



Economic Update

Michigan Actuarial Society

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December 5, 2018

The views expressed here are our own and do not necessarily reflect the views of the Federal Reserve Bank of Chicago, the Federal Open Market Committee (FOMC) or the Federal Reserve System.

Before the Federal Reserve

- Alexander Hamilton's, *Report on a National Bank, December 14 1790*
“...a National Bank is an Institution of primary importance to the prosperous administration of Finances, and would be of the greatest utility in the operations connected with the support of Public Credit...”
- In 1791, Congress created the Bank of the United States to assist the federal government in its financial transactions and to help America's financial system meet the needs of a growing economy.
- There were two failed attempts at establishing a national bank which highlighted the different regional views of the role of a central bank.

Source: Speech by Fed Governor Jerome H. Powell, *America's Central Bank: The History of the Federal Reserve*, (March 28, 2017)

Why the Current Structure Exists

- The organization of the Fed reflects the long-standing history in America to ensure power over the nation's monetary policy and financial systems is not concentrated in the hands of a few.
- Monetary policy and financial matters need to be influenced by a diverse set of voices from all parts of the country and the economy.
- The structure of the Fed was designed to achieve this broad representation, promote a stronger financial system, and protect the nation's economy against the periodic financial damage that was frequently experienced in the 19th and early 20th centuries.¹
- After months of hearings and debate the Federal Reserve Act was passed December 23, 1913.

1. The United States experienced numerous financial crises in its early history with major crises in 1839, 1857, 1873, 1873, 1893 and 1907.

Source: Speech by Fed Governor Jerome H. Powell, *America's Central Bank: The History of the Federal Reserve*, (March 28, 2017)

The Federal Reserve System



Source: Board of Governors of the Federal Reserve System (2016), *The Federal Reserve System: Purpose and Functions*, 10th ed. (Washington: Board of Governors), p. 4, https://www.federalreserve.gov/aboutthefed/files/pf_complete.pdf.

Functions of the Federal Reserve

- Financial services to the public, financial institutions, U.S. government, and foreign official institutions -- a major role in the payments system
- Supervising and regulating banking institutions to ensure safety and soundness of the banking system and to protect credit rights of consumers
- Conduct monetary policy

The “Dual Mandate”

- In 1977, Congress amended The Federal Reserve Act, stating the monetary policy objectives of the Federal Reserve as:

"The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices and moderate long-term interest rates."

Goals of Monetary Policy

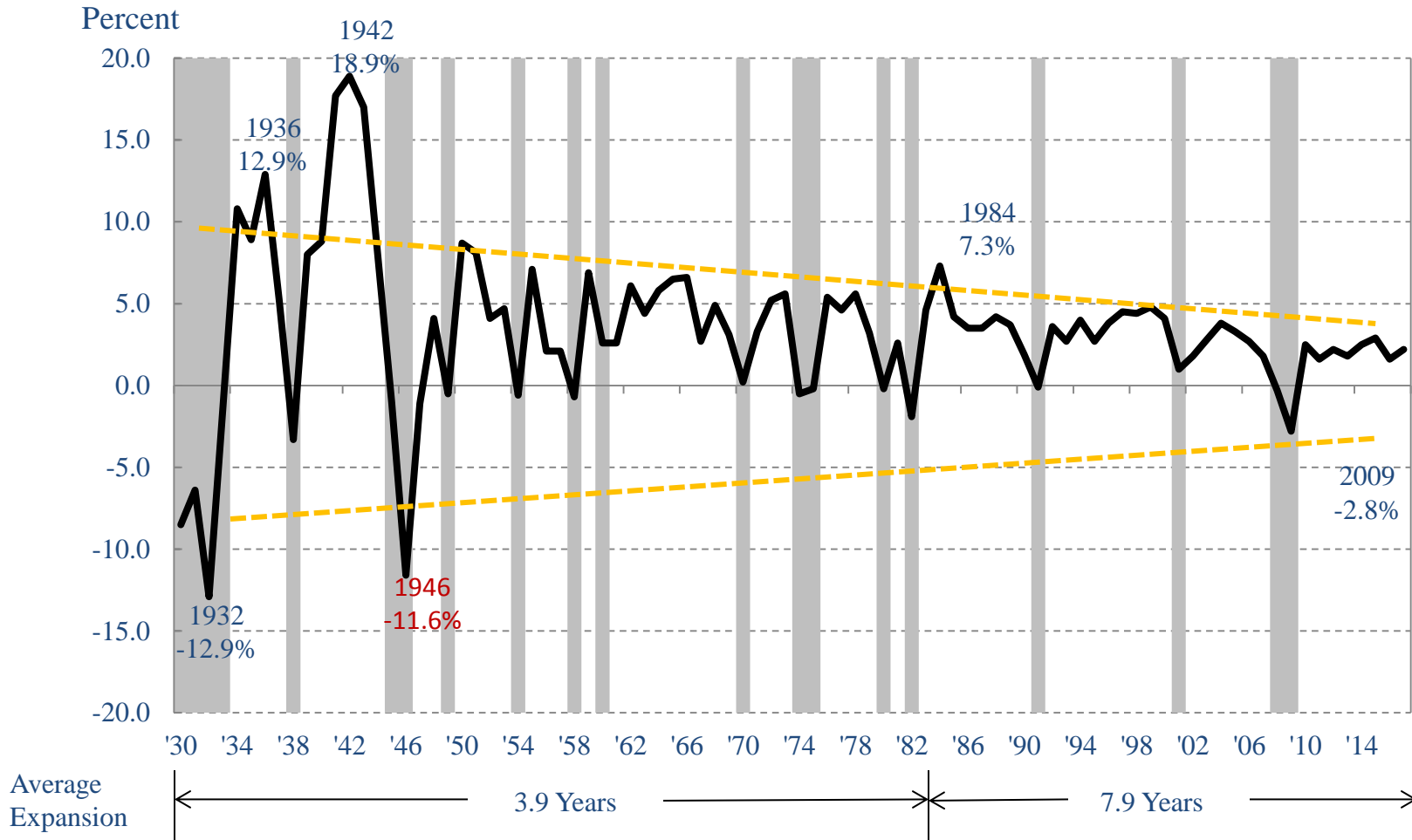
- Price stability
 - Since 2012, explicit 2% objective for PCE inflation
 - Target is for an average over medium term – it is not a ceiling
 - Explicit statement should help anchor expectations
- Full employment
 - The appropriate employment goal may change over time for nonmonetary reasons
 - Seek an economy operating at its level of potential output
 - Current Non-Accelerating Inflation Rate of Unemployment (NAIRU) : 4.5%
- Balanced approach
 - Take balanced approach when shocks push the economy away from objectives
 - Takes account of lags in effects of monetary policy and other limits

Importance of Price Stability

- Price stability gets great emphasis
- Price stability improves the workings of the price system -- high and variable inflation disrupts the economy
- Price stability provides the environment necessary to meet all the other goals of monetary policy
- Price stability makes planning easier
- Price stability may also lower long-term interest rates by reducing uncertainty

U.S. Real GDP

Percent Change Yr./Yr.



Sustainable Growth

- The Federal Reserve can't make the economy grow faster than its potential in the long run
- Trying to over-stimulate the economy results in increasing inflation that contributes to short boom-bust cycles
- Steady, sustainable growth is the key to improved living standards

Tools of Monetary Policy

- Reserve requirements: funds that depository institutions must hold in reserve against deposits
- Discount Rate: the interest rate charged to commercial banks when they borrow reserves from a Federal Reserve Bank
 - Banks who are in better financial shape can borrow at the Primary Credit rate (currently at 100 basis points above the Fed Funds rate) and those that are not as solid can borrow at the Secondary Credit rate (currently 150 basis points above the Fed Funds rate)
- Open market operations: influencing the level of reserves by buying and selling U.S. government securities in the open market -- done by trading desk at the New York Fed
 - Currently the desk operates by targeting the interest rate on Federal Funds

Importance of an Independent Fed

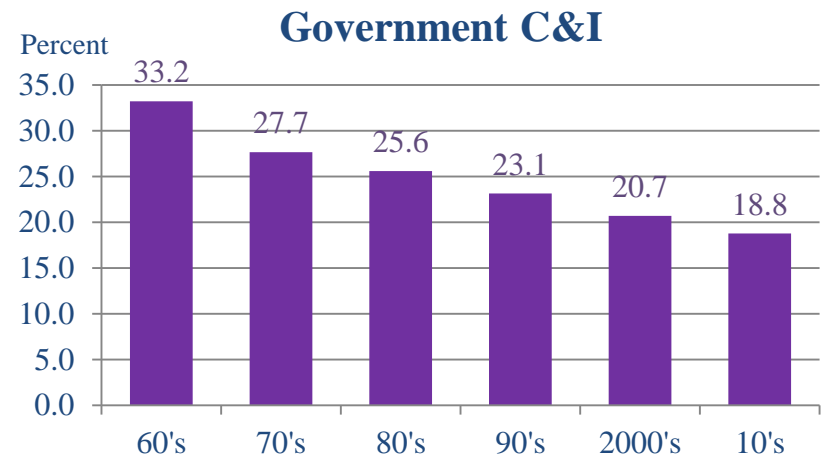
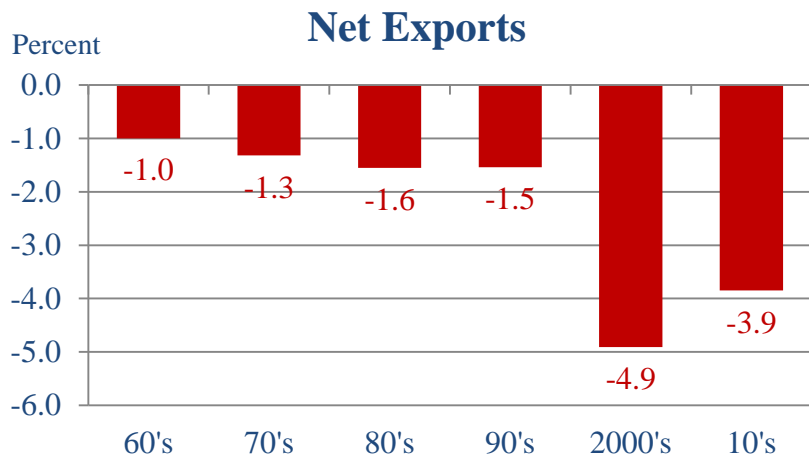
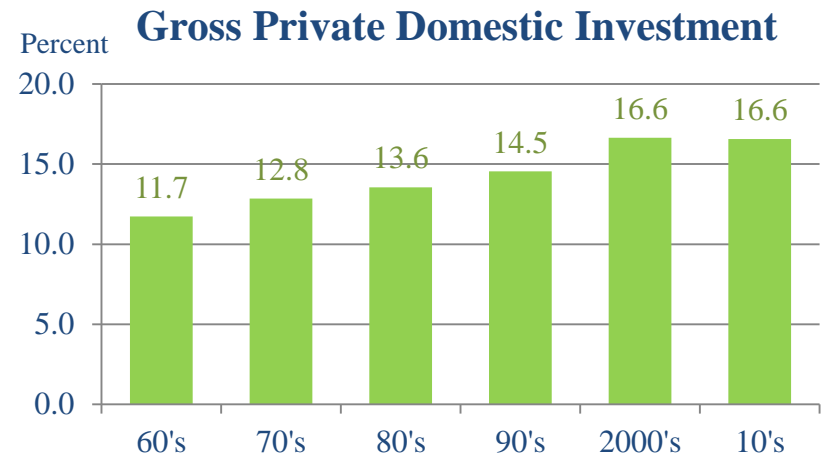
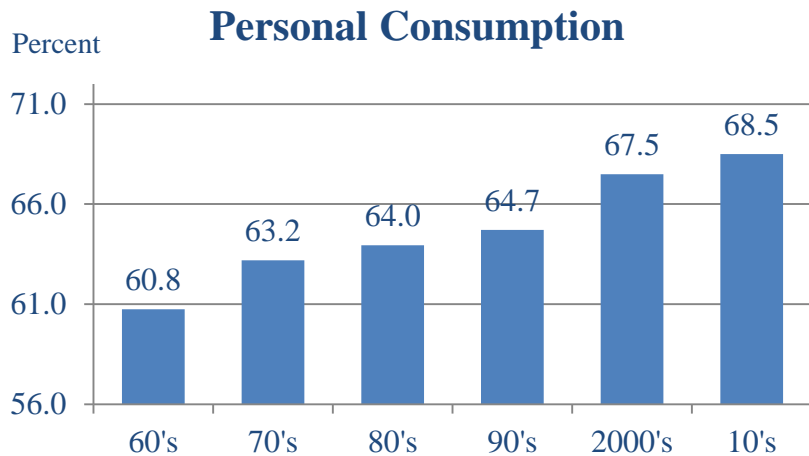
- Policymakers, academics, and other informed observers around the world agree that the goals of monetary policy should be established by the political authorities, but the conduct of monetary policy should be free from political influence.*
- Achieving monetary goals can at times take substantial time, this requires that monetary policy makers take a longer-term perspective.
- In contrast, short-term political influences may cause pressure to over stimulate the economy resulting in output and employment gains that exceed the economy's underlying potential.
- Additionally, a government that controls the central bank could abuse the central bank's money-creation powers to help finance government budget deficits which would inevitably lead to high inflation and interest rates and a volatile economy.
- In short, monetary policy interference can generate boom-bust cycles with high inflation and less stable economic activity.

* Source: Board of Governors of the Federal Reserve

Gross Domestic Product

Real GDP by Sector

Billions Chained \$2012, Percent of Total Real GDP



Note: Sector percentages may not sum to 100.0 due to rounding.

Main Economic Indicators

Year-over-year Comparison

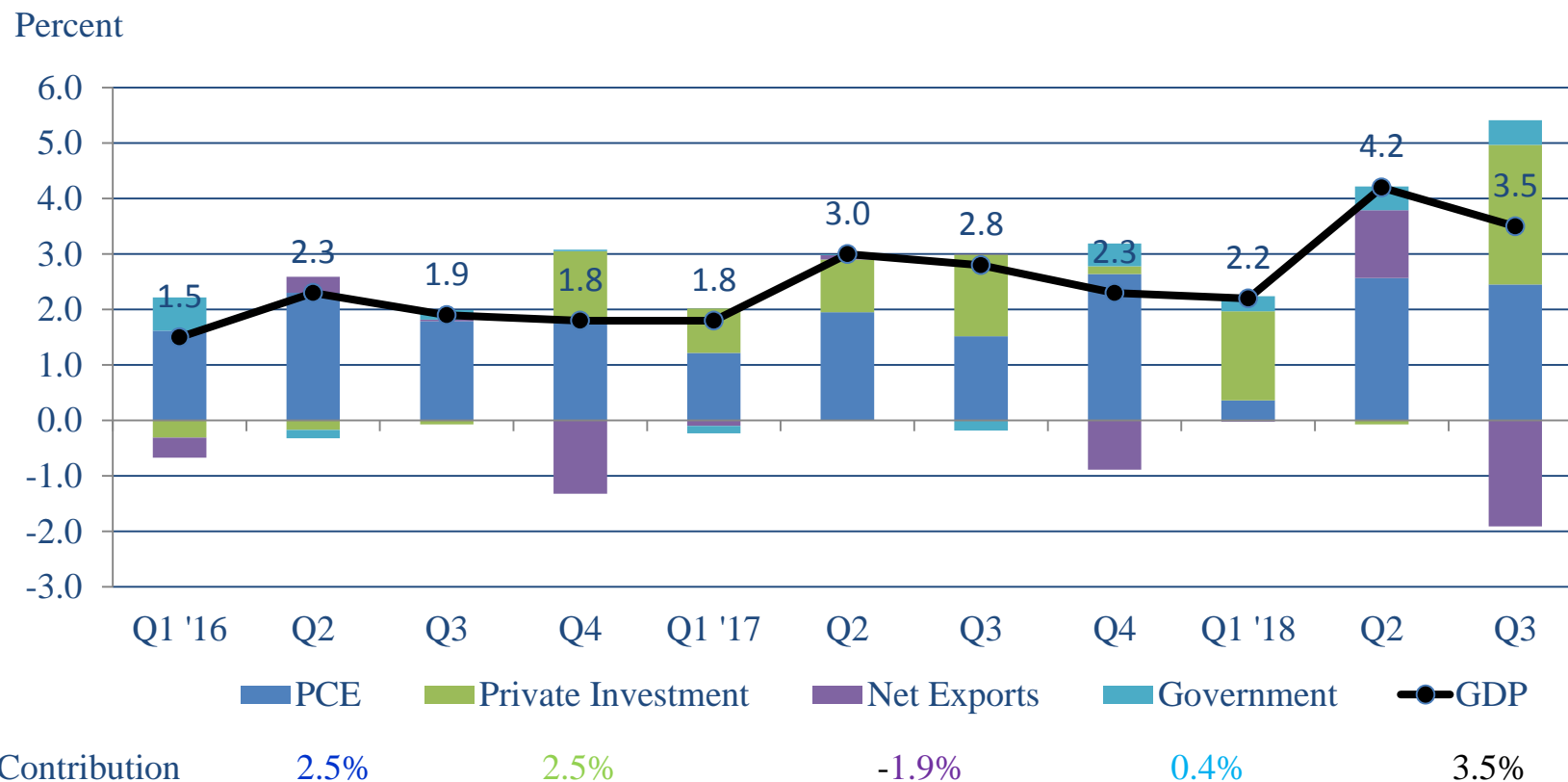
	<u>2016</u>	<u>2017</u>	<u>2018 YTD</u>
GDP – Annual Growth Rate ¹	1.9%	2.5%	3.3%
Unemployment Rate ²	4.9%	4.4%	3.9%
Nonfarm Job Growth ³	195.3	182.3	212.5
Private Wage Growth ⁴	2.6%	2.6%	2.8%
PCE Inflation Yr. / Yr. ⁴	0.9%	1.6%	2.1%

1. Year-over-year - 2016 & 2017 Q4/Q4, 2018 Q2/Q2
2. Annual Average YTD
3. Average Monthly Job Growth in Thousands- SA
4. Percent Change Year-over-year – Annual Average YTD

Source: U.S. Bureau of Economic Analysis, Census Bureau and Bureau of Labor Statistics

U.S. Real GDP

Q2 2018 Contribution to Percent Change - Q/Q at SAAR, \$2012

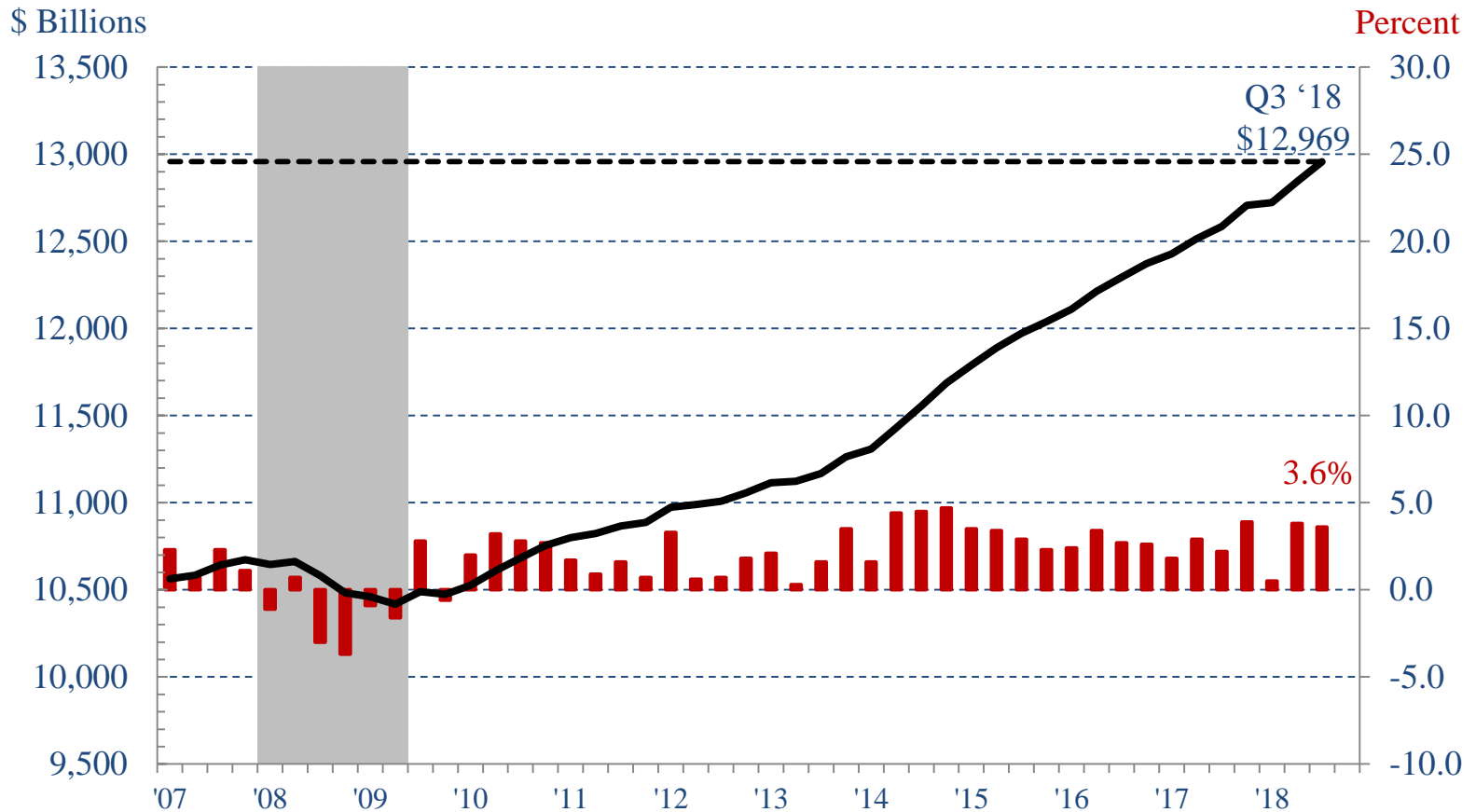


Note: Contributions by sector may not sum to total due to rounding errors.

Source: U.S. Bureau of Economic Analysis.

Real Personal Consumption Expenditures

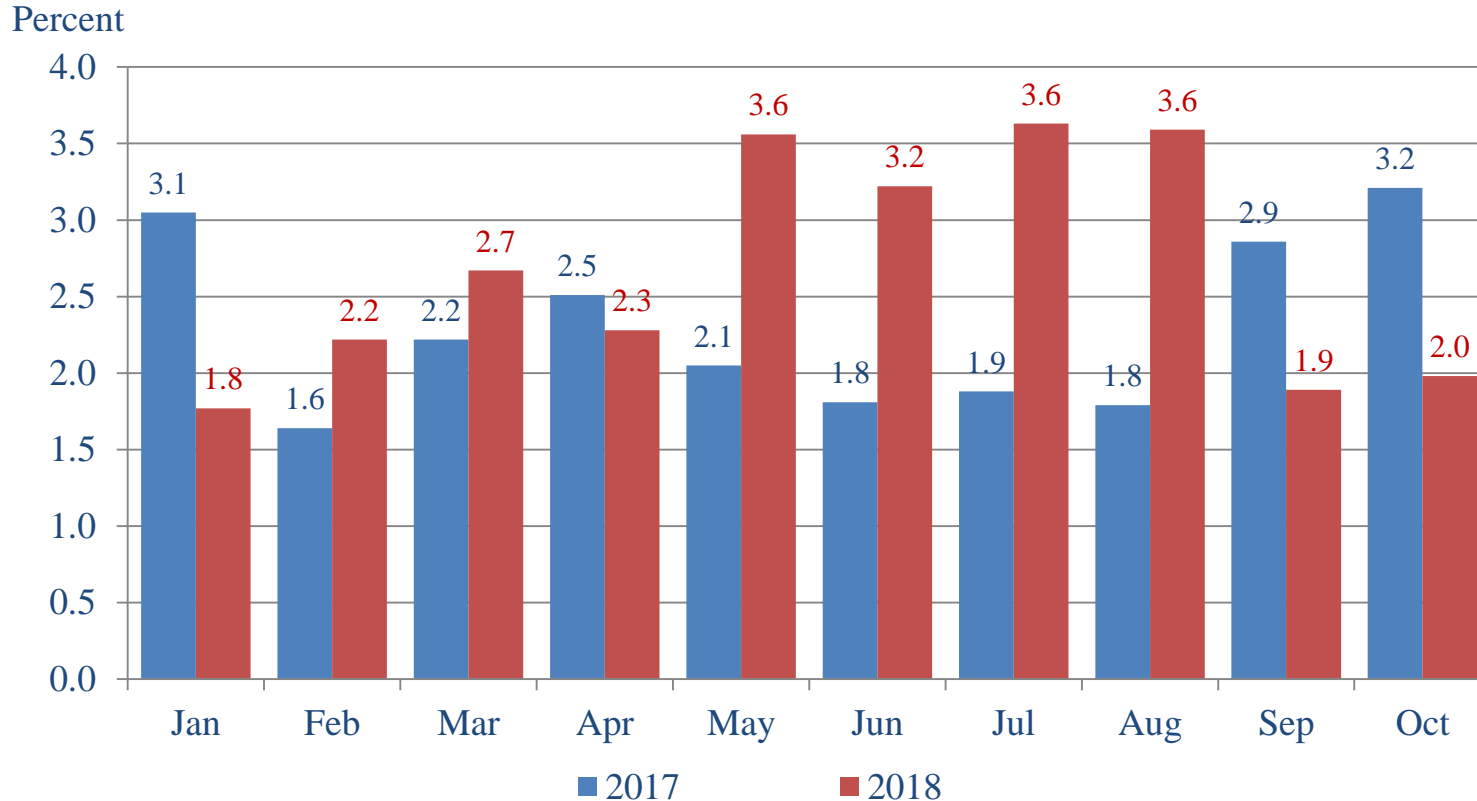
Billions Chained \$2012, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

Real Retail & Food Service Sales

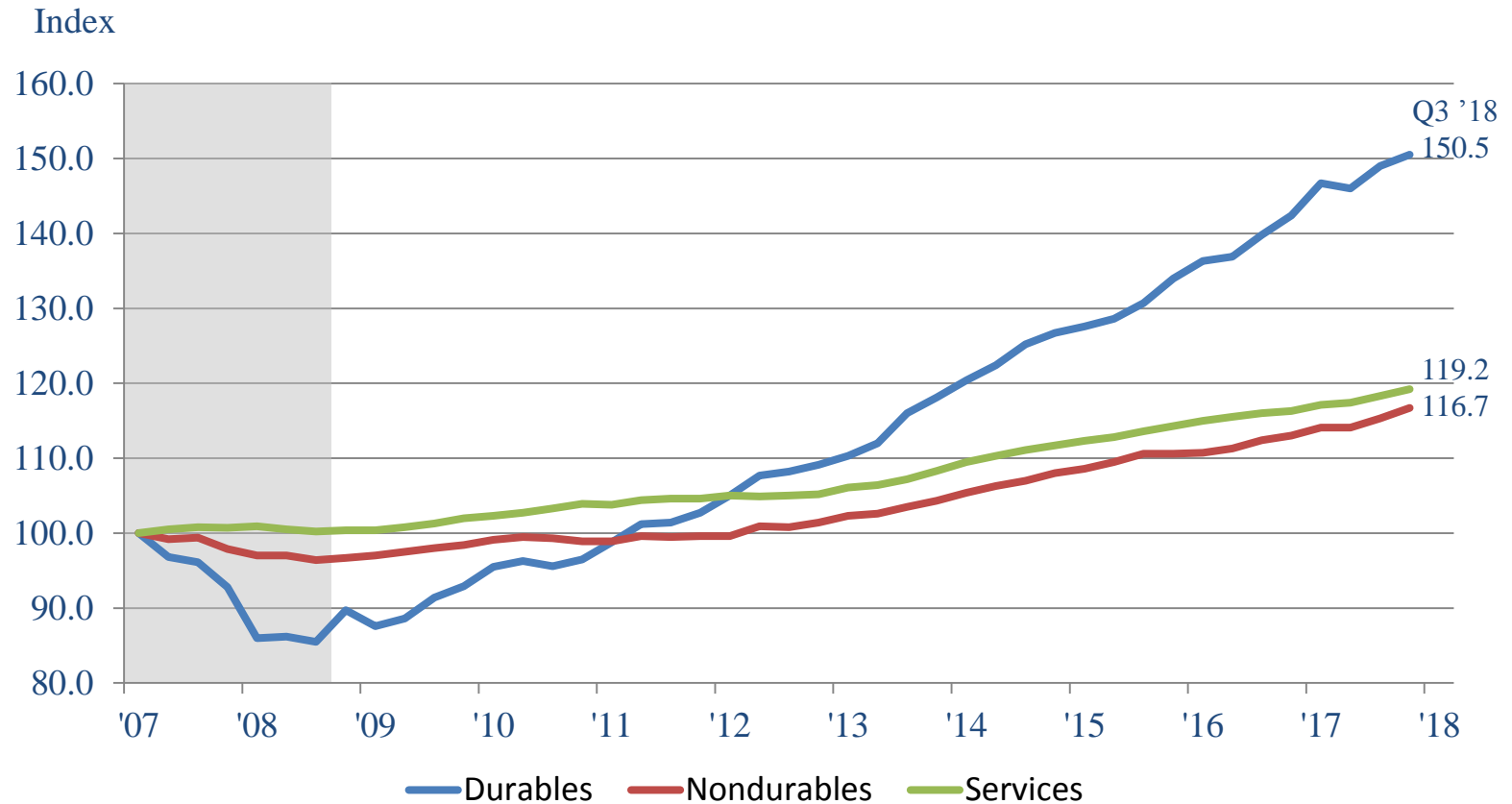
Millions Chained \$2012, Percent Change Yr./Yr.



Source: Author's calculations using Federal Reserve Bank of St. Louis data.

Real Personal Consumption Expenditures

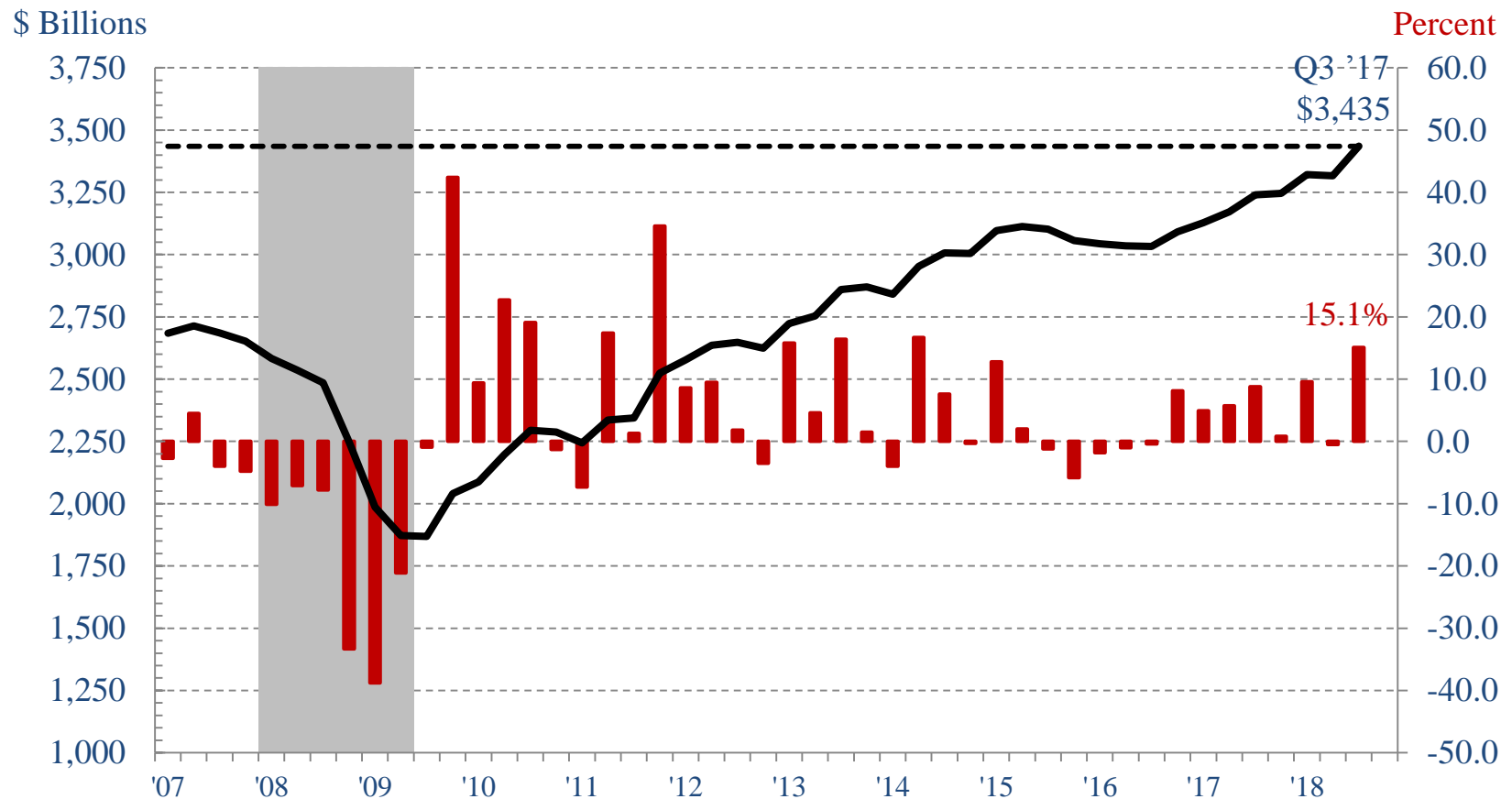
Billions Chained \$2012, Index – Q4 '07 = 100



Source: Author's calculations using data from the BEA

Real Gross Private Domestic Investment

Billions Chained \$2012, % Change Q/Q at SAAR

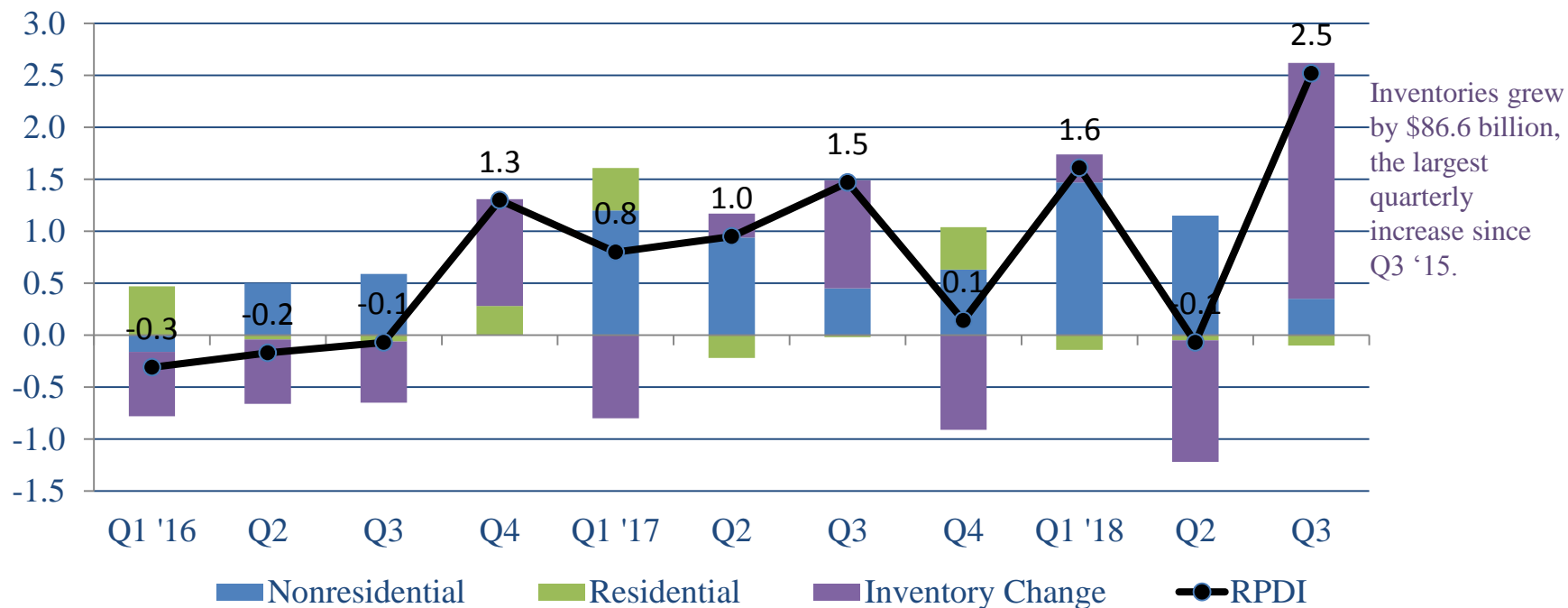


Source: U.S. Bureau of Economic Analysis

U.S. Real Private Domestic Investment

Q2 2018 Contribution to Percent Change - Q/Q at SAAR, \$2012

Percent



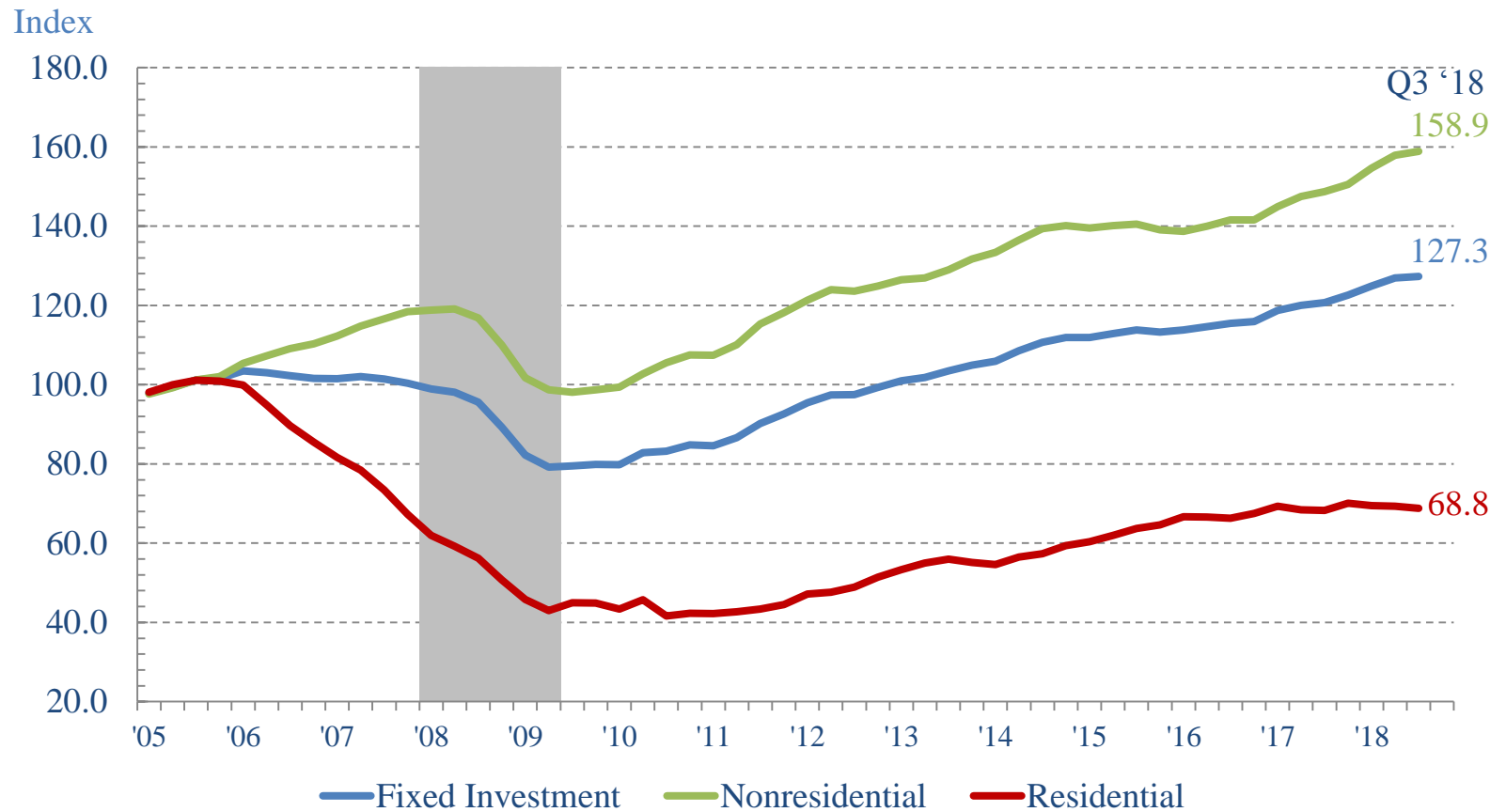
Q3 '18 0.1% -0.2% 2.1% 2.0%

Note: Contributions by sector may not sum to total due to rounding errors.

Source: U.S. Bureau of Economic Analysis.

Real Domestic Fixed Investment

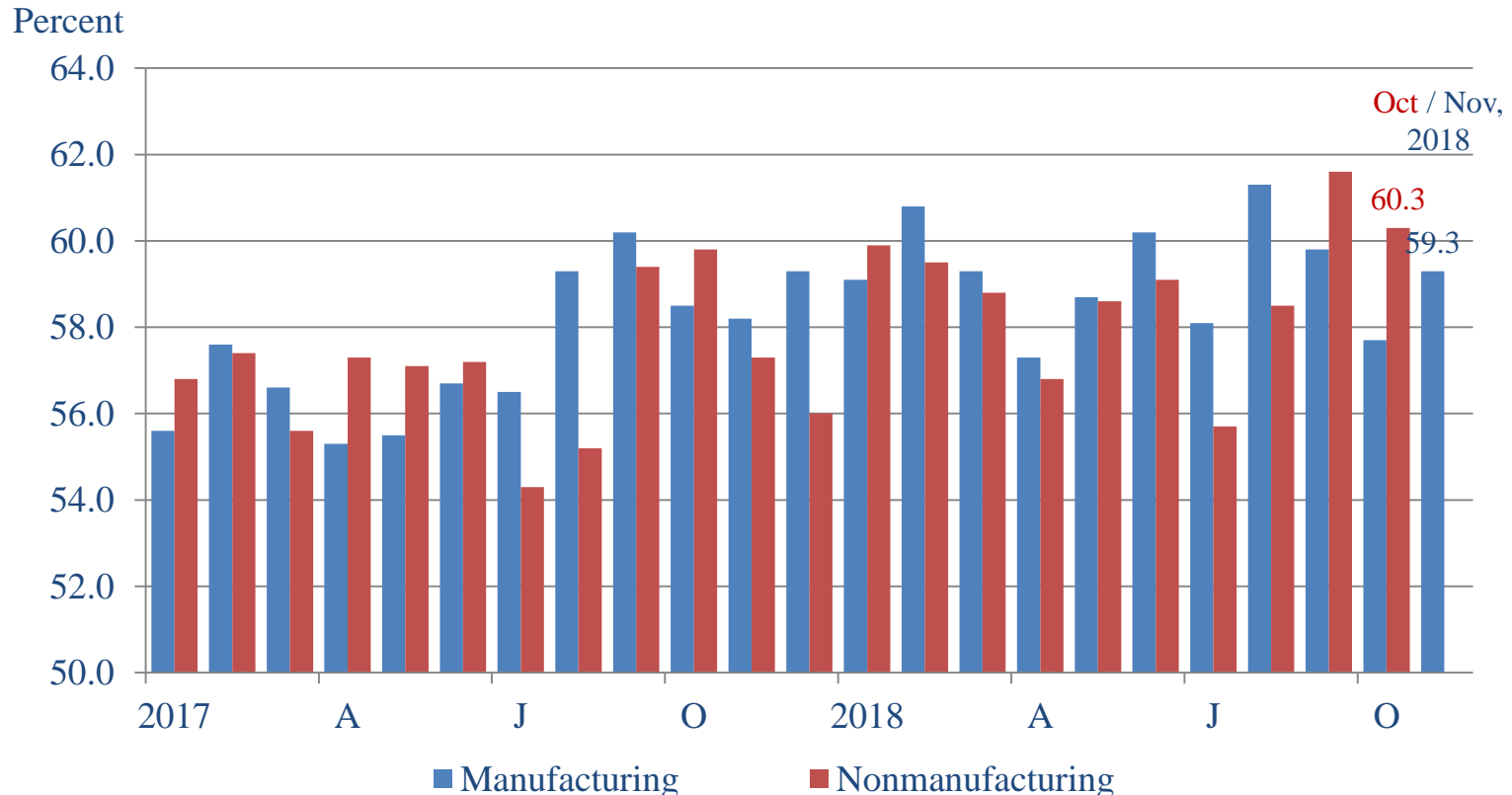
Billions Chained \$2012, Index – 2005 = 100



Source: U.S. Bureau of Economic Analysis

ISM Purchasing Managers Indexes

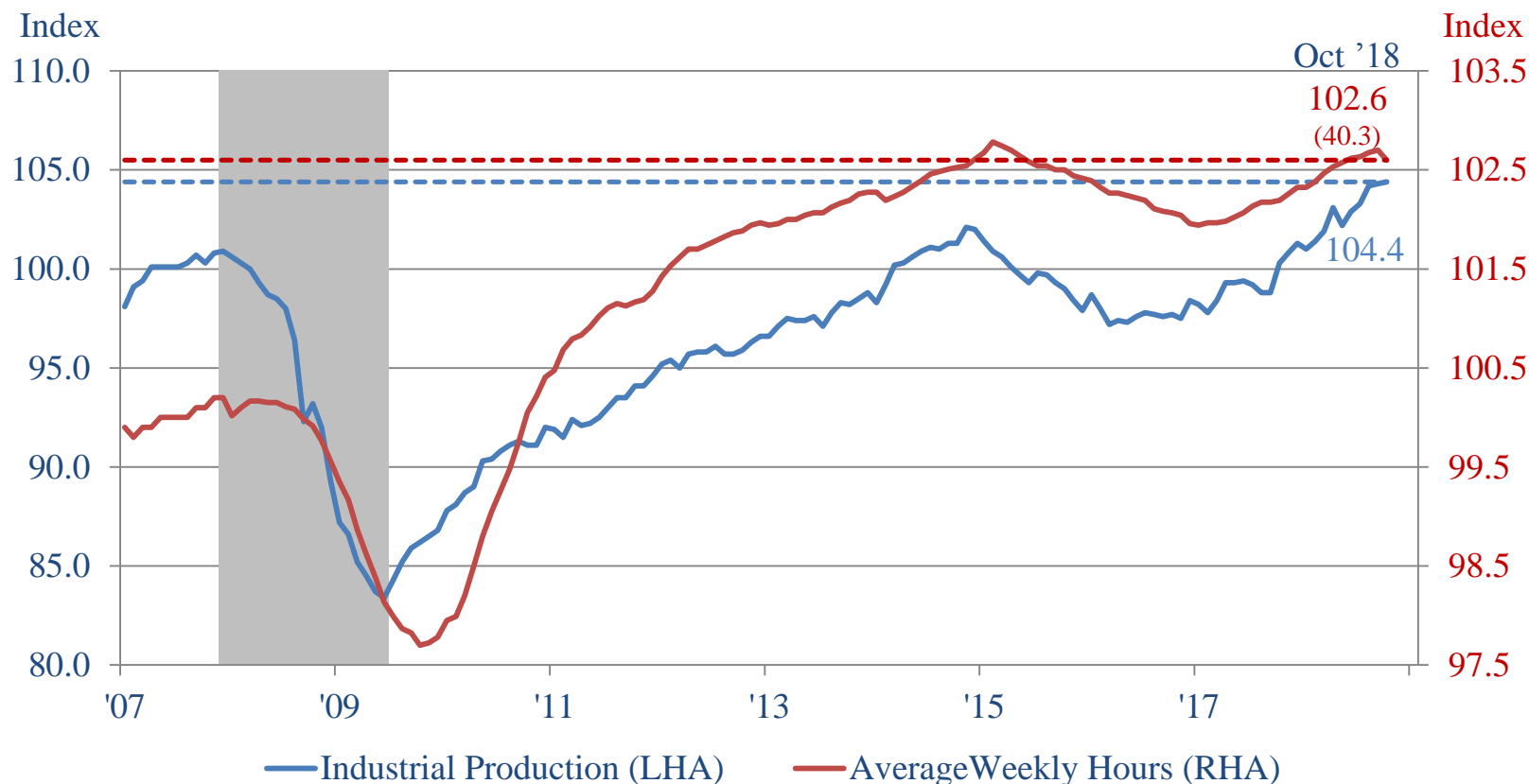
Manufacturing & Nonmanufacturing, SA - Greater than 50 = Expansion



Source: Institute for Supply Management and Haver Analytics.

Industrial Production & Hours Worked

Industrial Production & All Employees – Goods Producing – Index, 2007 = 100

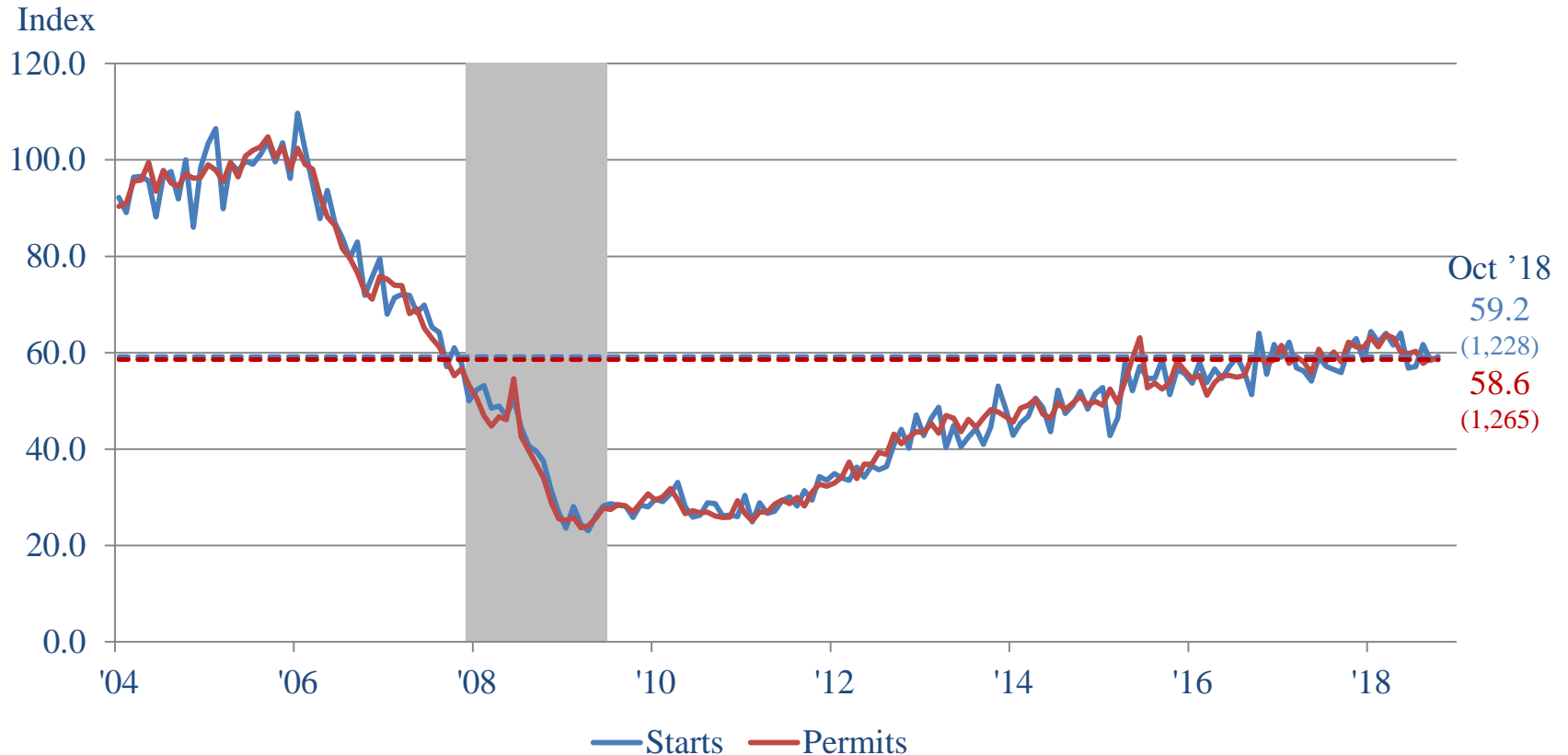


Note: Actual values in parentheses are in thousands.

Source: Board of Governors of the Federal Reserve System.

New Private Housing

Housing Starts and Building Permits – Index, 2005 = 100

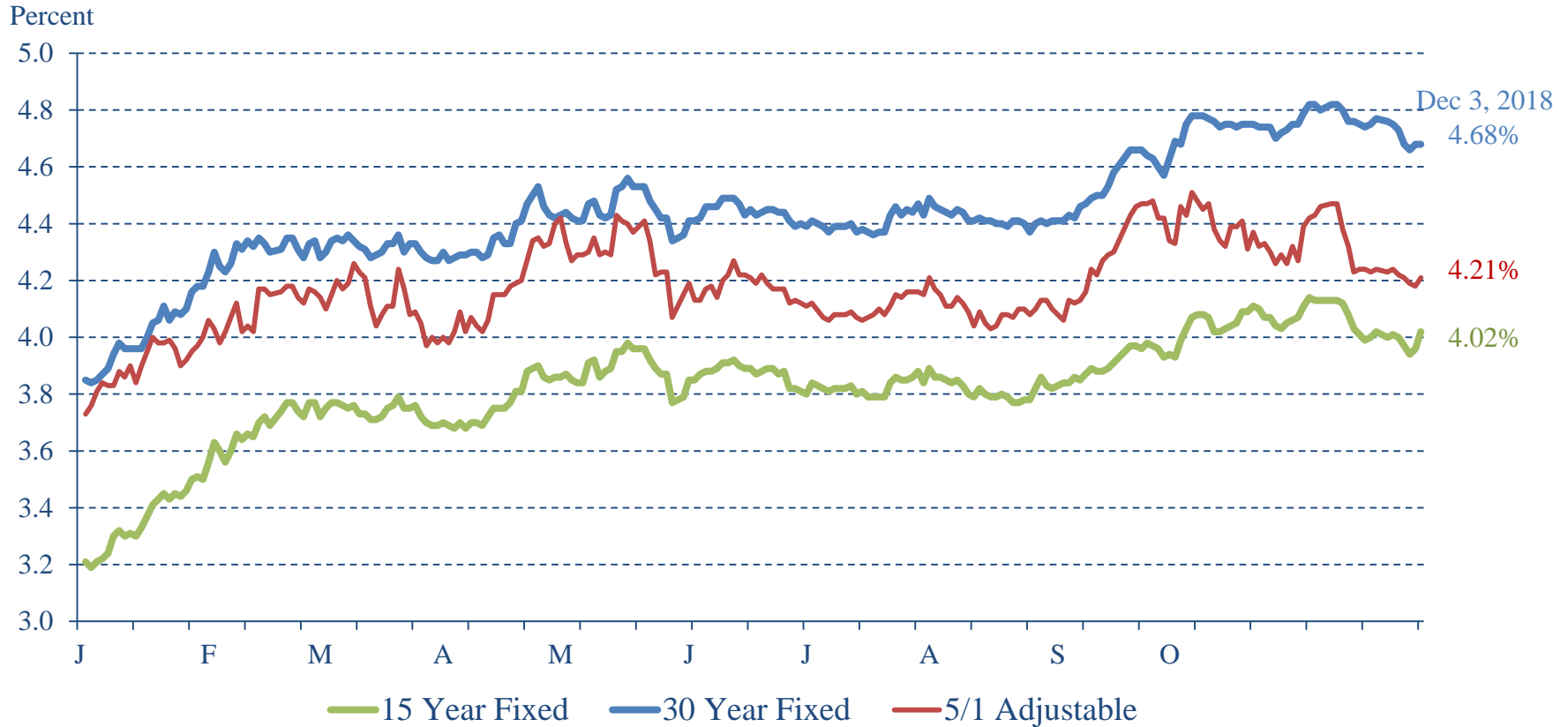


Note: Actual values in parentheses are in thousands.

Source: U.S. Census Bureau & Bureau of Labor Statistics.

Mortgage Rates

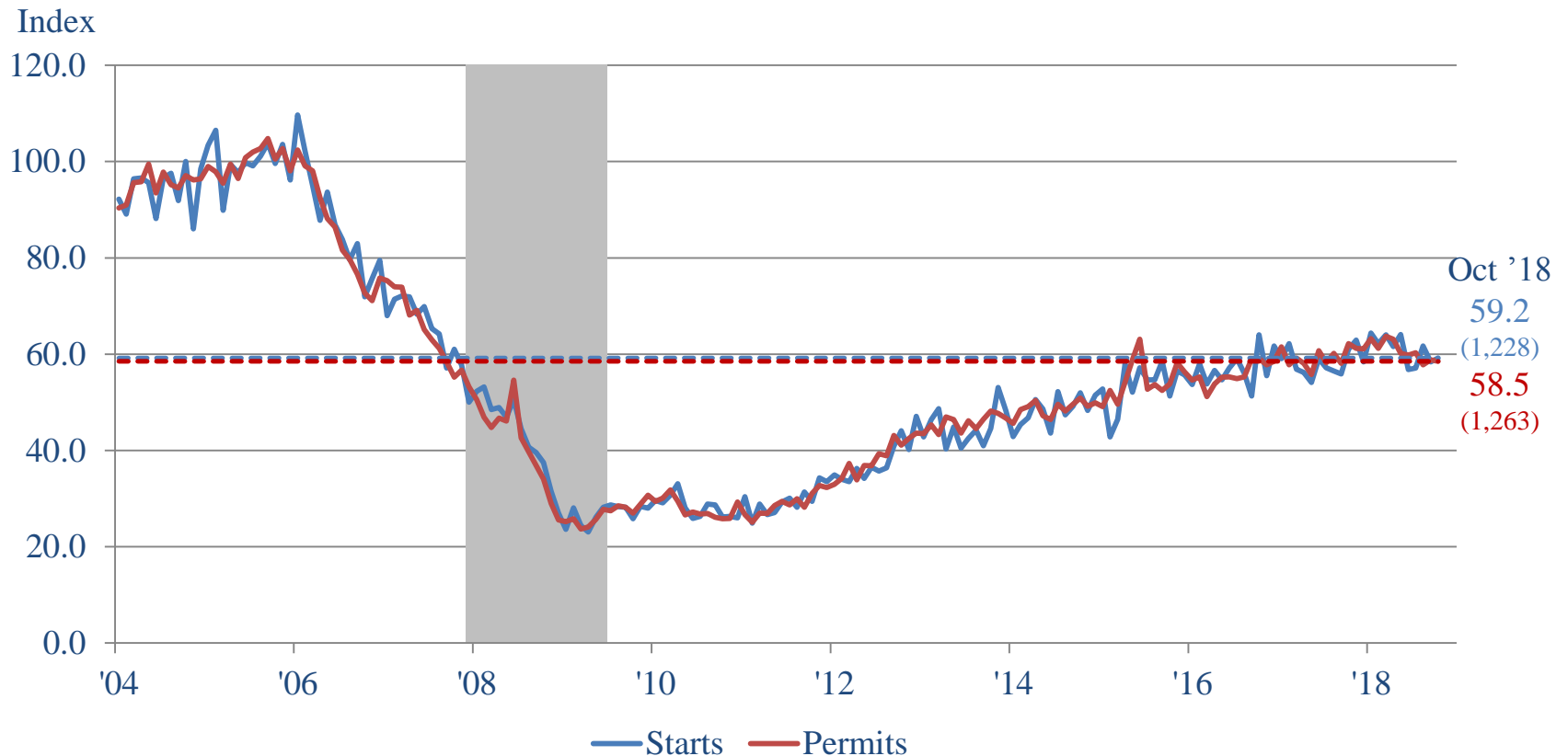
15 Year and 30 Year Fixed & 5/1 Adjustable



Source: New York Times and Haver Analytics

New Private Housing

Housing Starts and Building Permits – Index, 2005 = 100

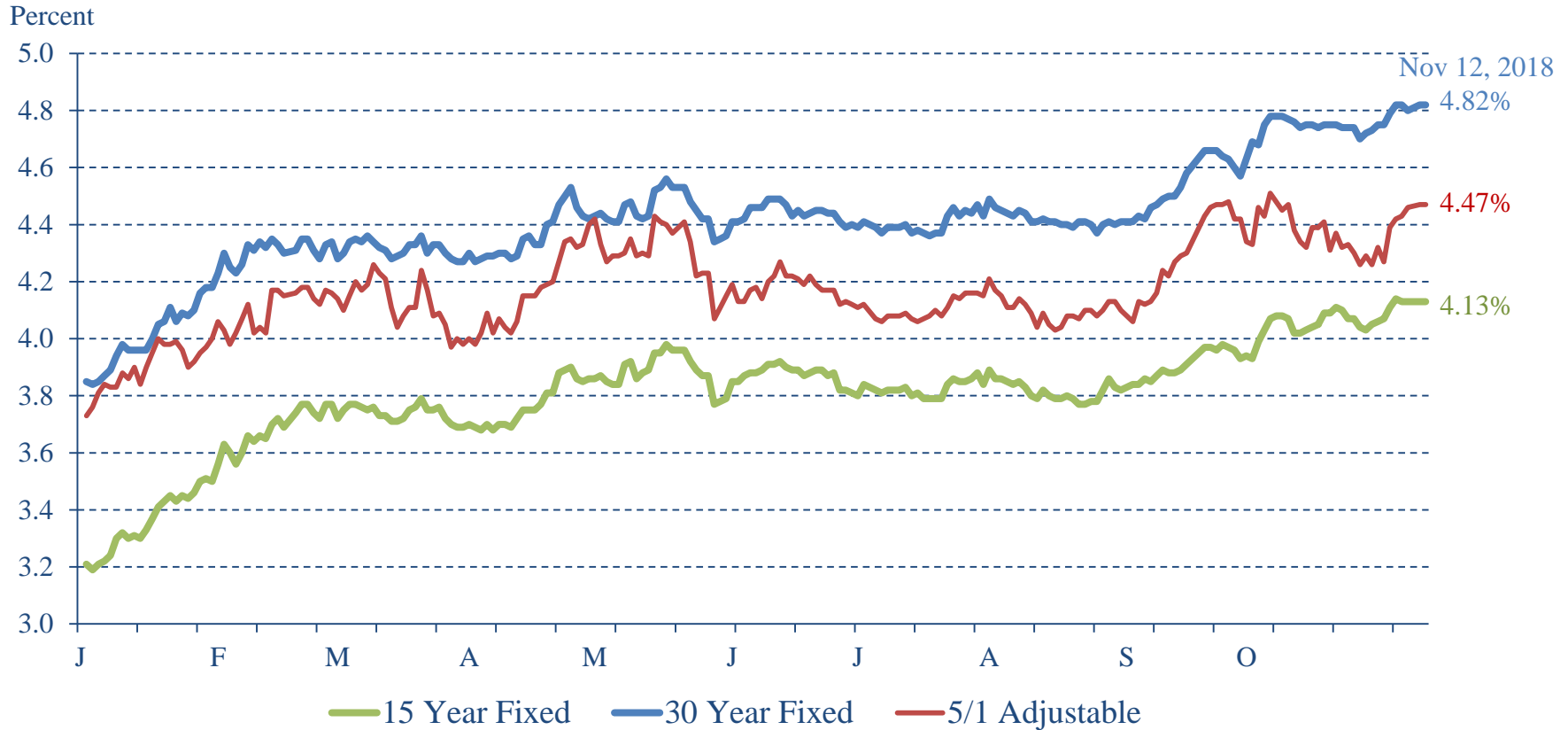


Note: Actual values in parentheses are in thousands.

Source: U.S. Census Bureau & Bureau of Labor Statistics.

Mortgage Rates

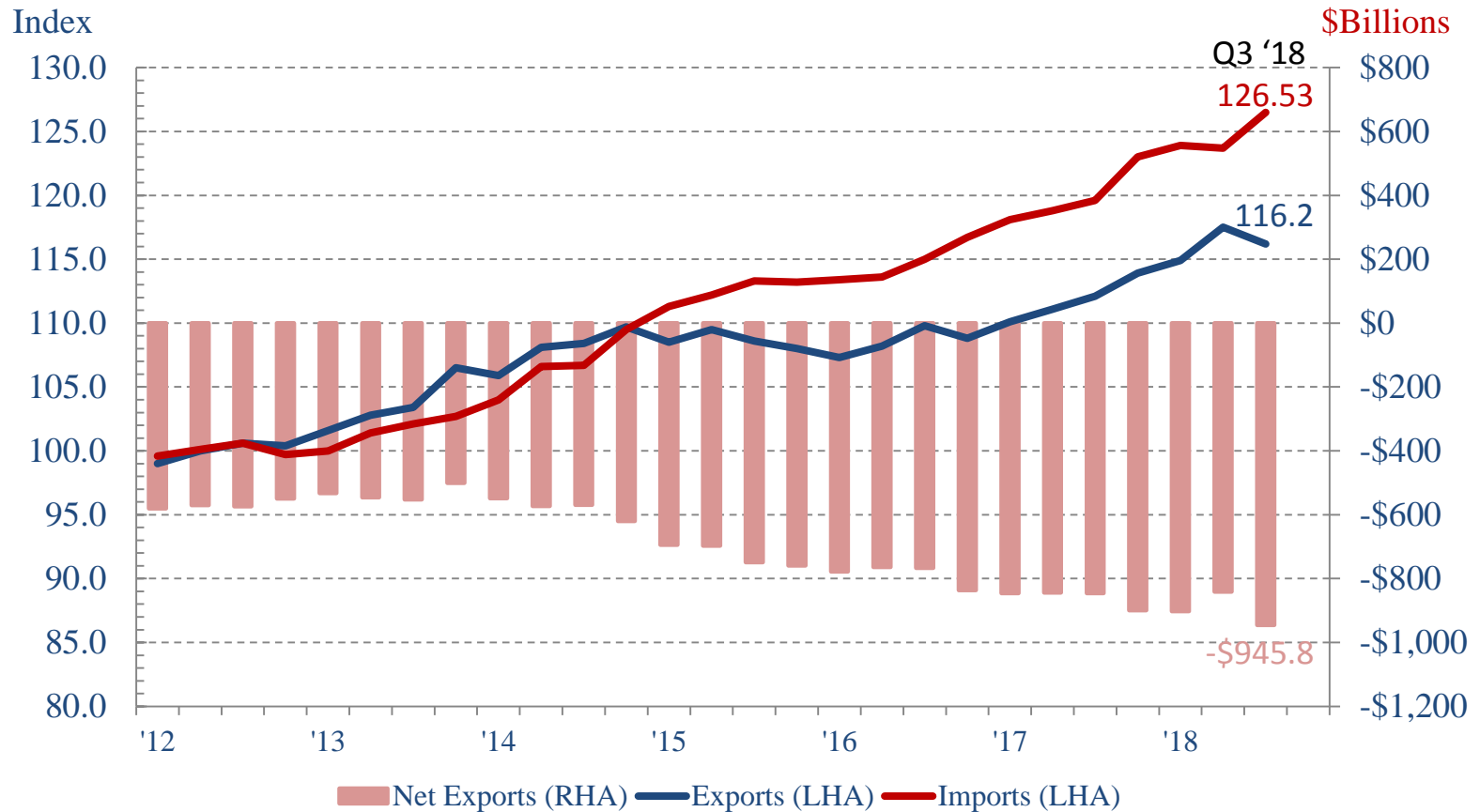
15 Year and 30 Year Fixed & 5/1 Adjustable



Source: New York Times and Haver Analytics

Real Imports and Exports

Billions Chained \$2012, Index – 2012 = 100



Source: U.S. Bureau of Economic Analysis

Negative Effects of Tariffs

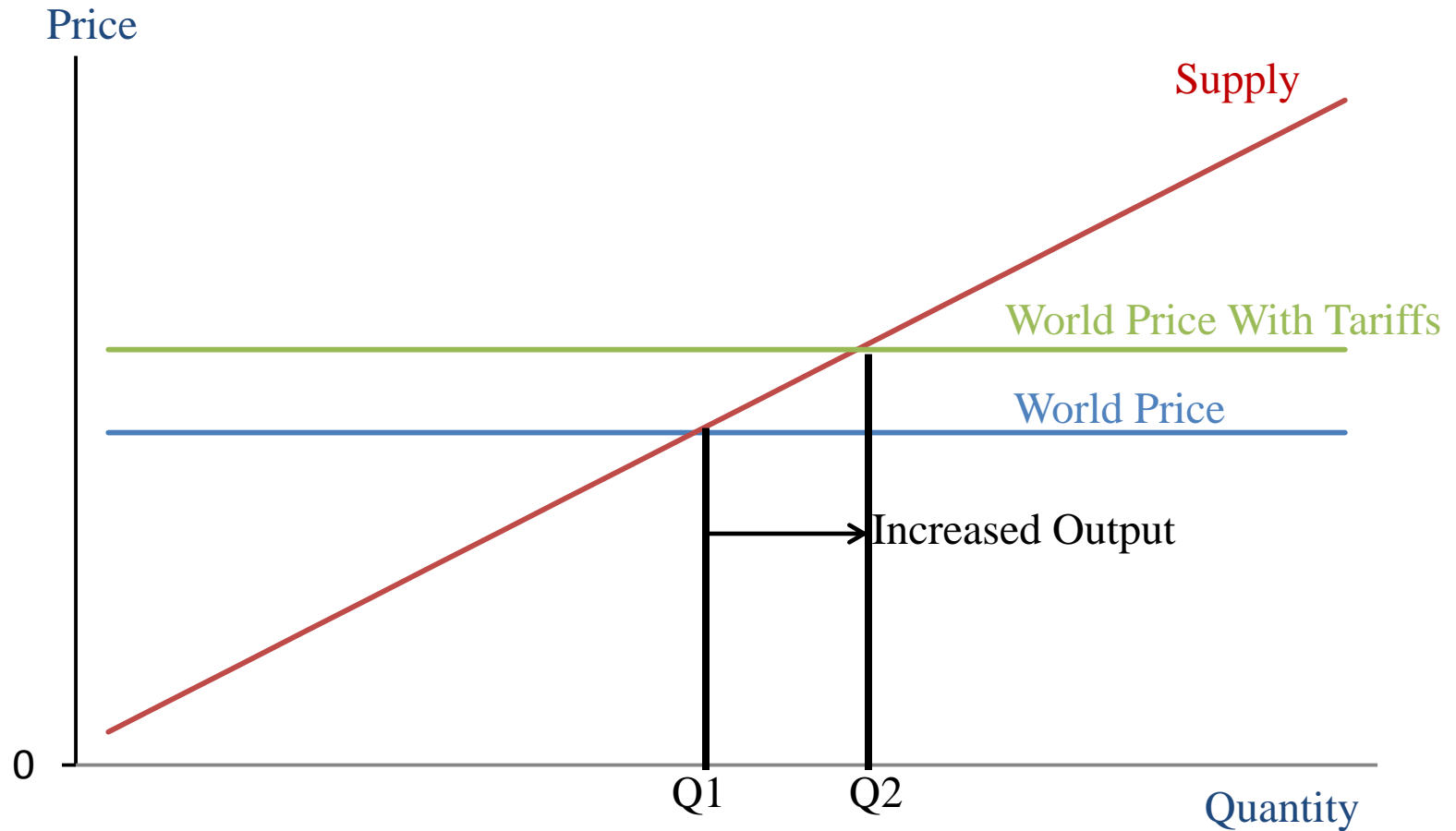
- Increase prices and lower output
 - Tariffs on intermediate goods can lead to higher prices and less output of final goods
- Lead to retaliation (trade wars)
- Hurt lower and middle income consumers more than the wealthy
- Result in ineffective allocation of resources and protect inefficient domestic industries
- Lead to unintended consequences
 - Smoot-Hawley Act of 1930

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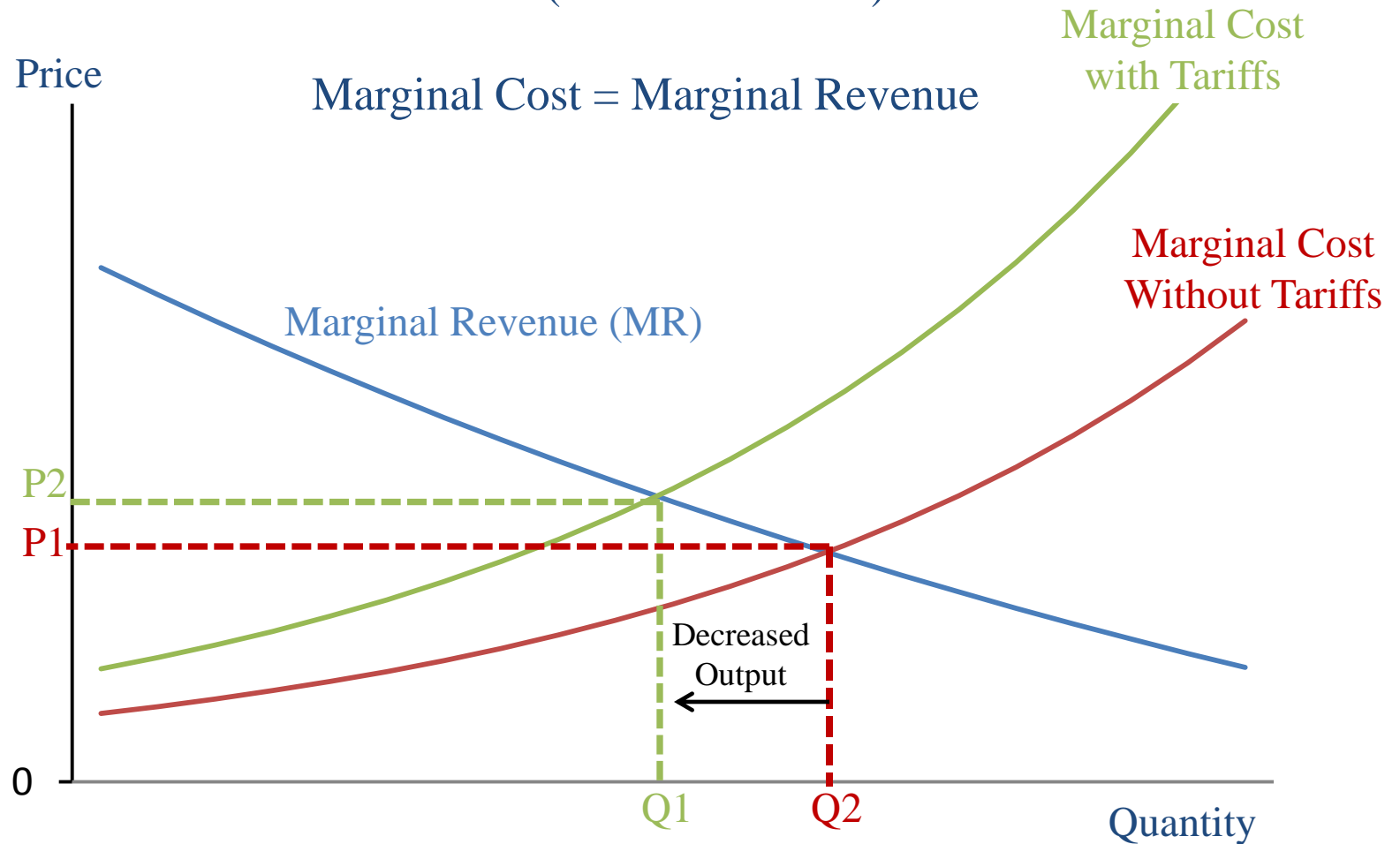
Trade and Tariffs

Impact on Intermediate Goods Production (Steel)



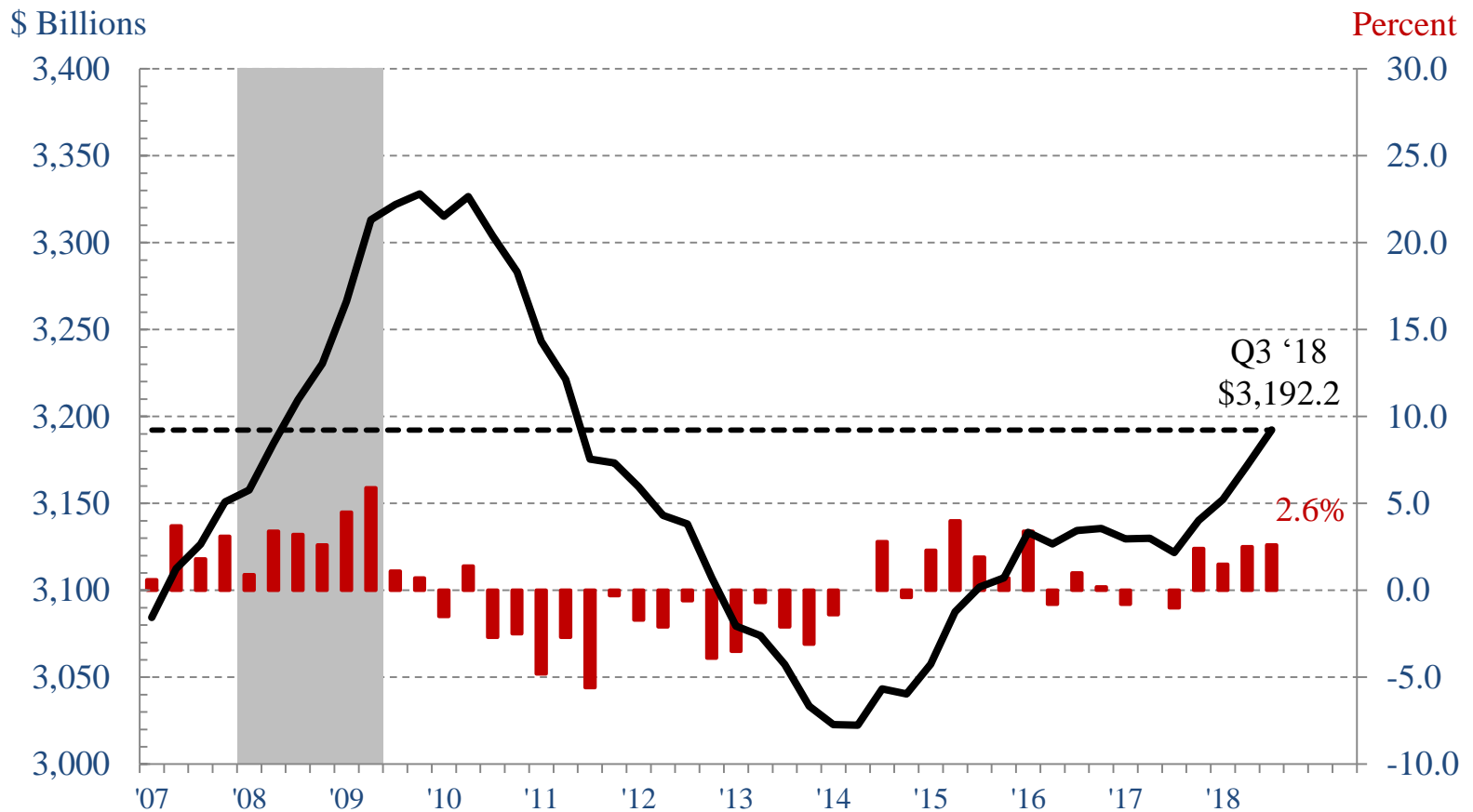
Trade and Tariffs

Impact on Final Goods Production (i.e. Automobiles)



Real Government Consumption & Investment

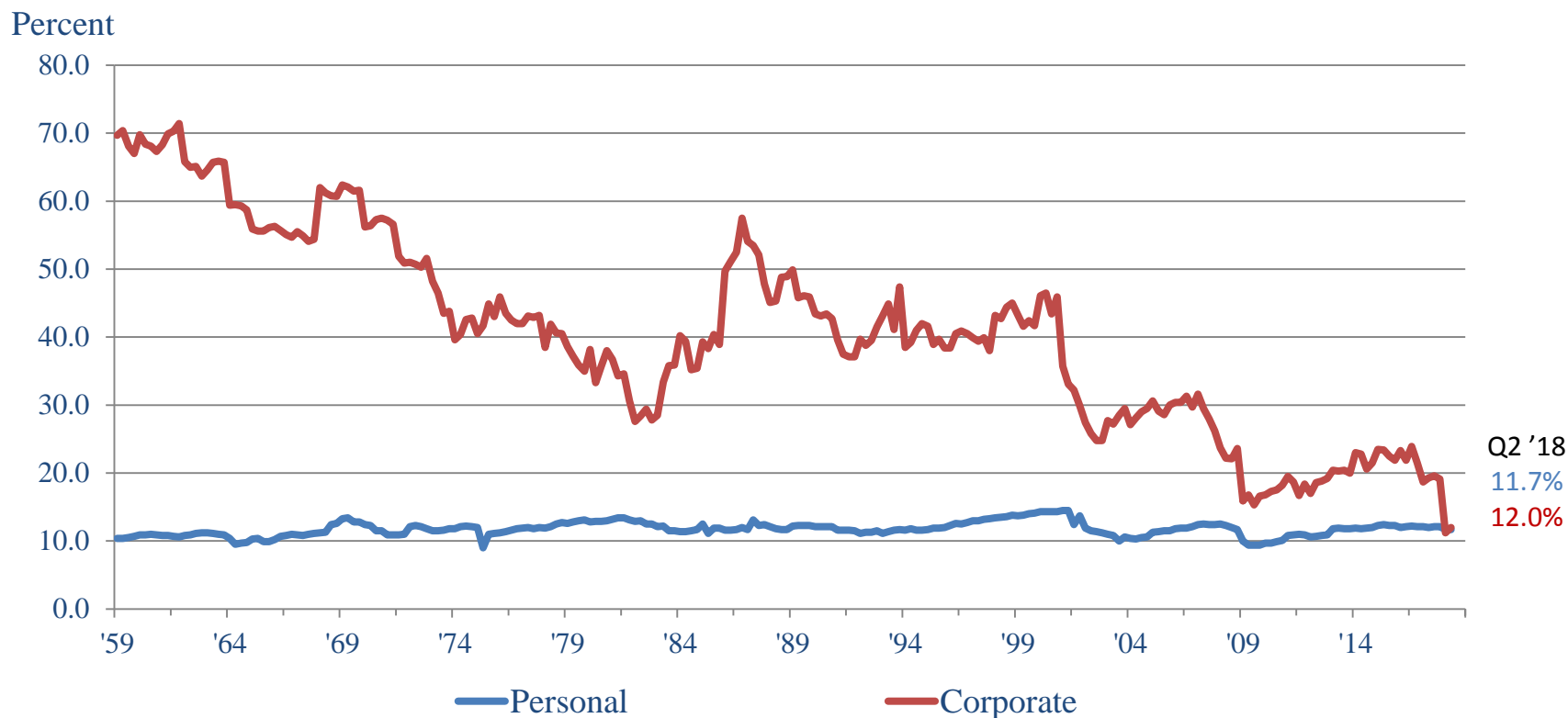
Billions Chained \$2012, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

Average Tax Rates

Personal and Corporate

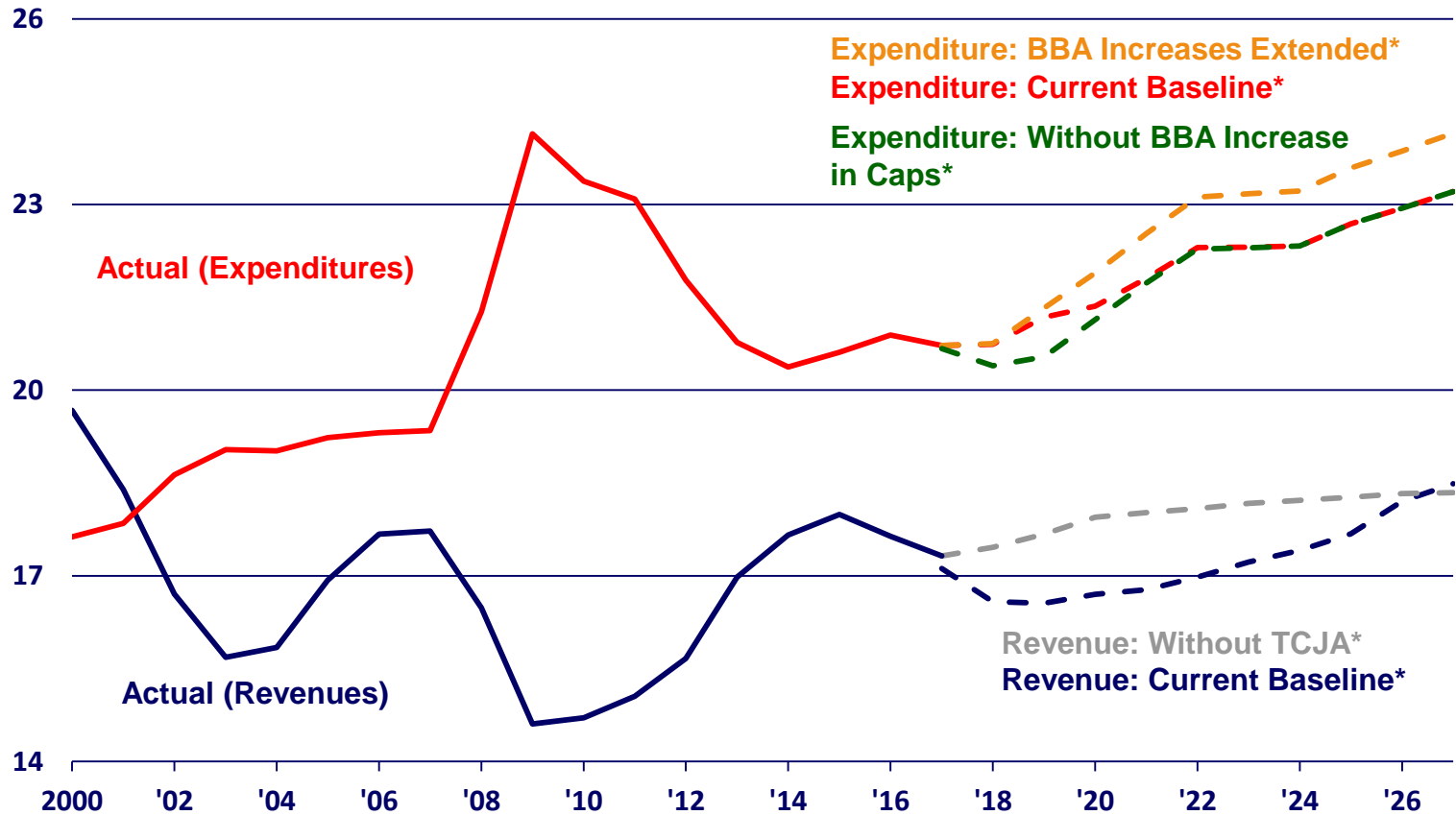


Notes: Corporate Tax Rate = (Corporate Profits Before Taxes / Corporate Profits After Taxes) – 1, both without IVA & CCAdj.
Personal Tax Rate = Personal Current Taxes / Personal Income (NIPA).

Source: Author's calculations using U.S. Bureau of Economic Analysis data.

Federal Expenditures and Receipts

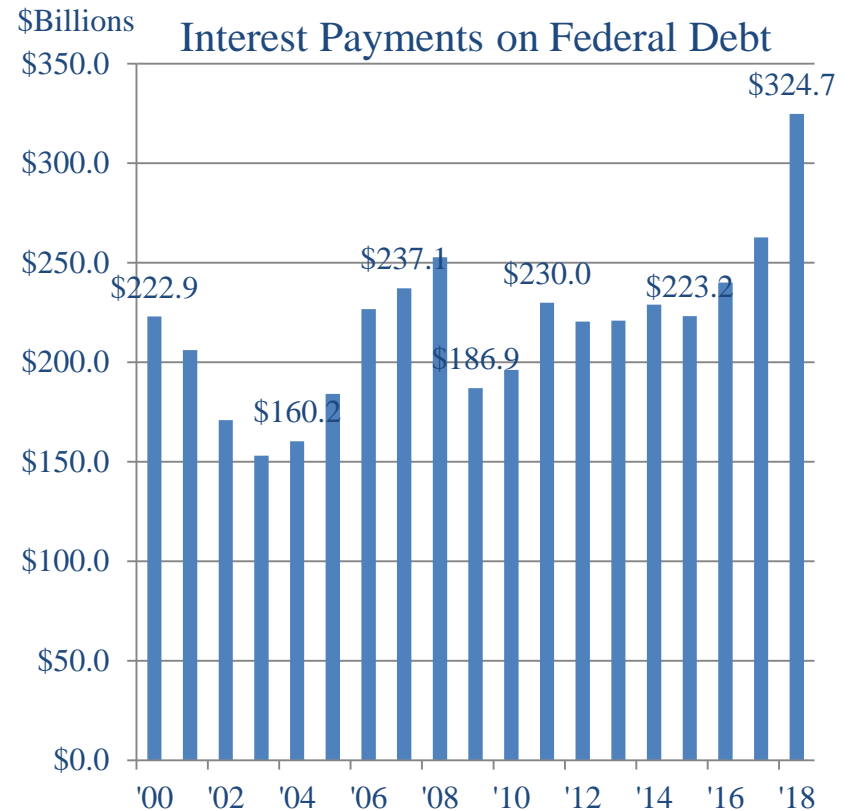
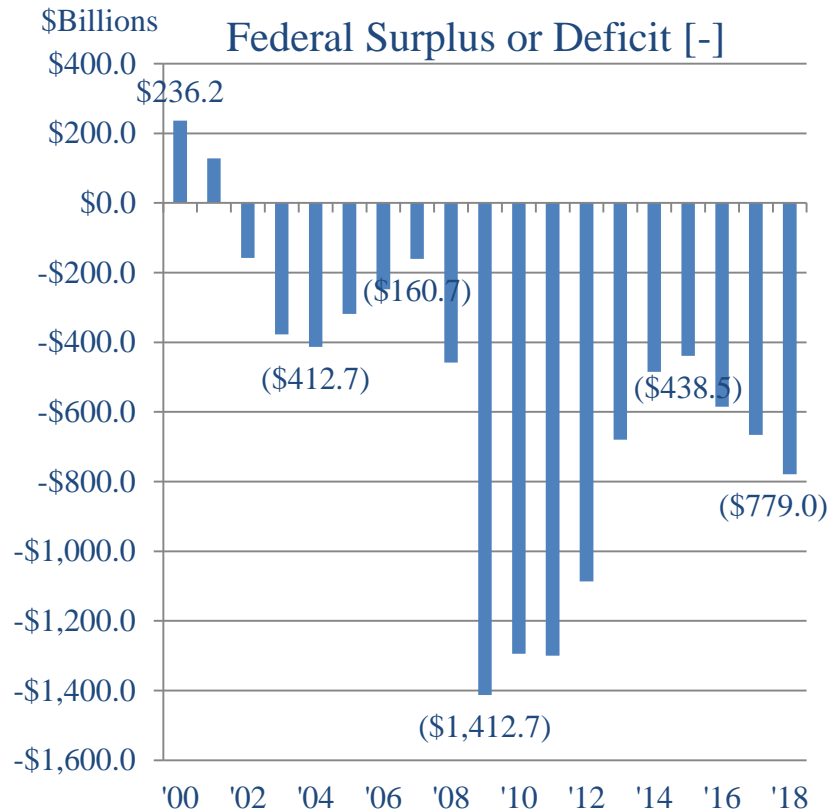
Actual and Projections (percent of GDP)



* Calculations based on the CBO's April 2018 projections of Federal outlays, receipts, and gross domestic product.

Federal Debt and Interest on Debt

Billions of Dollars – Fiscal Year (October 1 – September 30)



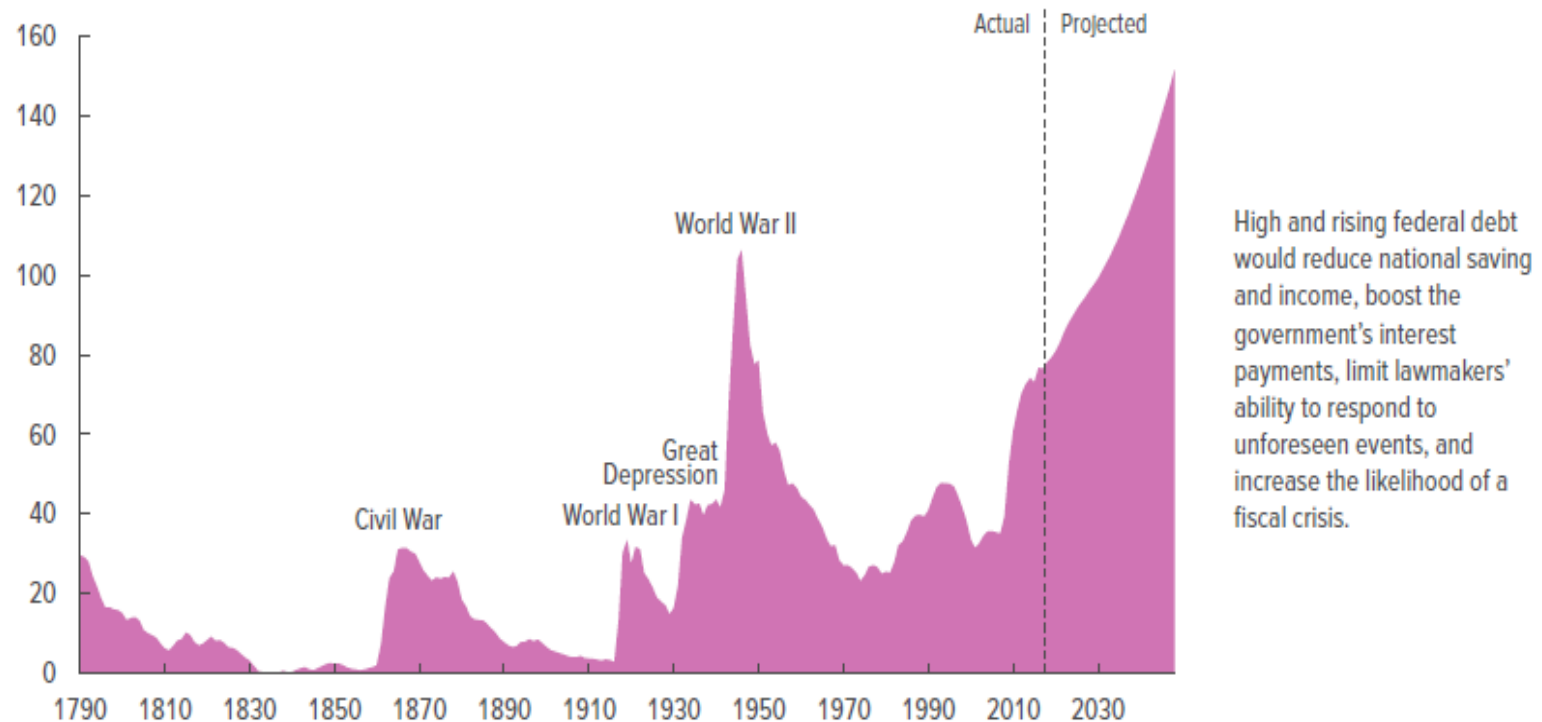
Source: Office of Management and Budget.

Debt Projections in Historical Context

Figure 3.

Federal Debt Held by the Public

Percentage of Gross Domestic Product

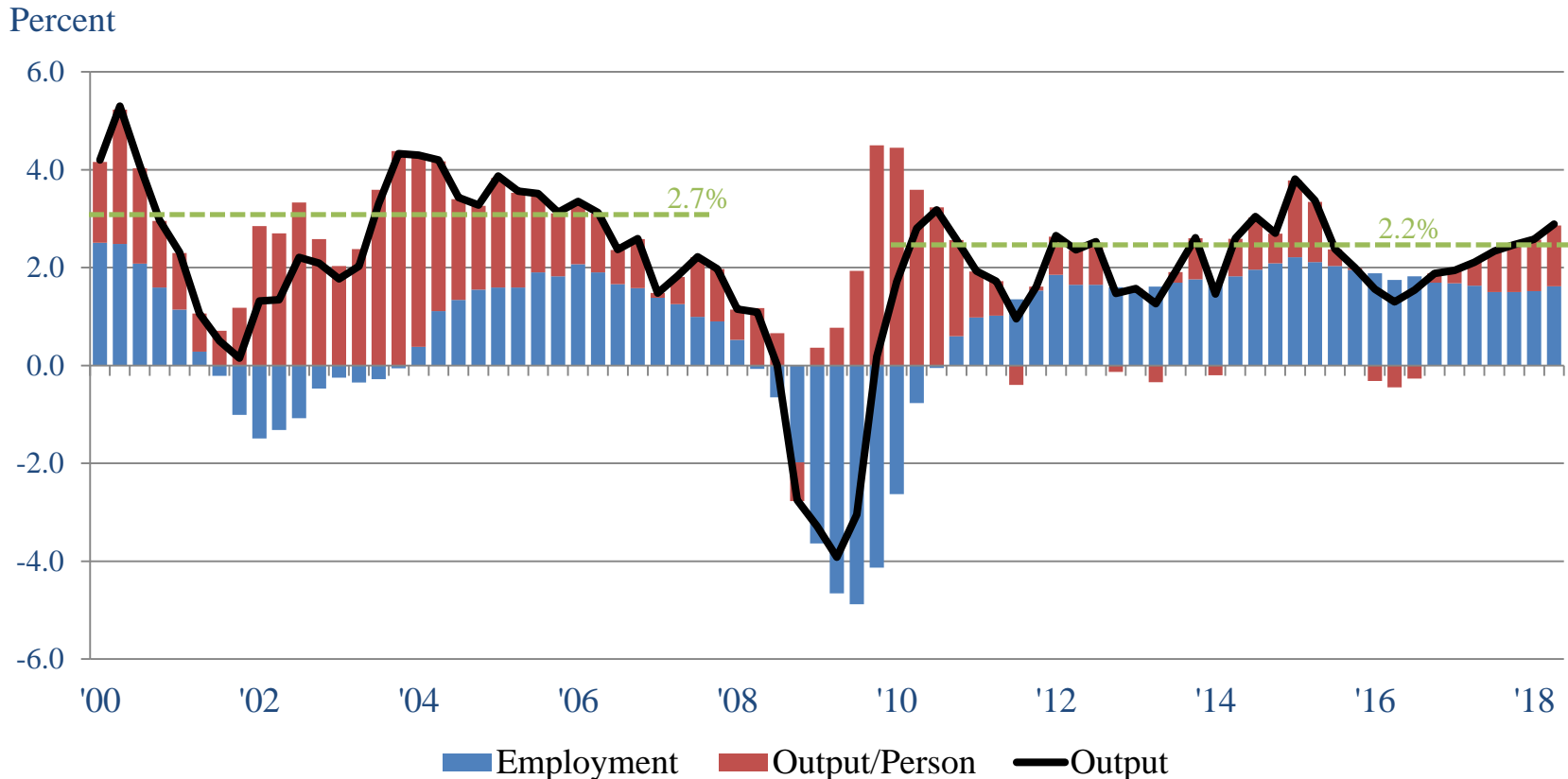


High and rising federal debt would reduce national saving and income, boost the government's interest payments, limit lawmakers' ability to respond to unforeseen events, and increase the likelihood of a fiscal crisis.

Source: Congressional Budget Office.

Employment, Productivity, and Output

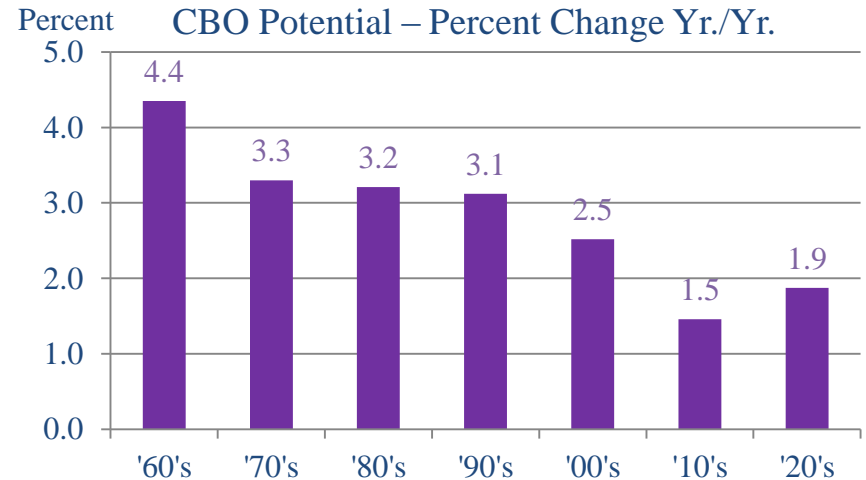
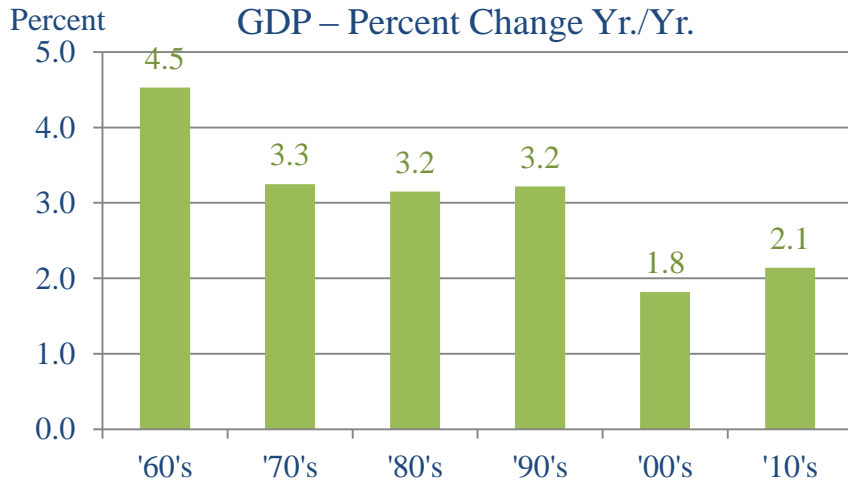
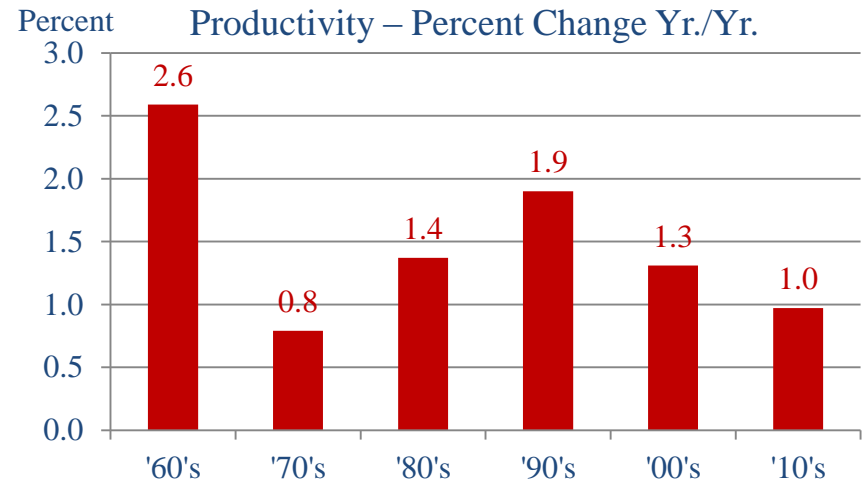
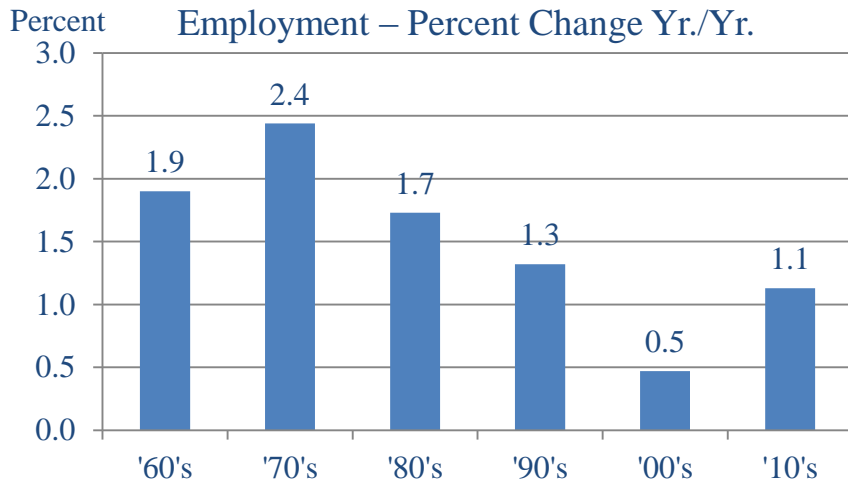
Nonfarm Business Sector – Percent Change Yr./Yr.



Source: Author's calculations using U.S. Bureau of Labor Statistics data.

Employment, Productivity, and GDP Growth

Percent Change Yr./Yr.



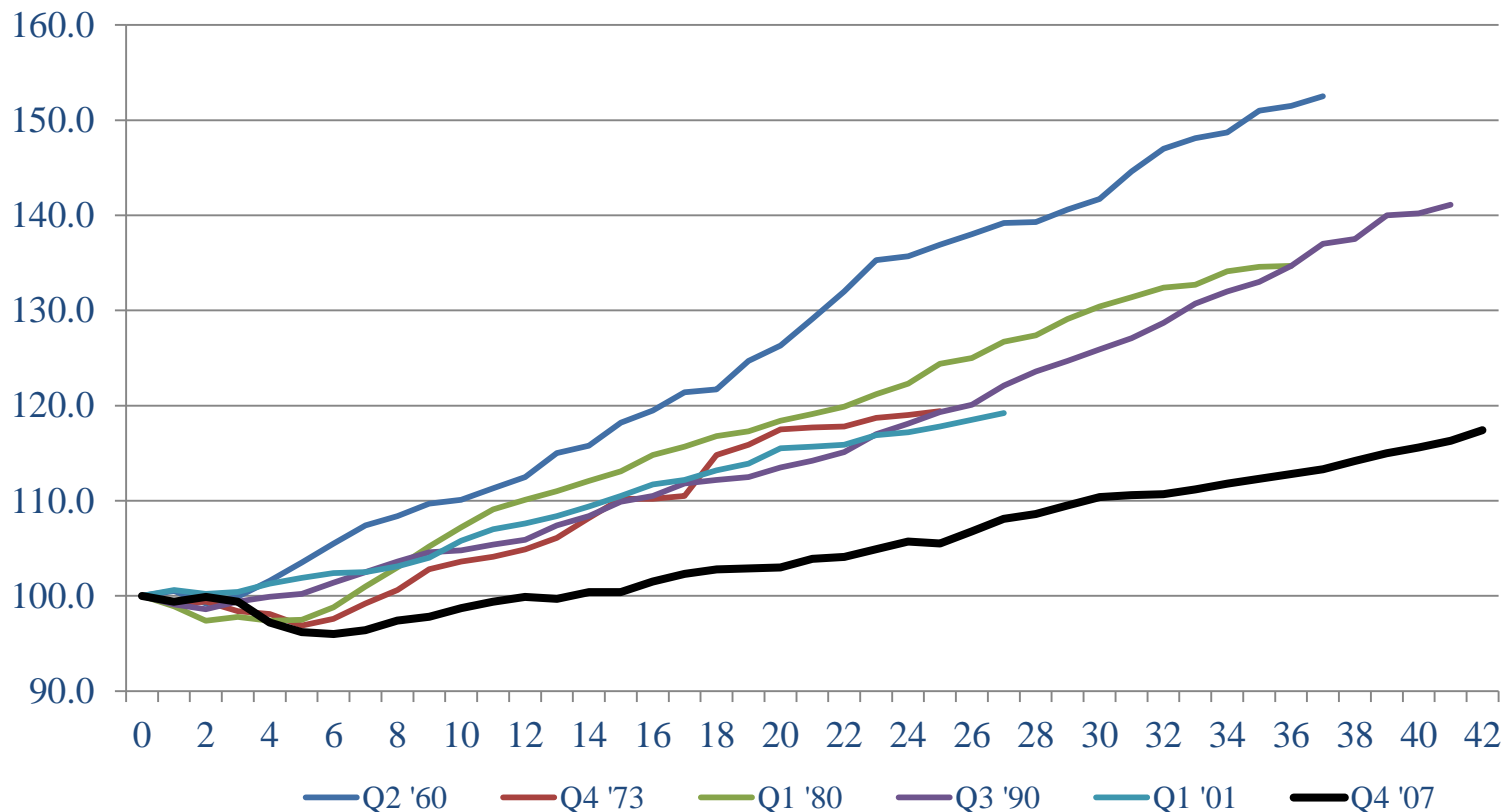
Source: Author's Calculations using BEA, BLS, and Fed data.

December 5, 2018

Federal Reserve Bank of Chicago

U.S. Real GDP Recession Recoveries

Billions Chained \$2012 – Index Recession Peak = 100



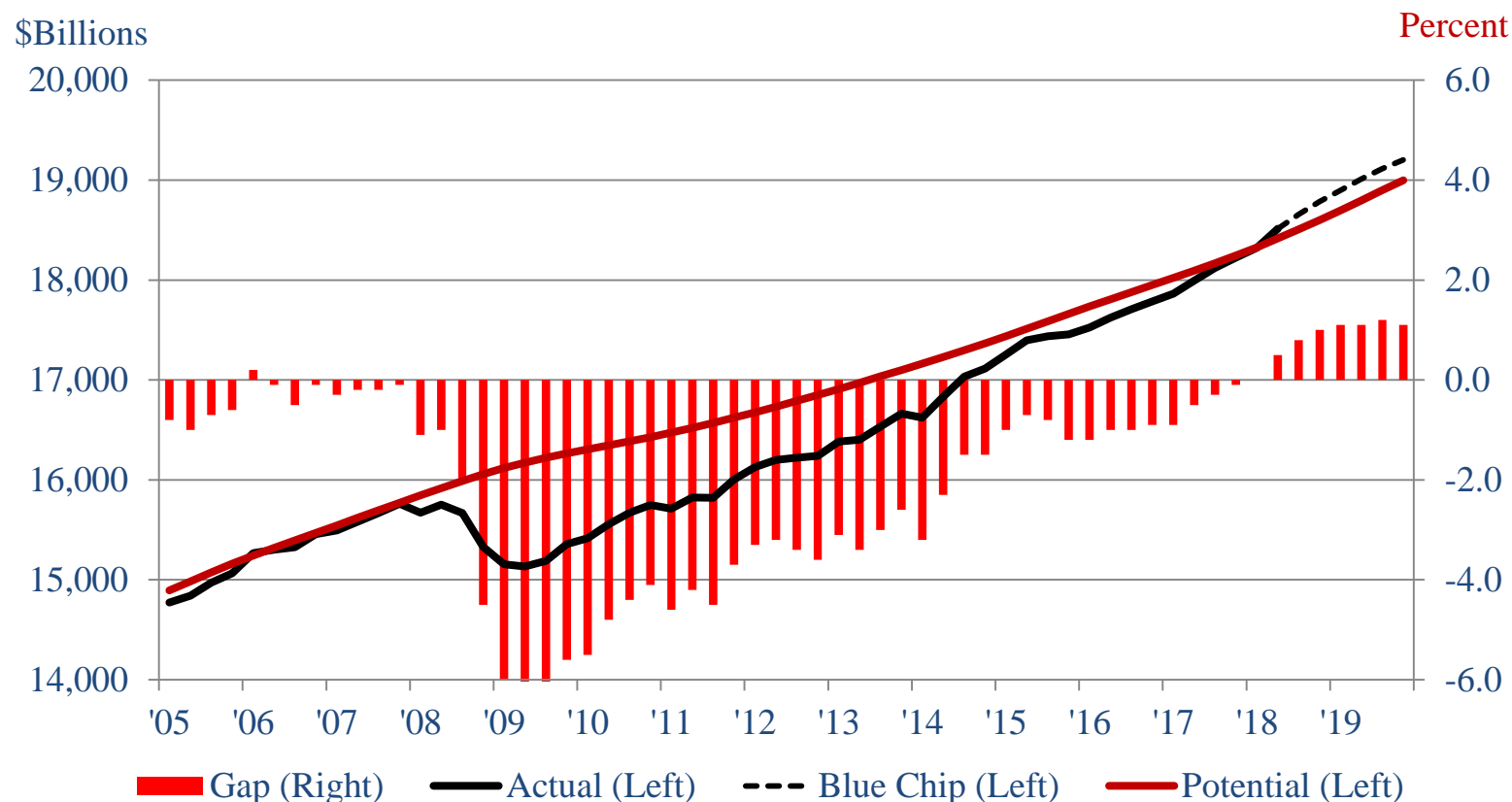
CBO Potential Growth Rate:

4.4% 3.3% 3.2% 3.1% 2.5% 1.5%

Source: Author's calculations using U.S. Bureau of Labor Statistics data.

U.S. Real GDP – Actual and Potential

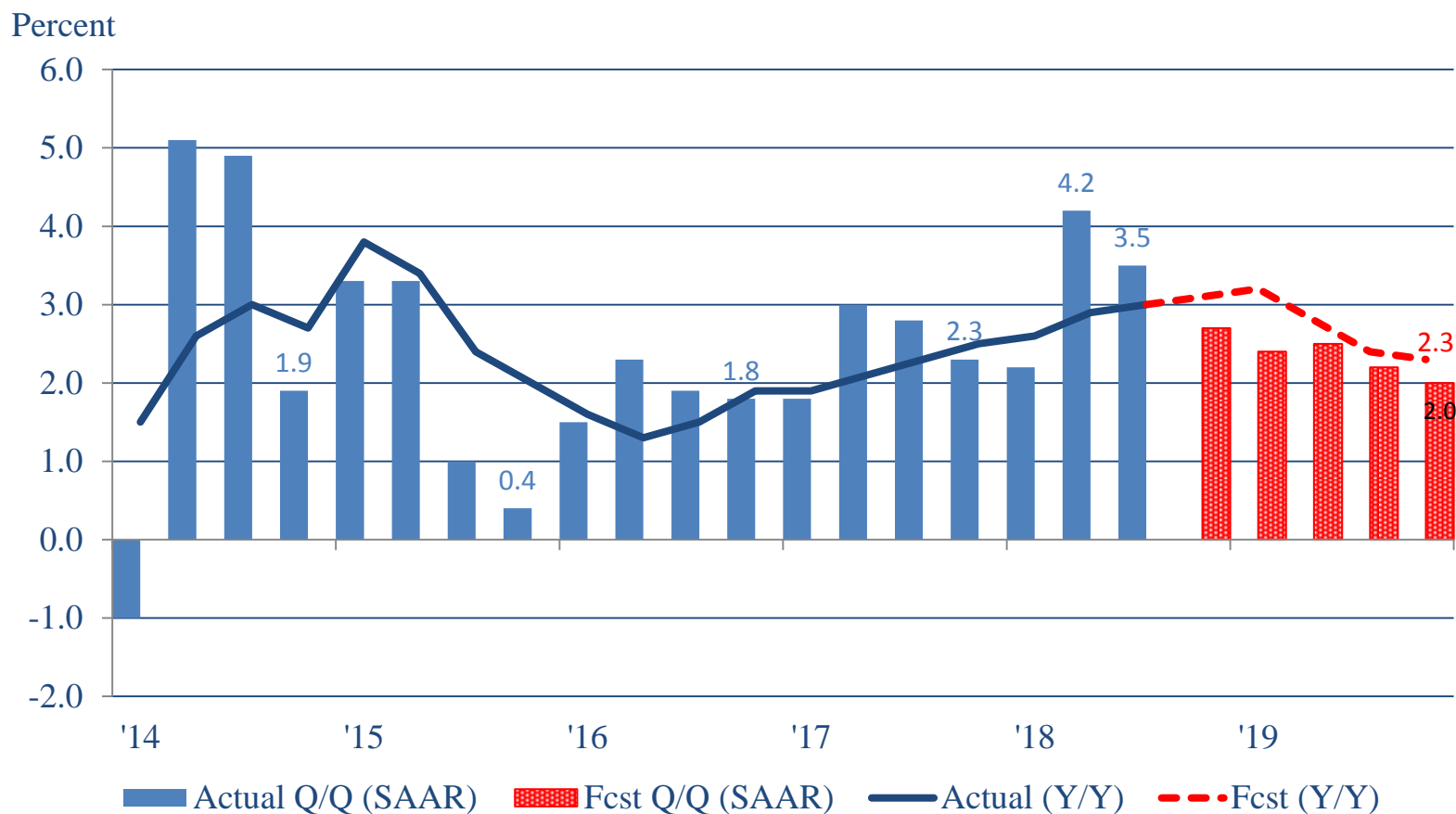
Billions Chained \$2012 and Percent H/L than Potential



Source: Author's calculations using Bureau of Economic Analysis and the U.S. Congressional Budget Office and Blue Chip Consensus forecast data.

U.S. Real GDP – September, 2018 Blue Chip Forecast

Percent Change – Billions of Chained \$2009

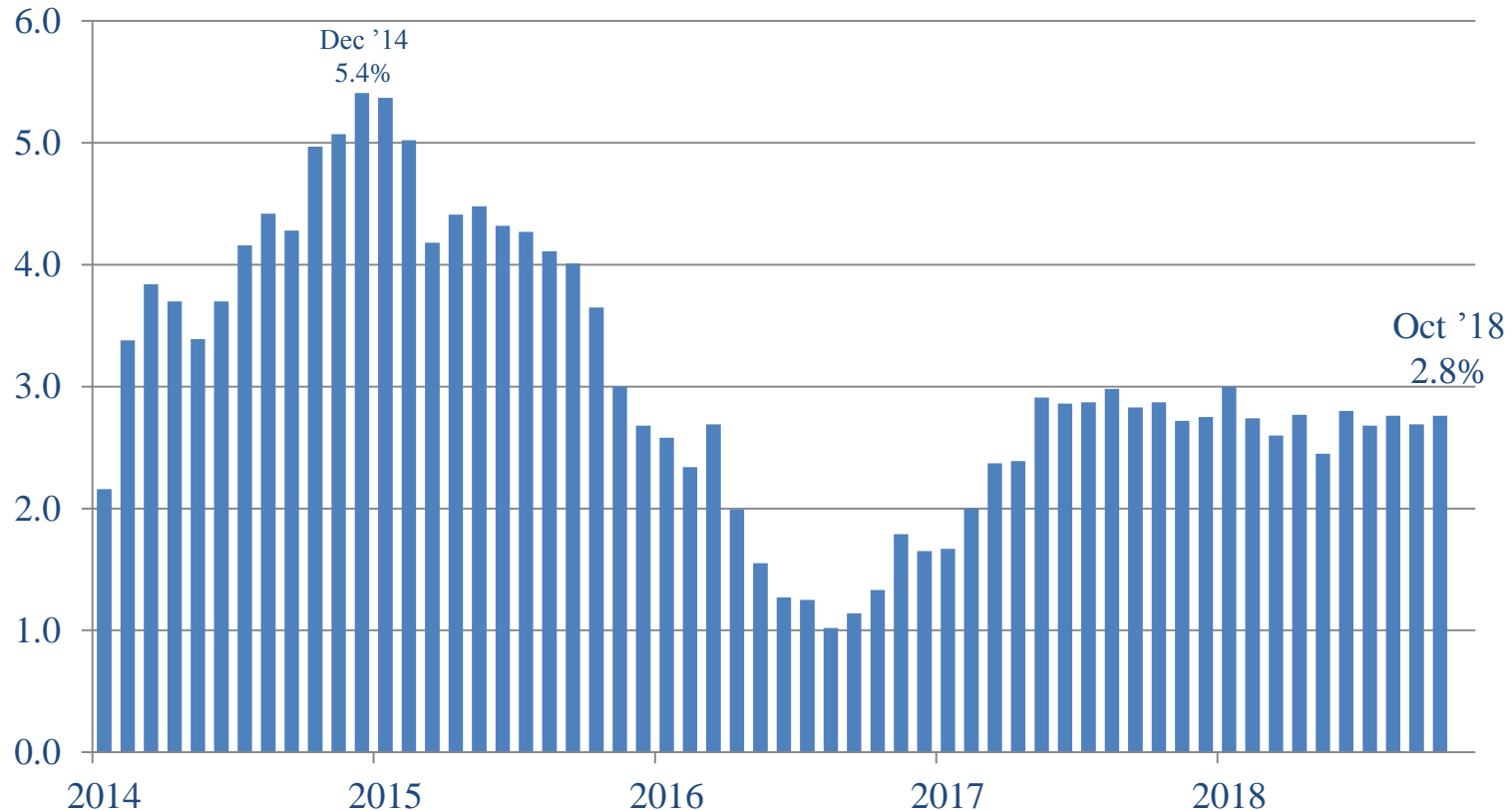


Source: BEA and November 2018 Blue Chip Economic Indicators

U.S. Consumer

Real Disposable Income

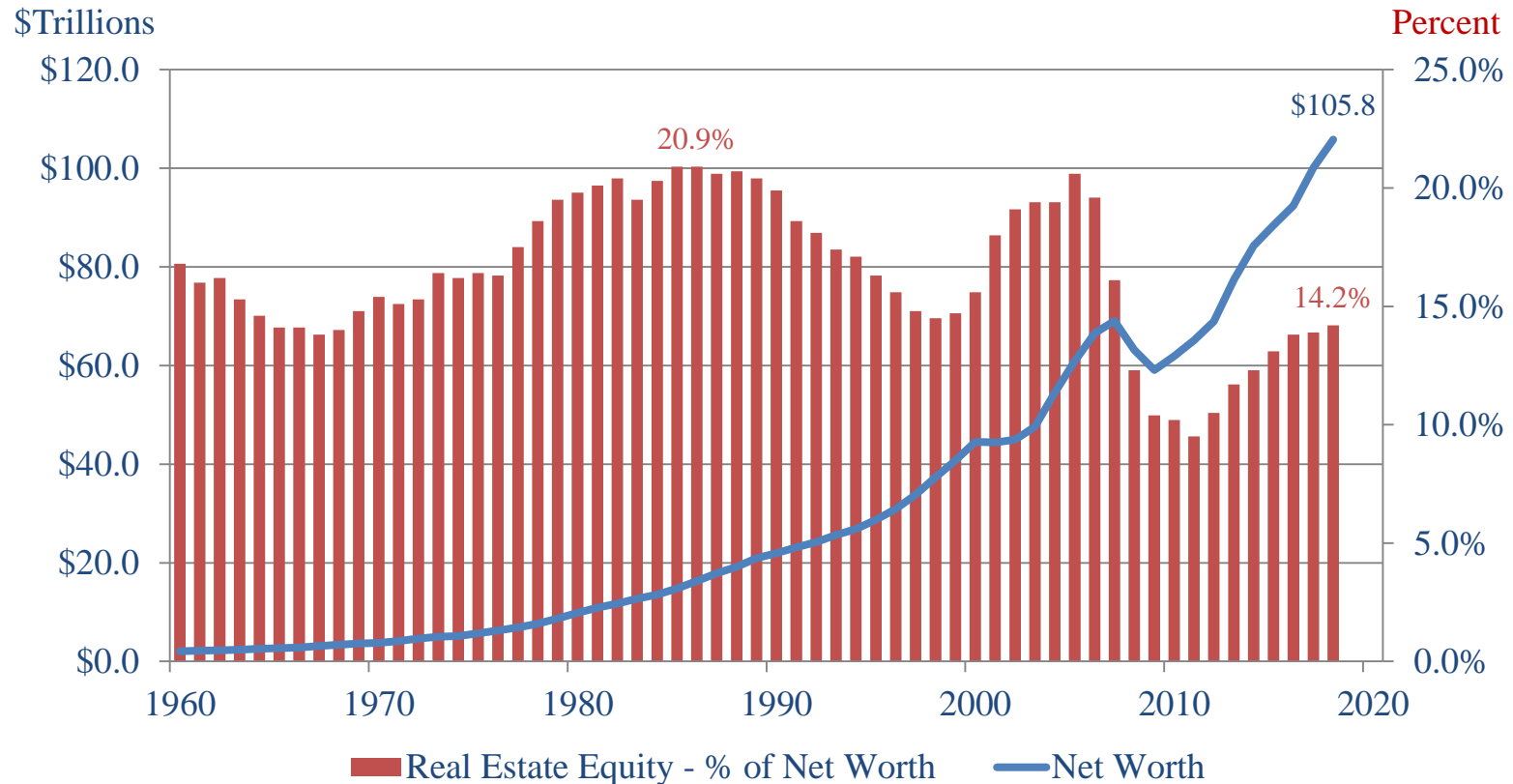
Billions of Chained 2012 Dollars - Percent Change Yr./Yr.



Source: Bureau of Economic Analysis.

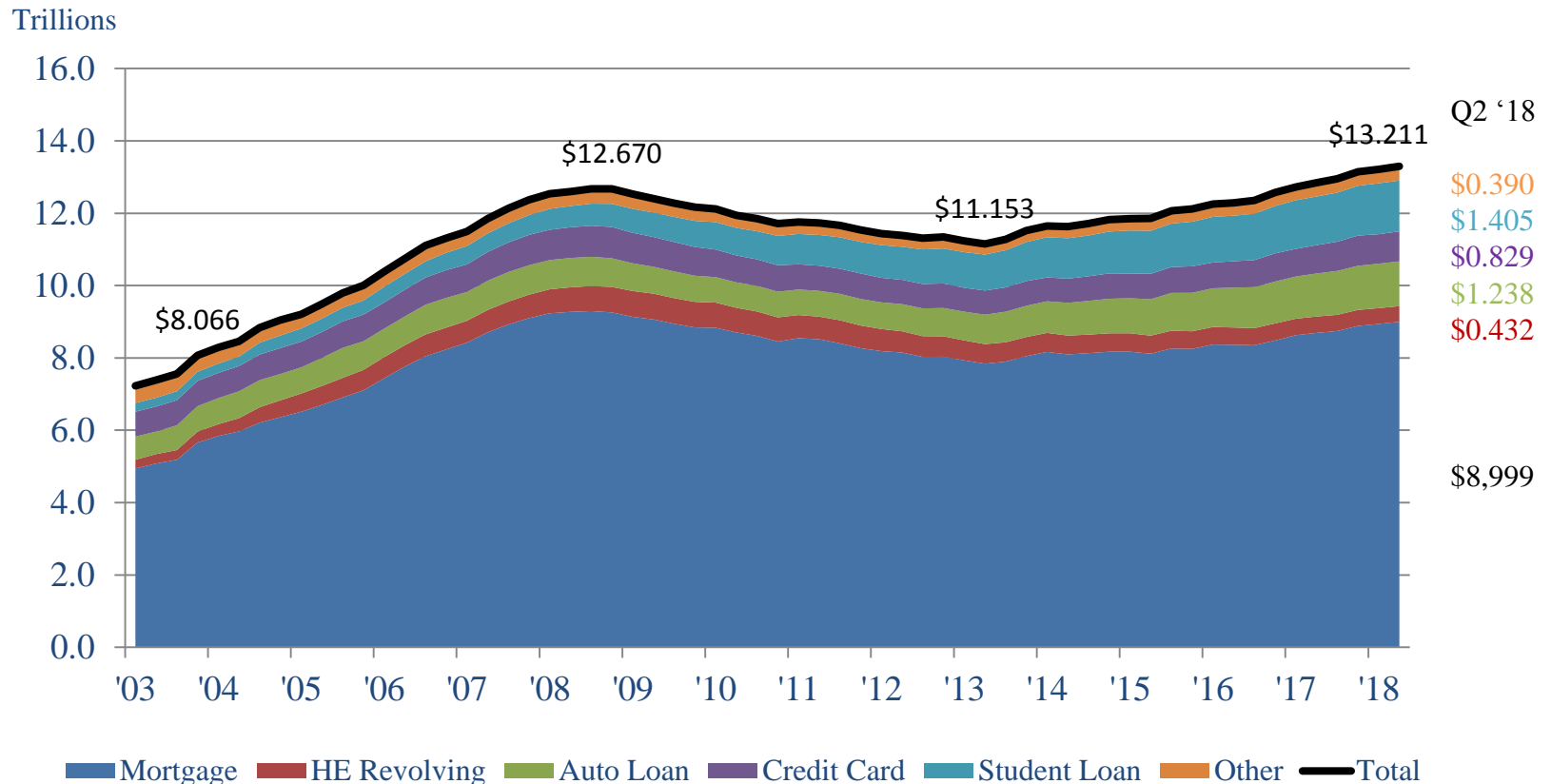
Household Net Worth

Trillions of Current Dollars & Percent – Annual Average



Total Consumer Debt by Composition

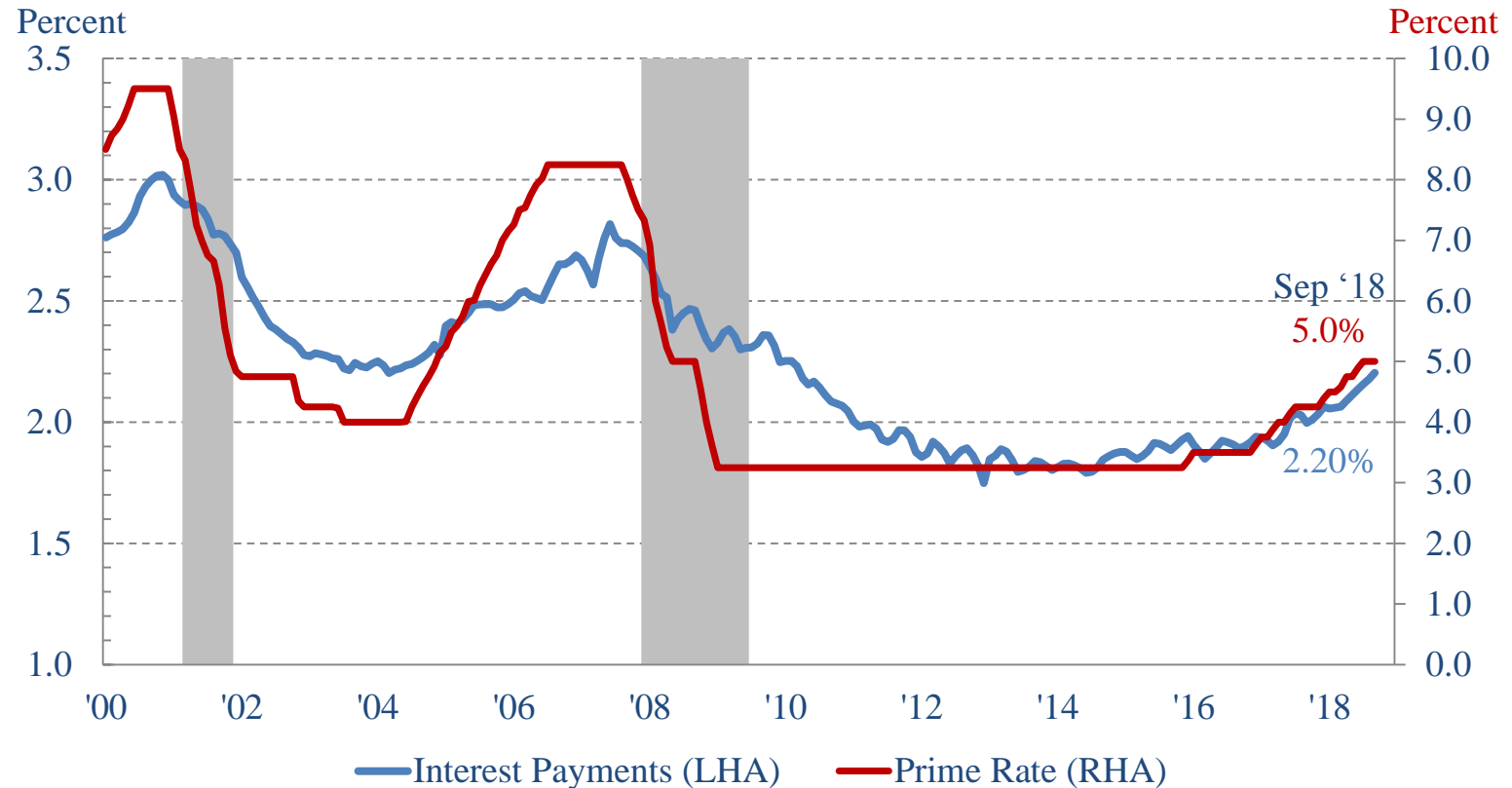
Trillions of Dollars



Source: Federal Reserve Bank of New York and Equifax

Interest Payments

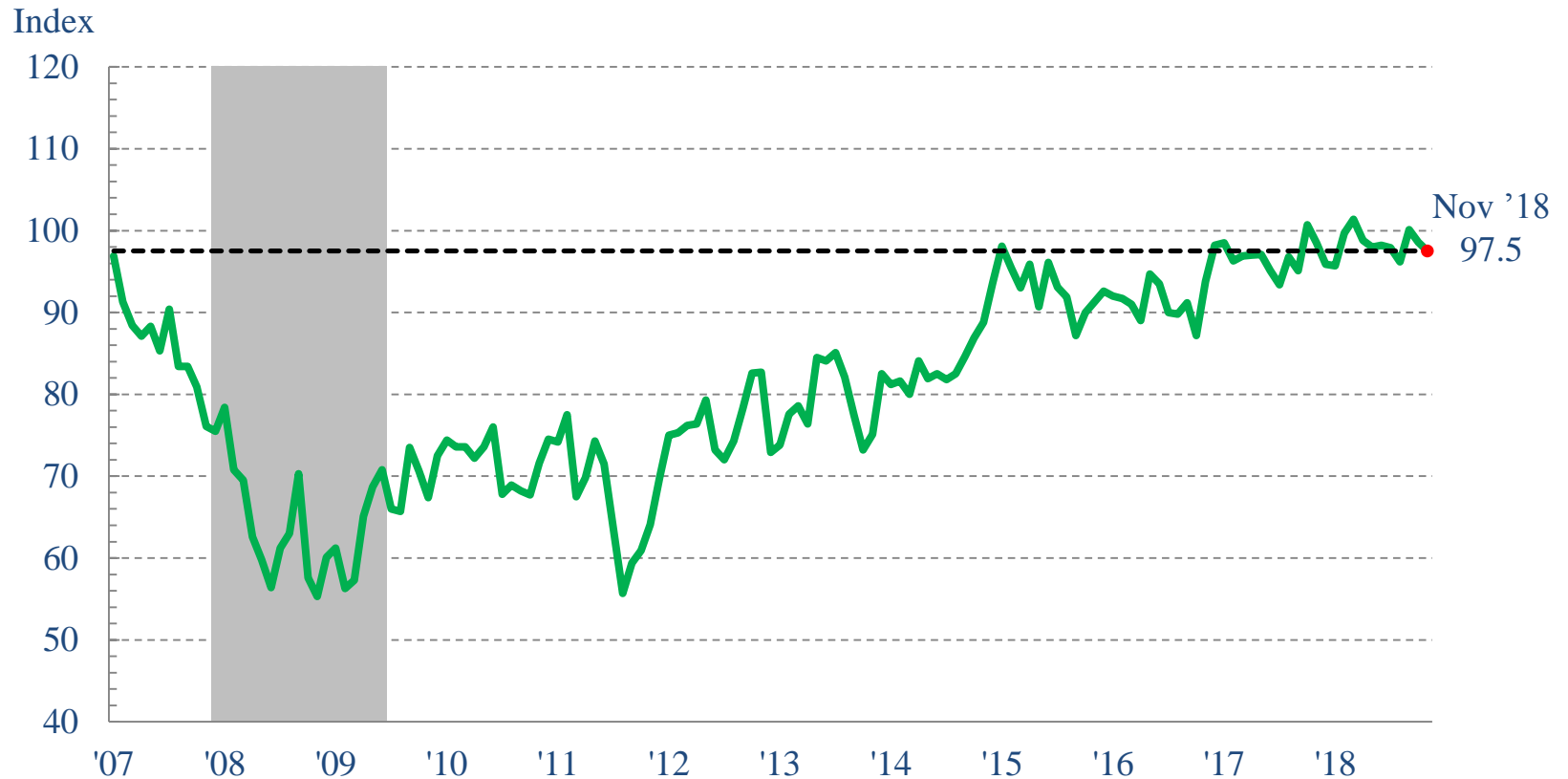
As a Percent of Disposable Personal Income



Source: Federal Reserve Bank - Board of Governors

Consumer Sentiment

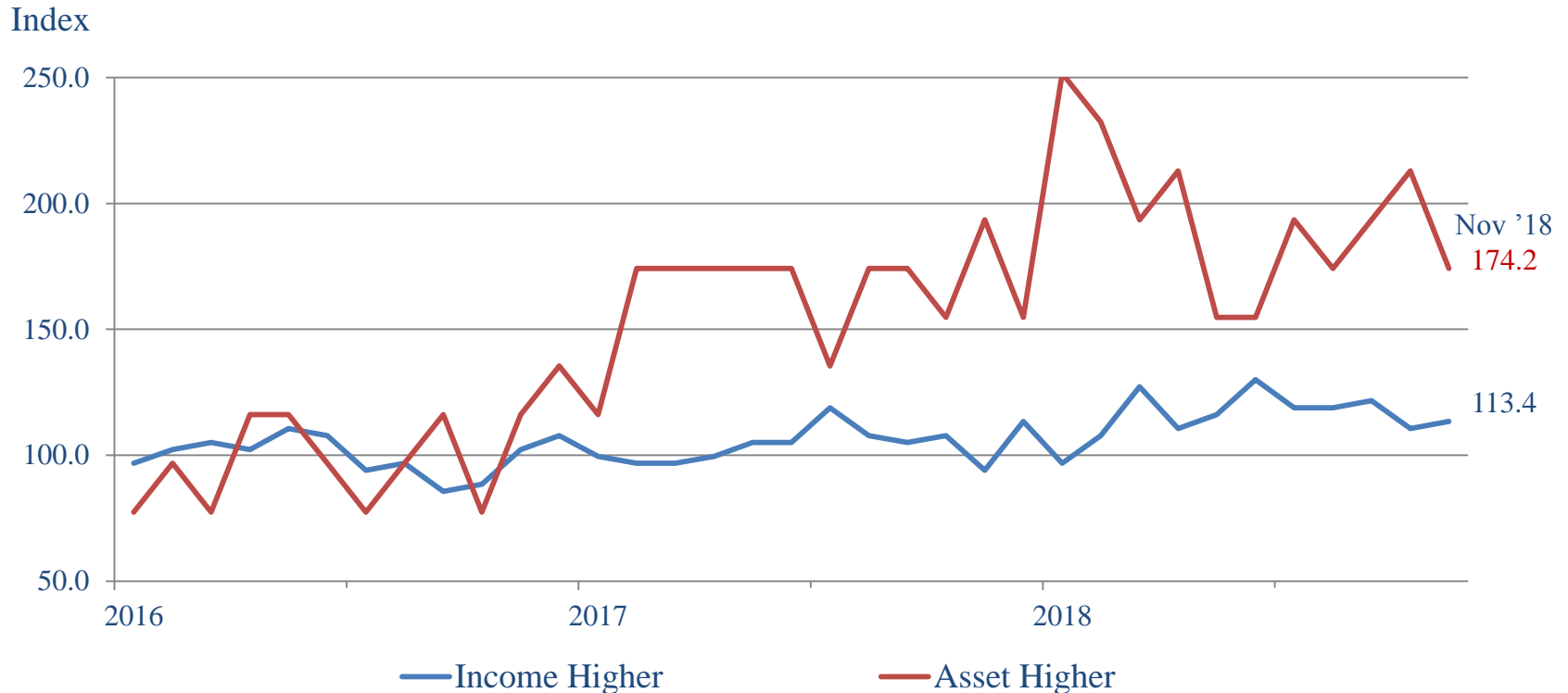
University of Michigan



Source: Thomson Reuters / University of Michigan

Current Household Financial Situation

Compared to a Year Ago – Index 2016 = 100

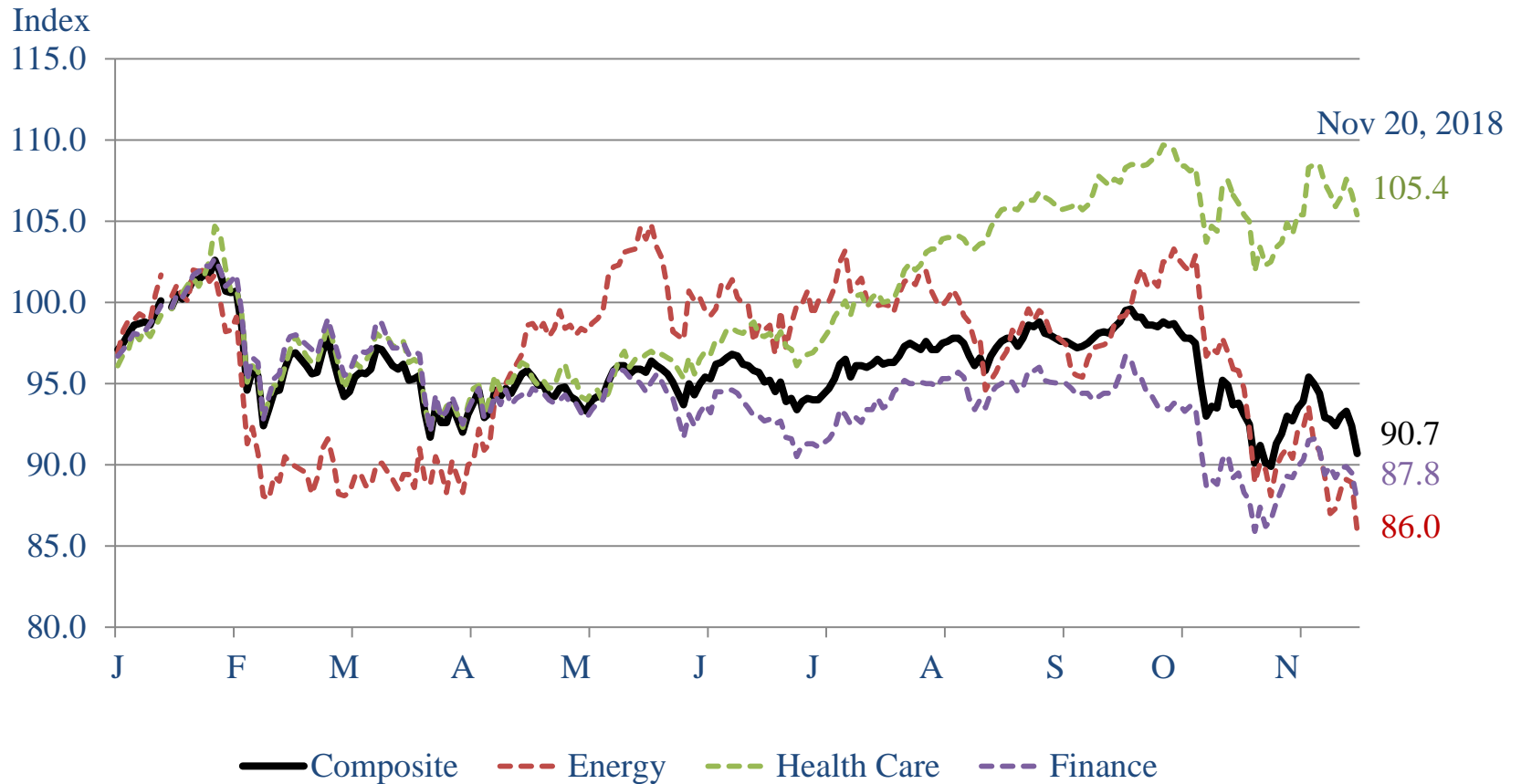


Note: Relative situation is calculated as the number of respondents answering that their income and asset to debt ratio is better than a year ago minus those responding that it is worse than a year ago.

Source: University of Michigan Consumer Sentiment

Stock Market

New York Stock Exchange, Index – January 2018 = 100

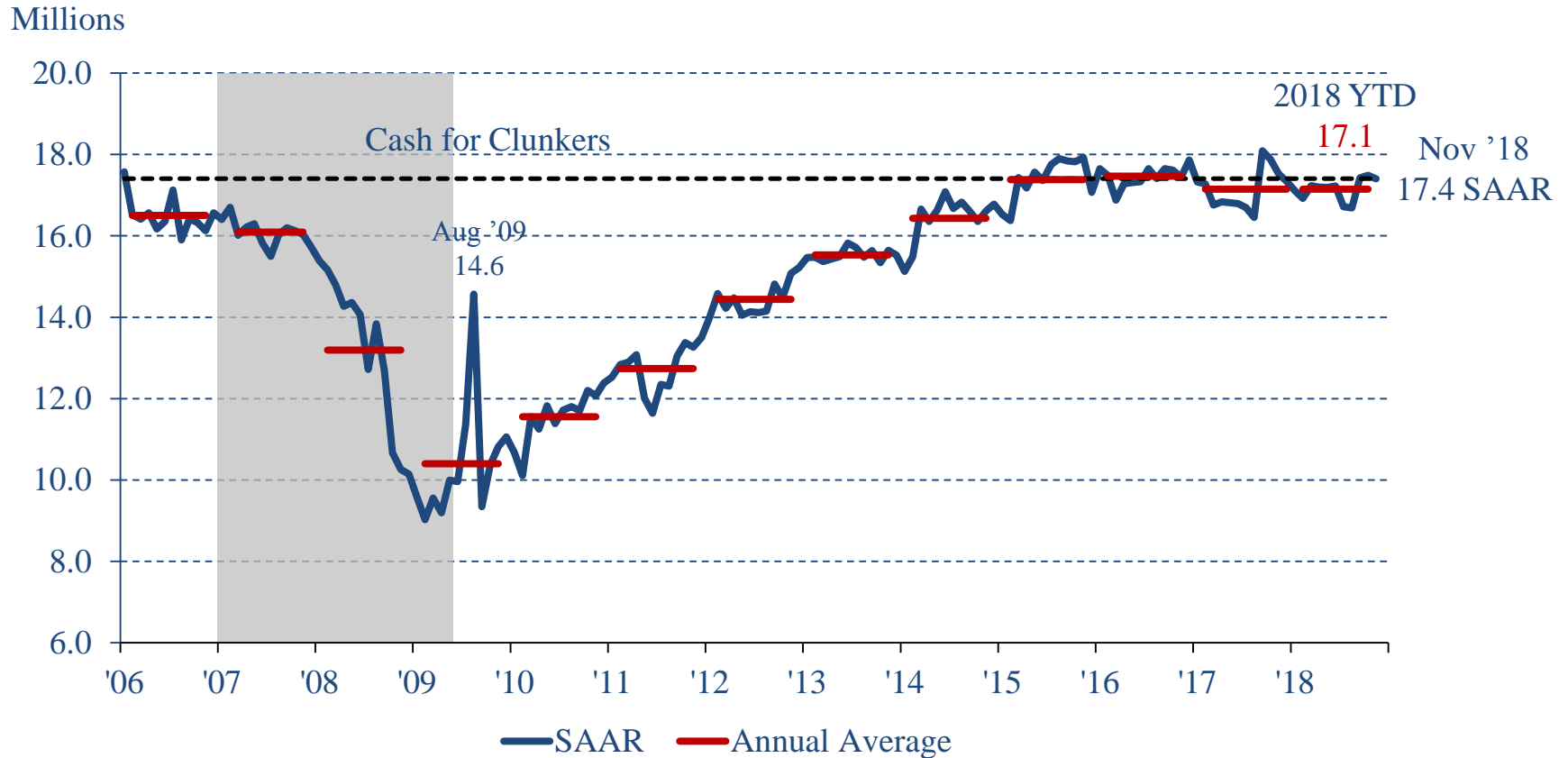


Source: Wall Street Journal and Haver Analytics.

Automotive Industry

U.S. Light Vehicle Sales

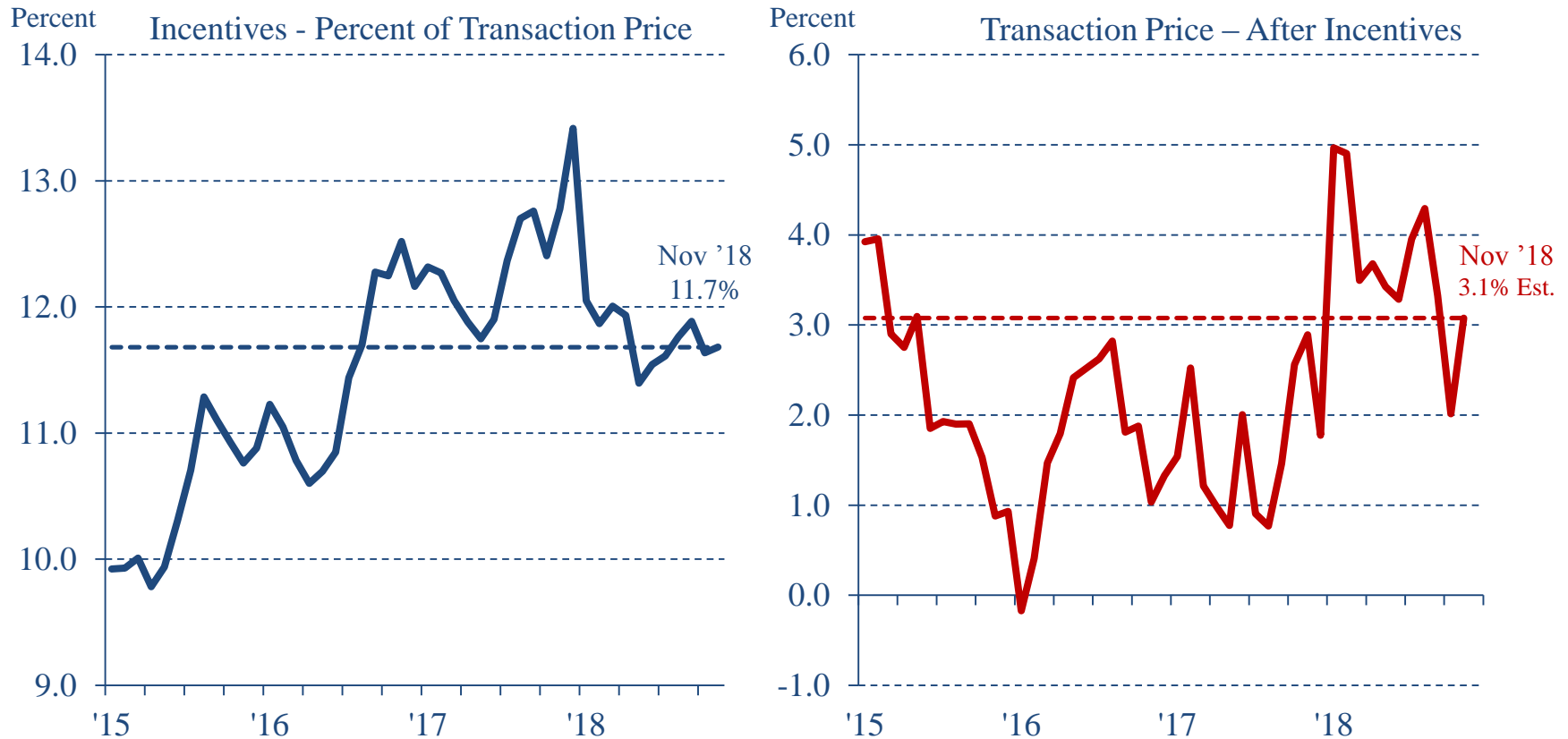
S.A.A.R – Millions of Units



Source: Ward's Automotive and BEA

Light Vehicle Incentives & Transaction Price

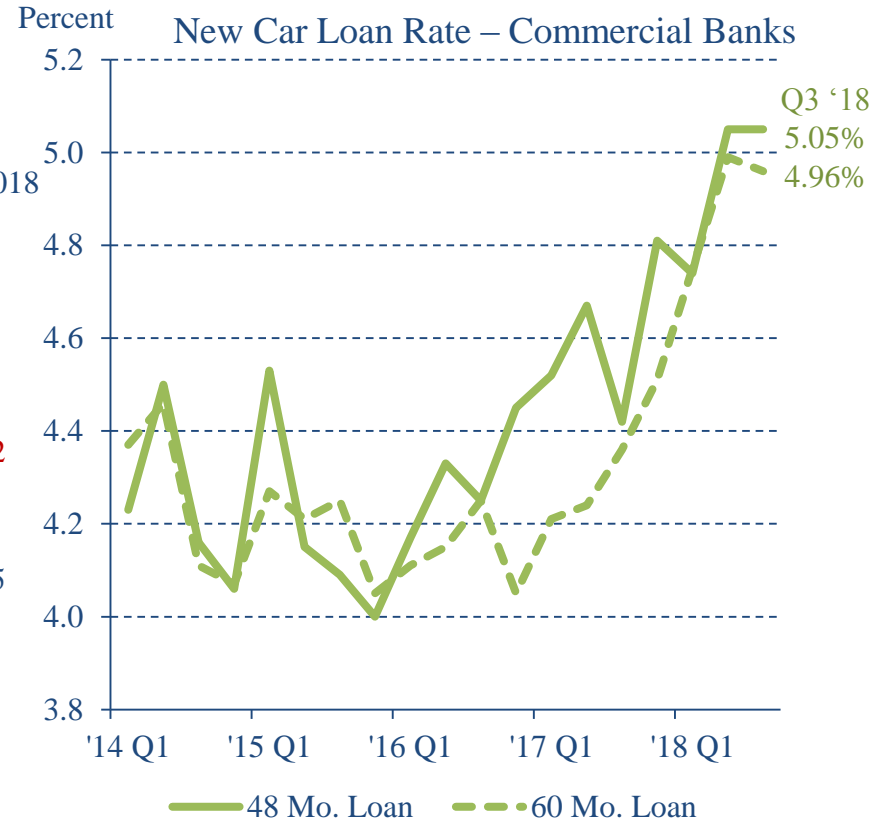
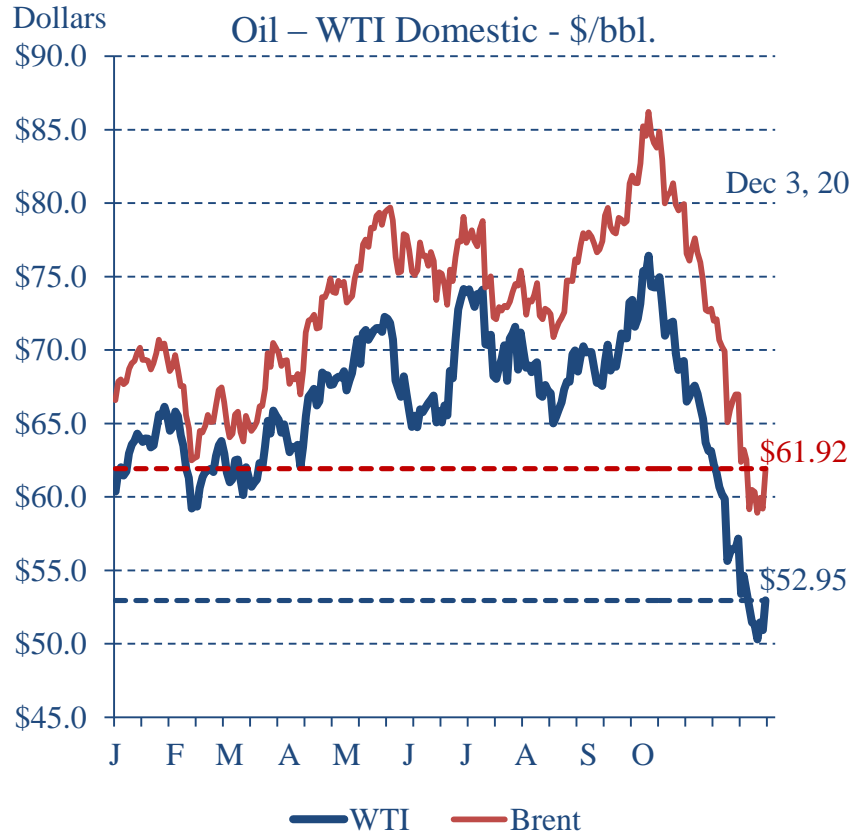
Percent of Transaction Price & Percent Change Yr./Yr. - SA



Source: Author's calculations using J.D. Power and FOMC Board of Governors

Oil and New Car Loan Rate

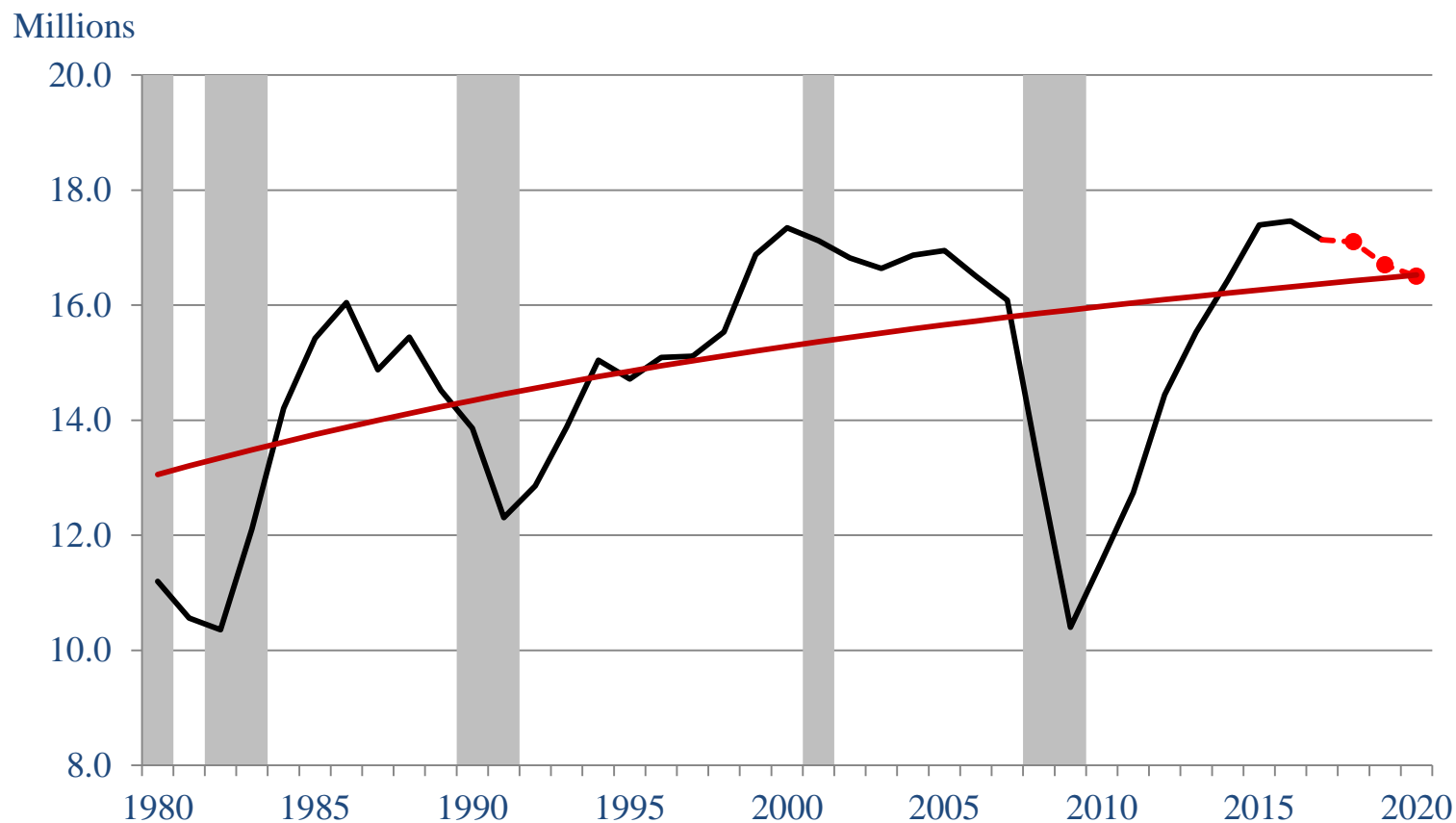
Current Dollars / bbl. and Percent



Source: EIA and Federal Reserve Board of Governors.

U.S. Light Vehicle Industry Trend

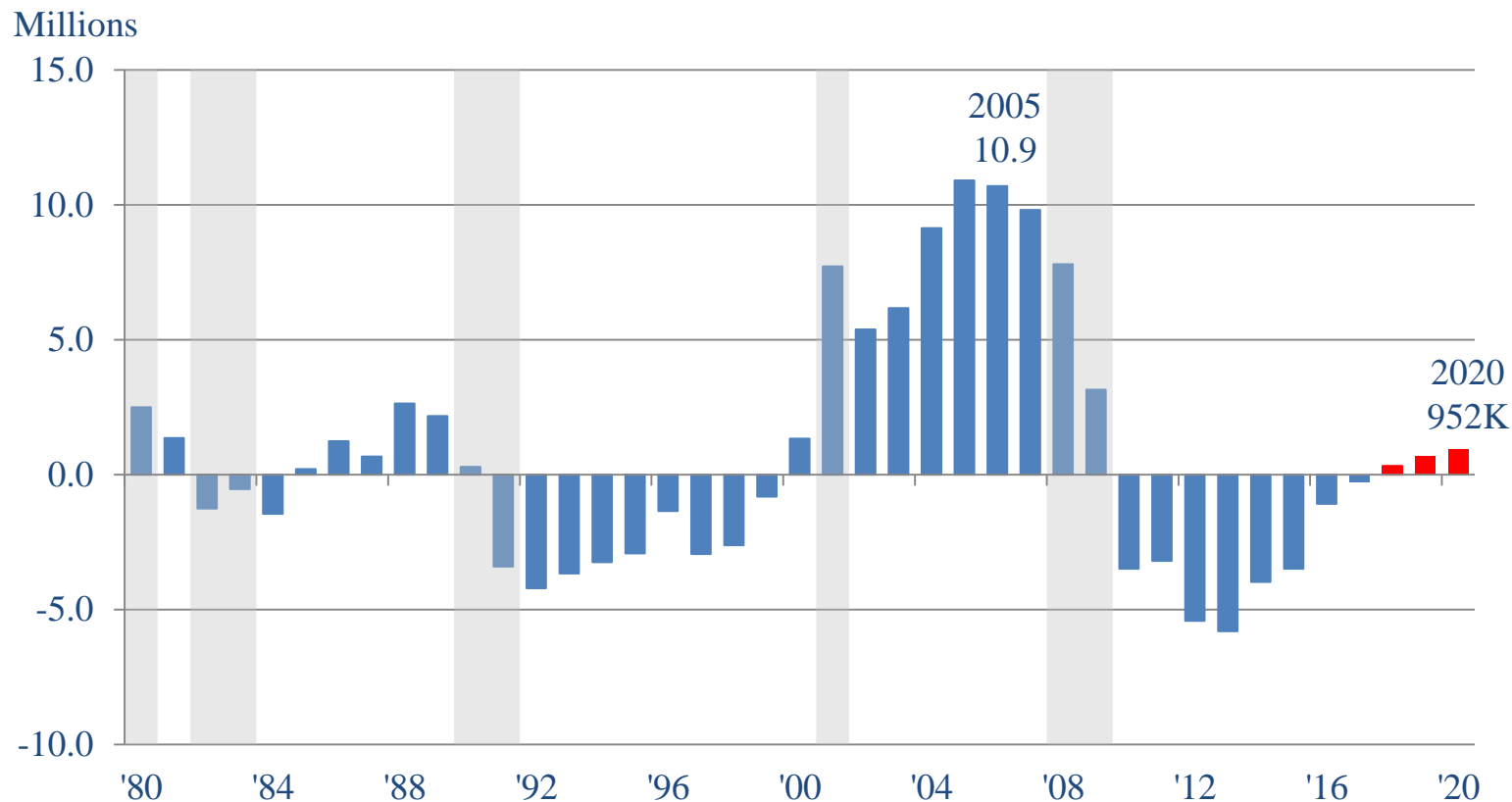
Millions of Units – Calendar year



Source: Ward's Automotive, Blue Chip Consensus, and Author.

U.S. Light Vehicle Pent-Up Demand

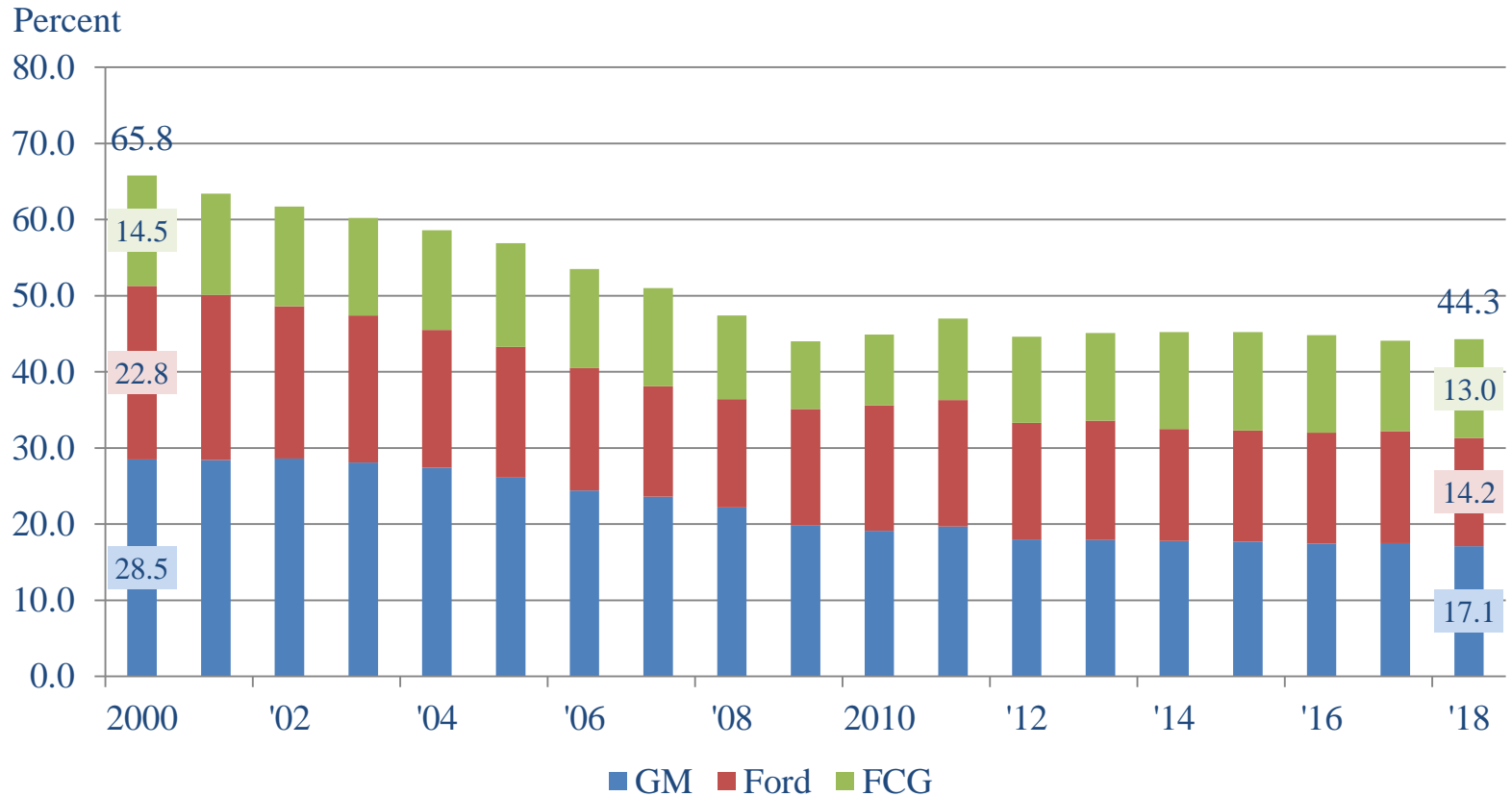
Millions of Units



Source: Author's calculations using Ward's Automotive, Blue Chip Consensus, and Author's data.

Detroit Three Market Share

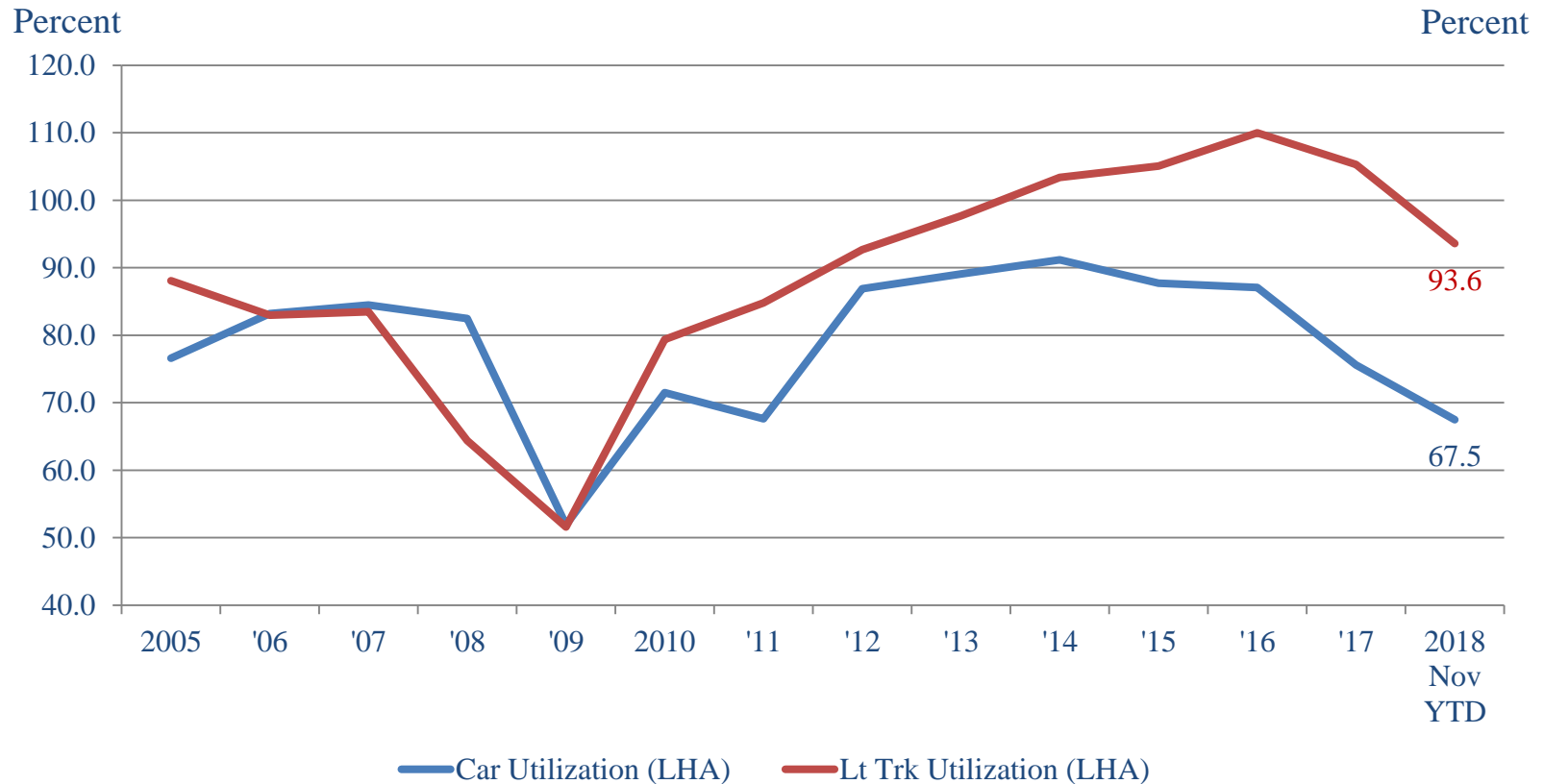
Percent of Light Vehicle Sales – Calendar year



Source: Author's calculations using Ward's Automotive, Blue Chip Consensus, and Author's data.

Car / Light Truck – Capacity Utilization & Mix

Percent of Light Vehicle Capacity & Sales – Calendar year



Note: Capacity utilization based on production weighted straight time capacity.

Source: Author's calculations using Ward's Automotive, Blue Chip Consensus, and Author's data.

Monetary Policy

F.O.M.C Statement

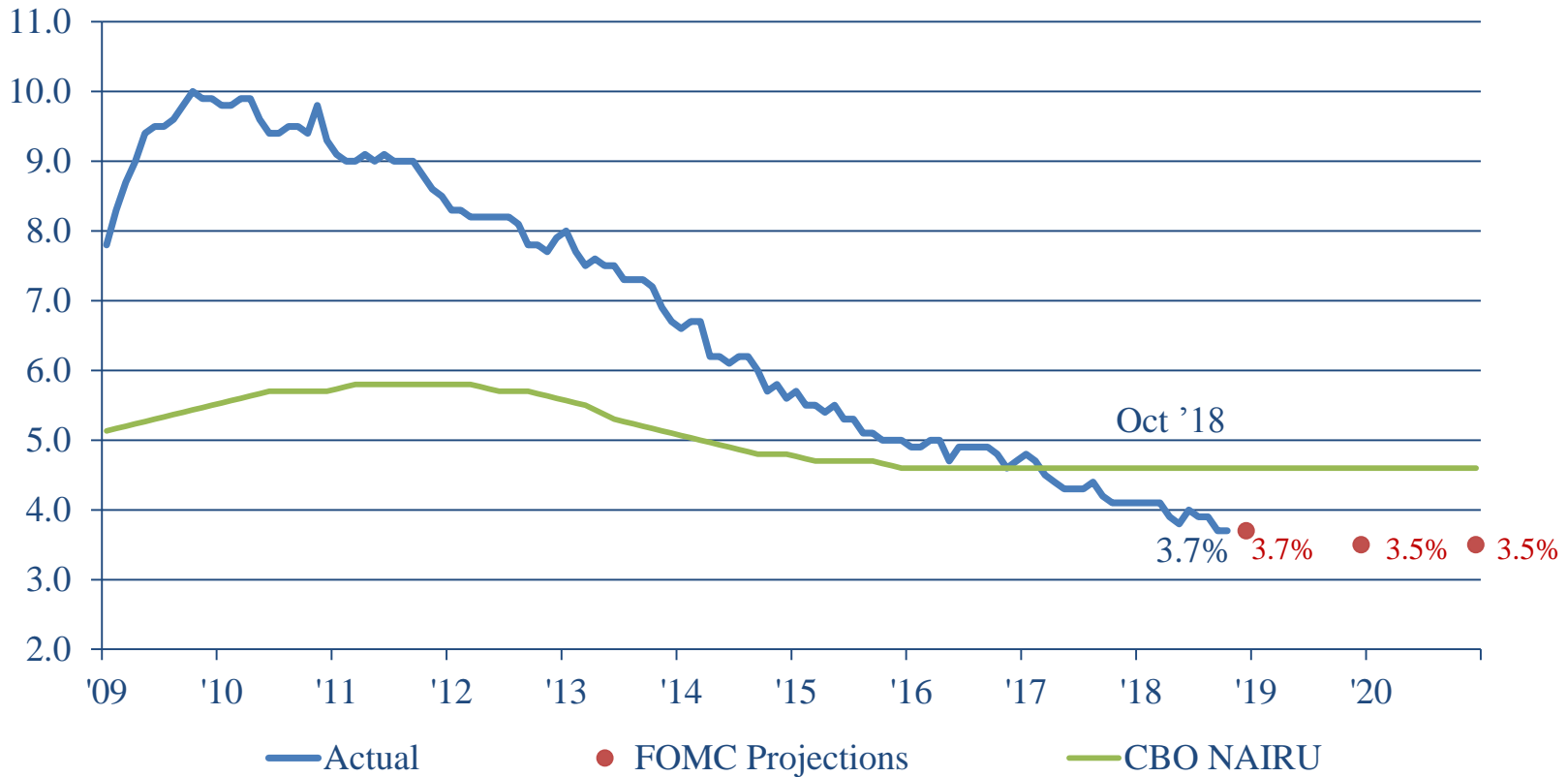
November 8, 2018

1. Information received since the F.O.M.C. met in September indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate.
2. Job gains have been strong, on average, in recent months, and the unemployment rate has declined.
3. Household spending and business fixed investment has grown strongly.
4. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectation are little changed, on balance.
5. Risks to economic outlook appear roughly balanced.

Unemployment Rate

Percent of Labor Force Unemployed

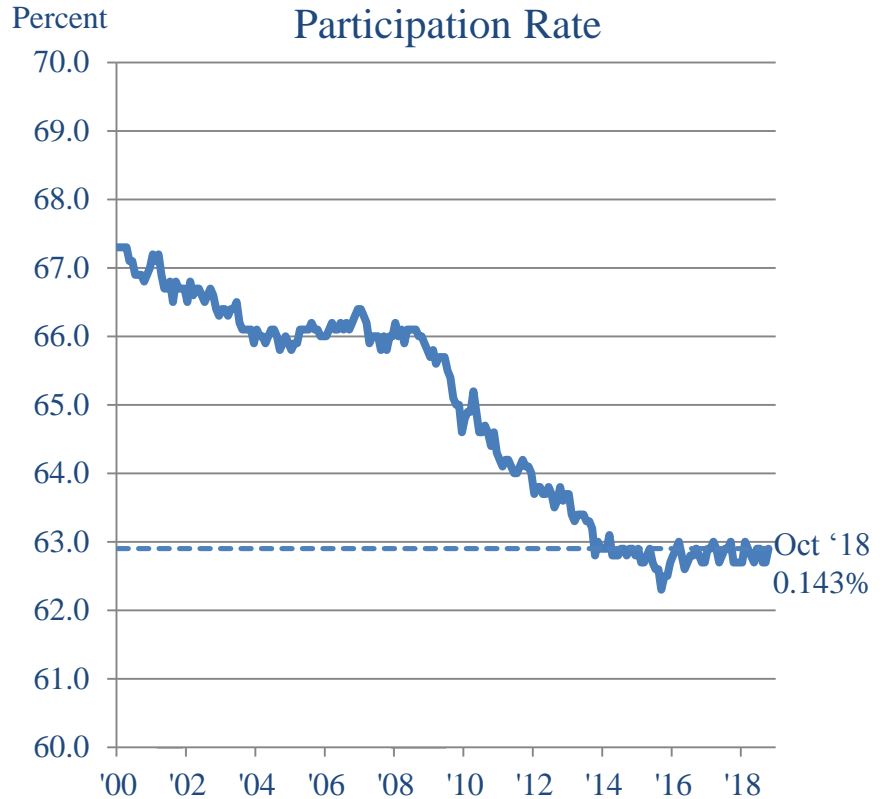
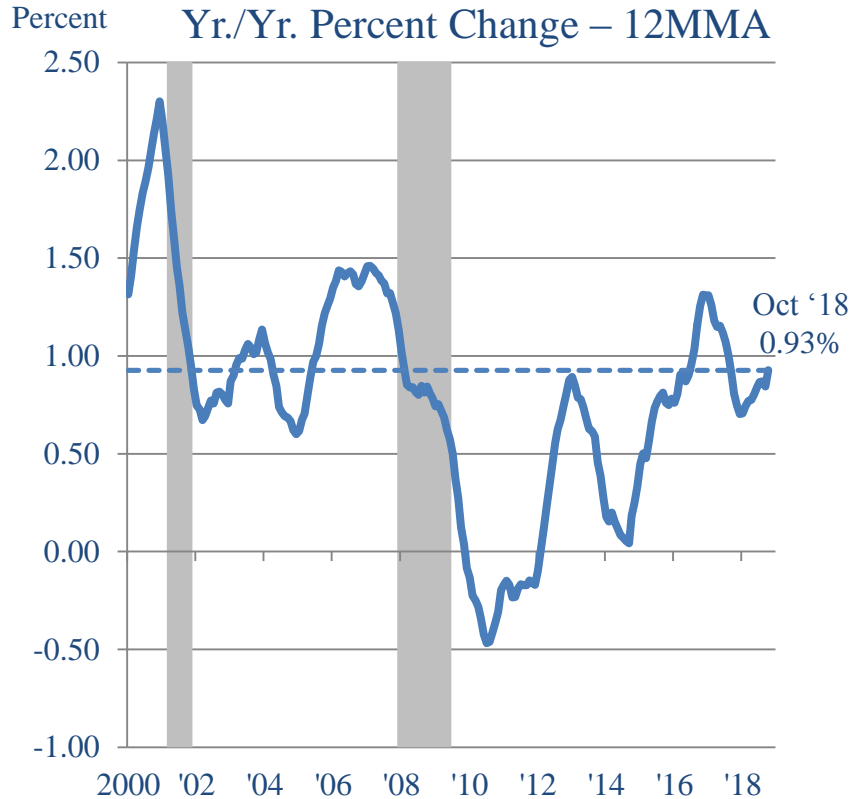
Percent



Sources: U.S. Department of Labor – Job Openings and Labor Turnover Survey, FOMC Projections – September 26, 2018

Labor Force

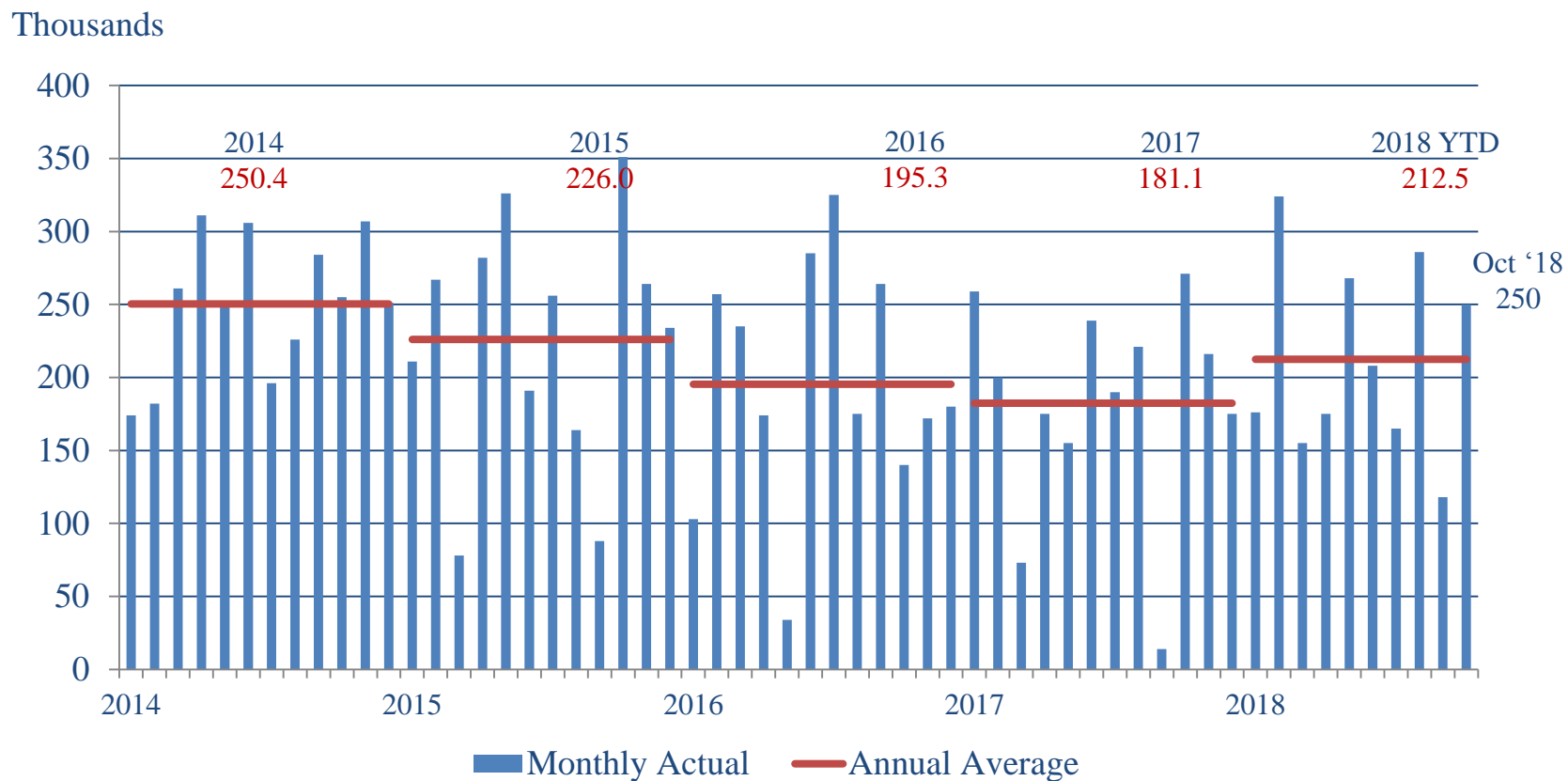
Labor Force Growth & Participation Rate



Sources: U.S. Department of Labor – Job Openings and Labor Turnover Survey, U.S. Employment and Training Administration

U.S. Nonfarm Payrolls

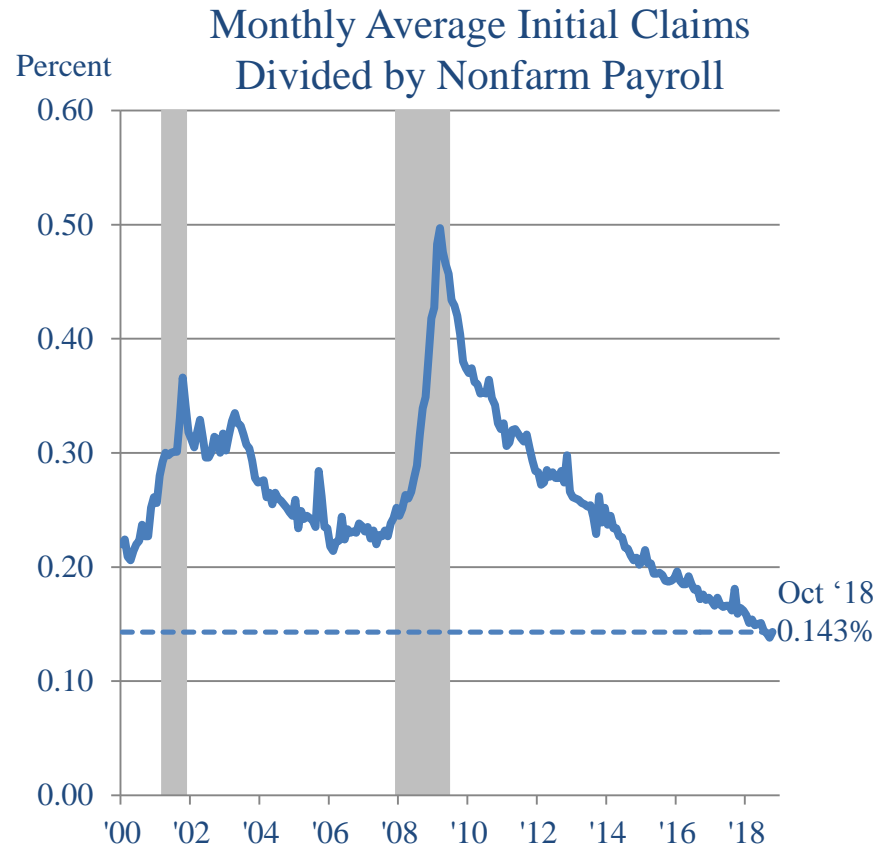
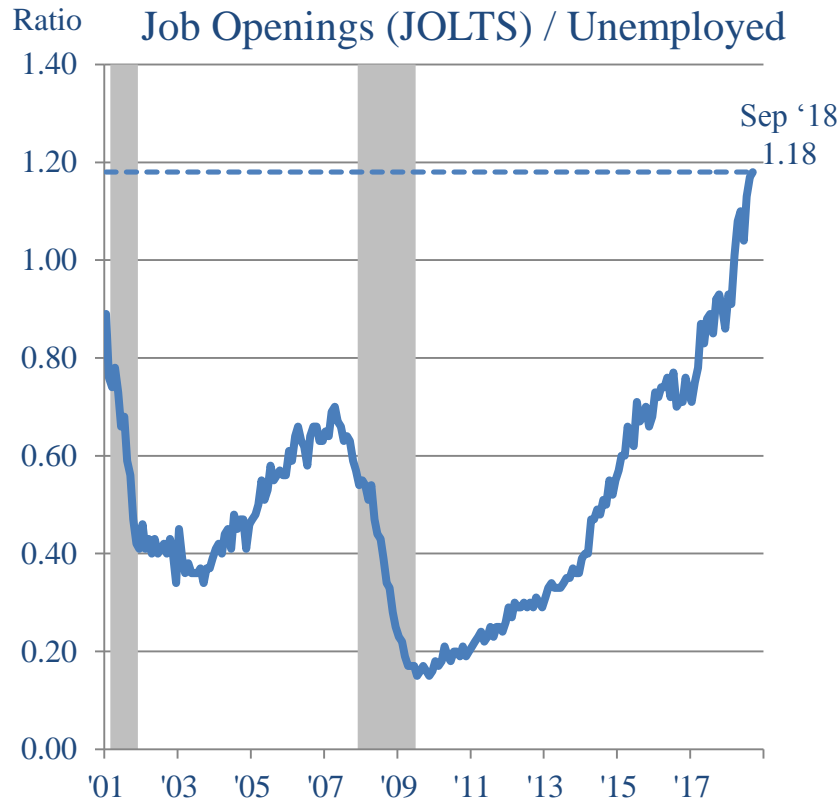
Monthly and Annual Average Job Change – In Thousands



Source: U.S. Department of Labor: Bureau of Labor Statistics

Labor Conditions

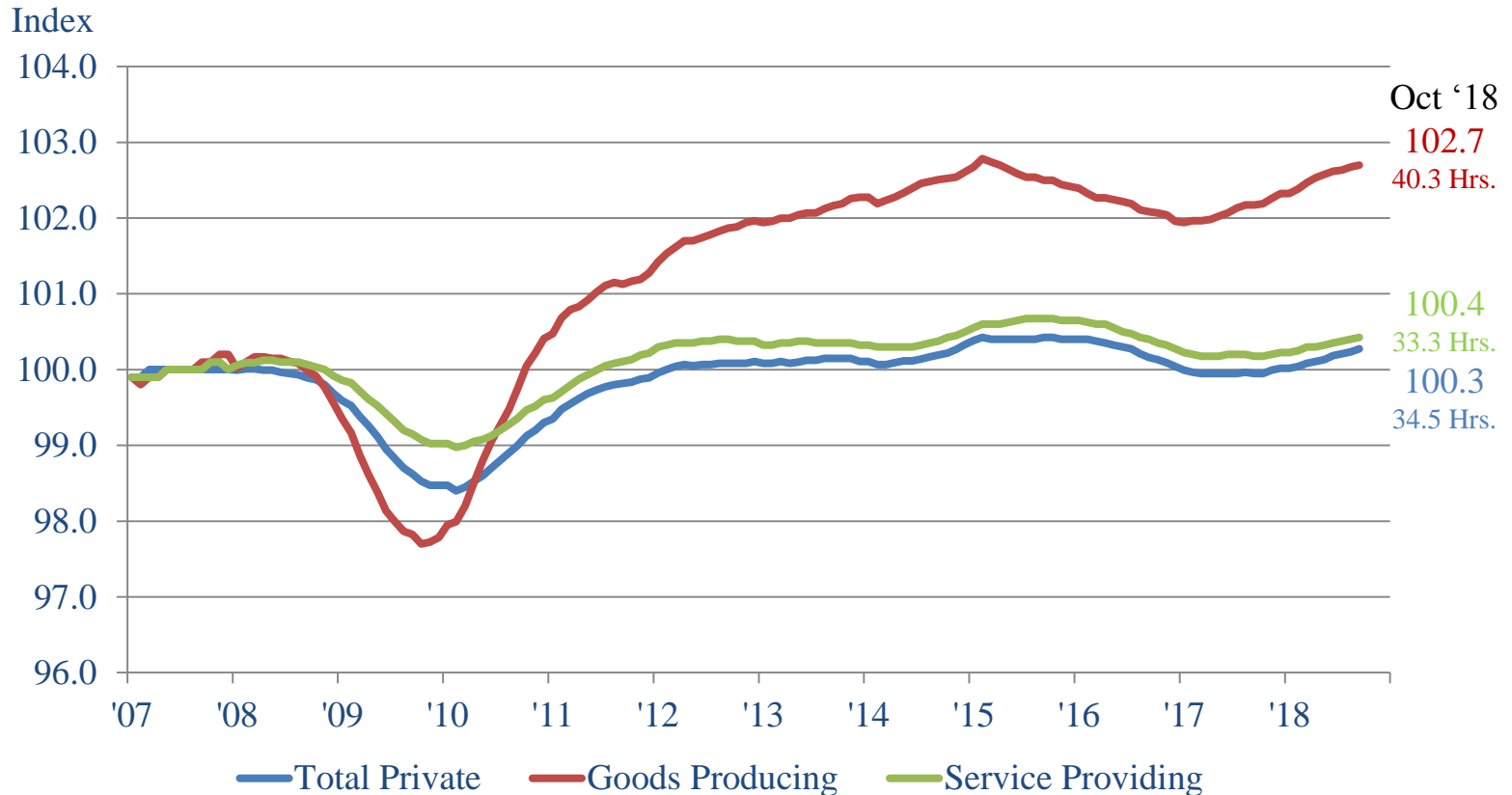
Job Openings and Initial Claims



Sources: U.S. Department of Labor – Job Openings and Labor Turnover Survey, U.S. Employment and Training Administration

Average Weekly Hours Worked

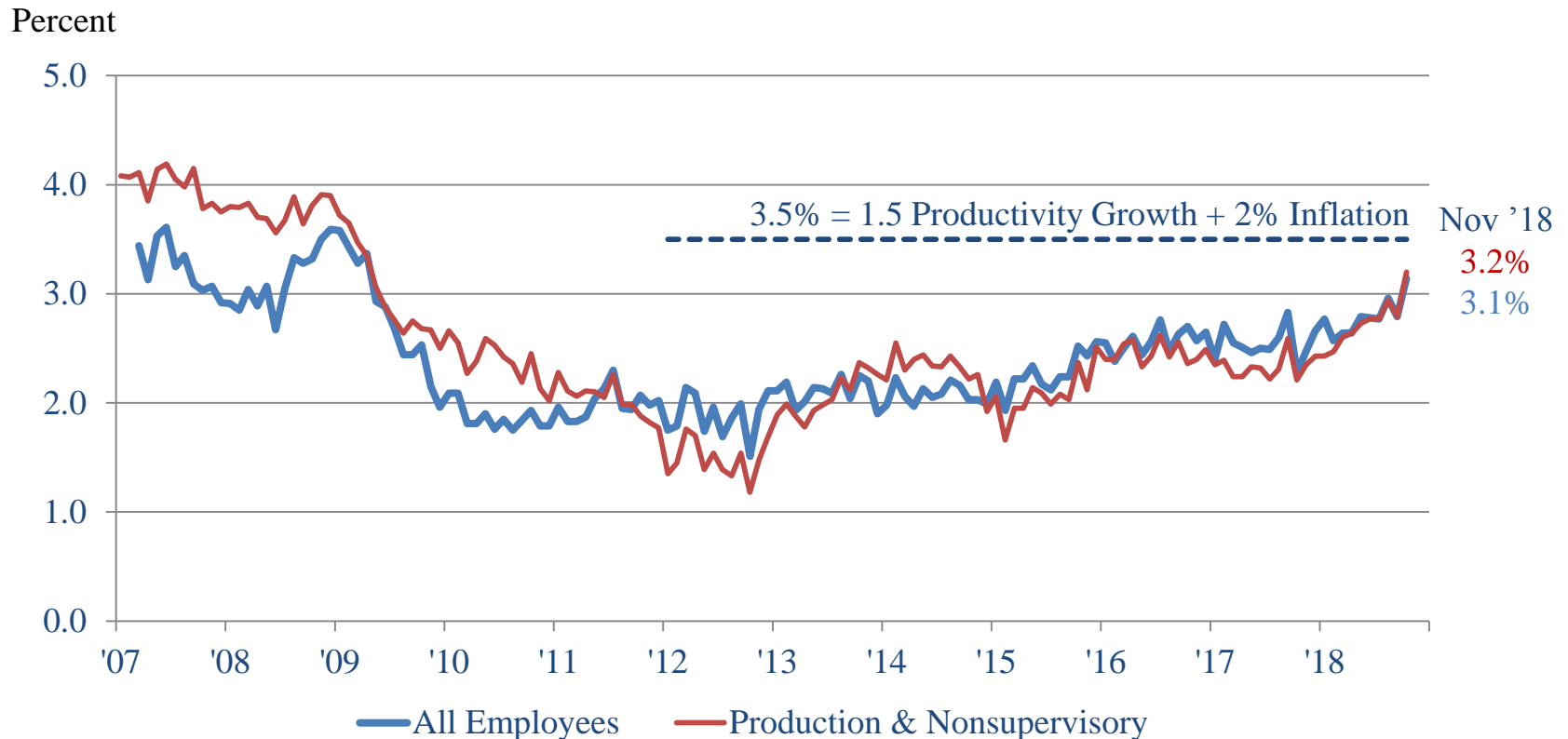
Private Workers, SA - 12 MMA, Index 2007 = 100



Sources: U.S. Bureau of Labor Statistics

Average Hourly Earnings – Private Employees

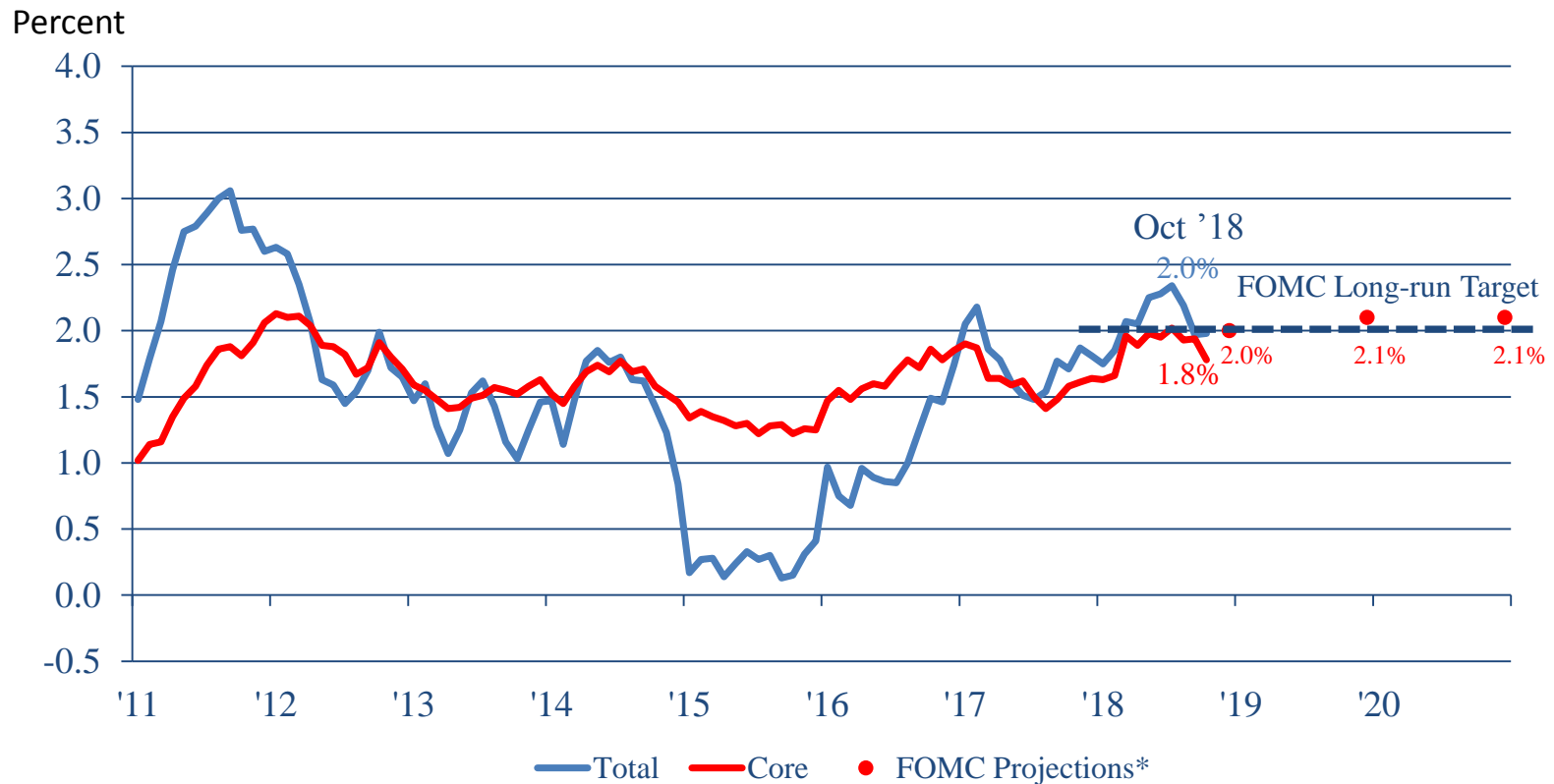
Percent Change Year / Year



Source: U.S. Department of Labor: Bureau of Labor Statistics

PCE Inflation

All Items & Core, 12-Month Percent Change

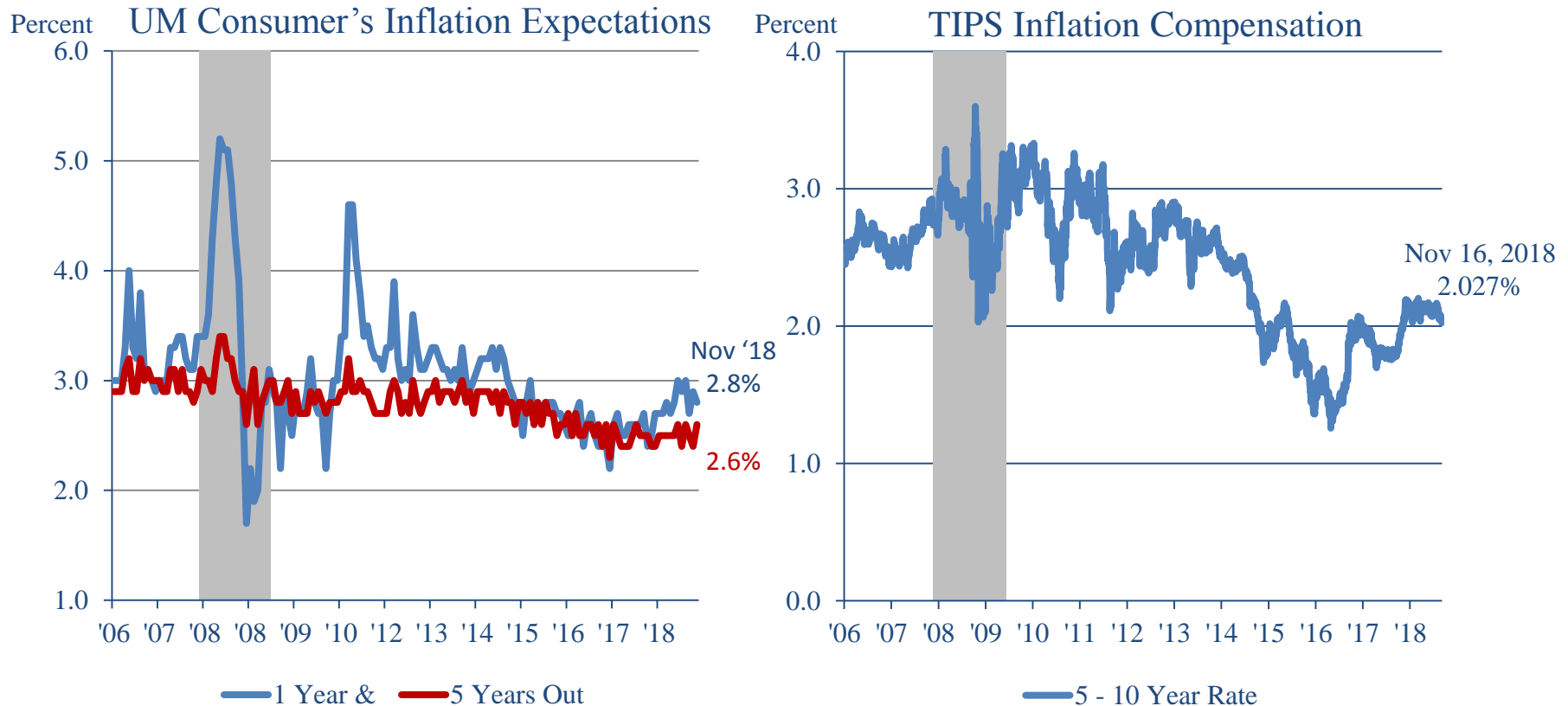


* Midpoint of the central tendency of forecasts made by the FOMC participants as of June 13, 2018

Source: U.S. Department of Labor: Bureau of Labor Statistics, Bureau of Economic Analysis and the Federal Reserve

Inflation Expectations

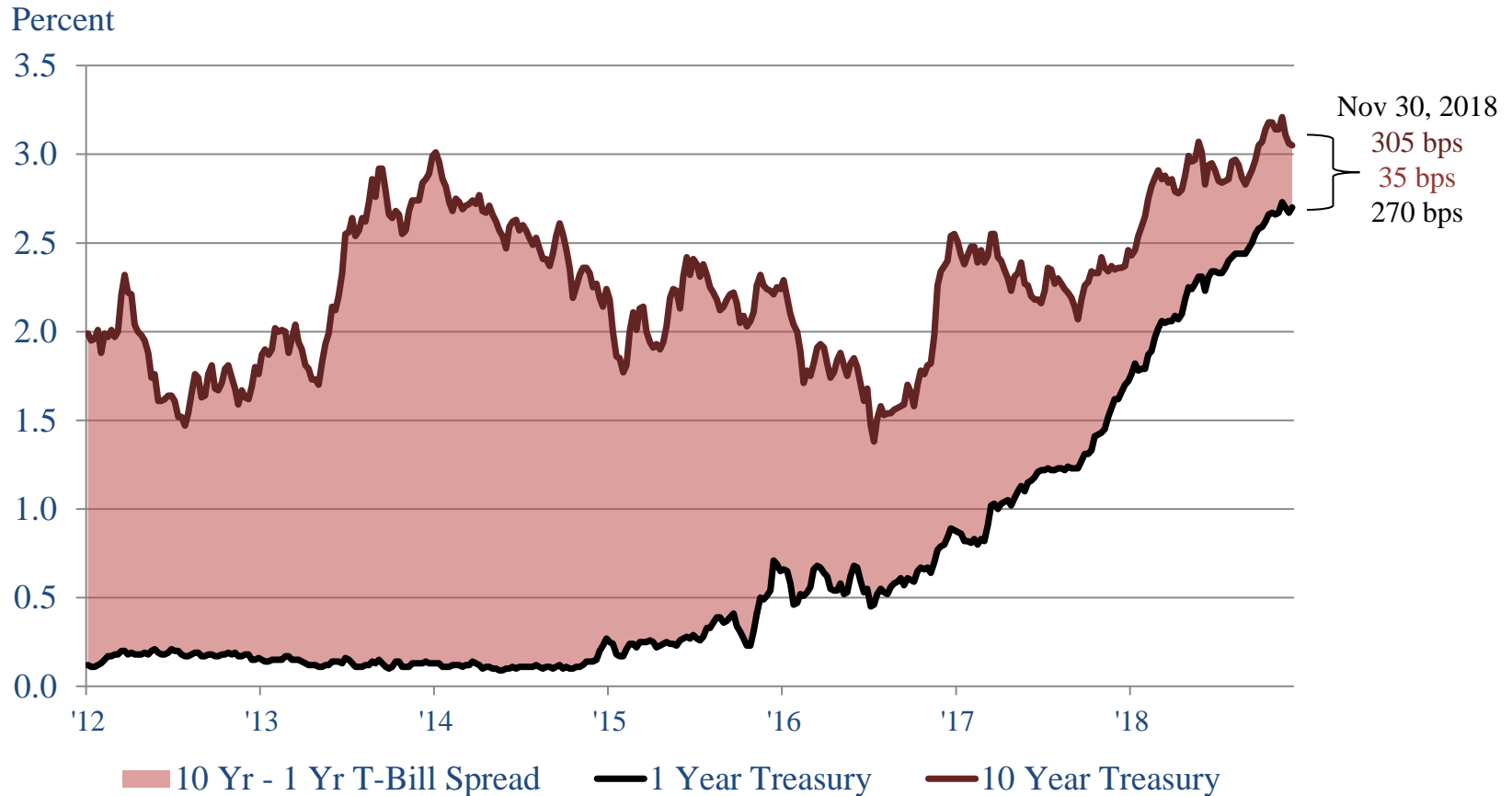
1-5 Year and 5-10 Year Inflation Expectations



Source: Survey of Consumers – University of Michigan and Federal Reserve Board

Yield Curve

10 Year – 1 Year Treasuries in Basis Points

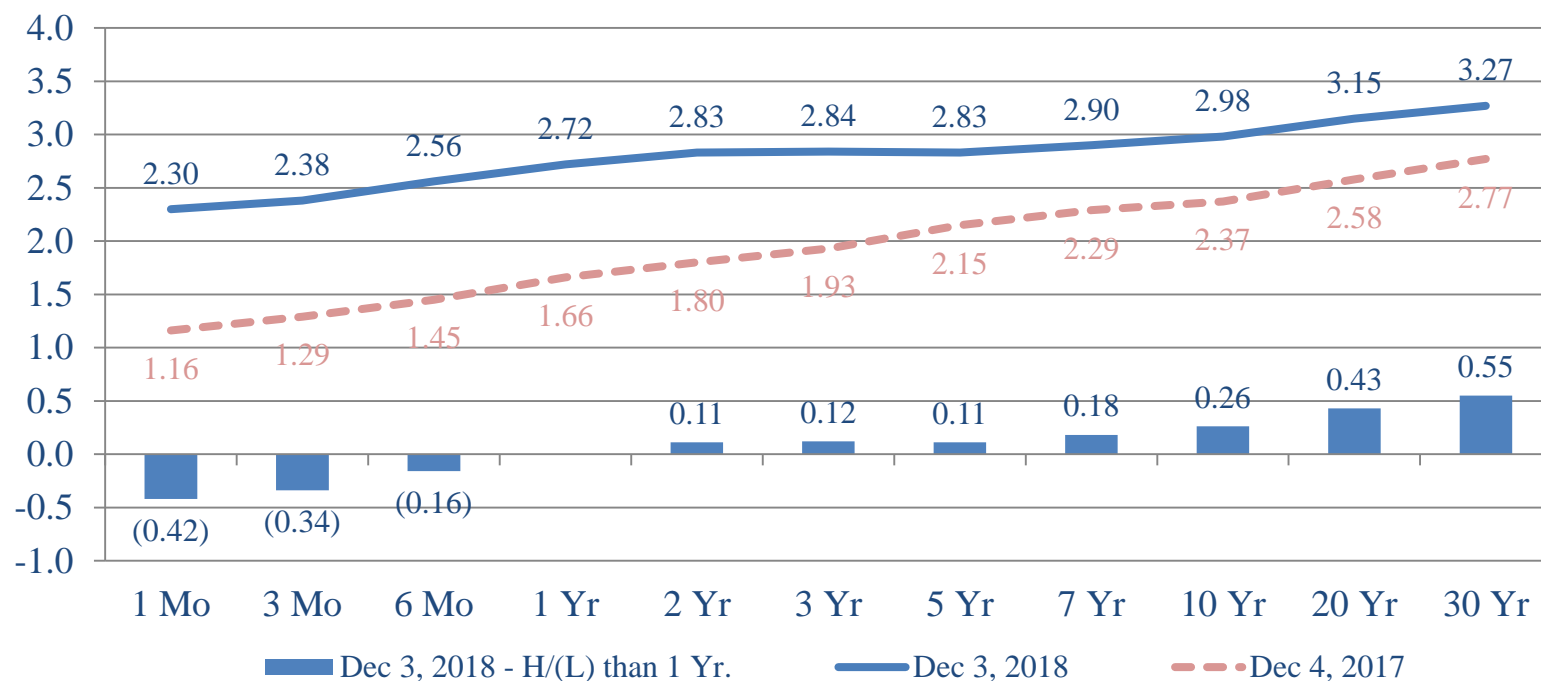


Source: Board of Governors – Federal Reserve System

Yield Curve

1 Month to 30 Year Treasury - Constant Maturity Rate

Percent



Source: Board of Governors – Federal Reserve System

Yield Curve

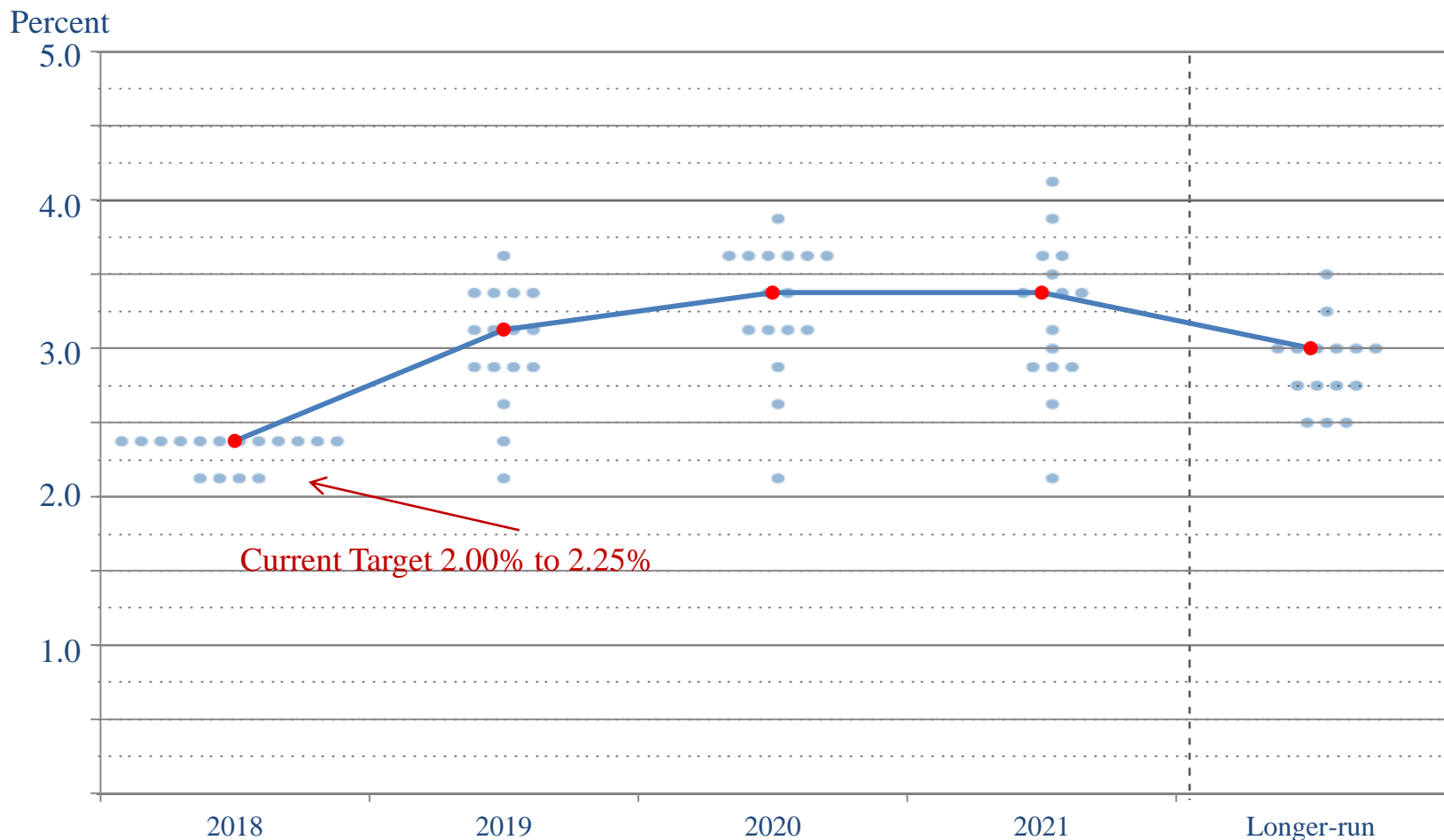
10 Year – 1 Year Treasuries in Basis Points



Source: Federal Reserve System, Board of Governors and Blue Chip Financial Forecast, November 2018

Appropriate pace of policy firming

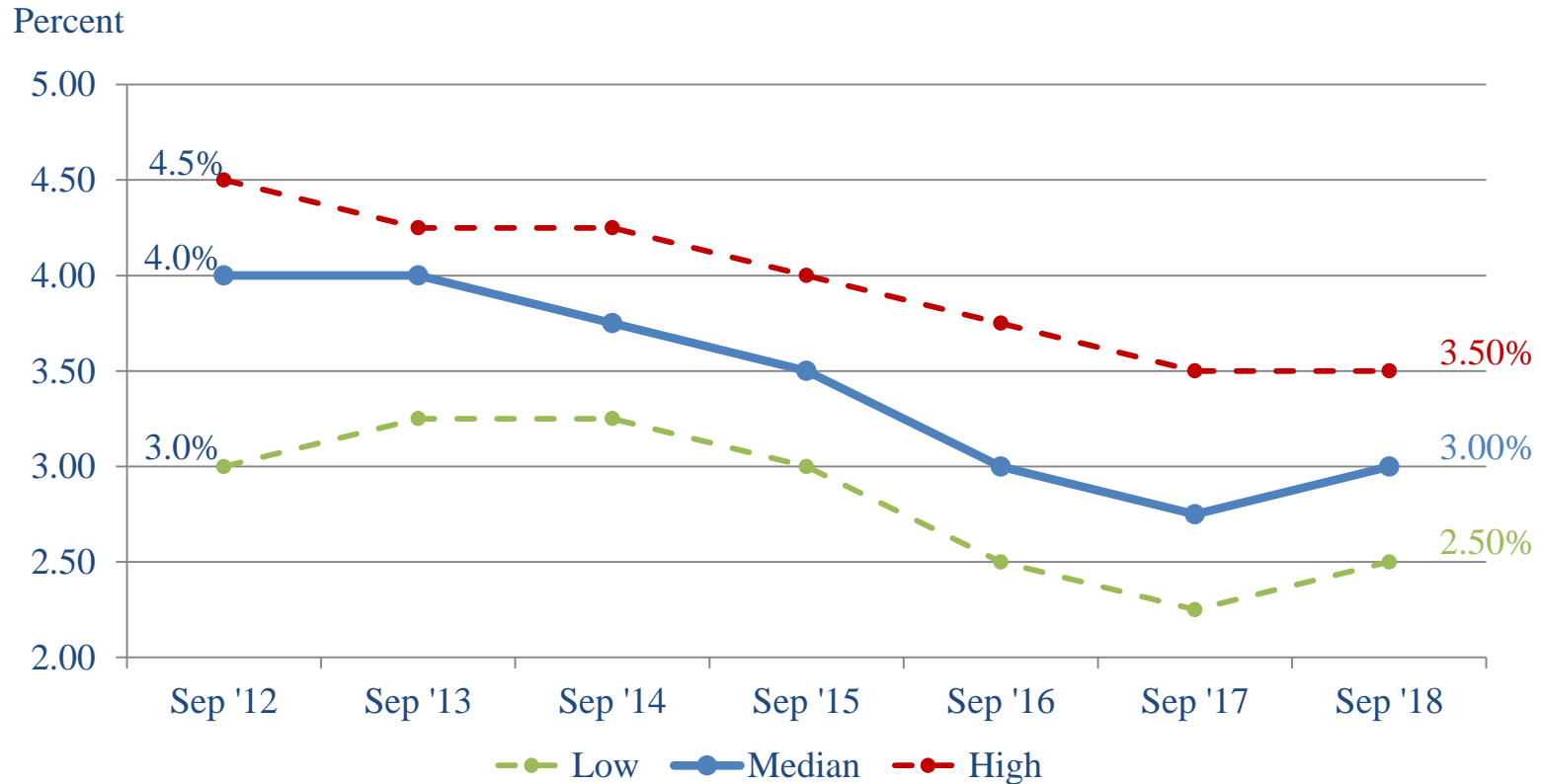
Fed Funds Rate – Year End Projections



Source: Federal Reserve - F.O.M.C. participants, September 26, 2018

Target Federal Funds Rate

Long Run Projections



Source: Federal Reserve - F.O.M.C. participants projections.

Thank You!