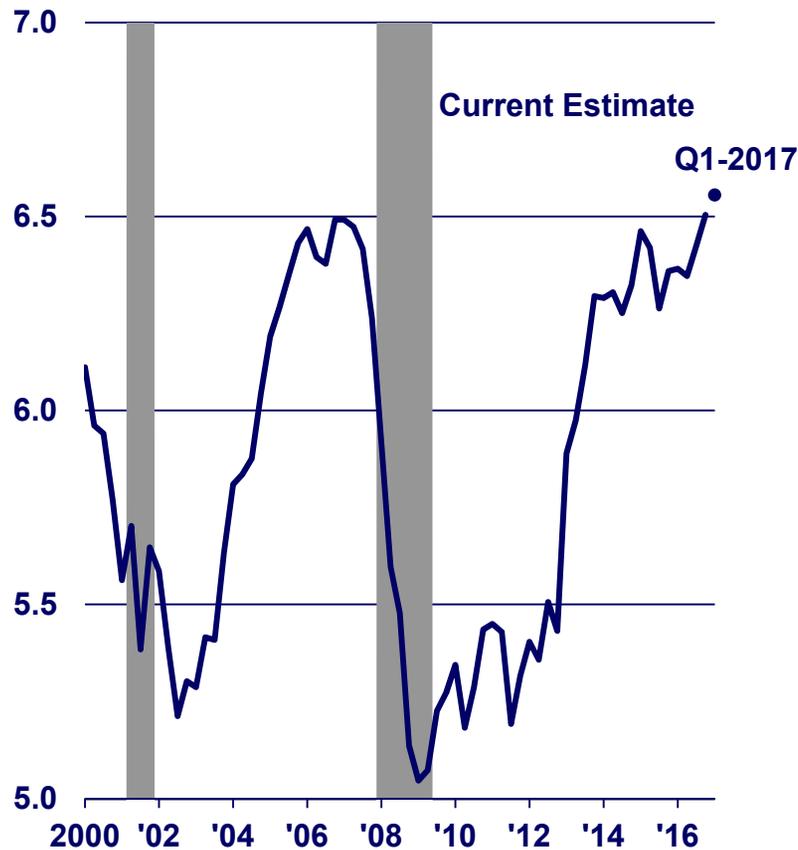
**Indices of Overall Consumer Sentiment**  
(Michigan: Q1-1966=100; Conference Board: 1985=100)



Source: Data from the University of Michigan Survey of Consumers and the Conference Board, accessed via Haver Analytics.

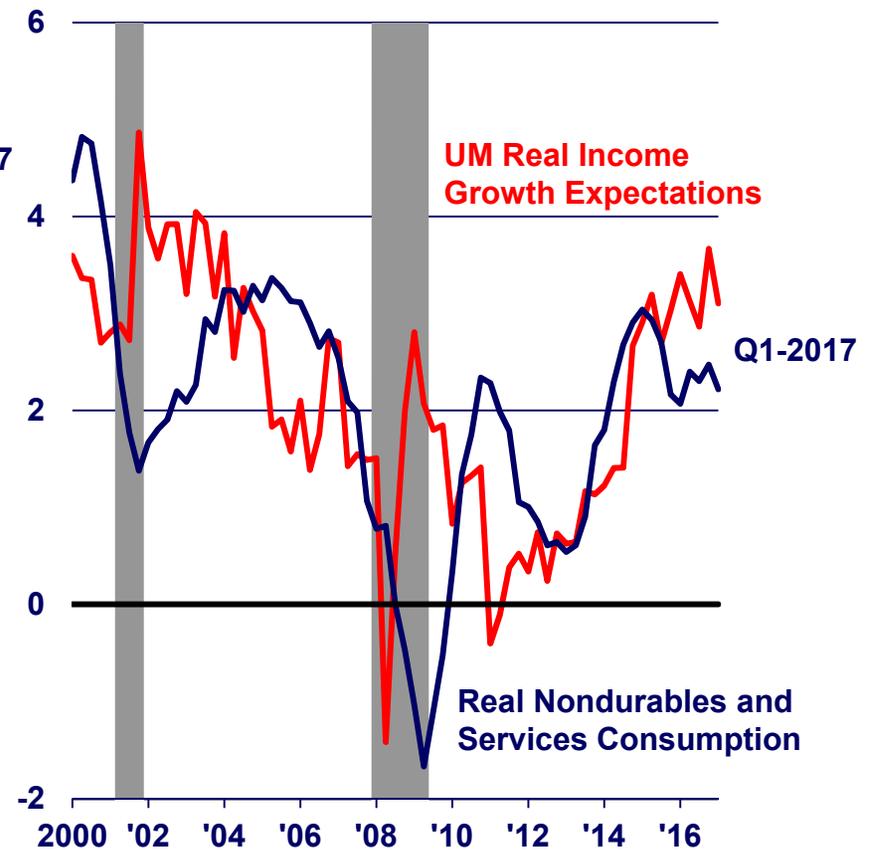
# Household Wealth and Income

**Ratio of Household Net Worth to DPI**  
(hundreds of percent)



Source: Data from the Federal Reserve Board, accessed via Haver Analytics.

**Real Income Growth and Expectations**  
(year-over-year percent change)

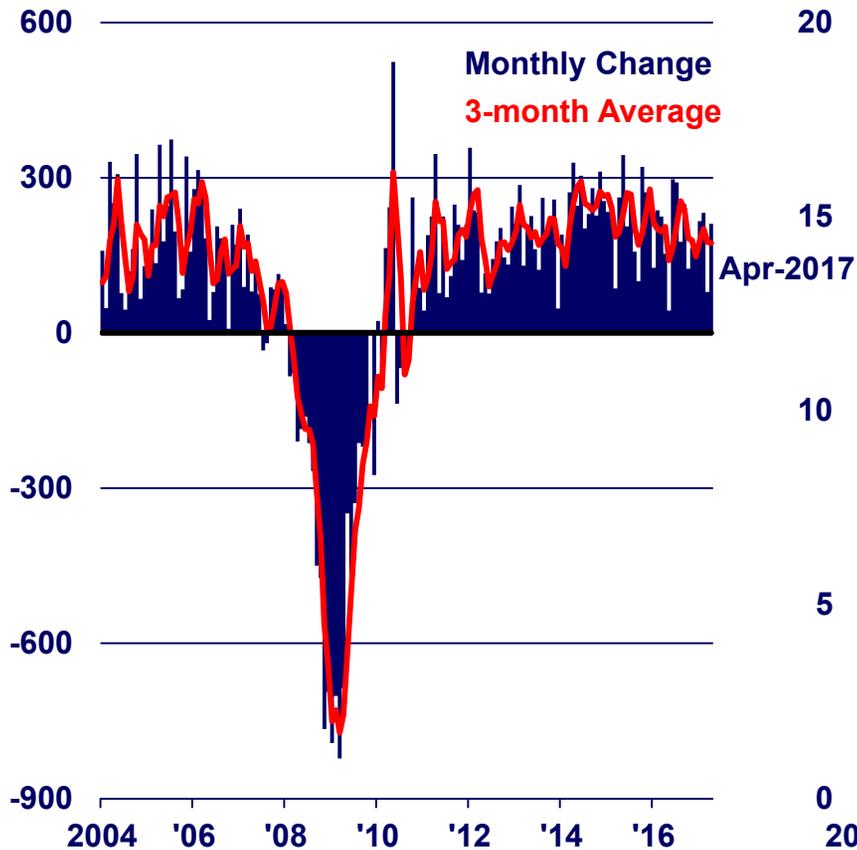


Source: Data from the Bureau of Economic Analysis, accessed via Haver Analytics, and the University of Michigan Survey of Consumers.

# Labor Market Dynamics

## Nonfarm Payroll Employment

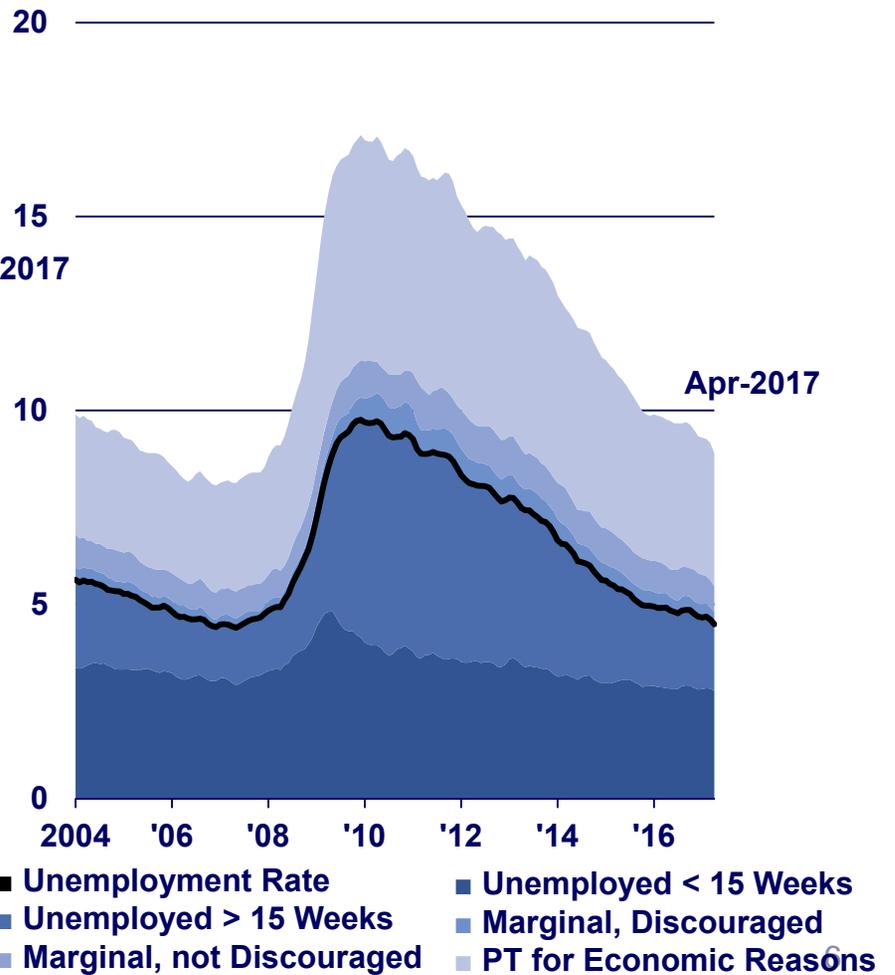
(change, thousands)



Source: Data from the Bureau of Labor Statistics, accessed via Haver Analytics.

## Labor Underutilization Measures

(percent)

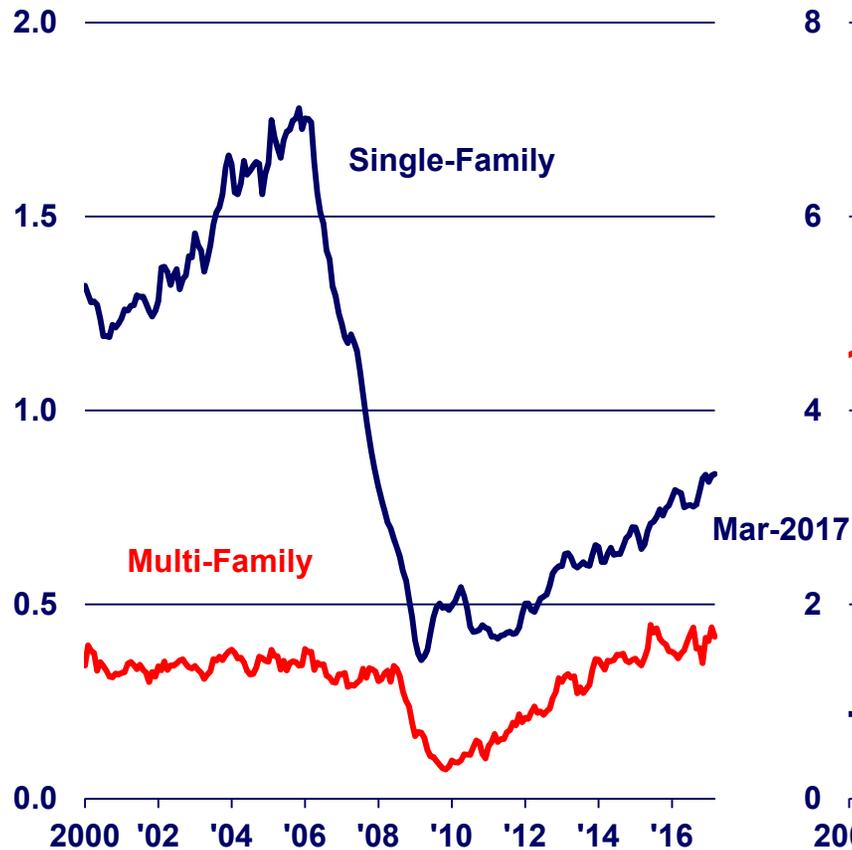


Source: Data from the Bureau of Labor Statistics, accessed via Haver Analytics.

# Housing Market

## Housing Starts

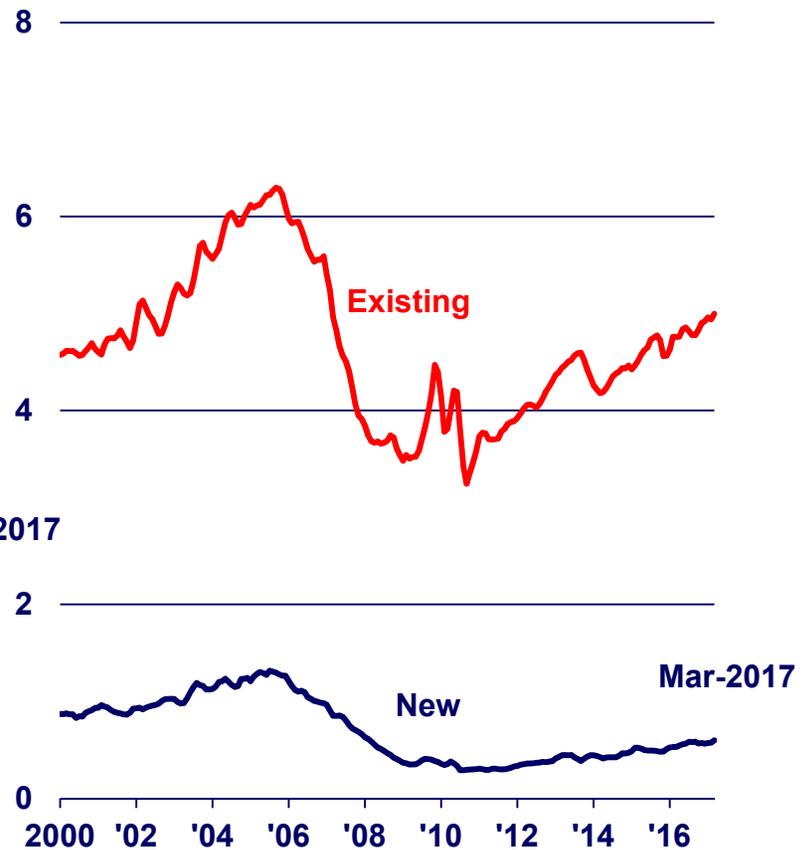
(3-mo. MA in millions of units, annual rate)



Source: Data from the U.S. Department of Commerce and Bureau of the Census., accessed via Haver Analytics.

## Single-Family Home Sales

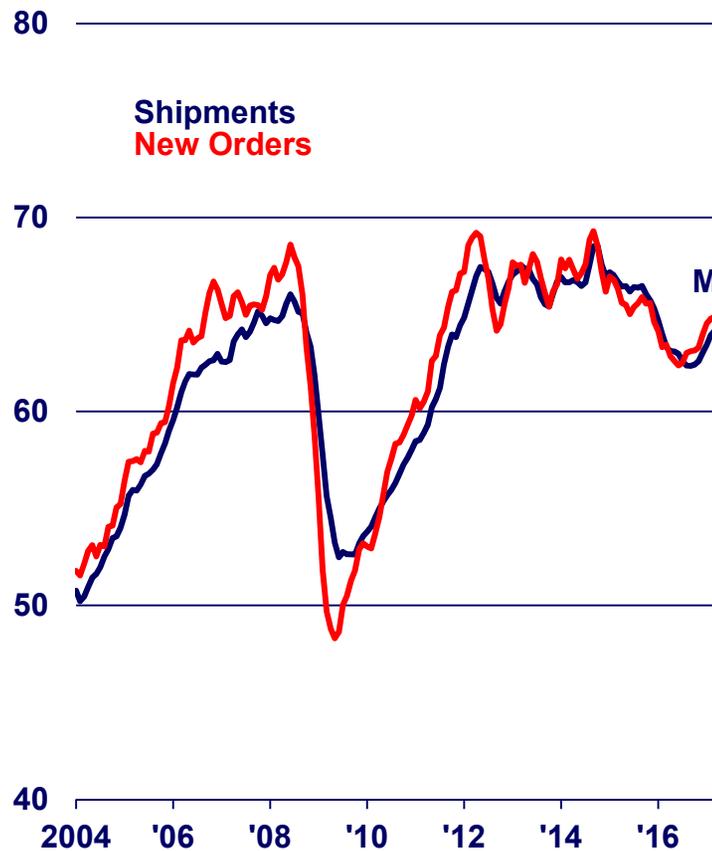
(3-mo. MA in millions of units, annual rate)



Source: Data from the Census Bureau and the Department of Housing and Urban Development, accessed via Haver Analytics.

# Business Spending

**Nondefense Capital Goods ex. Aircraft**  
(Bils. \$, 3-month MA)



Source: Data from the Census Bureau, accessed via Haver Analytics.

**Nonresidential Private Construction**  
(Bils. \$, 3-month MA)



Source: Data from the Census Bureau, accessed via Haver Analytics.

# Manufacturing vs. Non-Manufacturing

## Purchasing Managers Indexes

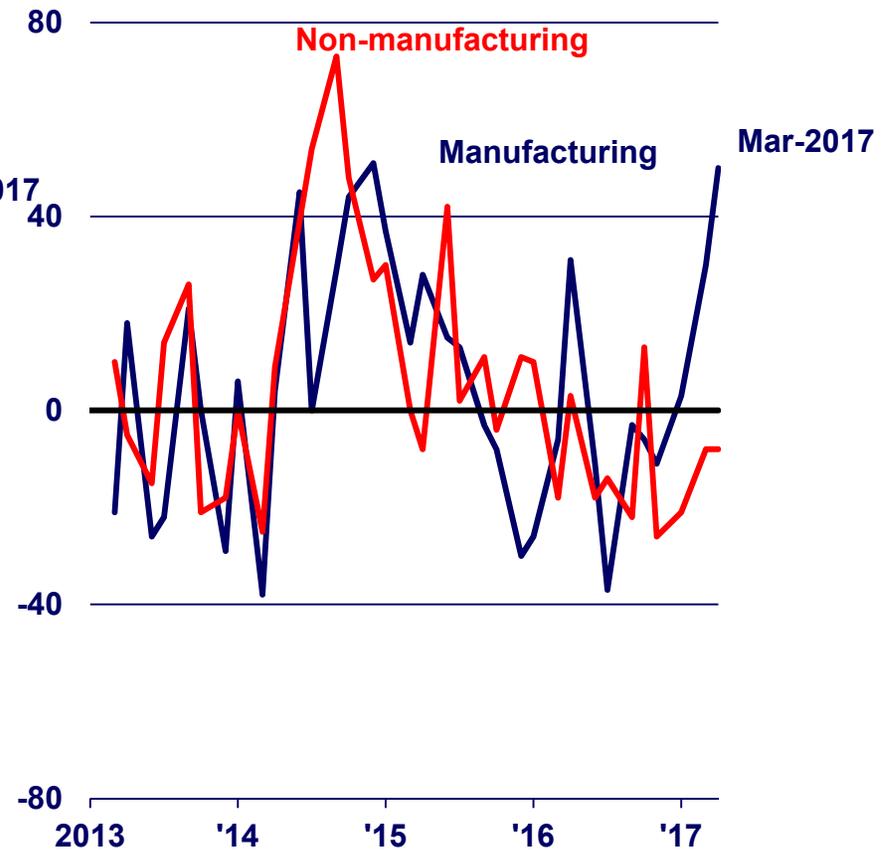
(Index: 50+ equals expansion)



Source: Data from the Institute for Supply Management, accessed via Haver Analytics.

## CFSBC Activity Indexes

(Index: 0=Trend Growth)



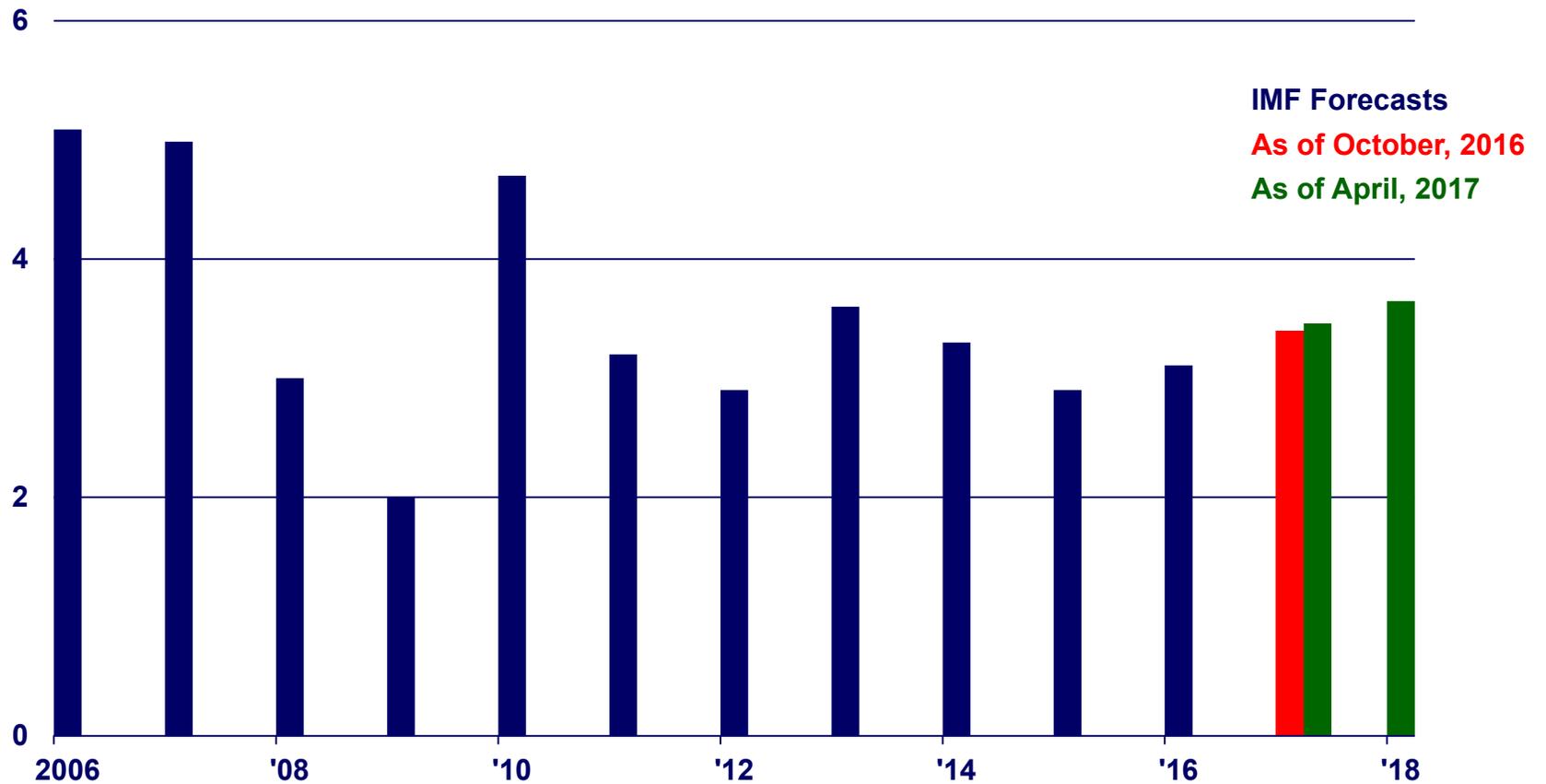
Source: Data from the Federal Reserve Bank of Chicago.

# World Growth and Trade

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## Real World GDP Growth

(4-quarter percent change)

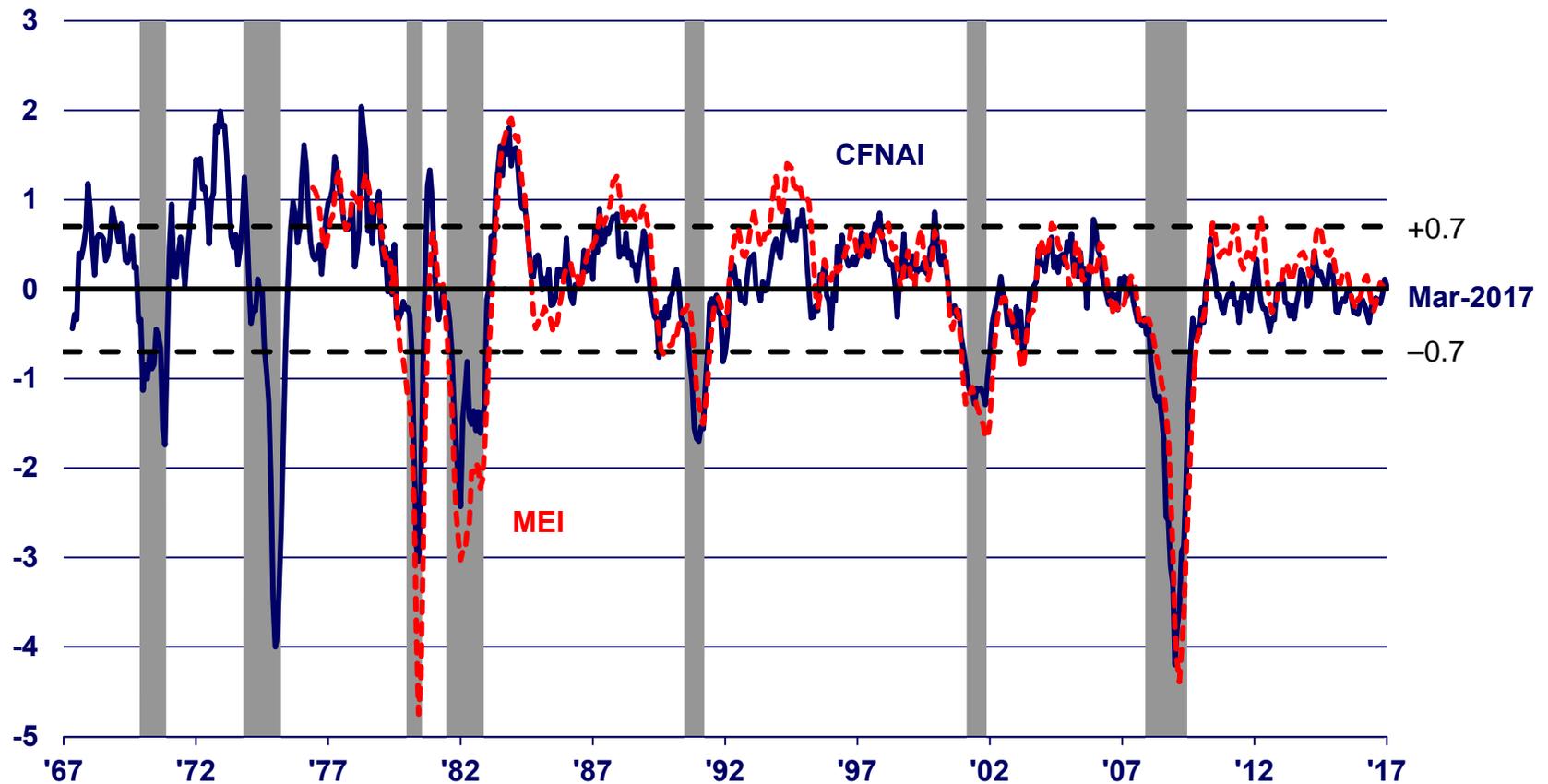


Source: Data from the International Monetary Fund.

# U.S. and Midwest Economic Activity

## Chicago Fed Activity Indexes

(standard deviation from trend, 3-month average)

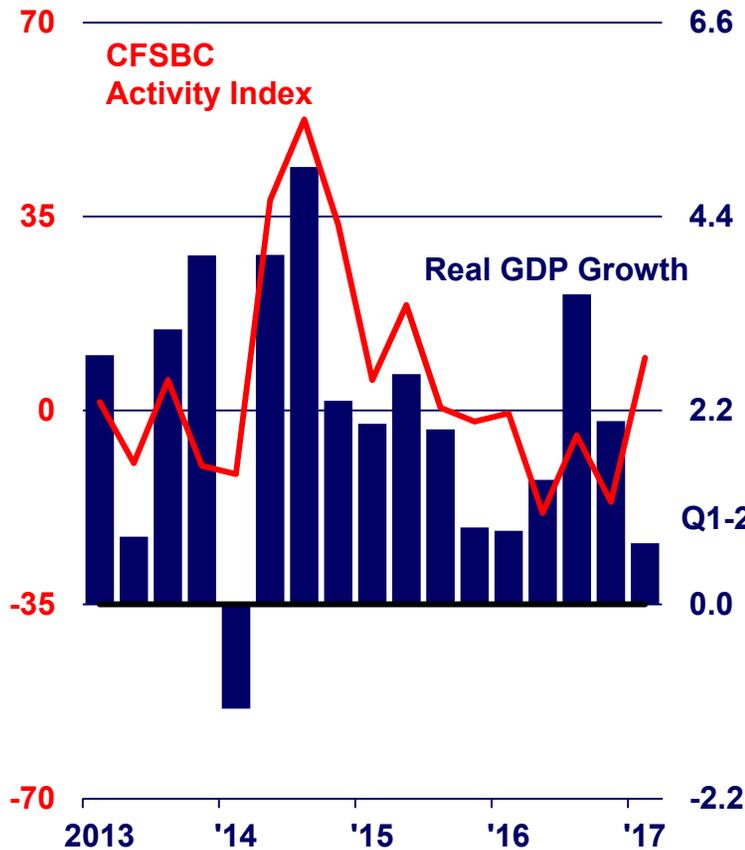


Source: Data from the Federal Reserve Bank of Chicago, accessed via Haver Analytics.  
Shading indicates US recessions according to the National Bureau of Economic Research.

# Chicago Fed Survey of Business Conditions

## Real GDP and CFSBC Activity Index

(GDP: percent change, annualized;  
Index: 0 = trend growth)



\* Source: Data from the Bureau of Economic Analysis, accessed via Haver Analytics, and the Federal Reserve Bank of Chicago.

## CFSBC Outlook Index and Capital Spending and Hiring Plans

(Index: 0 = trend growth)

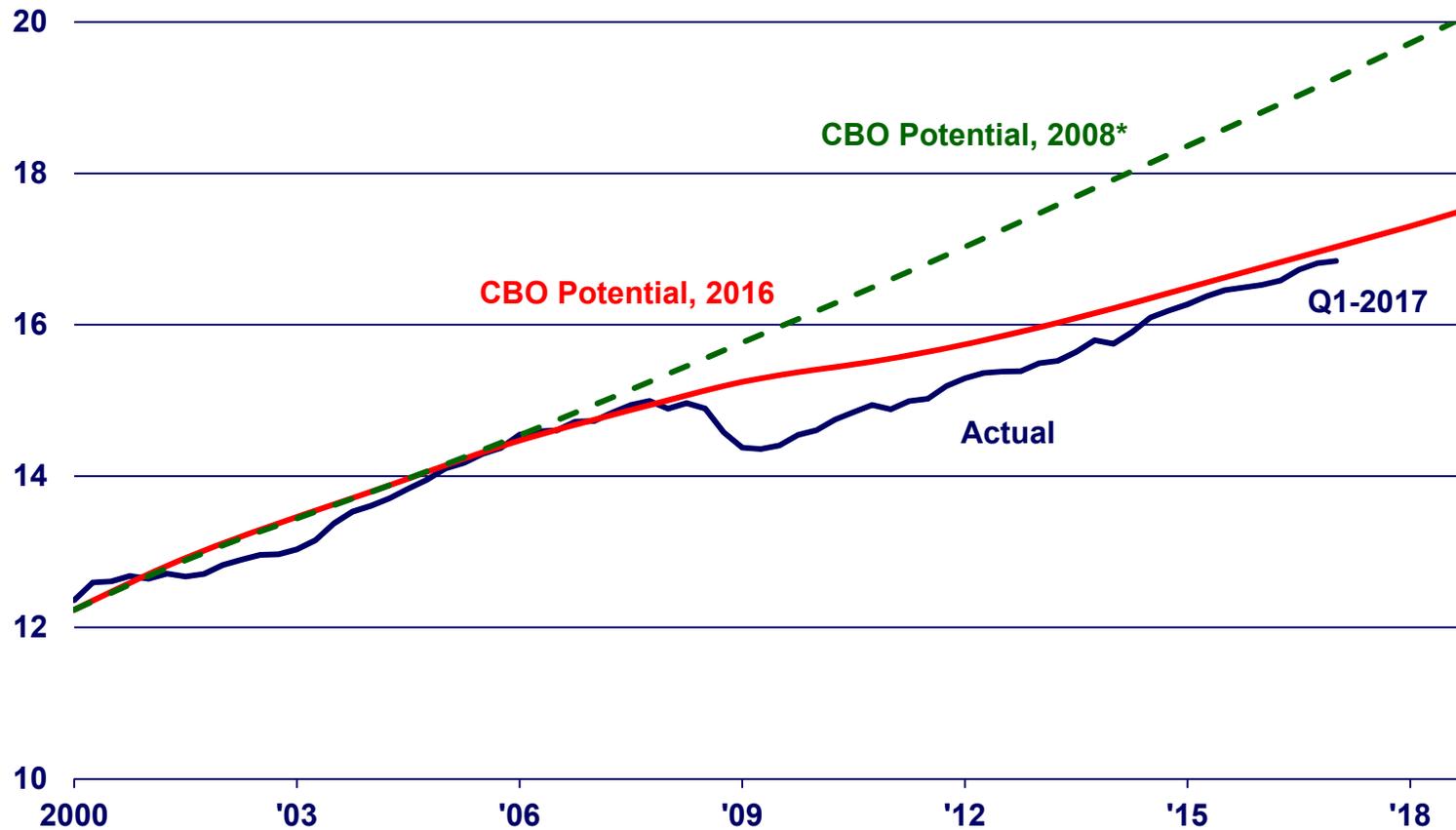


\* Source: Data from the Federal Reserve Bank of Chicago.

# The Output Gap

## Gross Domestic Product

(Trils. 2009\$)



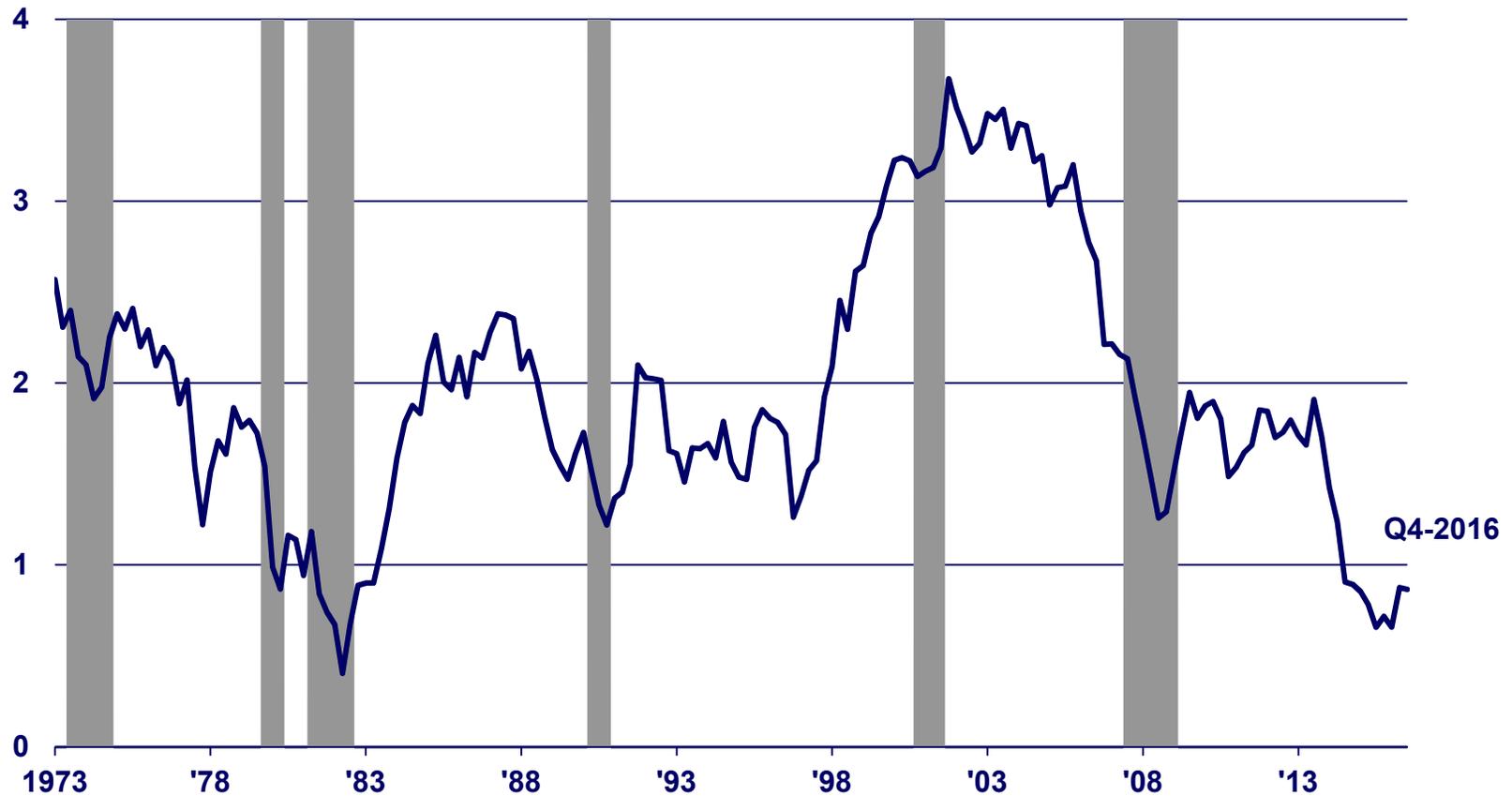
Source: Data from the Bureau of Economic Analysis and the Congressional Budget Office, accessed via Haver Analytics.

\* CBO 2008 Potential GDP indexed to the CBO 2016 potential GDP as of Q1-2000.

# Productivity Slowdown

## Labor Productivity

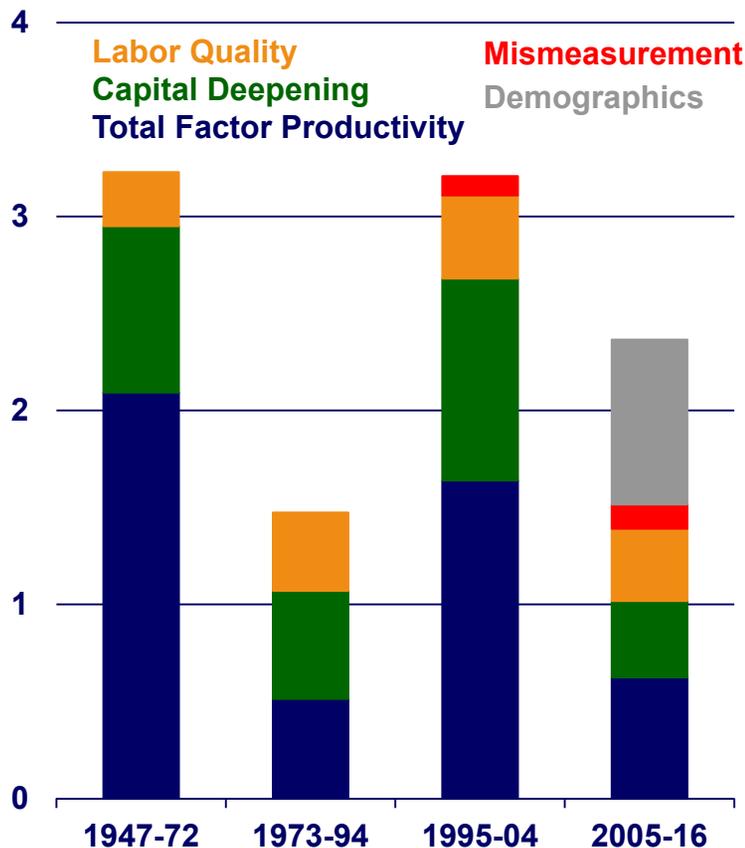
(20-qtr moving average of quarterly percent change)



Source: Based on estimates from the Federal Reserve Bank of San Francisco, accessed via Haver Analytics. Shading indicates US recessions according to the National Bureau of Economic Research.

# Sources of U.S. Productivity Growth

## Contributions to Output per Hour (business sector, percent change, annual rate)



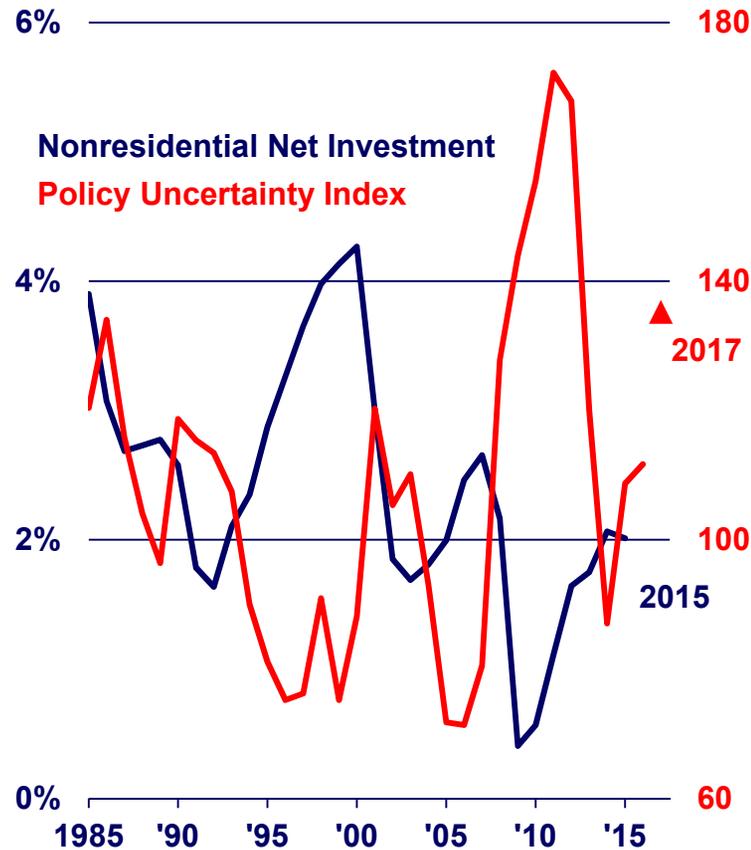
- **Periods of low and high productivity growth are common**
- **Current slowdown predates the Great Recession, consistent with ~\$3 tril. in “missing” output**
- **Possible mismeasurement likely accounts for only a fraction**
  - Offshore profit shifting and R&D
  - Gains from innovation in IT
- **Changing demographics and slower technical progress (TFP) are by far the biggest drivers**

Source: Author's calculations using data from "Productivity and Potential Output Before, During, and After the Great Recession" (Fernald, 2014), "Offshore Profit Shifting and Domestic Productivity Measurement" (Güvenen, Mataloni, Jr., Rassier, and Ruhl, 2017), "Does the United States have a productivity slowdown or a measurement problem?" (Byrne, Fernald, and Reinsdorf, 2016), and "The Disappointing Recovery of Output After 2009" (Fernald, Hall, Stock, and Watson, 2017).

# Private Sector Net Investment Rates

## Nonresidential Investment and Policy Uncertainty

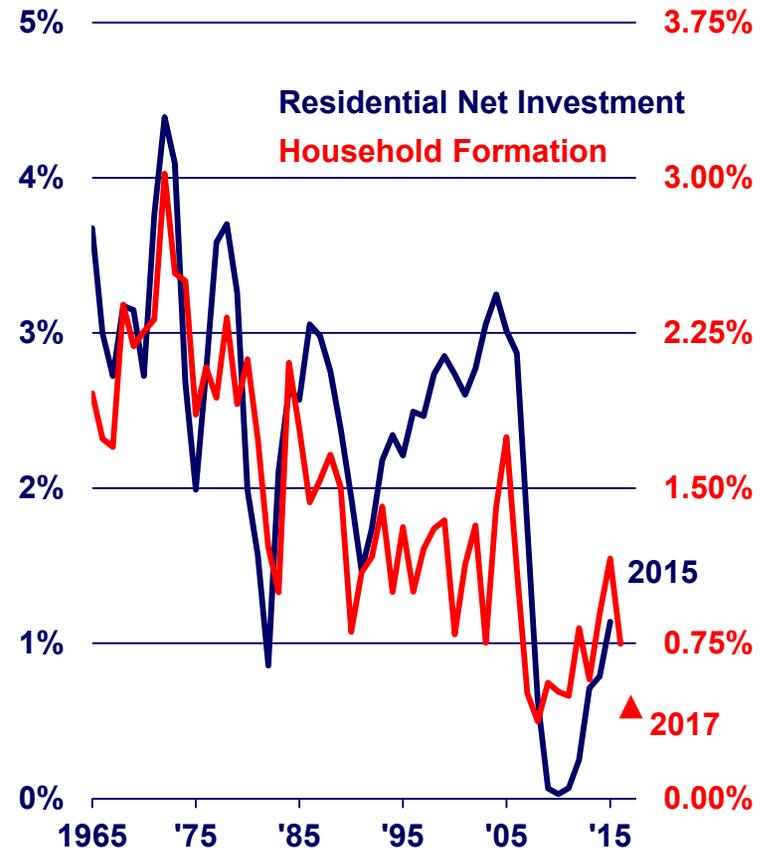
(percent and index)



Source: Data from the Bureau of Economic Analysis and “Measuring Economic Policy Uncertainty”. (2012). Scott R. Baker, Nicholas Bloom, and Steve Davis. Data accessed via Haver Analytics.

## Residential Investment and Household Formation

(percent and percent change)

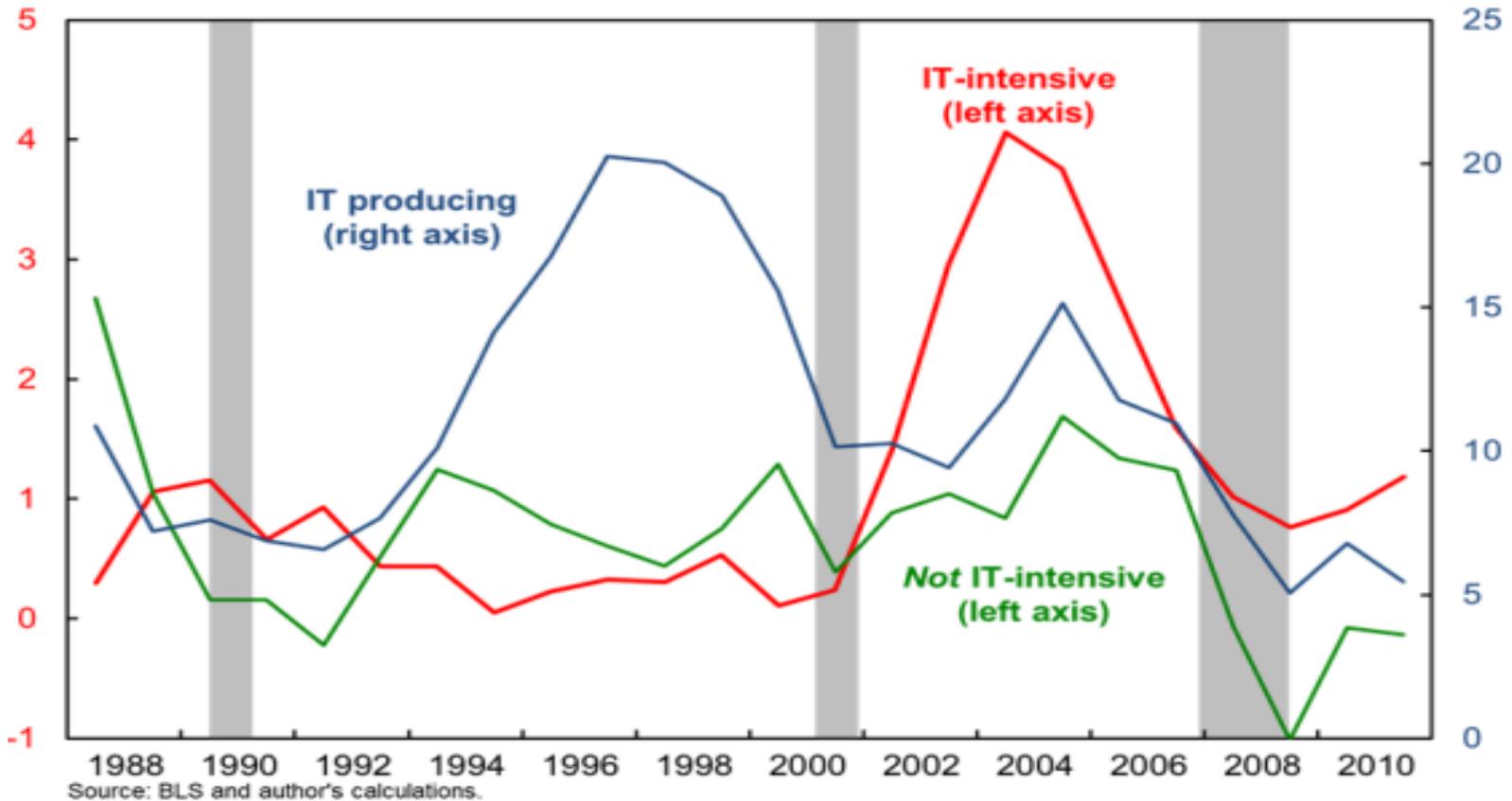


Source: Data from the Bureau of Economic Analysis and Bureau of the Census accessed via Haver Analytics.

# Stages of the IT Revolution

## Industry TFP Growth by Subgroup

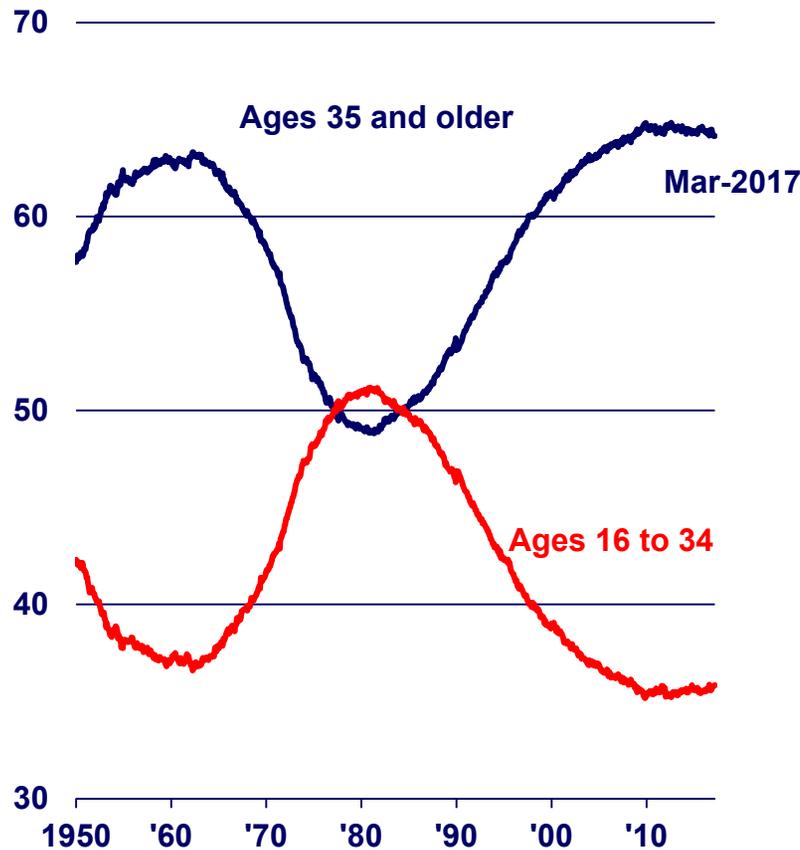
(annual percentage change, 4-yr MA)



Notes: Fernald (2014) Top panel decomposes TFP for “narrow business” (i.e., excluding natural resources, construction, and FIRE) into TFP for IT producing, IT-intensive-using, and non-IT-intensive industries.

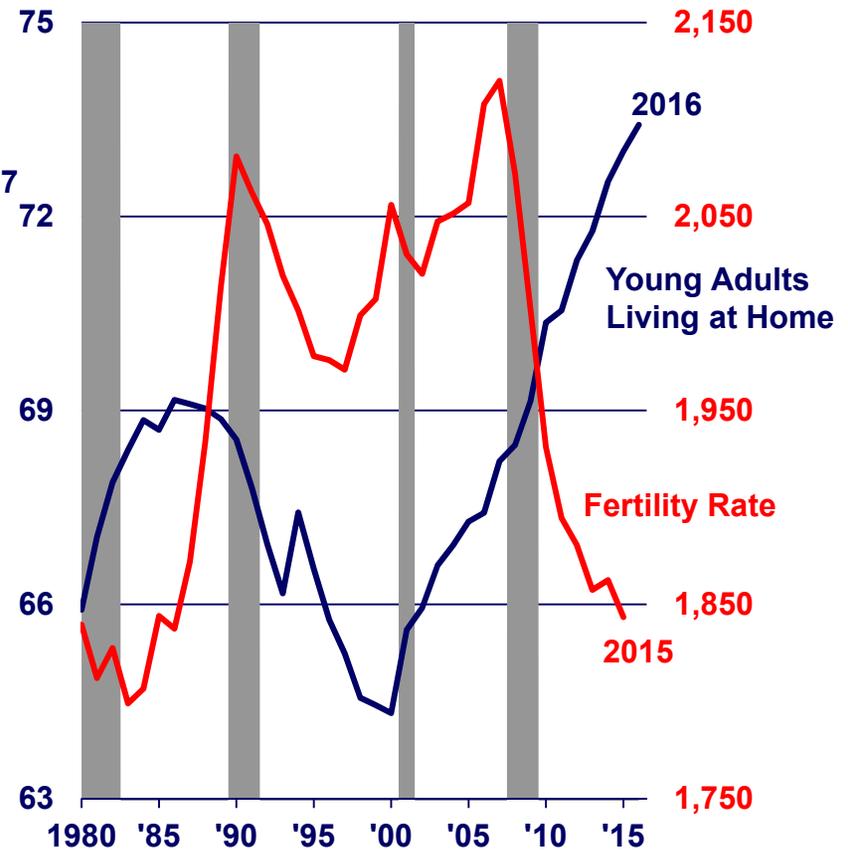
# Demographic Considerations

**Labor Force Age Composition**  
(percent of the total labor force)



Source: Data from the Bureau of Labor Statistics, accessed via Haver Analytics.

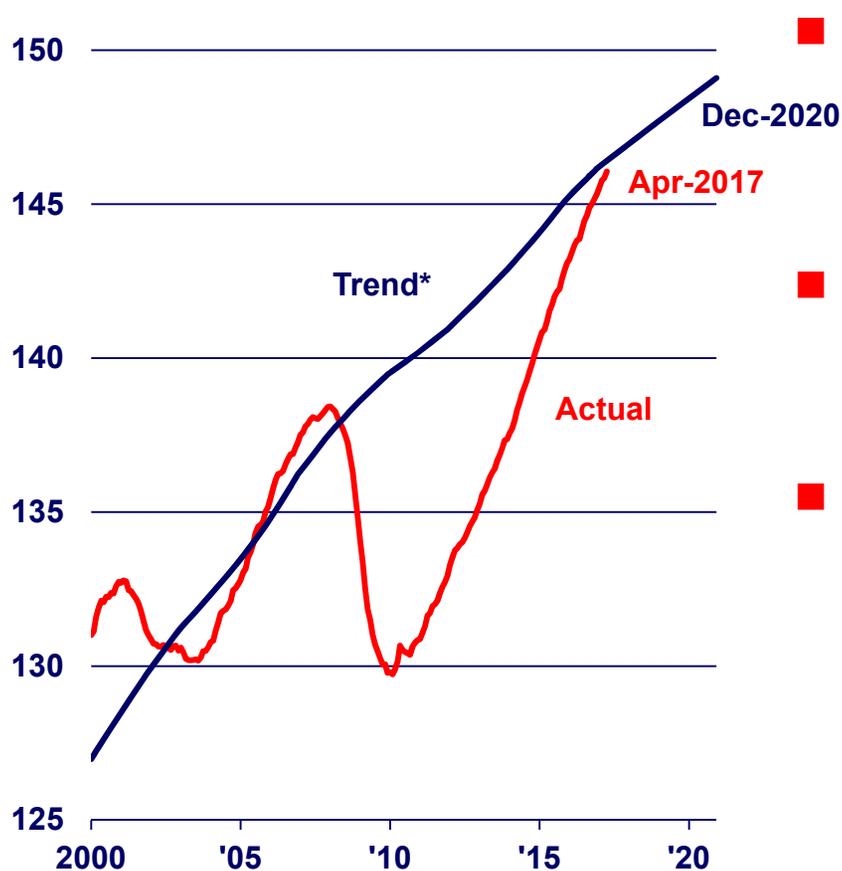
**Young Adults Living at Home and Fertility**  
(millions 18-34 year olds; births per 1,000 women)



Source: Data from the Census Bureau and National Vital Statistics Reports, accessed via Haver Analytics. Shading indicates US recessions according to the National Bureau of Economic Research.

# The Employment Gap

## Trend Nonfarm Payroll Employment (SA, millions)



- **Employment ~320k below a reasonable notion of its maximum sustainable level**

- **Trend growth expected to slow**
  - From ~80k to ~50k per month

- **Growth needed to close the employment gap:**

- 150,000 / month by Aug. 2017

- 200,000 / month by Jun. 2017

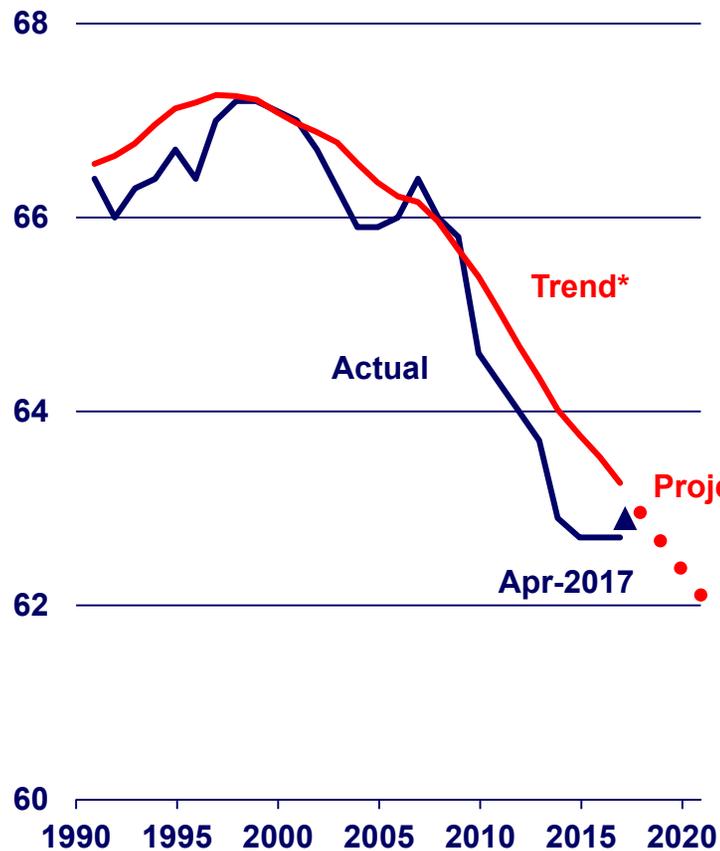
Source: Data from the Bureau of Labor Statistics, accessed via Haver Analytics.

\* Estimates updated from "Is There Still Slack in the Labor Market?", Chicago Fed Letter May 2016.

# Measures of Labor Market Slack

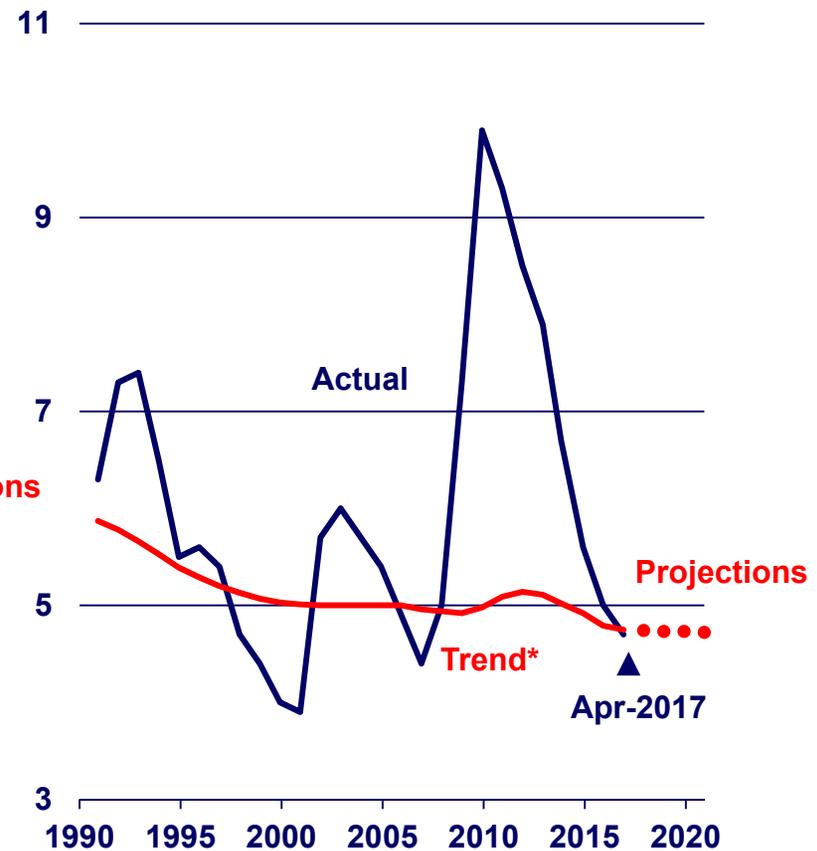
## Labor Force Participation

(fraction of the civilian noninstitutional population 16+)



## Unemployment Rate

(percent)



Source: Data from the Bureau of Labor Statistics, accessed via Haver Analytics.

\* Estimates updated from "Is There Still Slack in the Labor Market?", Chicago Fed Letter May 2016.

# Monetary Policy and the Real Economy

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## Fed must accept Aggregate Supply

- **Available labor**
  - Labor force adjusted for the natural rate of unemployment
- **Effective capital stock**
  - Plant, equipment, software, housing stock, etc.
- **Productivity**
  - Technological capabilities
  - Institutions and regulations

## Fed can change Aggregate Demand

- **Household spending**
  - Incentive to save
  - Wealth effects
- **Business investment**
  - Cost of capital
  - Prospective product demand
- **Net exports**
  - Effects on dollar

# The Federal Reserve's Dual Mandate

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## ■ Price stability

- Sets 2% objective for PCE inflation
- Target is for an average over medium term – it is not a ceiling
- Explicit statement should help to anchor inflation expectations

## ■ Full employment

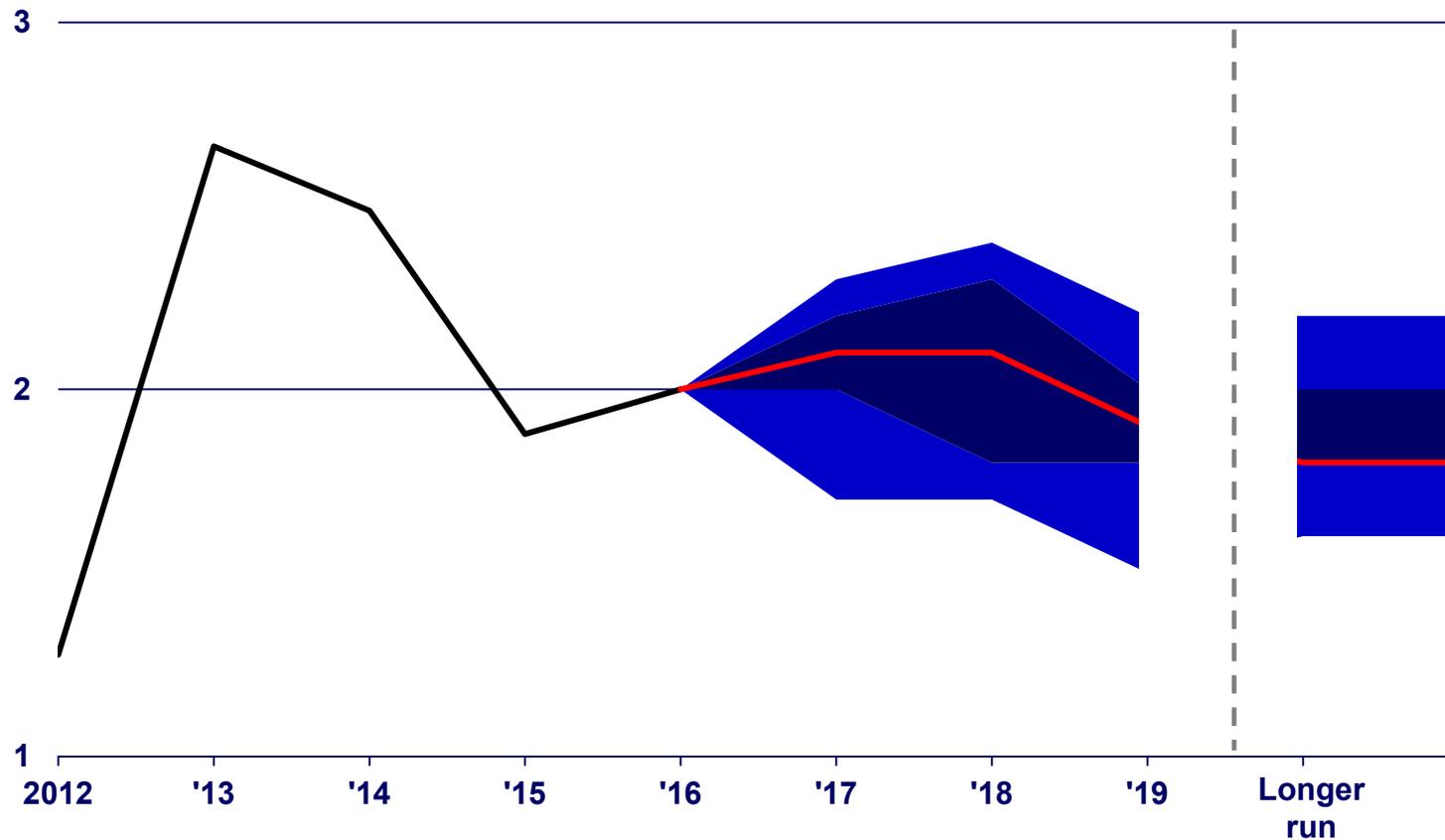
- The appropriate employment goal may change over time for nonmonetary reasons
- 4.7-5.0% unemployment rate *currently* consistent with mandate
- Seek an economy operating at its level of potential output

## ■ Balanced approach

- Take a balanced approach when shocks push the economy away from objectives

# FOMC GDP Projections

## Change in Real GDP (percent)

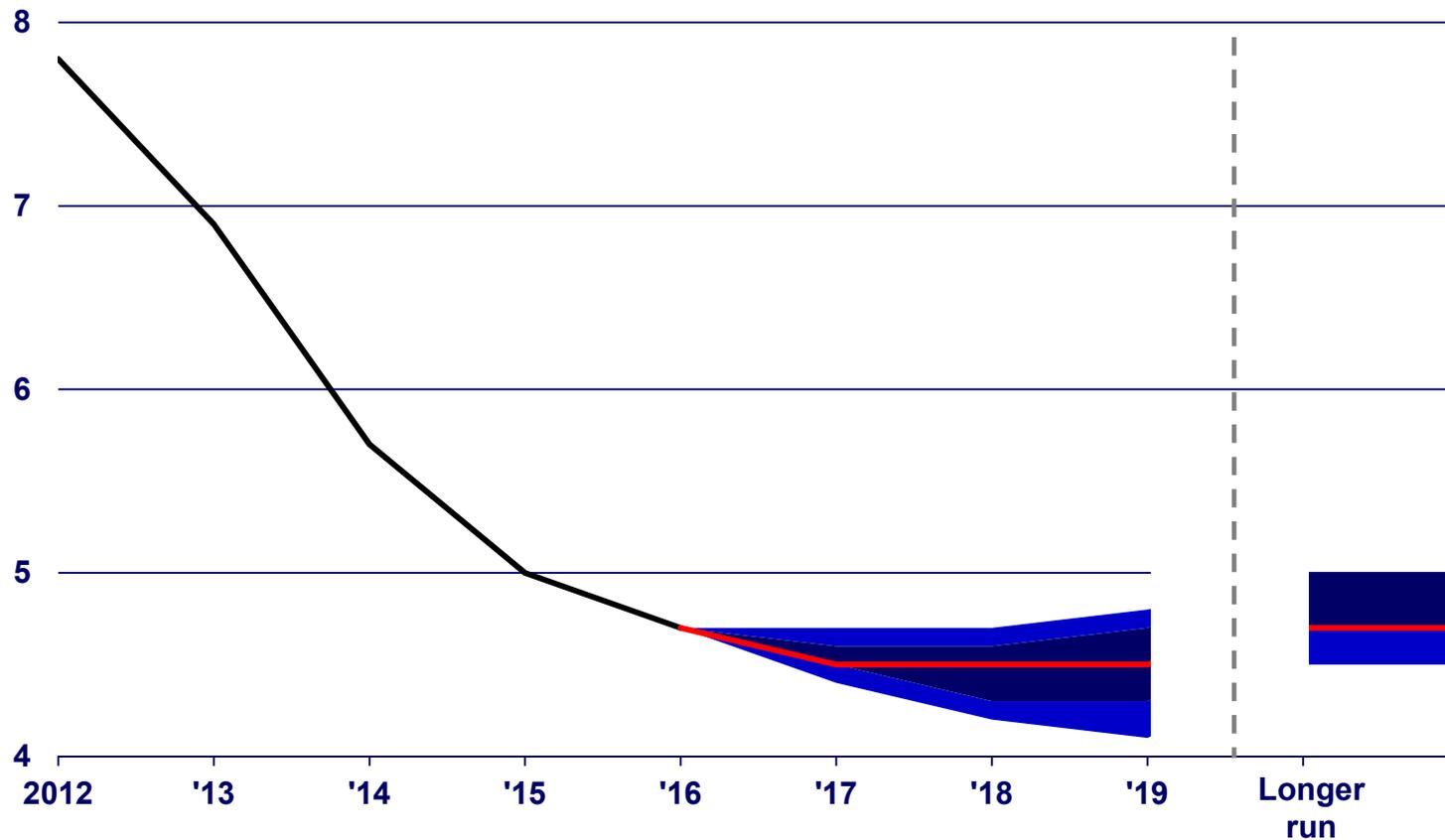


Source: Projections were obtained from the March 15, 2017 FOMC Summary of Economic Projections. The red line is the median forecast. Shaded areas depict forecast central tendencies (dark area) and ranges (light area).

# FOMC Unemployment Projections

## Unemployment Rate

(fourth quarter average, percent)



Source: Projections were obtained from the March 15, 2017 FOMC Summary of Economic Projections. The red line is the median forecast. Shaded areas depict forecast central tendencies (dark area) and ranges (light area).

# FOMC Inflation Projections

## Total PCE Inflation (percent)



Source: Projections were obtained from the March 15, 2017 FOMC Summary of Economic Projections. The red line is the median forecast. Shaded areas depict forecast central tendencies (dark area) and ranges (light area).

