

# The Economy and the Fed

## Grand Valley State University

**Federal Reserve Bank of Chicago**  
April 13, 2018

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# The Federal Reserve System



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

# Why the Current Structure Exists

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- 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 19<sup>th</sup> and early 20<sup>th</sup> centuries.<sup>1</sup>

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)

# Before the Federal Reserve

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- 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 a central bank.

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

# Functions of the Federal Reserve

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- 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”

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- 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

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- 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) : 4.7%
- 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

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- 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



# Sustainable Growth

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- 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

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- 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

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- 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 in pursuit of those goals should be free from political influence.\*
- The Fed has congressionally mandated goals of price stability, maximum employment, and moderate long-term interest rates.
- Many studies support a central bank's ability to conduct day-to-day monetary policy operations free of political pressure tend to deliver better inflation outcomes, without compromising economic growth.
- Achieving monetary goals can at times take substantial time, this requires that monetary policy makers take a longer-term perspective when making their decisions.

\* Source: Board of Governors of the Federal Reserve

# Importance of an Independent Fed (con't)

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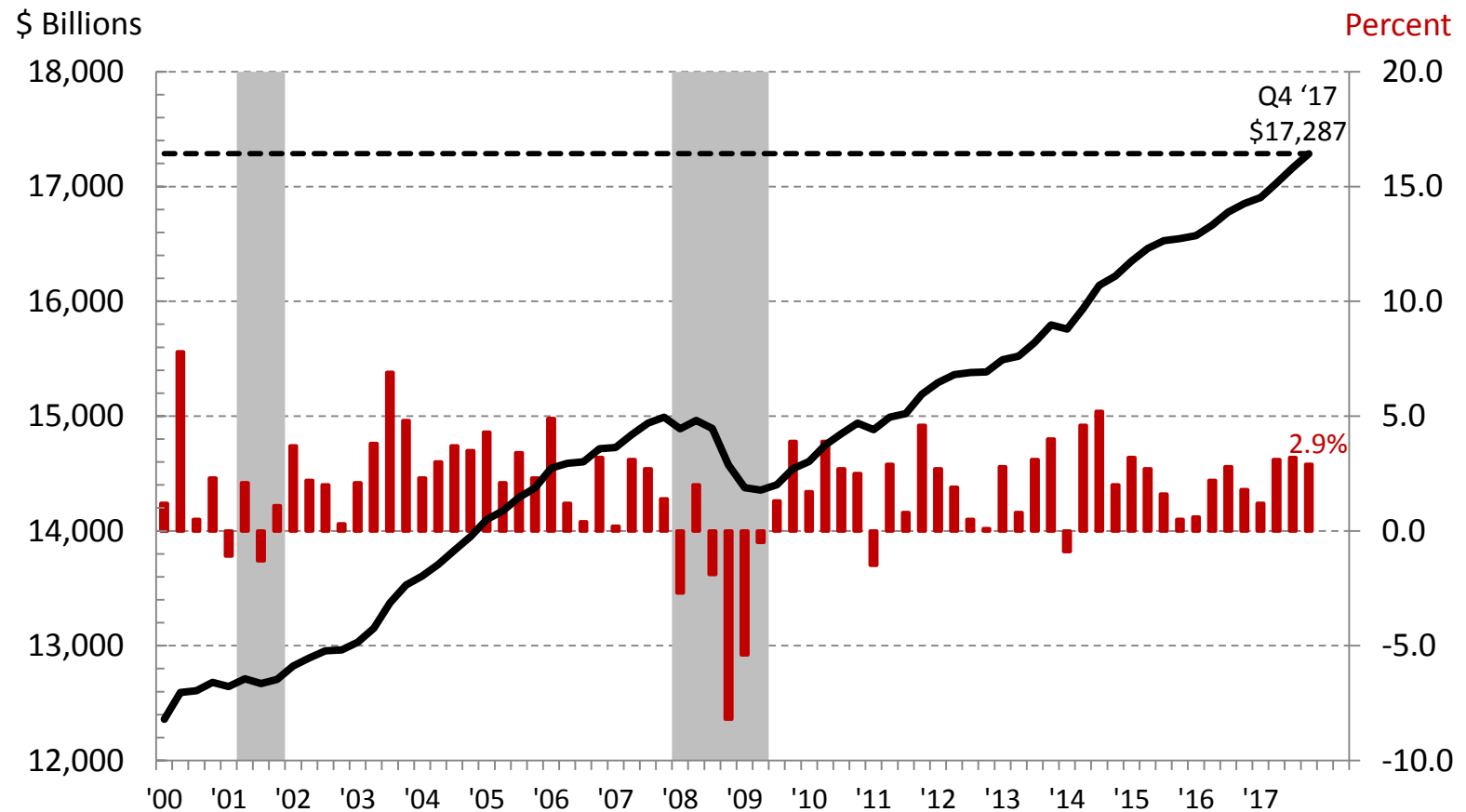
- In contrast, short-term political influences may cause pressure to over stimulate the economy resulting in output and employment gains that exceed the economy's underlying potential.
- Such gains may look good at first, but they are not sustainable and will likely create an inflationary environment that is detrimental to longer-term economic growth.
- In short, monetary policy interference can generate boom-bust cycles with high inflation and less stable economic activity.
- 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.

\* Source: Board of Governors of the Federal Reserve

# Current Economic Conditions

# U.S. Real GDP

Billions Chained \$2009, % Change Q/Q at SAAR

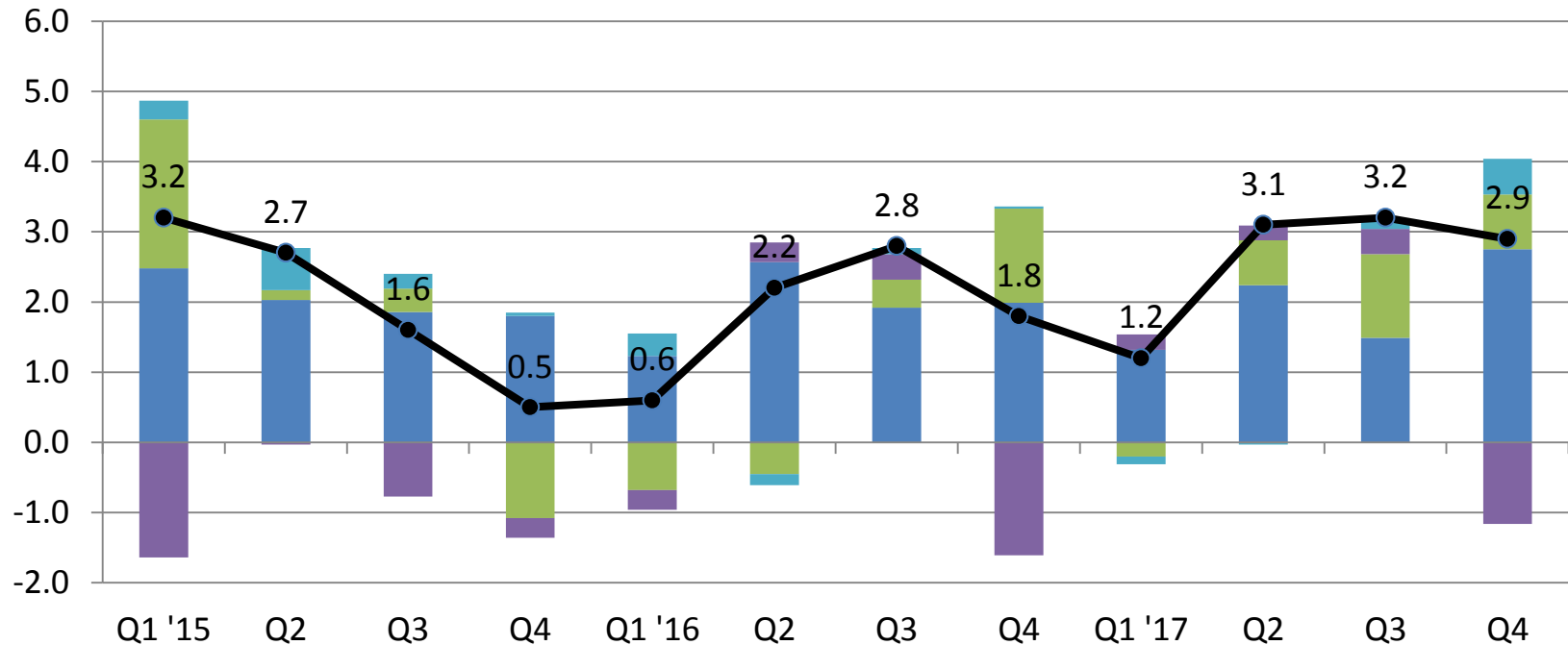


Source: U.S. Bureau of Economic Analysis

# U.S. Real GDP

## GDP and Contribution to Percent Change, Q/Q at SAAR

Percent

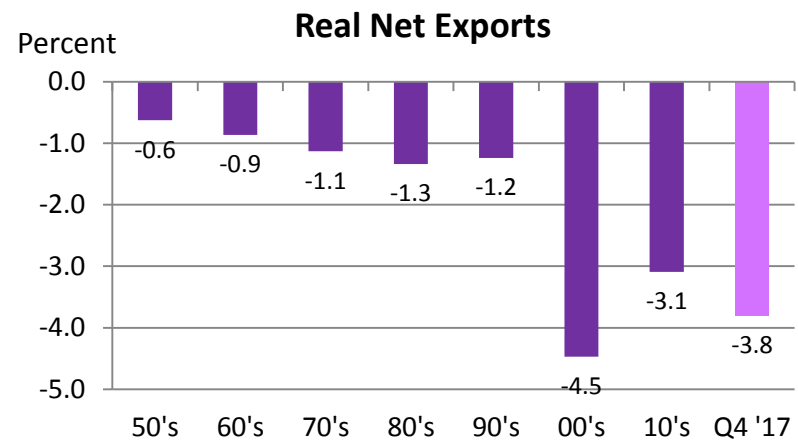
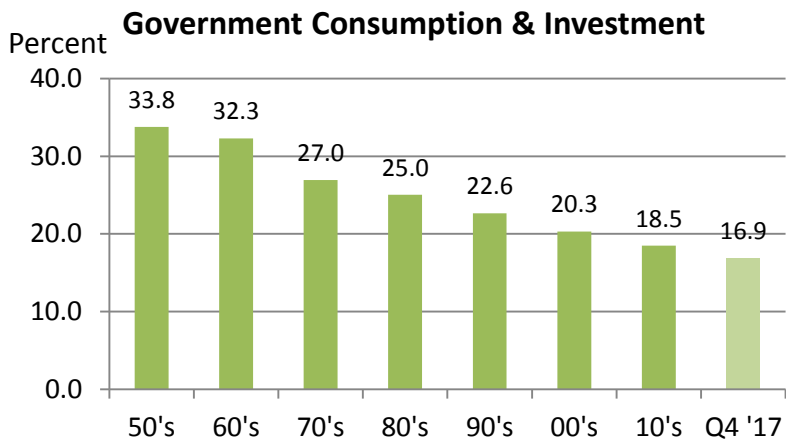
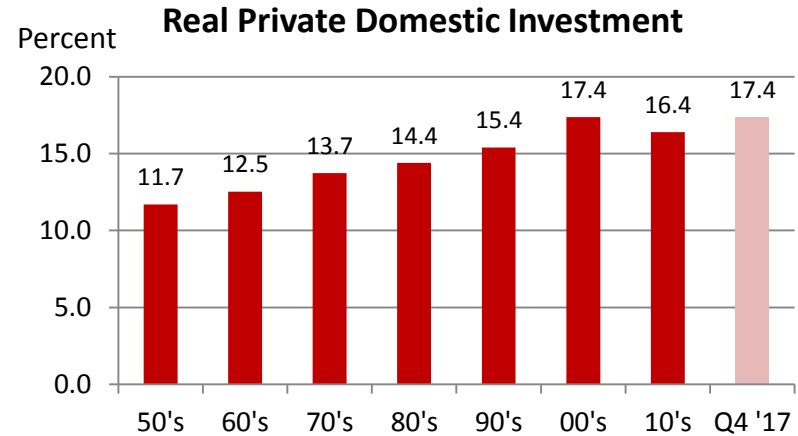
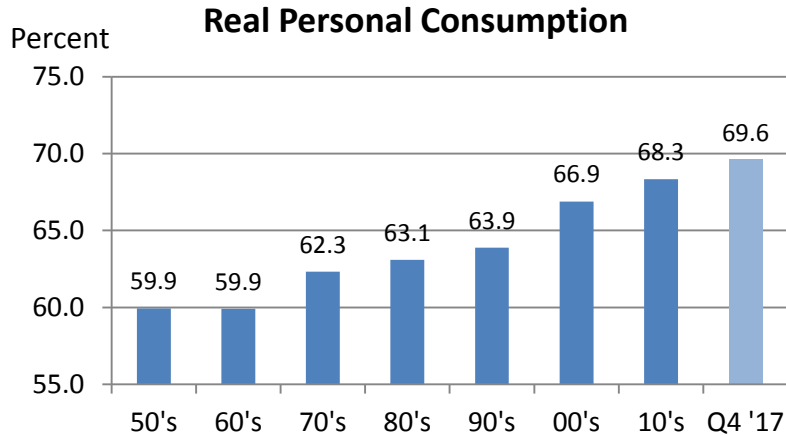


	<span style="color: blue;">■</span> PCE	<span style="color: green;">■</span> Private Investment	<span style="color: purple;">■</span> Net Exports	<span style="color: cyan;">■</span> Government	<span style="color: black;">●</span> GDP
Q4 2017					
Contribution	2.75%	0.78%	-1.16%	0.51%	2.90%

Source: U.S. Bureau of Economic Analysis, and FRB of St Louis FRED database.

# Share of U.S. Real GDP

C + I + G + Nx as Percent of GDP by Decade and 2010's YTD



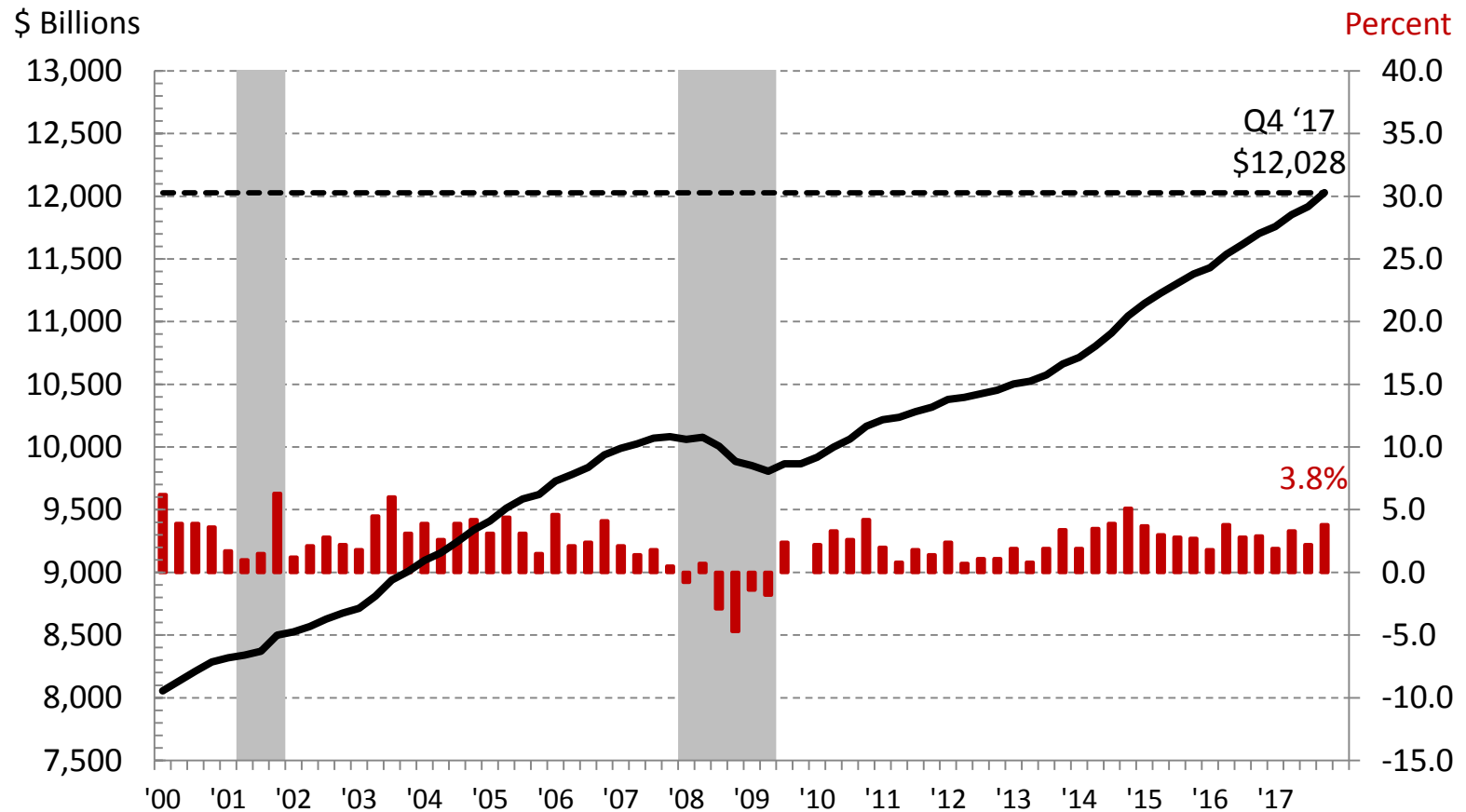
Totals may not add to 100.0 due to rounding and summing of averages.

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



# Real Personal Consumption Expenditures

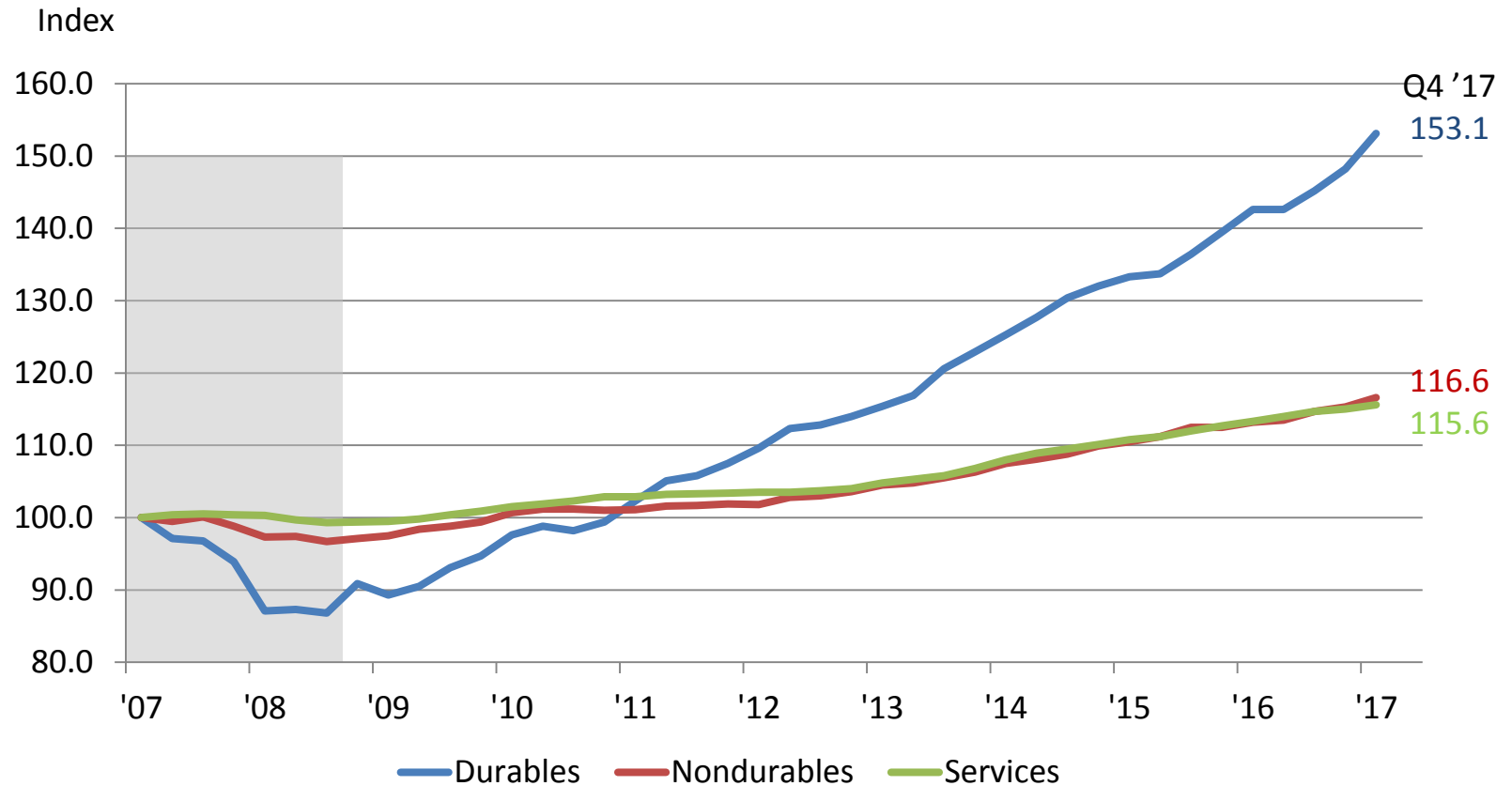
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Personal Consumption Expenditures

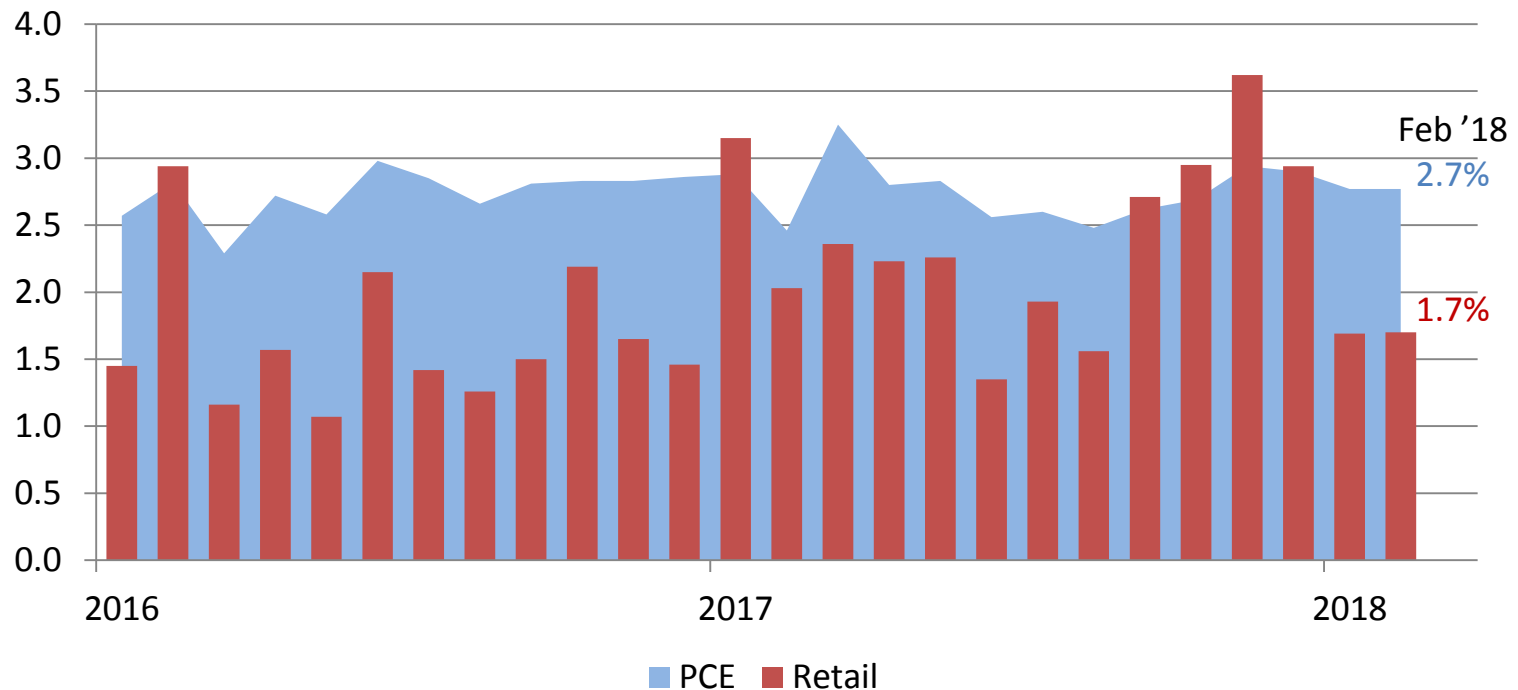
Index, Q4 2007 = 100



Source: Author's calculations using data from the BEA

# Real Personal Consumption

Real Personal Consumption Expenditures<sup>1</sup> and Retail Sales<sup>2</sup>  
Percent Change Year-over-year

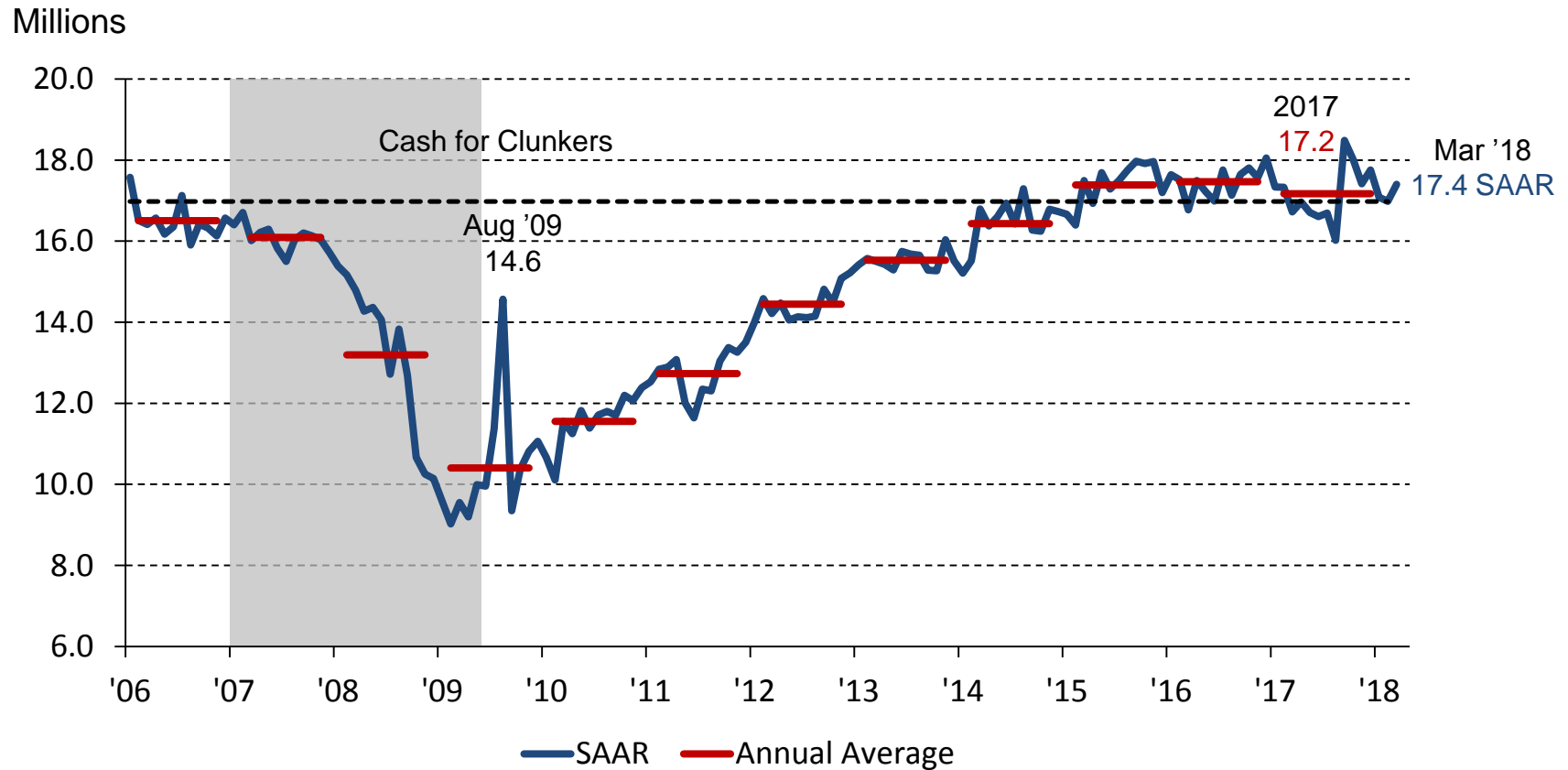


1. Real Personal Consumption Expenditures - SAAR
2. Real Retail Sales and Food Services - SA

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

# U.S. Light Vehicle Sales

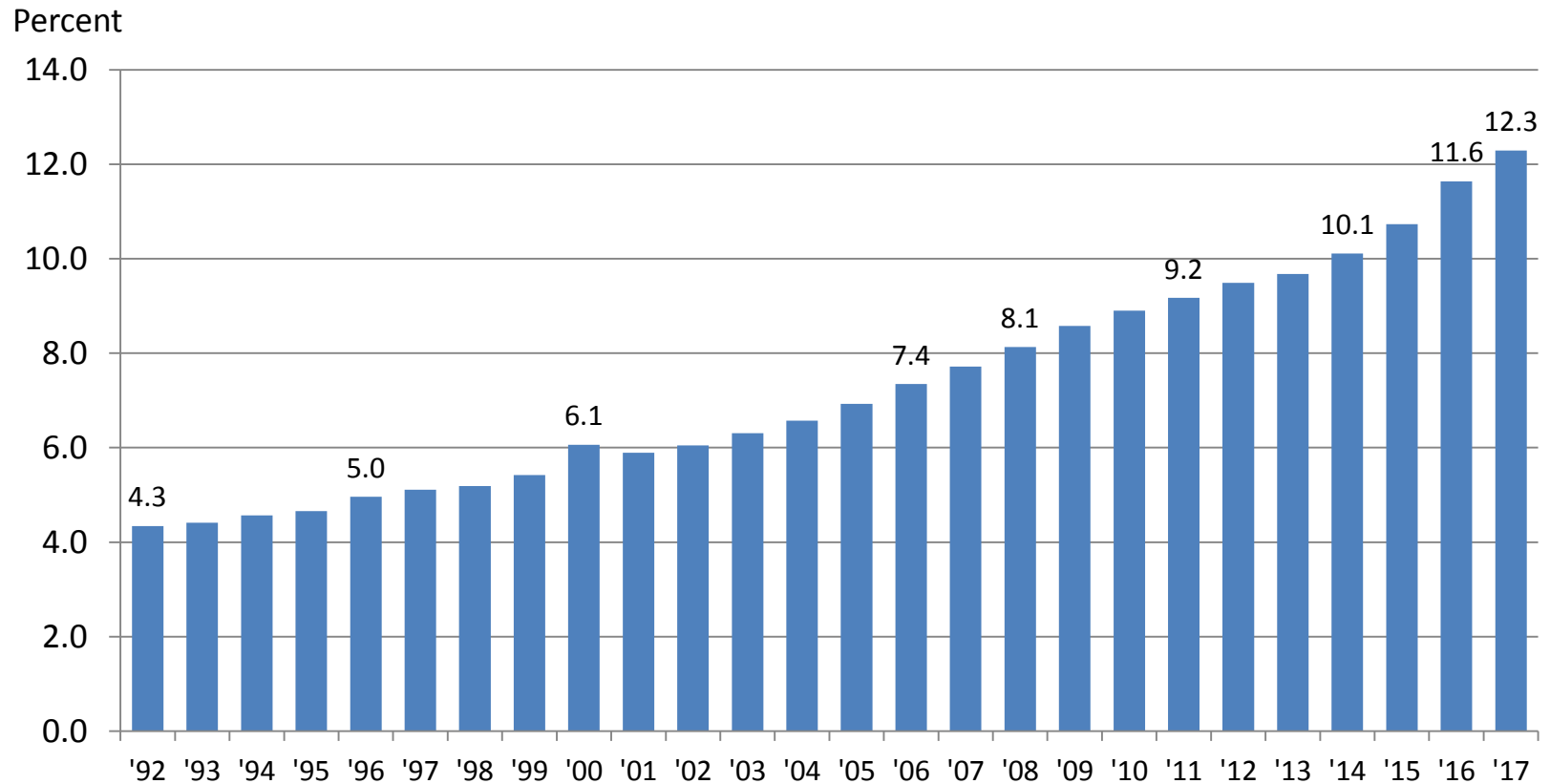
S.A.A.R – Millions of Units



Source: Ward's Automotive and BEA

# Non-store Retail Sales

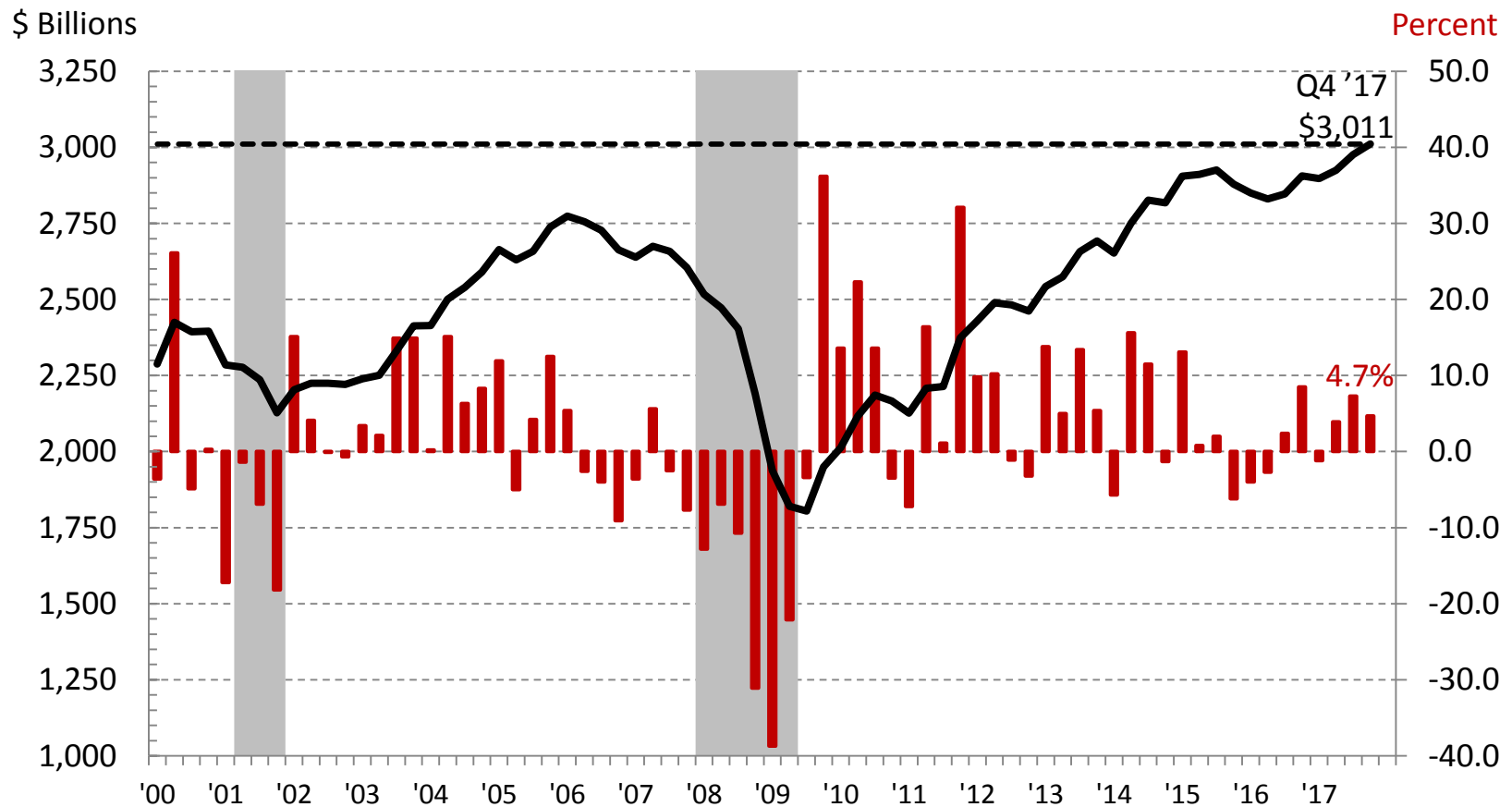
As a Percent of Total Retail Less Food Services – Calendar Year



Source: Author's calculation using U.S. Census Bureau data.

# Real Gross Private Domestic Investment

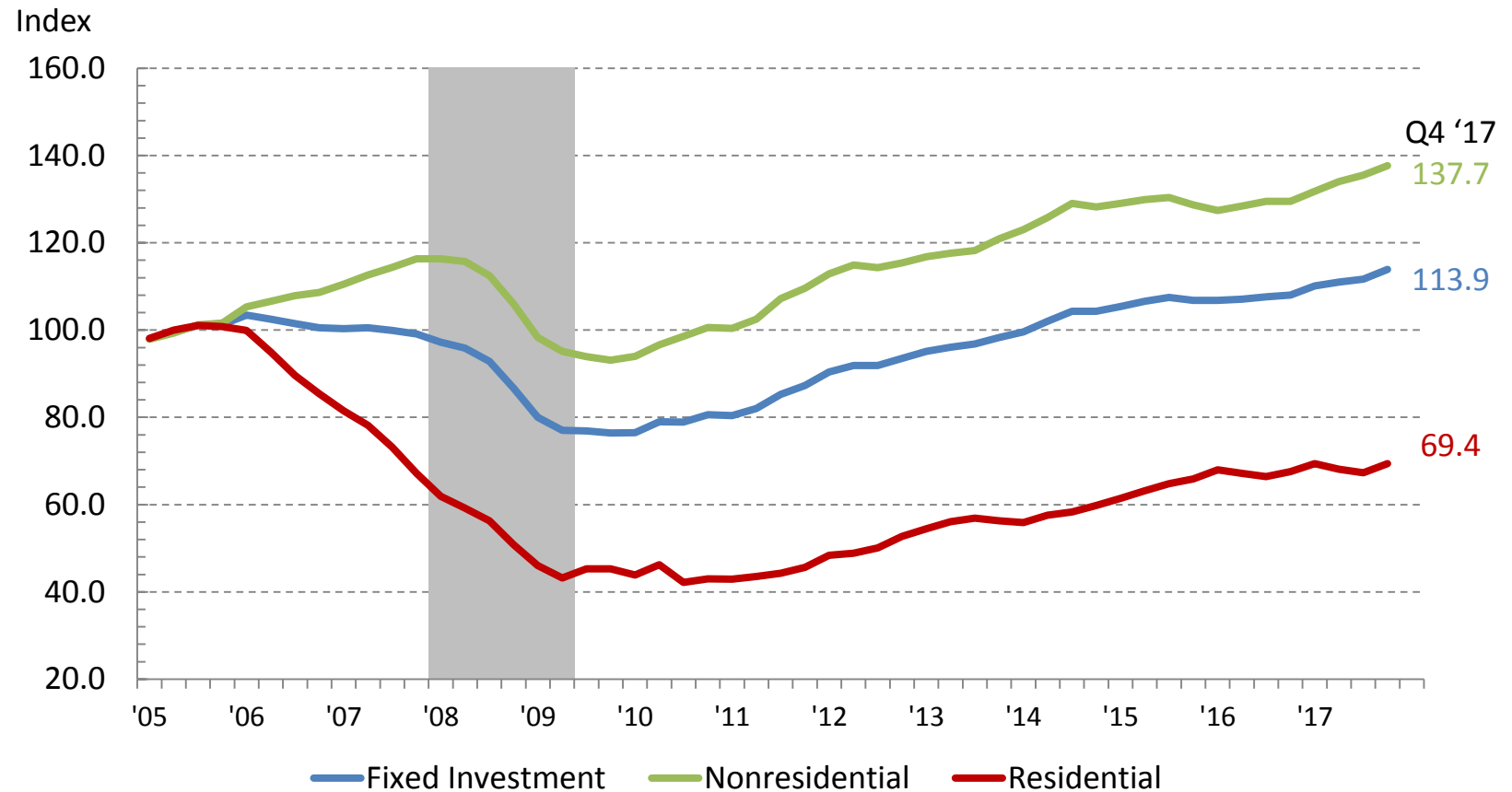
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Private Fixed Investment

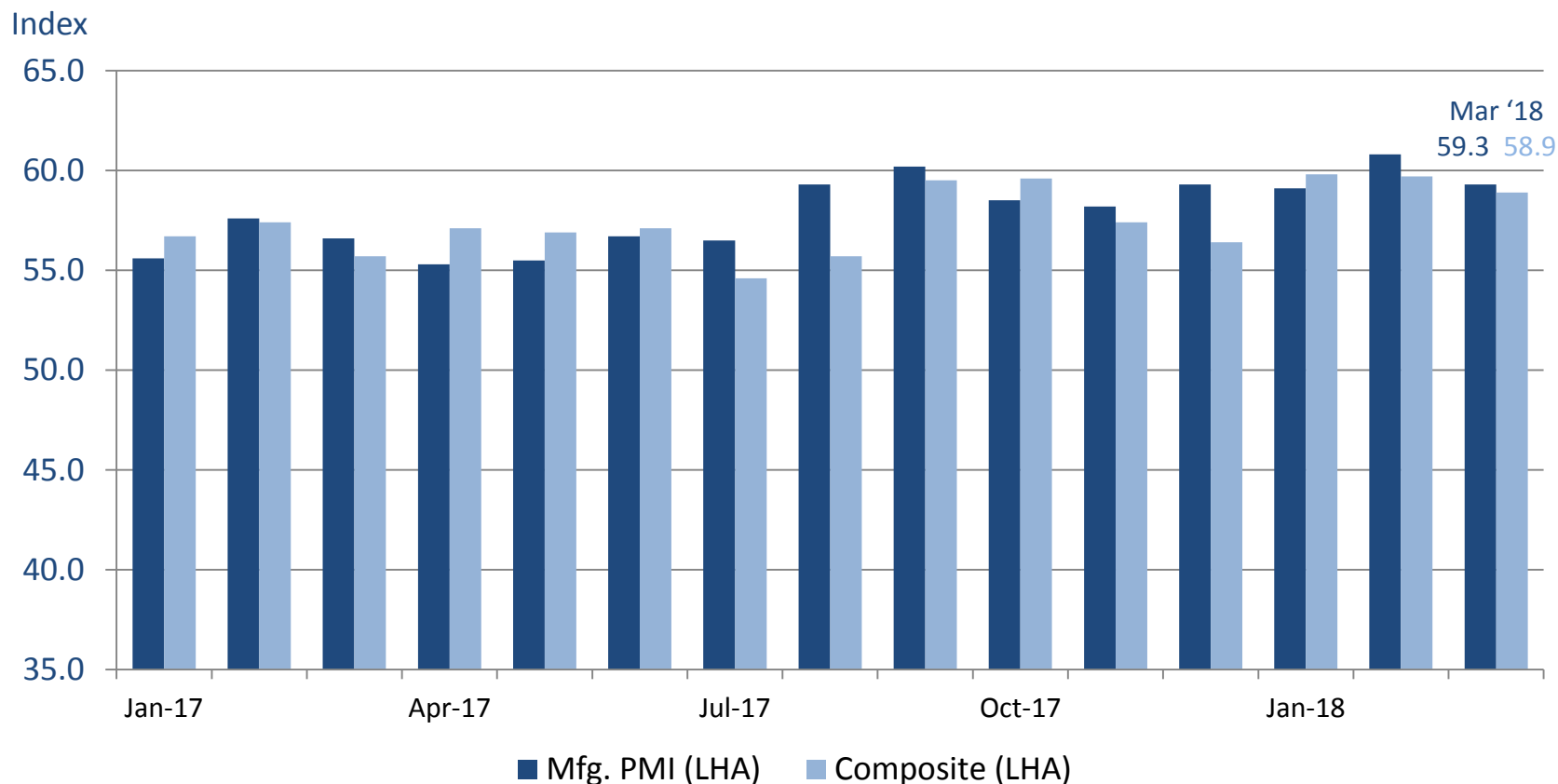
Billions Chained \$2009, Index – 2005 = 100



Source: U.S. Bureau of Economic Analysis

# ISM Purchasing Managers Index

Manufacturing & Composite, SA - Greater than 50 = Expansion

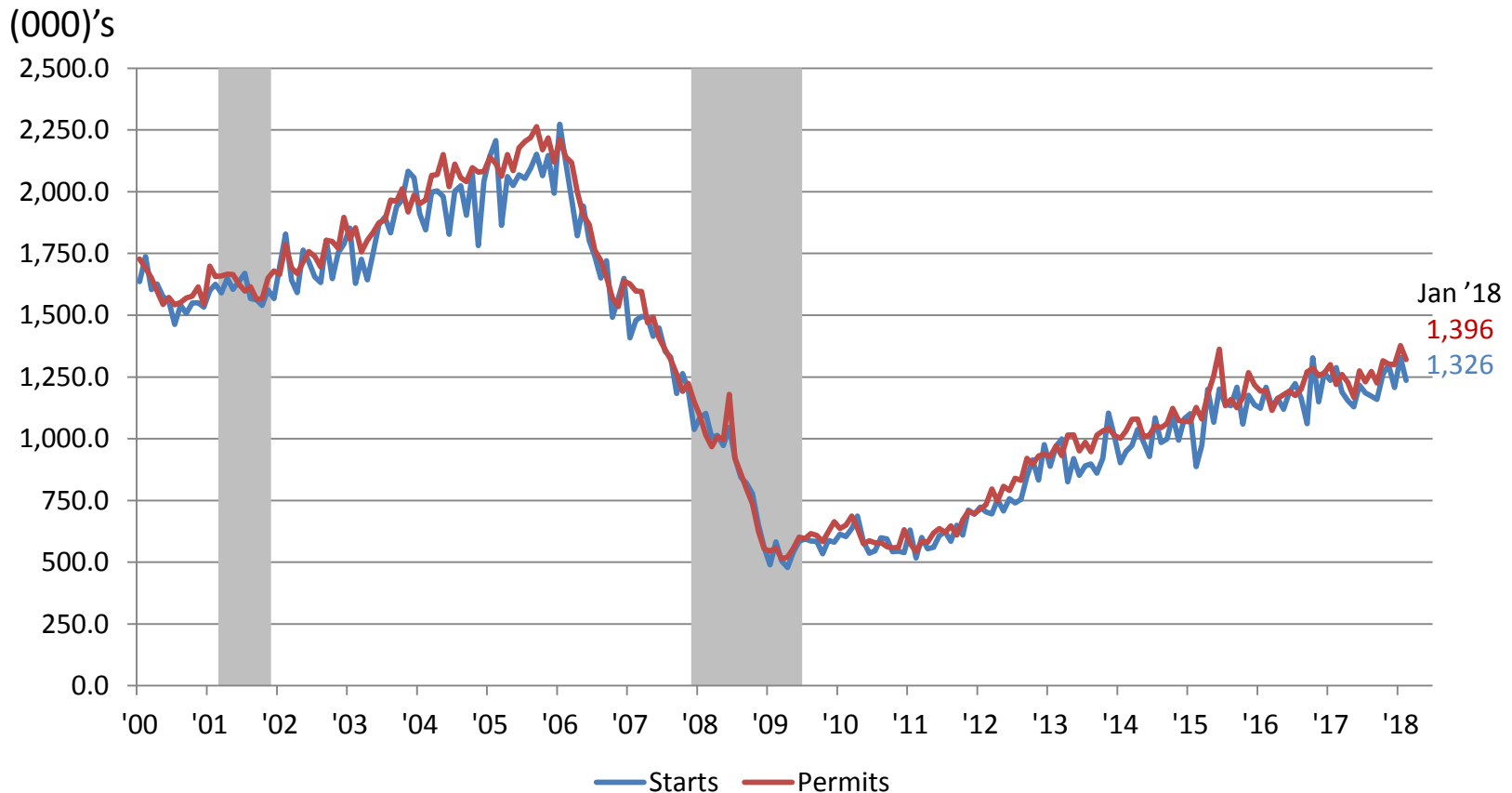


Source: Institute for Supply Management , Haver Analytics and FRED



# New Private Housing

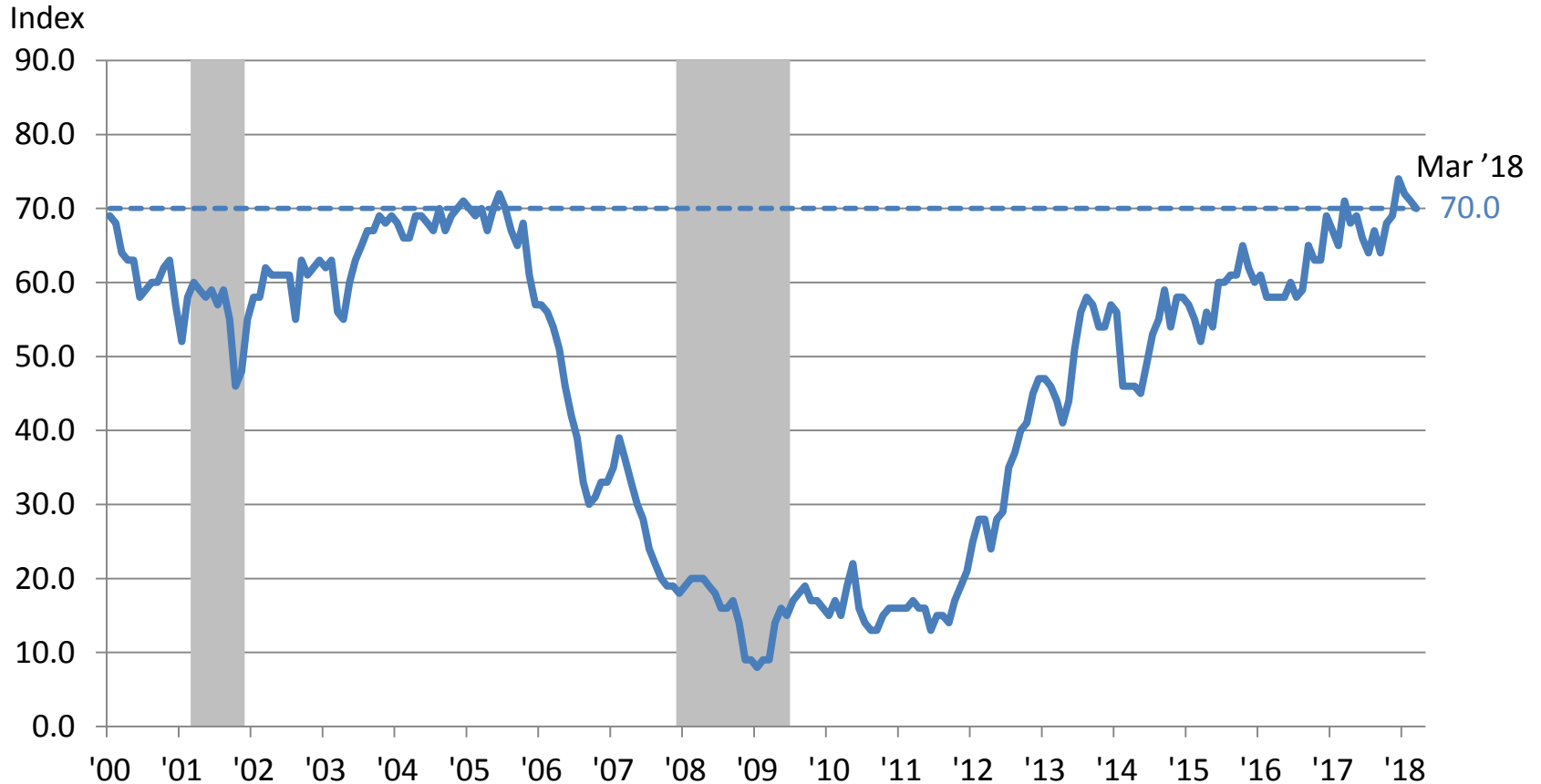
## Starts and Permits – Units (SAAR)



Source: Board of Governors, Federal Reserve and U.S. Census Bureau

# Housing Market Index

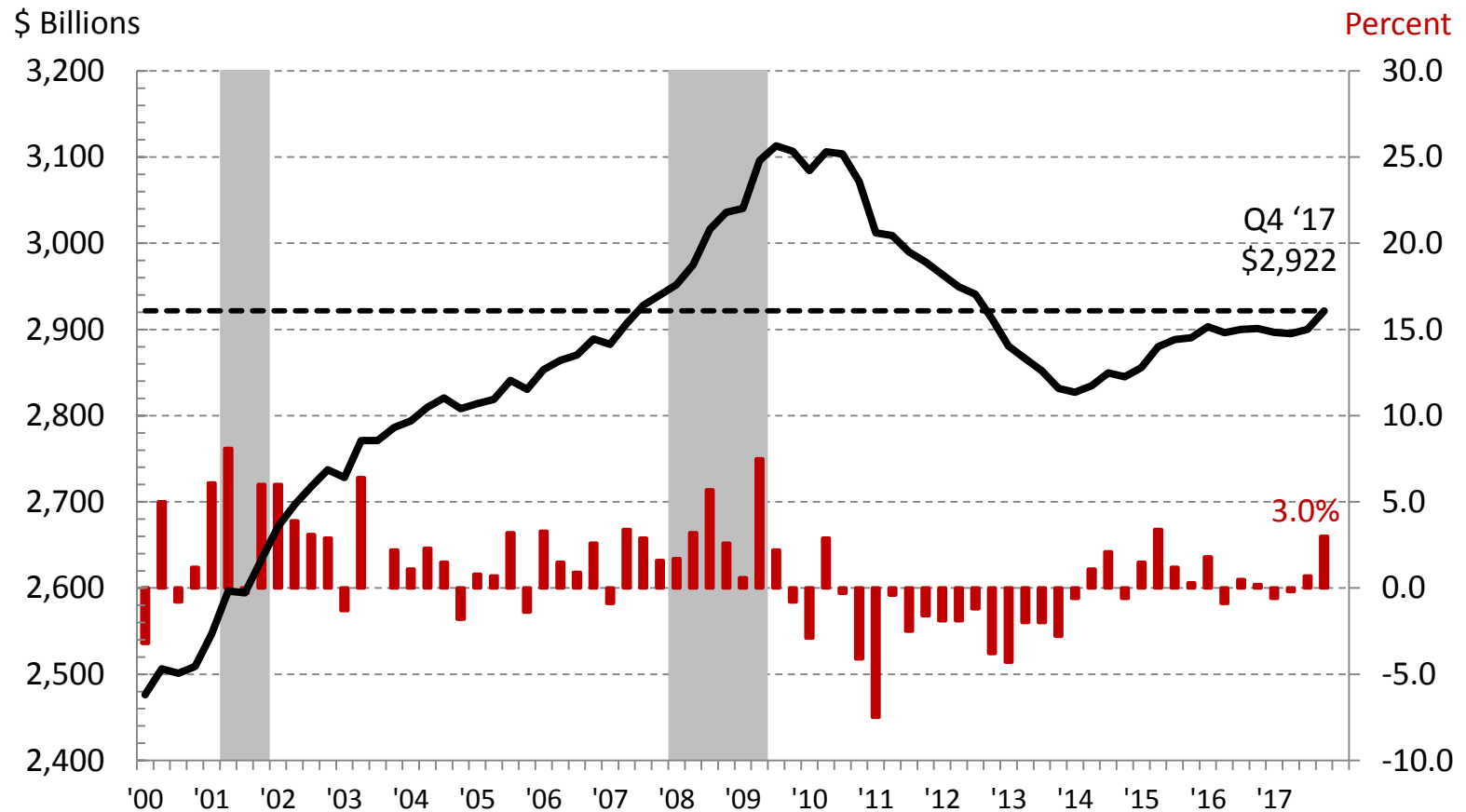
Index All Good = 100, SA



Source: National Association of Home Builders and Haver Analytics.

# Real Government Consumption & Investment

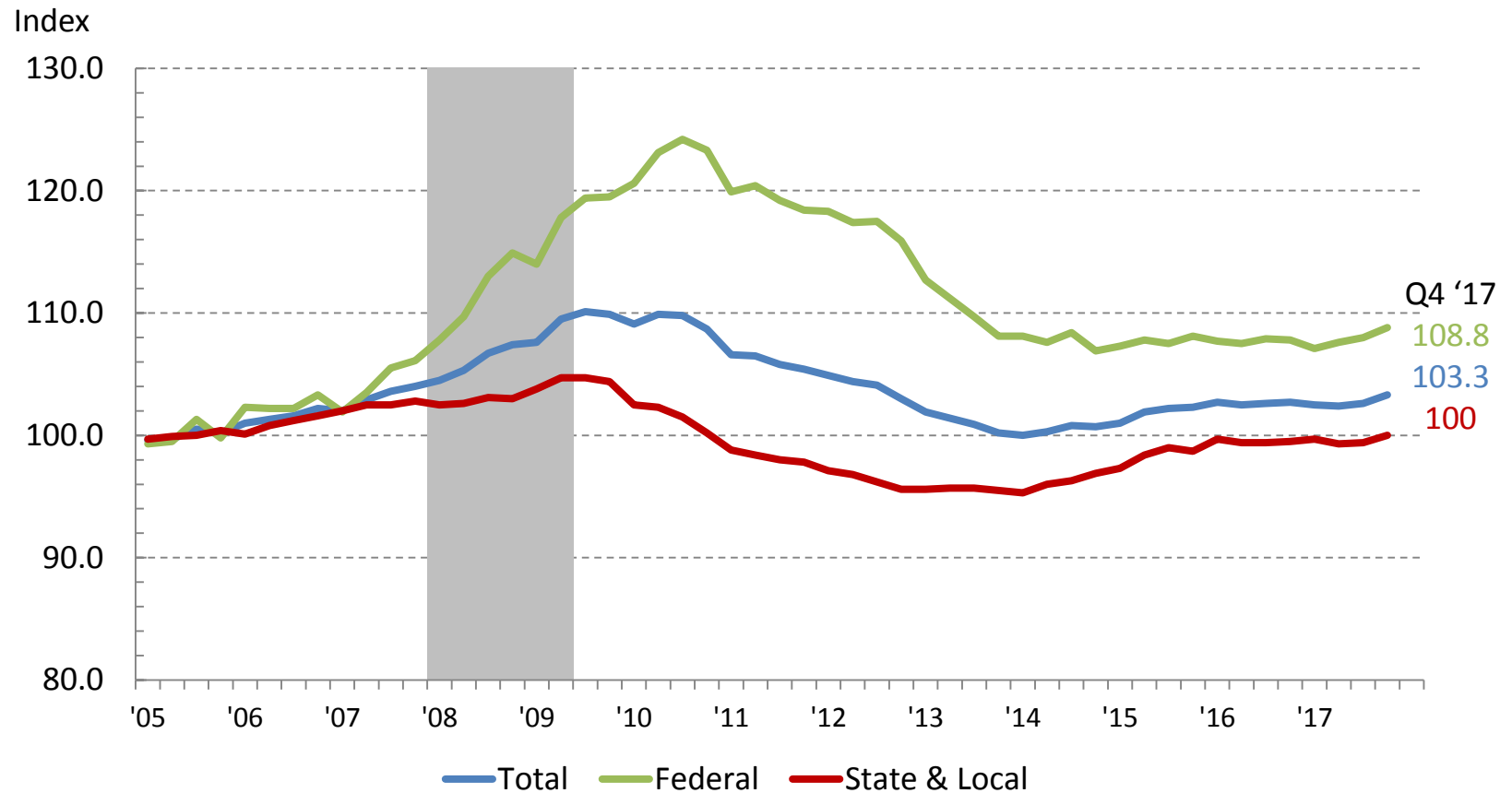
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Government Consumption & Investment

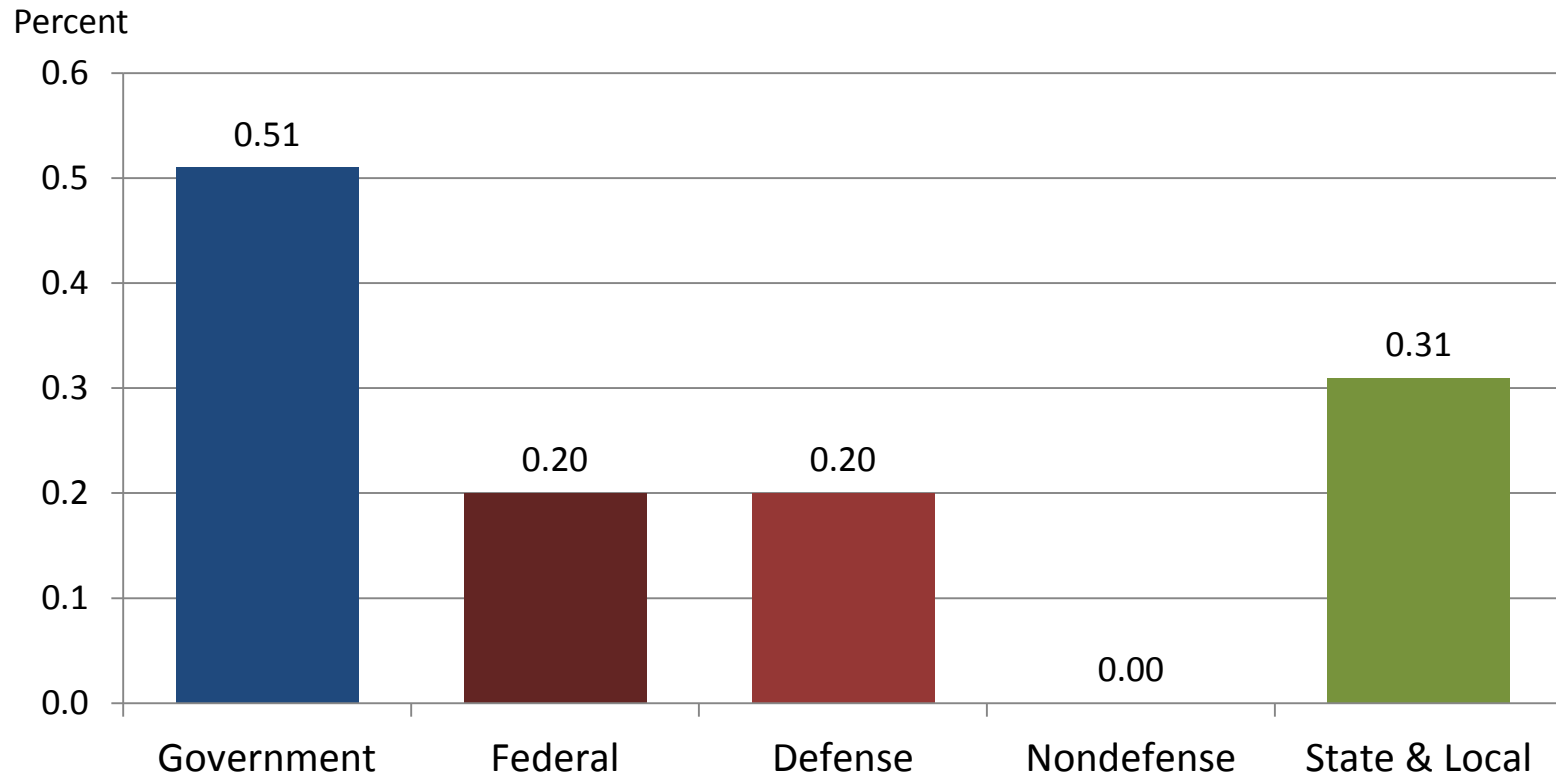
Billions Chained \$2009, Index – 2005 = 100



Source: U.S. Bureau of Economic Analysis

# Real Government Consumption & Gross Investment

Contribution to Percent Change, Q/Q at SAAR

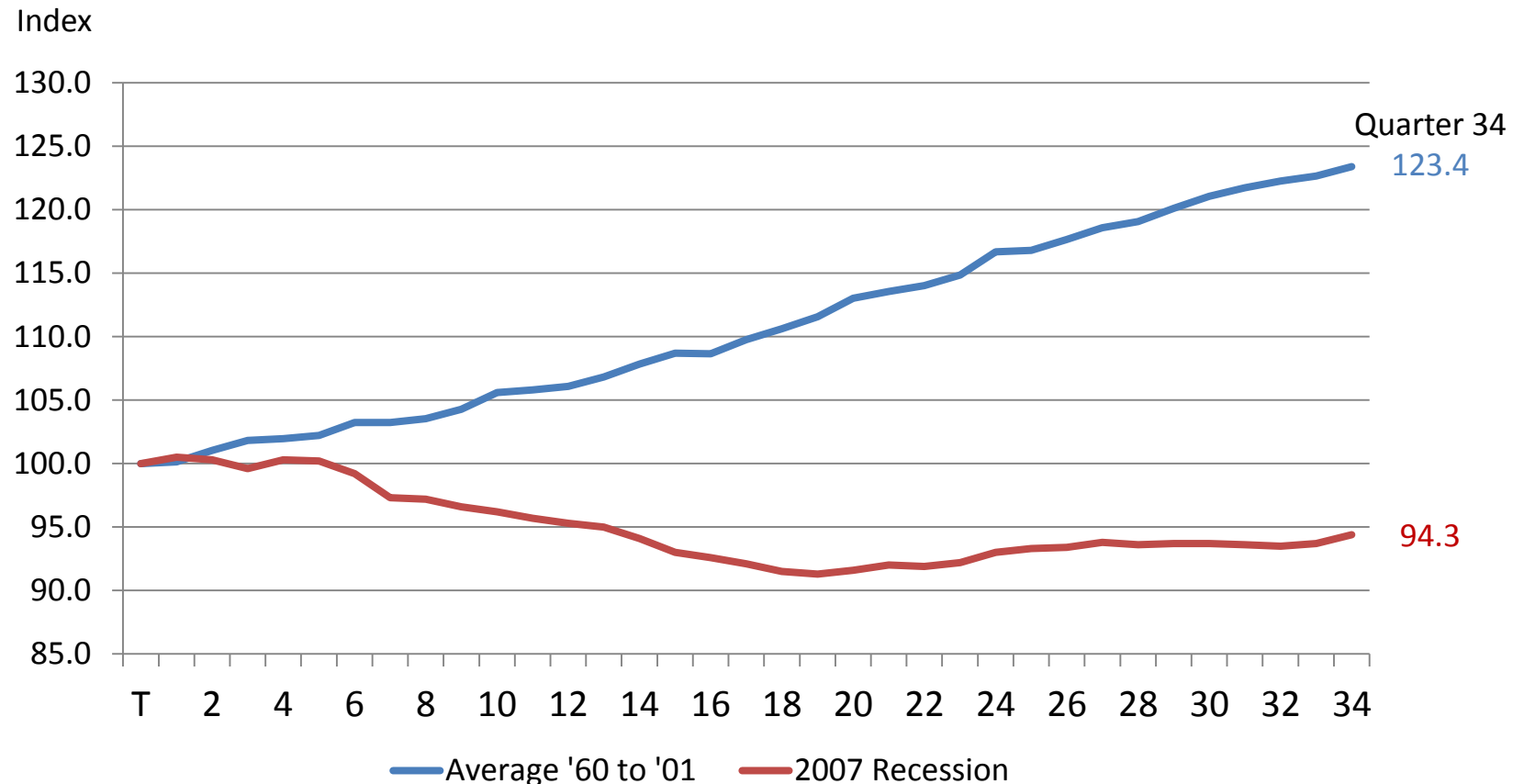


Totals may not sum due to rounding.

Source: U.S. Bureau of Economic Analysis

# Real Total Government Consumption & Investment

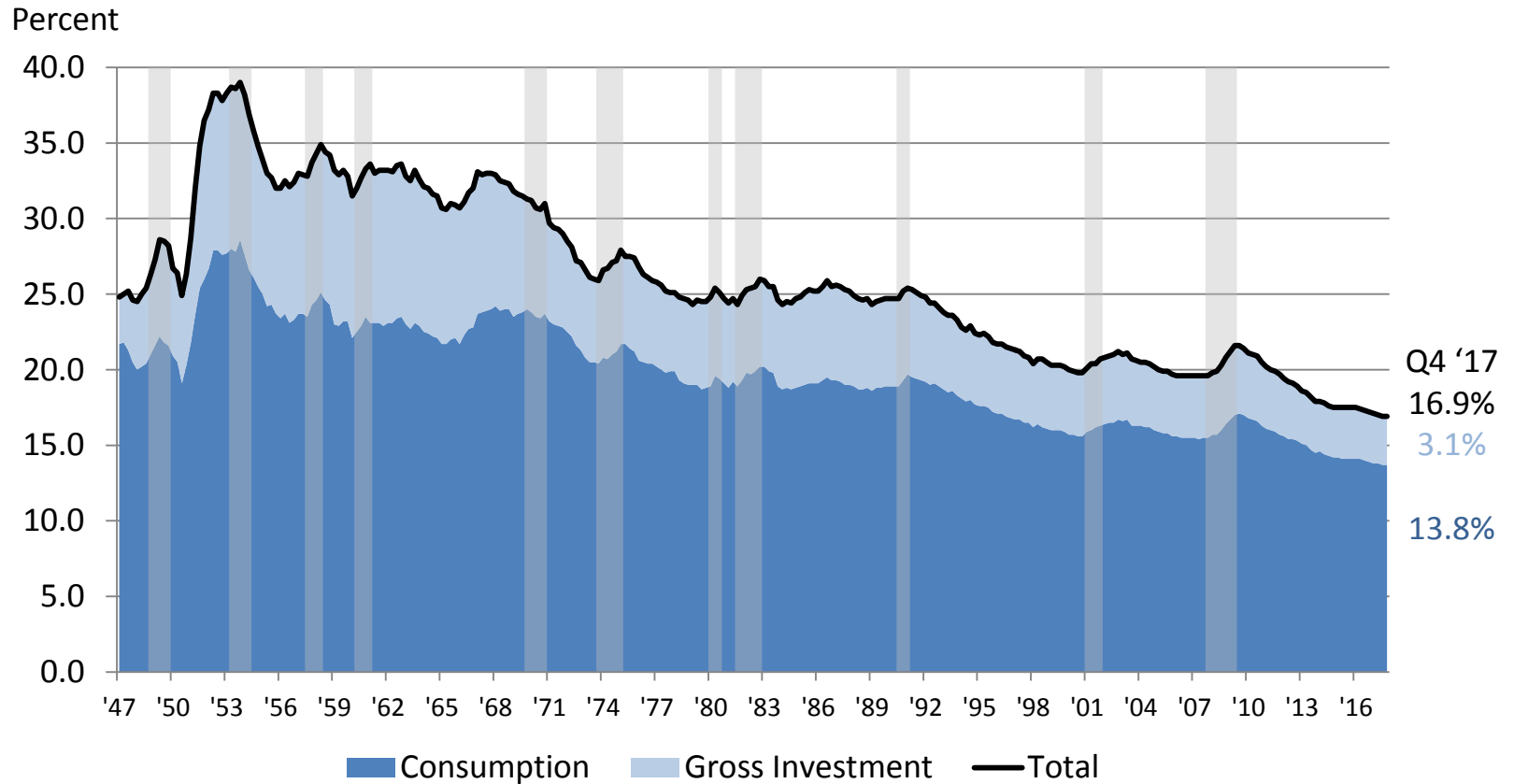
Average Post-Recession Recovery, Index – Recession Trough = 100



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

# Real Government Consumption & Gross Investment

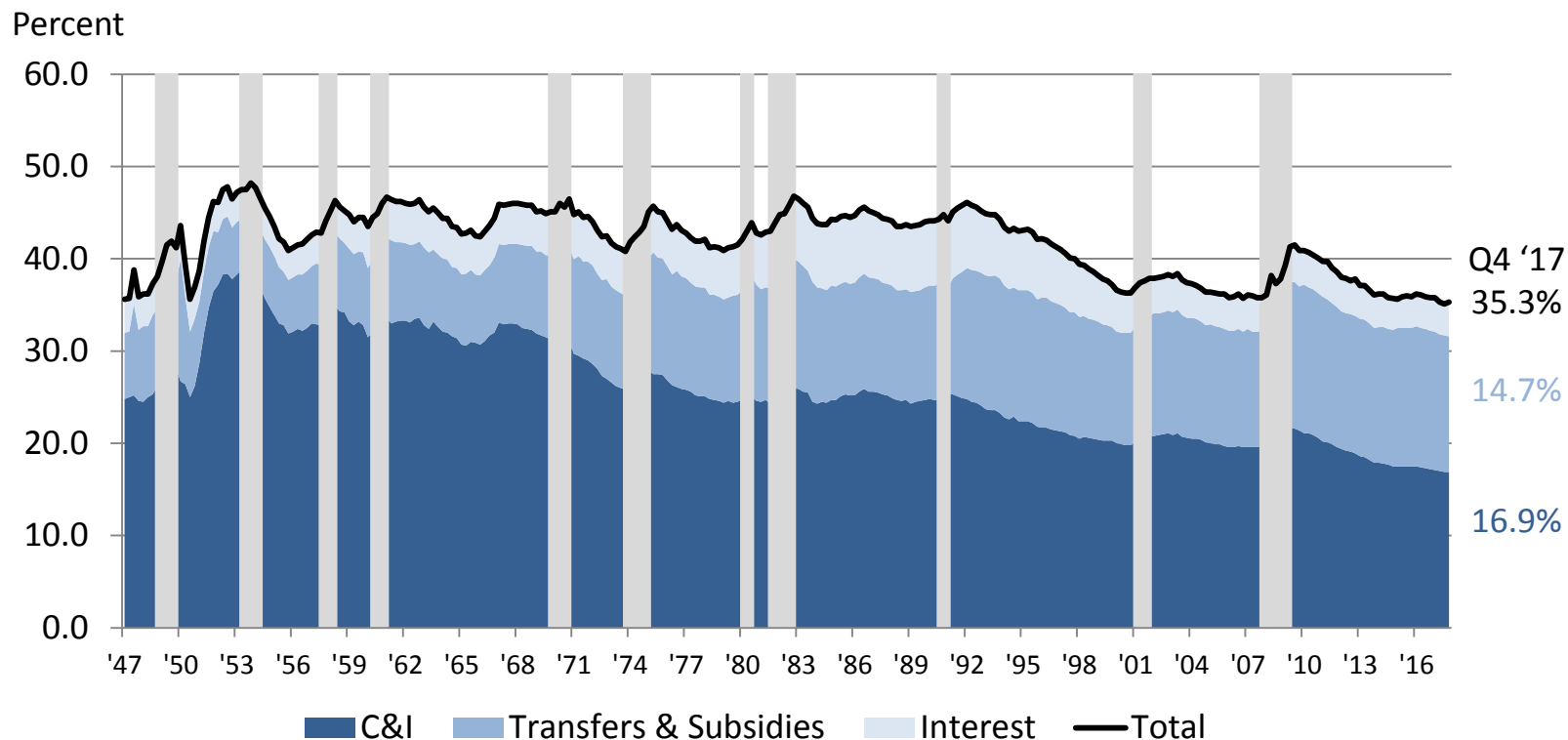
Percent of Total Real GDP - \$2009



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

# Real Total Government Expenditures<sup>1</sup>

Percent of Total Real GDP - \$2009



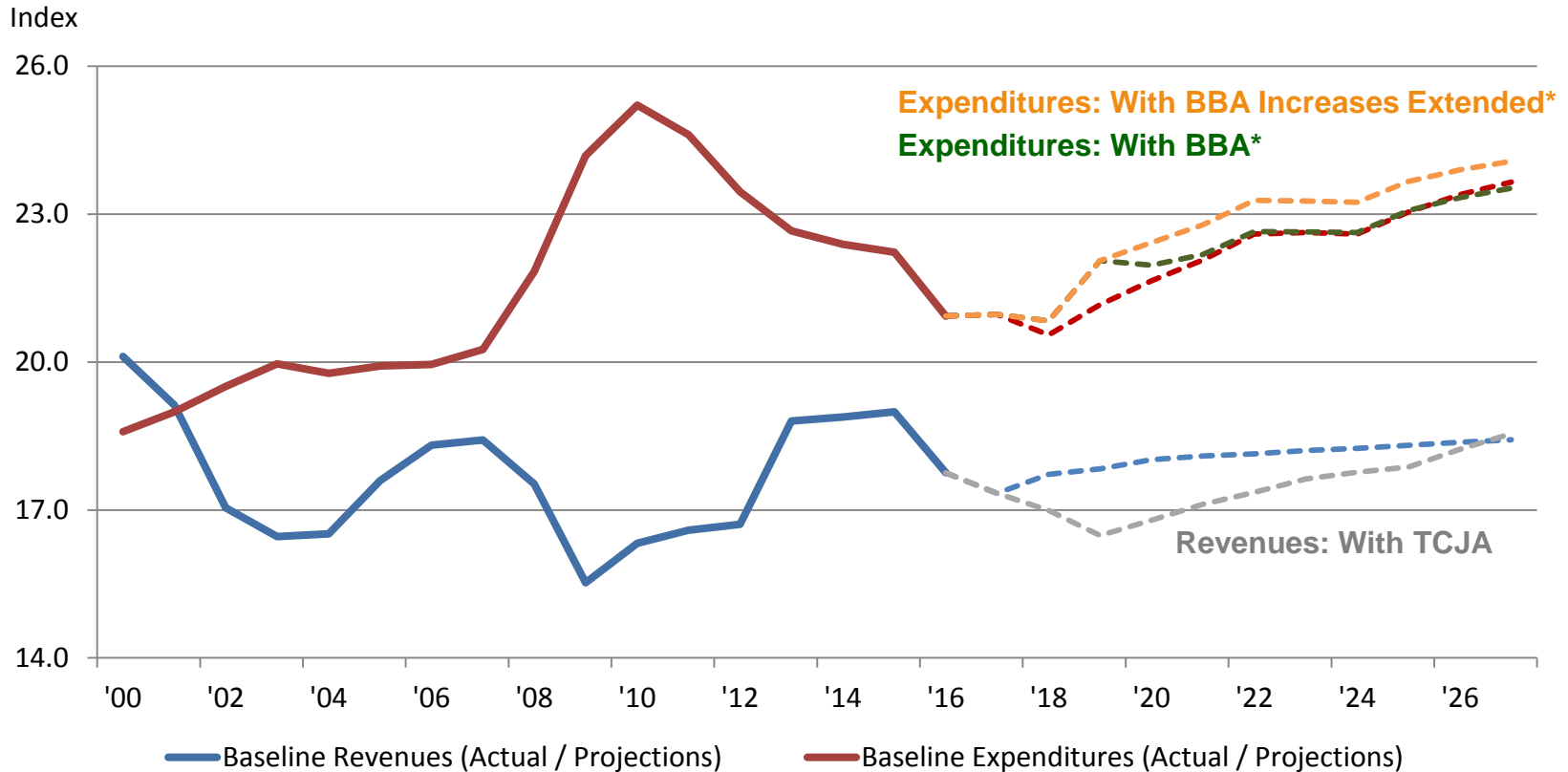
1. Includes Government Consumption, Investment, Transfer Payments, Interest Payments, and Subsidies.

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



# Federal Expenditures and Receipts

## Actual and Projections (Percent of GDP)



Bipartisan Budget Act (BBA)

Tax Cut & Jobs Act (TCJA)

\* FRBCHI staff estimates.

# The U.S. Dollar and Import Price Index

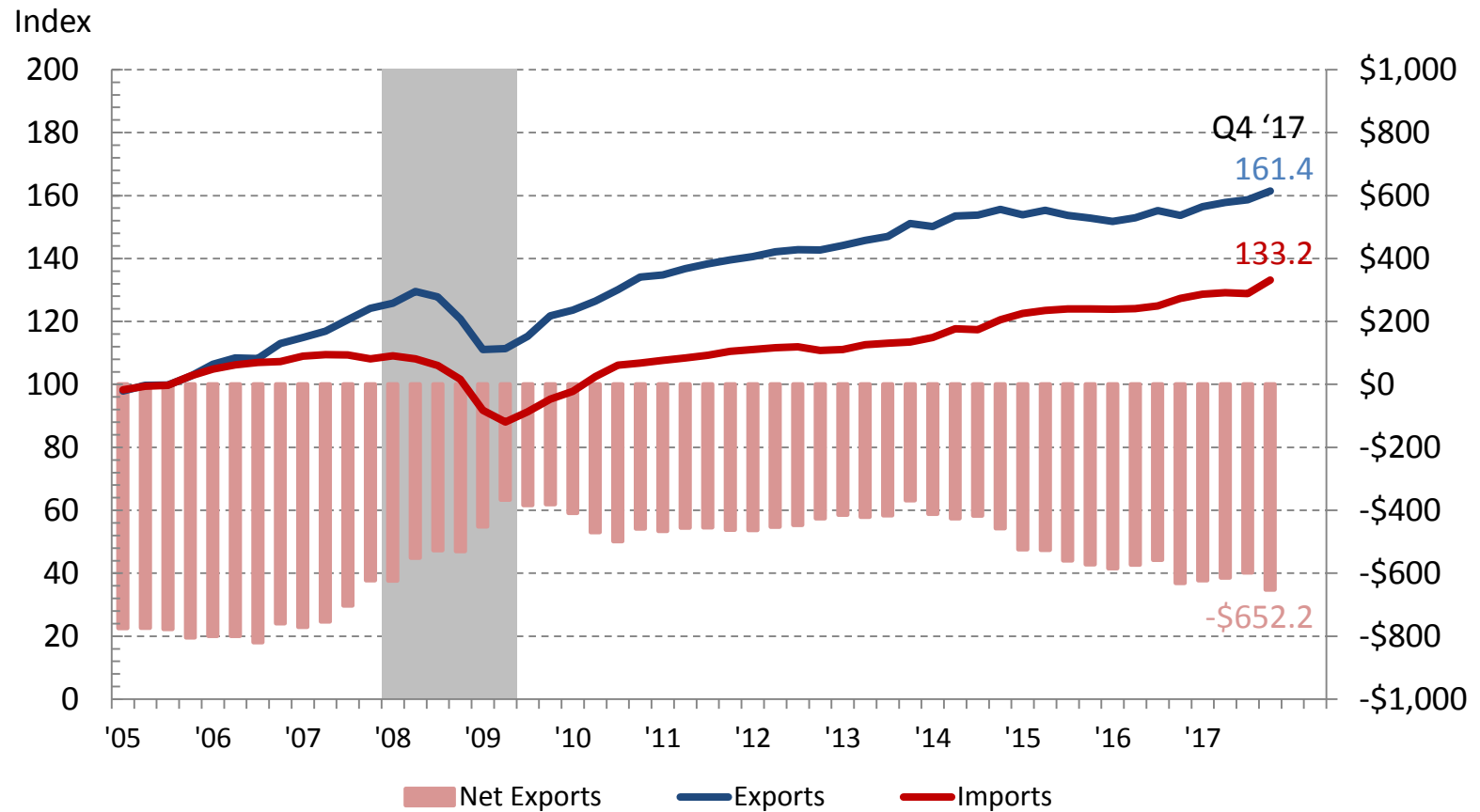
Index 2012 = 100



Source: Board of Governors, Federal Reserve and Bureau of Labor Statistics.

# Real Imports and Exports

Billions Chained \$2009, Index – 2005 = 100



Source: U.S. Bureau of Economic Analysis

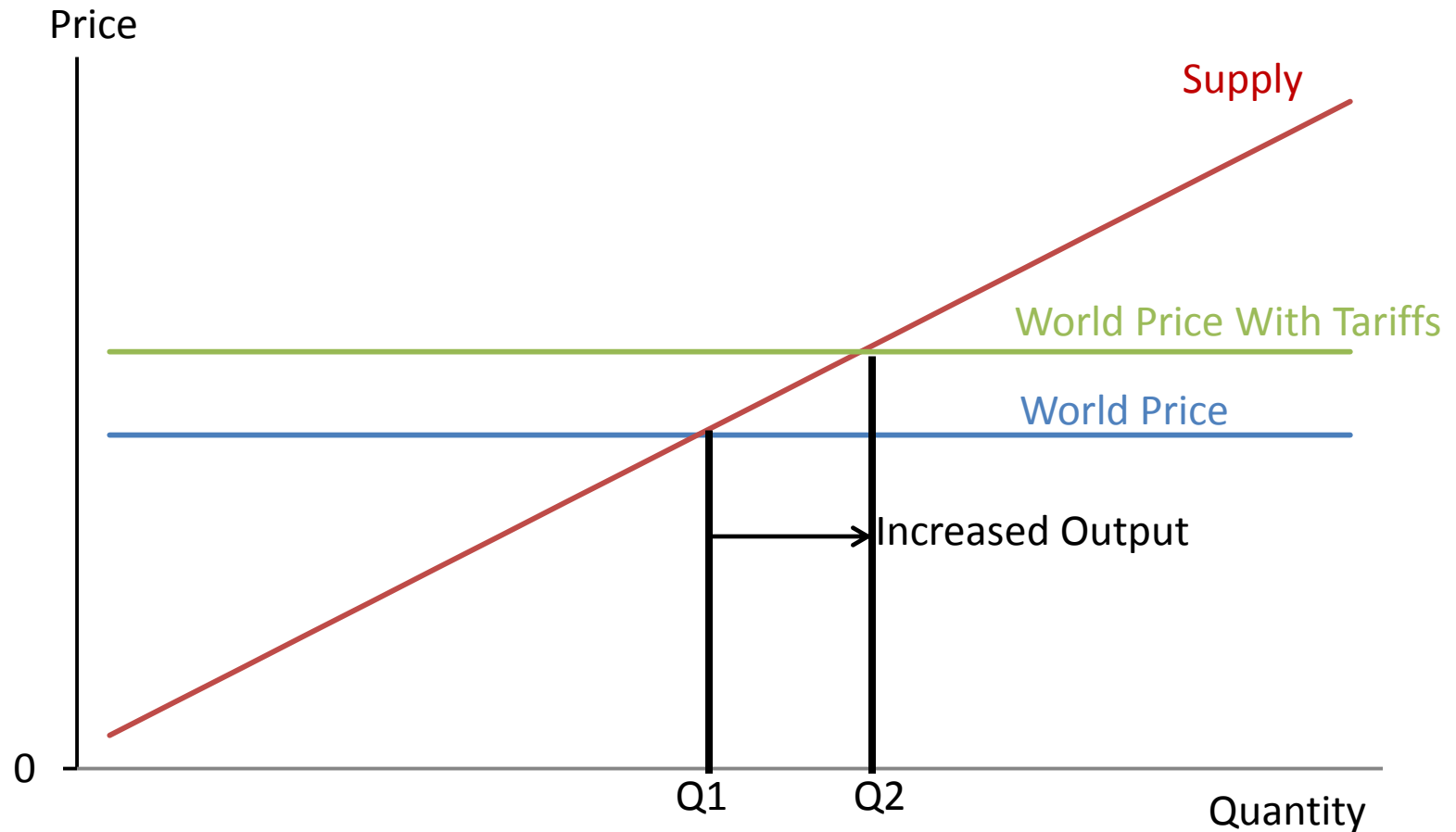
# Negative Effects of Tariffs

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- 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

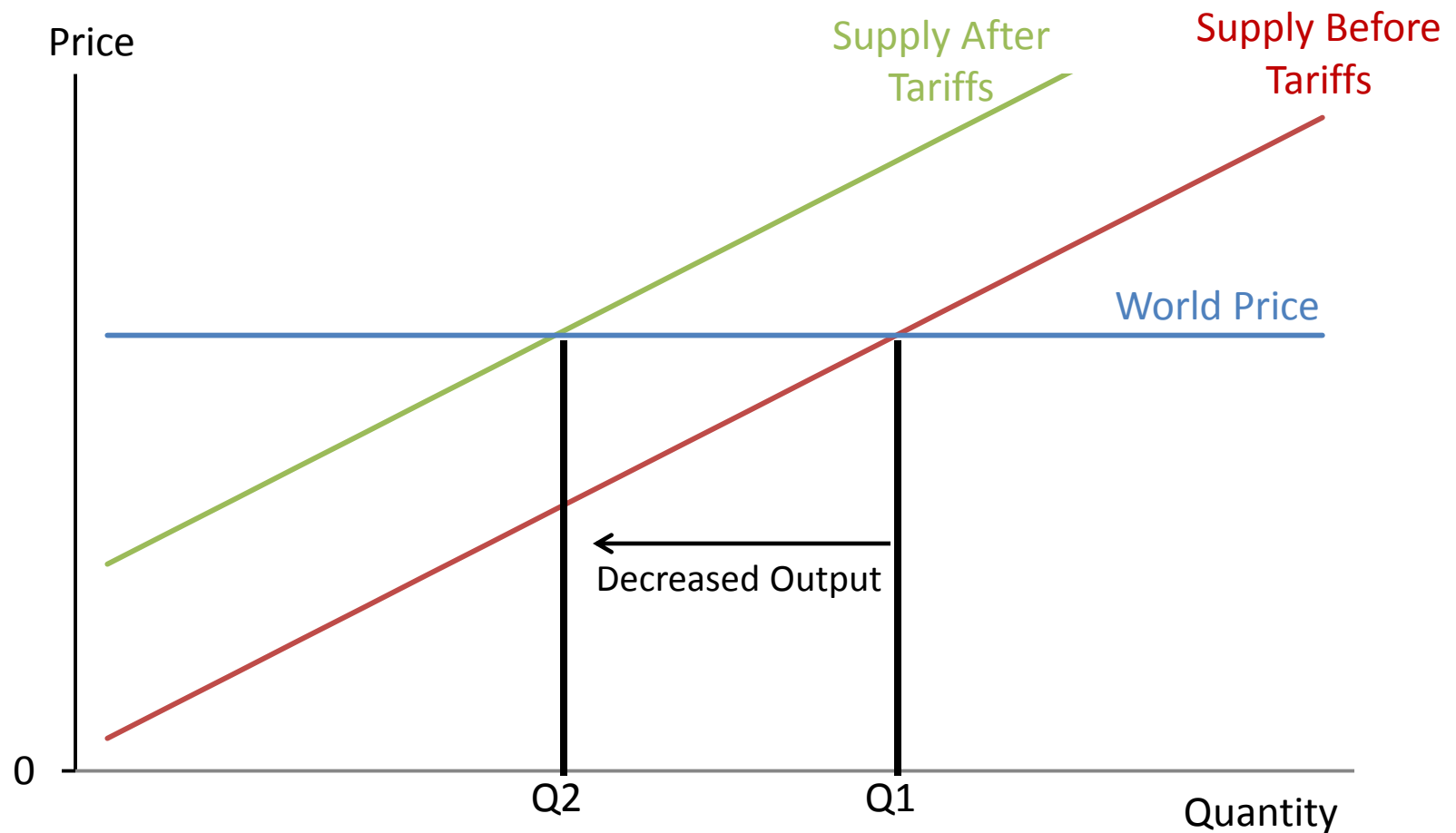
# Trade and Tariffs

## Impact on Intermediate Goods Production (Steel)



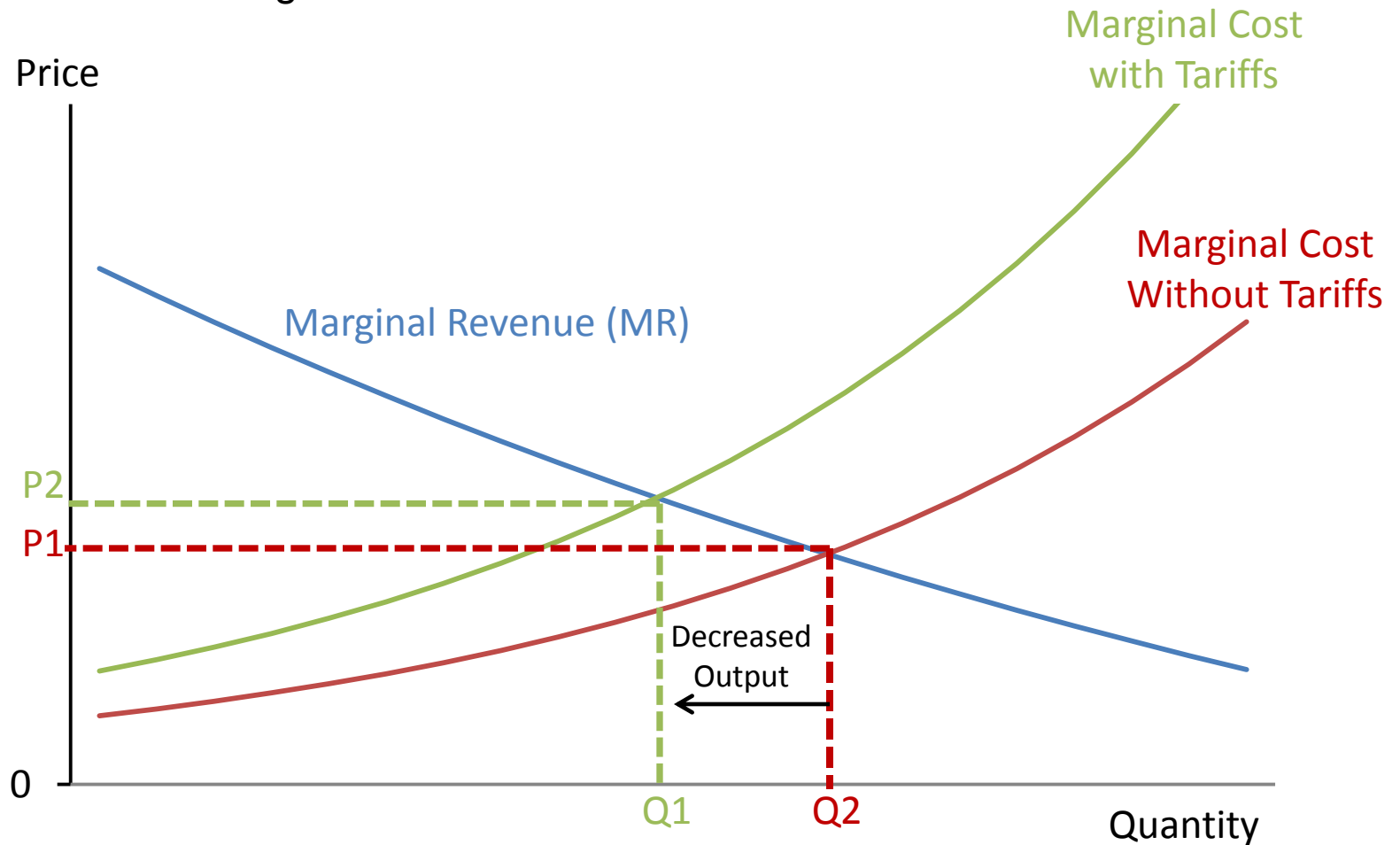
# Trade and Tariffs

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



# Profit Maximization

Marginal Cost = Marginal Revenue

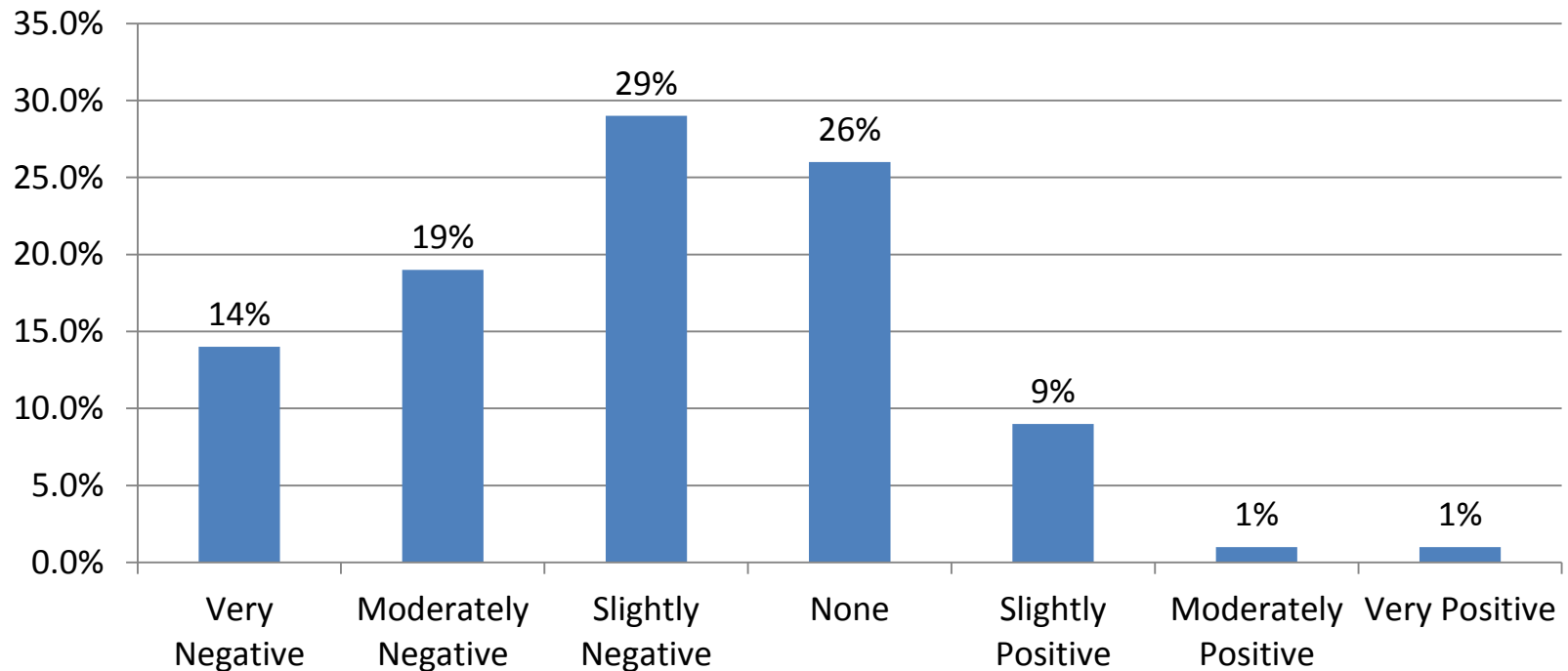


# Trade & Tariffs

## Beige Book Tariff Survey Question 1

What kind of impact will the new steel and aluminum tariffs have on your firm?

Percent



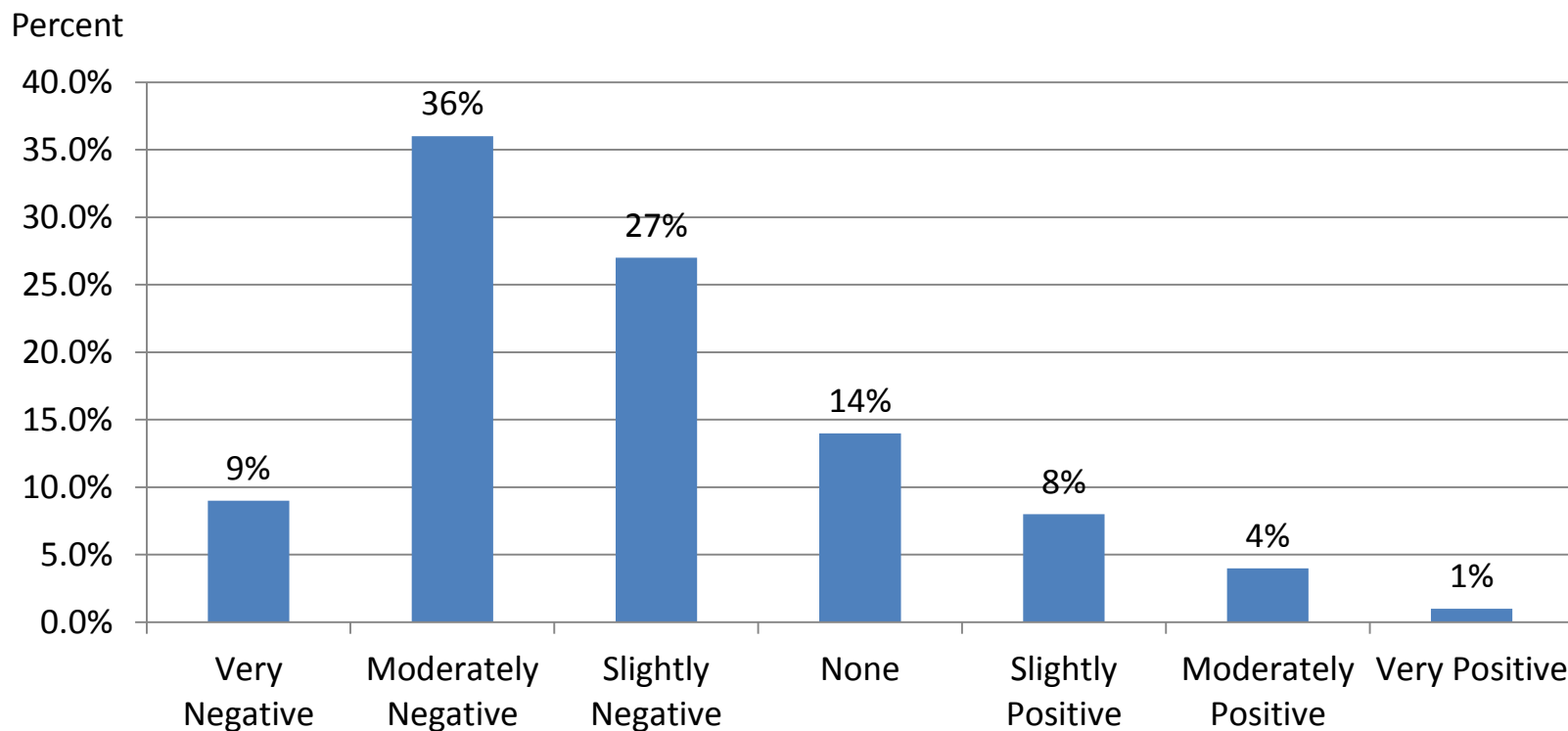
Source: Chicago Fed Survey of Business Conditions.



# Trade & Tariffs

## Beige Book Tariff Survey Question 1

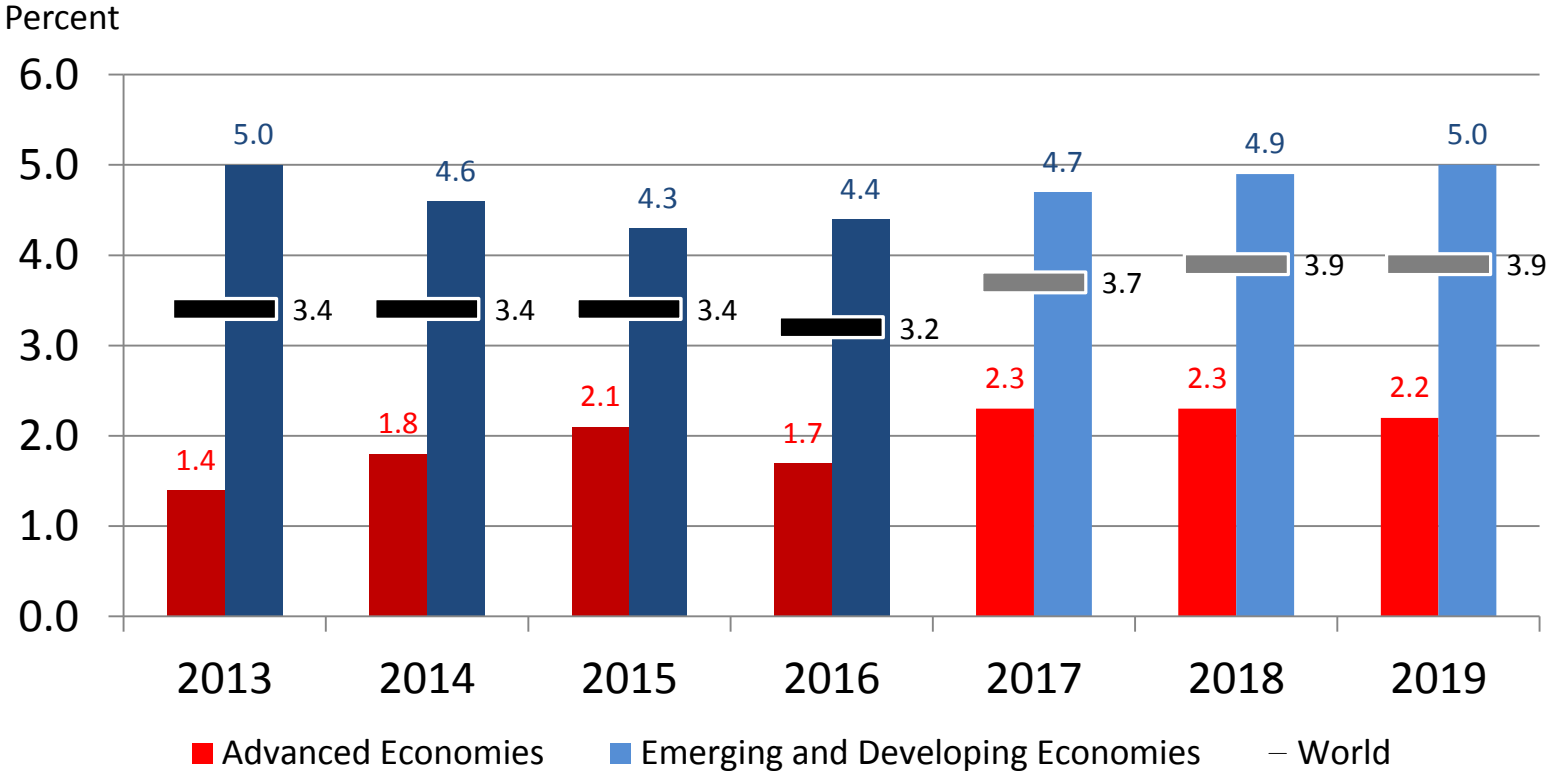
What kind of impact will the new steel and aluminum tariffs have on the US economy?



Source: Chicago Fed Survey of Business Conditions.

# Global Outlook

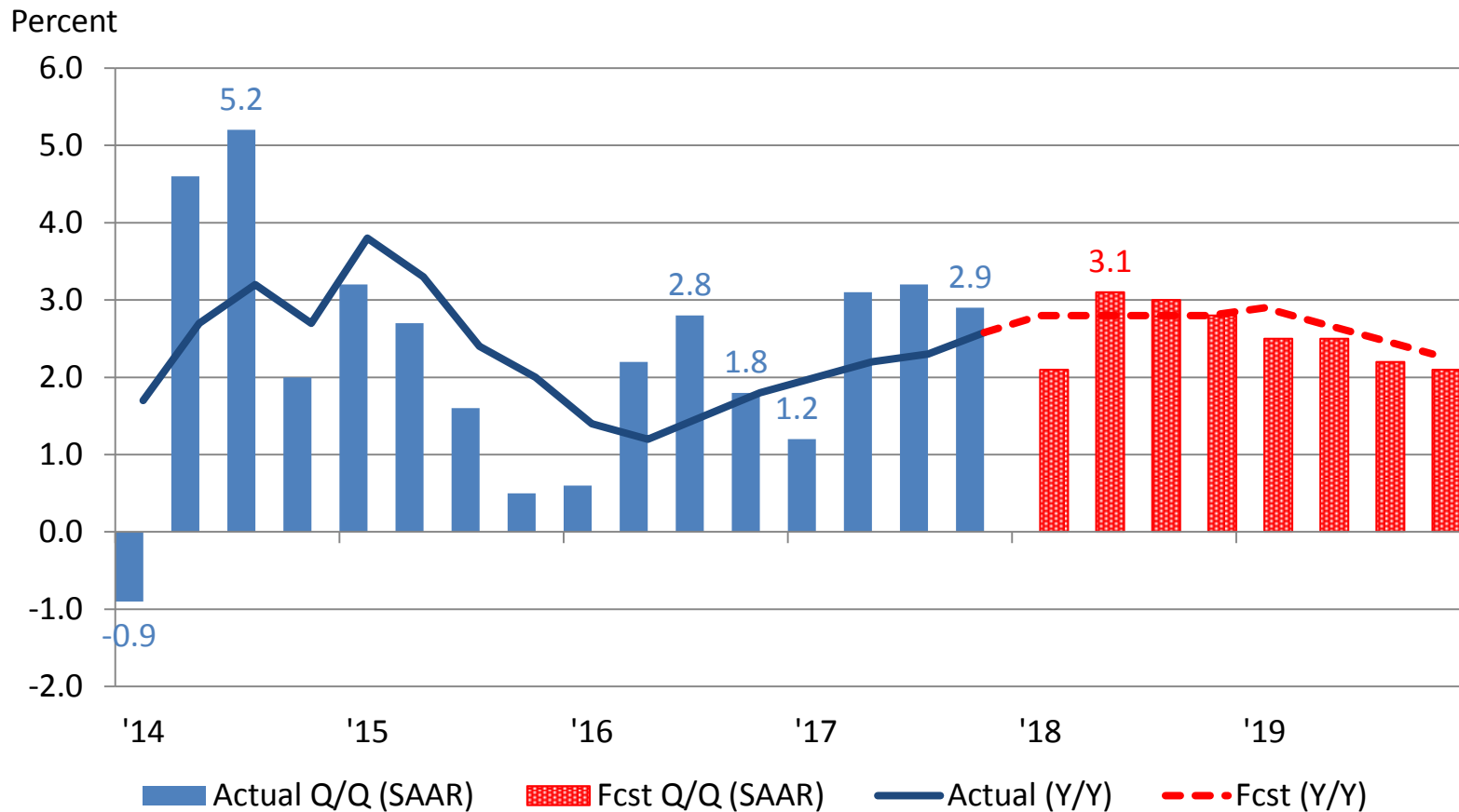
IMF Forecast for Growth (Jan '18 Interim Forecast), % Chg. Yr./Yr.



Source: IMF - World Economic Outlook – January 2018

# U.S. Real GDP Blue Chip Forecast

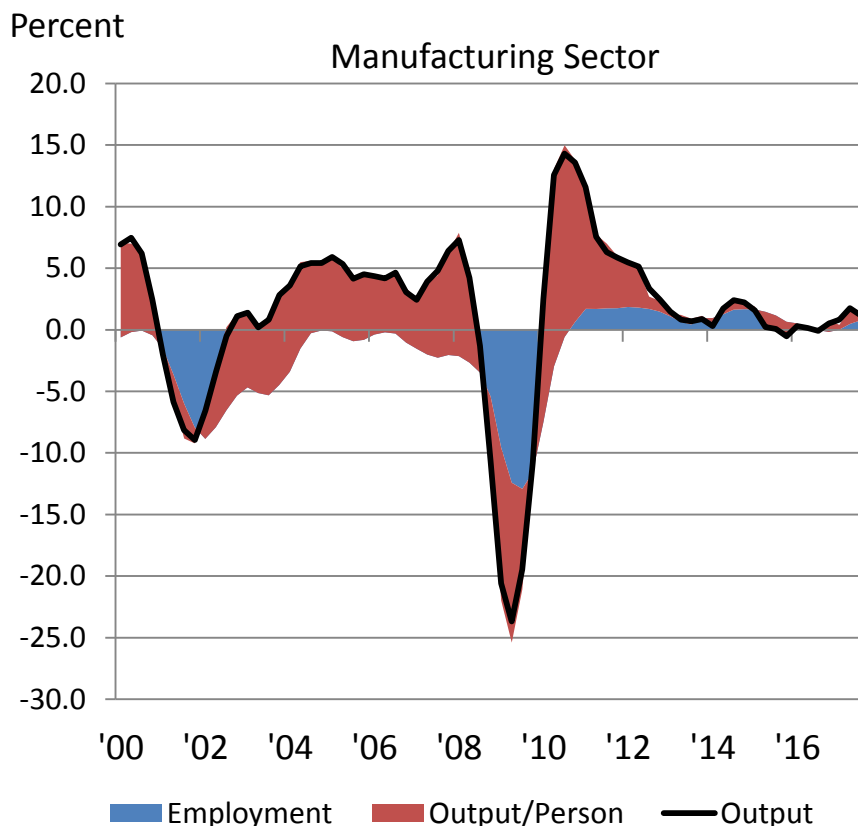
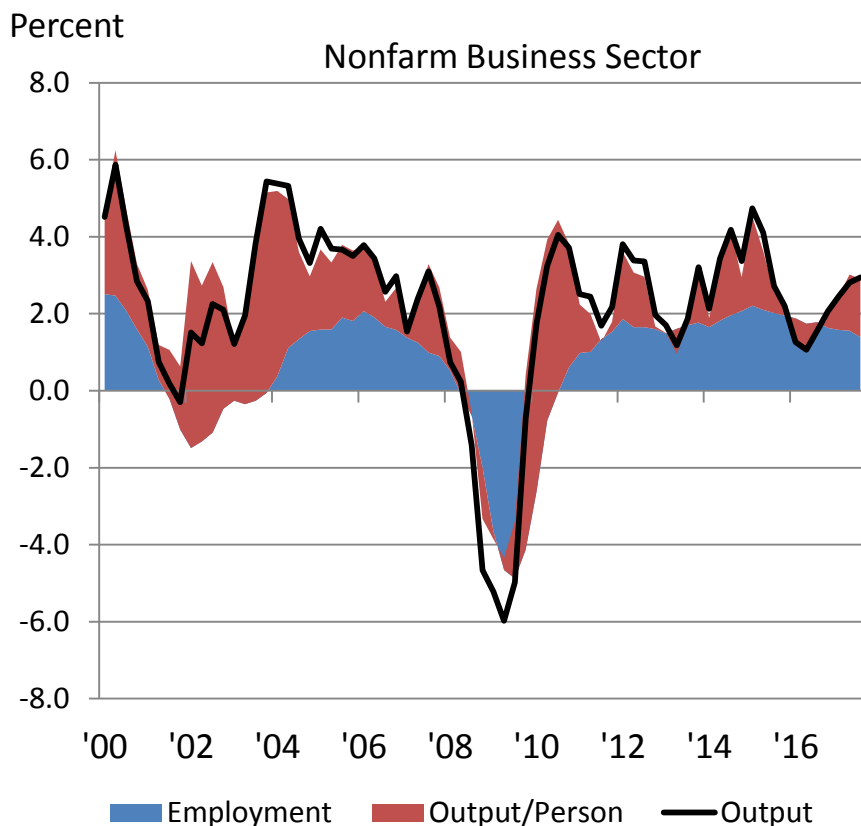
Percent Change – Billions of Chained \$2009



Source: BEA and April 2018 Blue Chip Economic Indicators

# Employment, Productivity, and Output

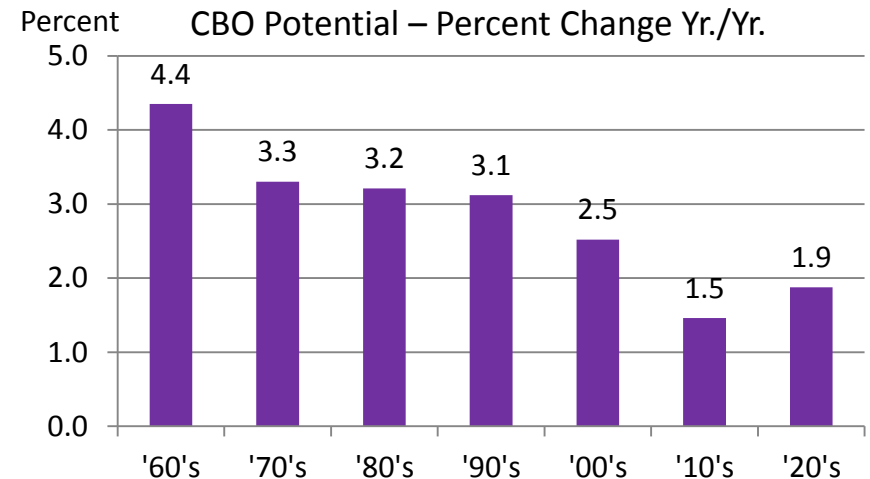
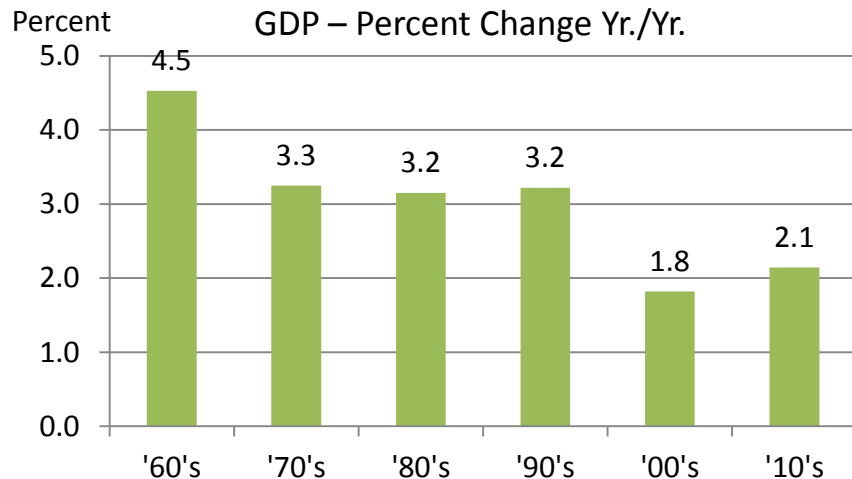
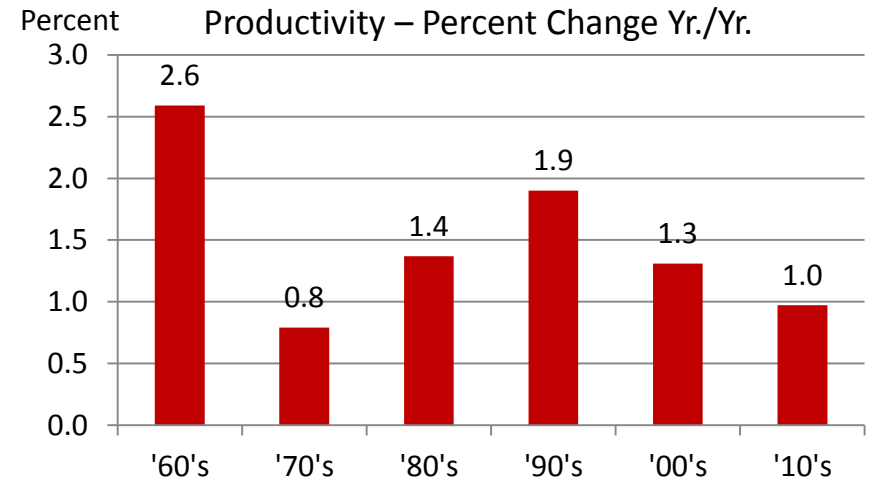
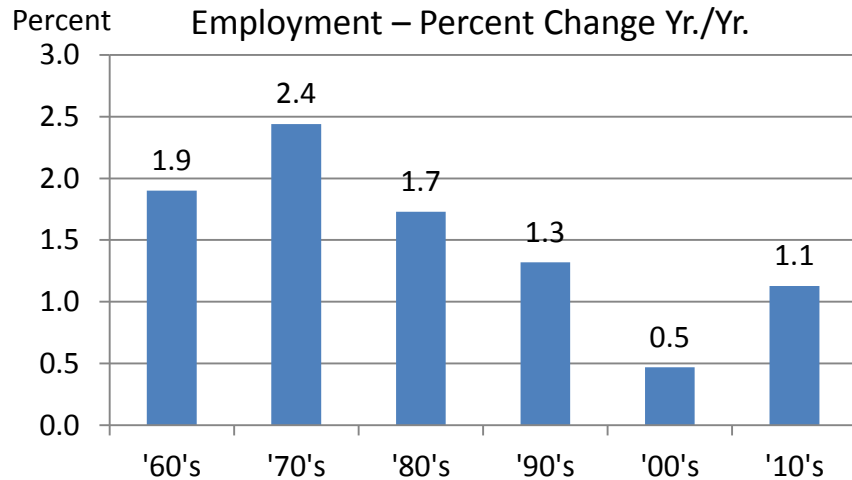
Nonfarm and Manufacturing – Percent Change Yr./Yr.



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

# Employment, Productivity, and GDP Growth

## Percent Change Yr./Yr.



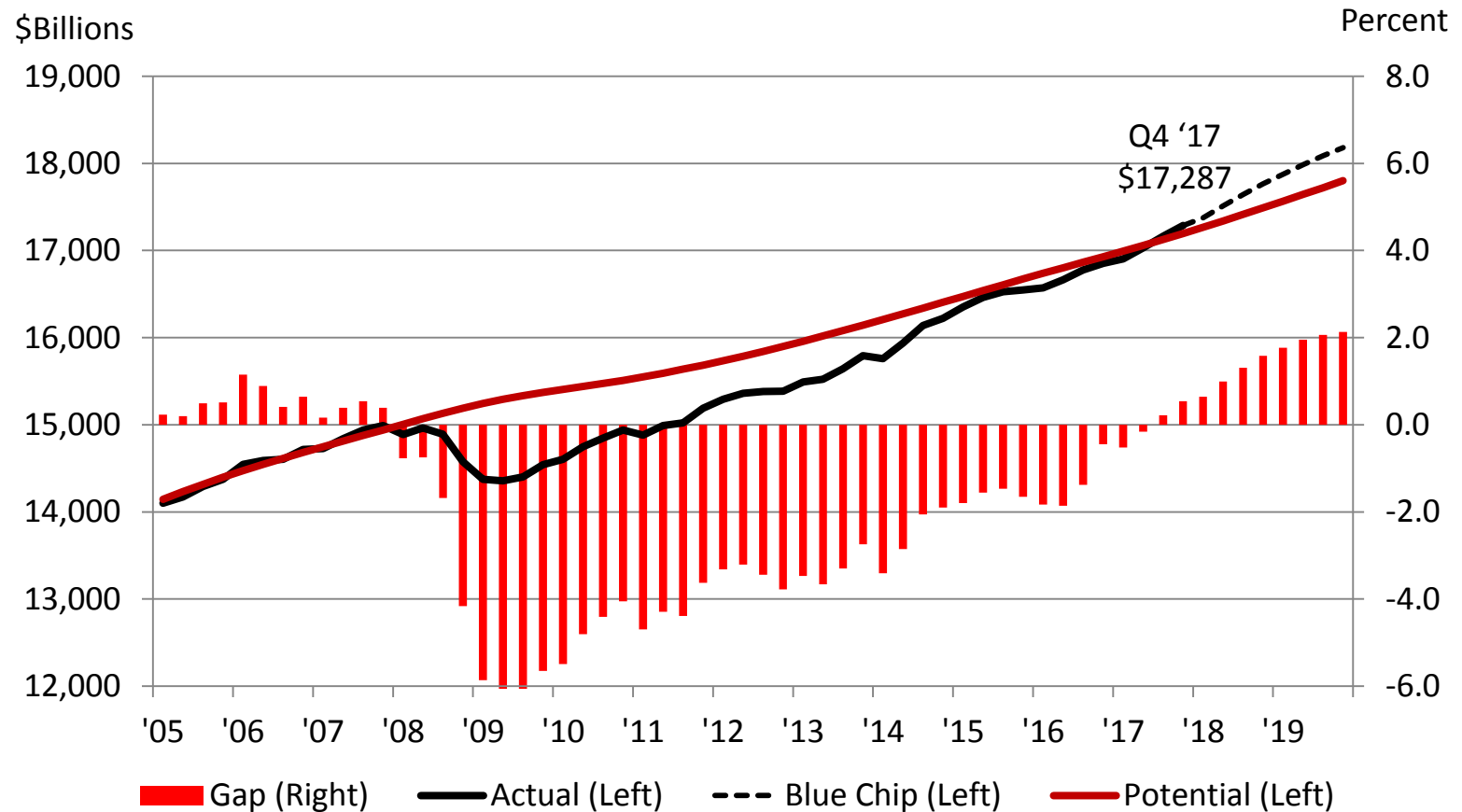
Source: Author's Calculations using BEA, BLS, and Fed data.

April 13, 2018

Federal Reserve Bank of Chicago

# U.S. Real GDP – Actual and Potential

Billions Chained \$2009 and Percent H/L than Potential



Source: Bureau of Economic Analysis and the U.S. Congressional Budget Office

April 13, 2018

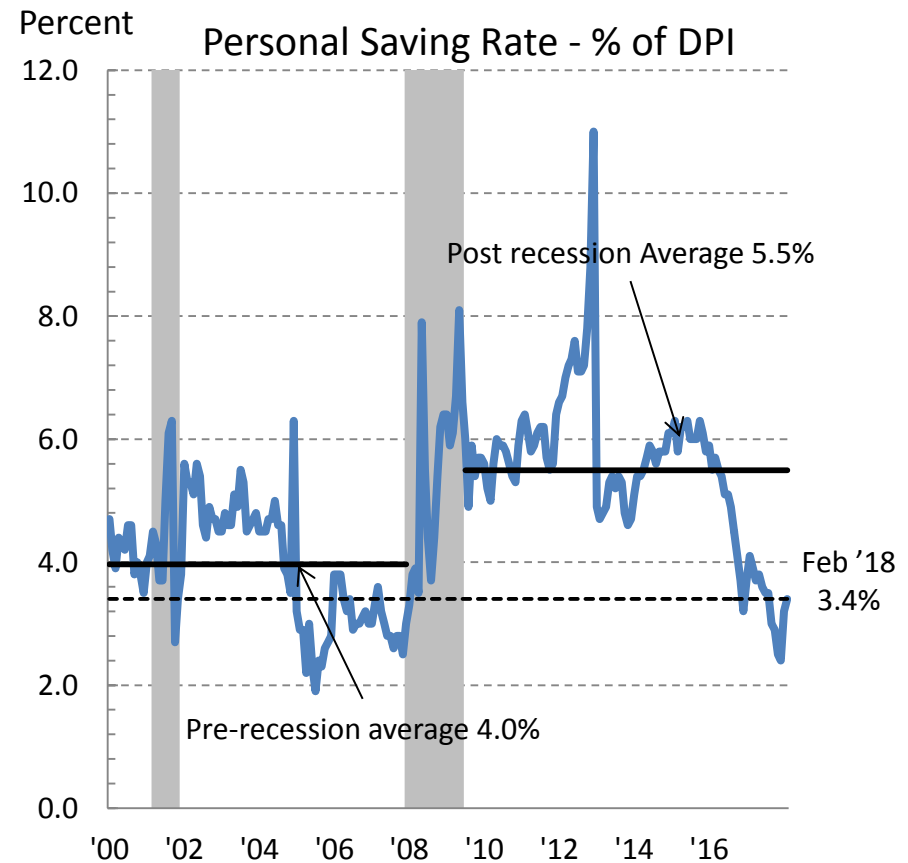
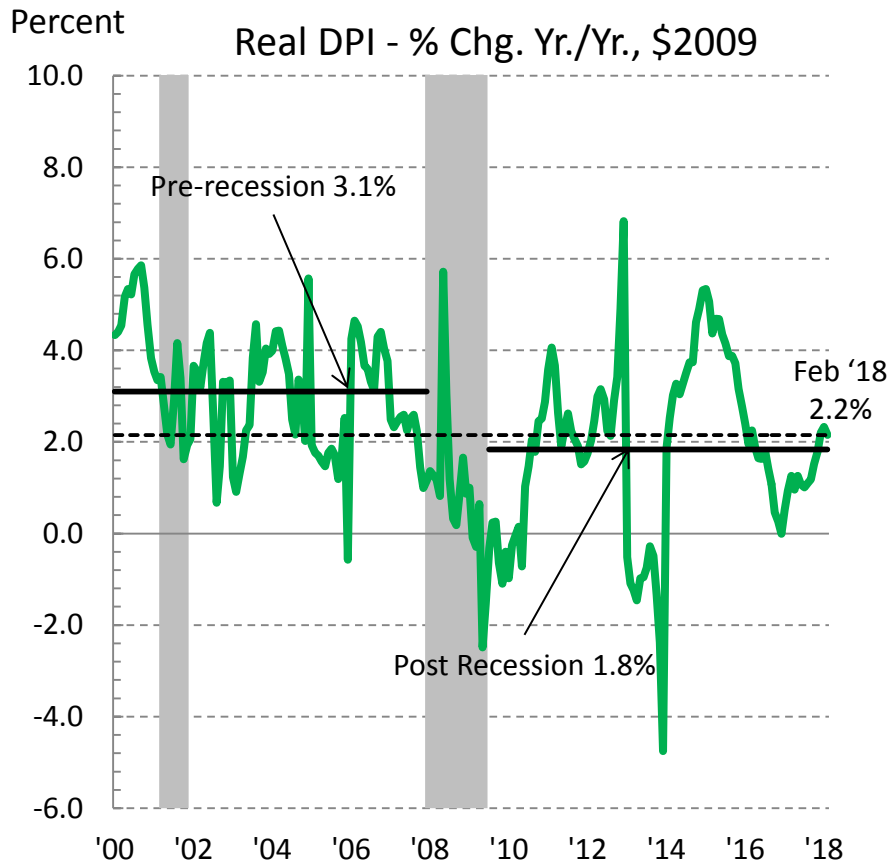
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Federal Reserve Bank of Chicago

# U.S. Consumer

# Income and Savings Rate

## Percent Change and Percent of DPI

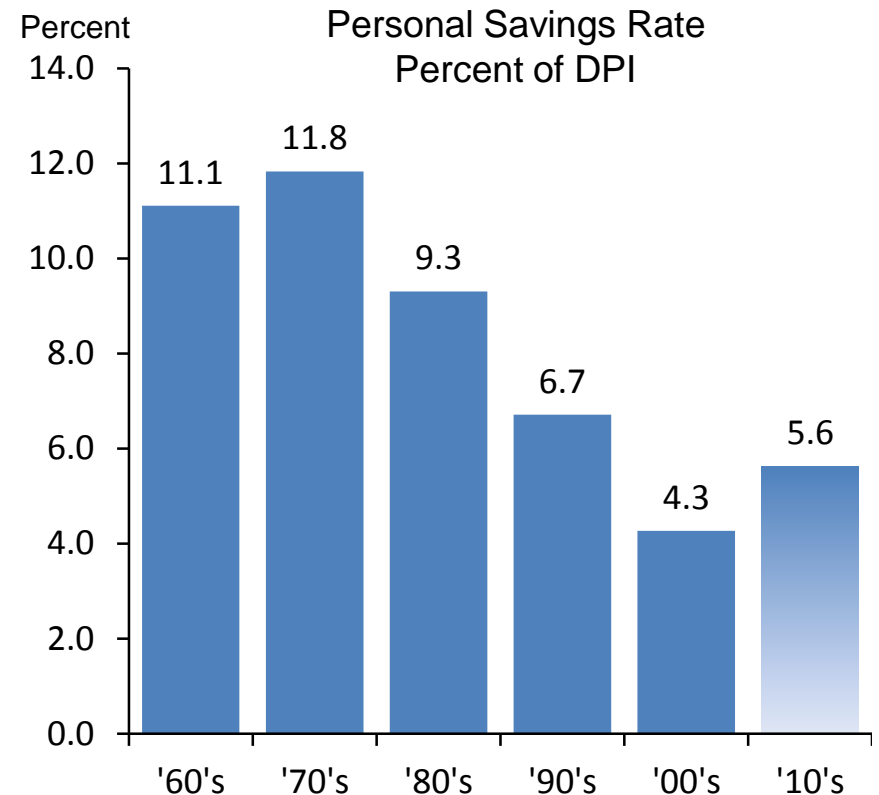
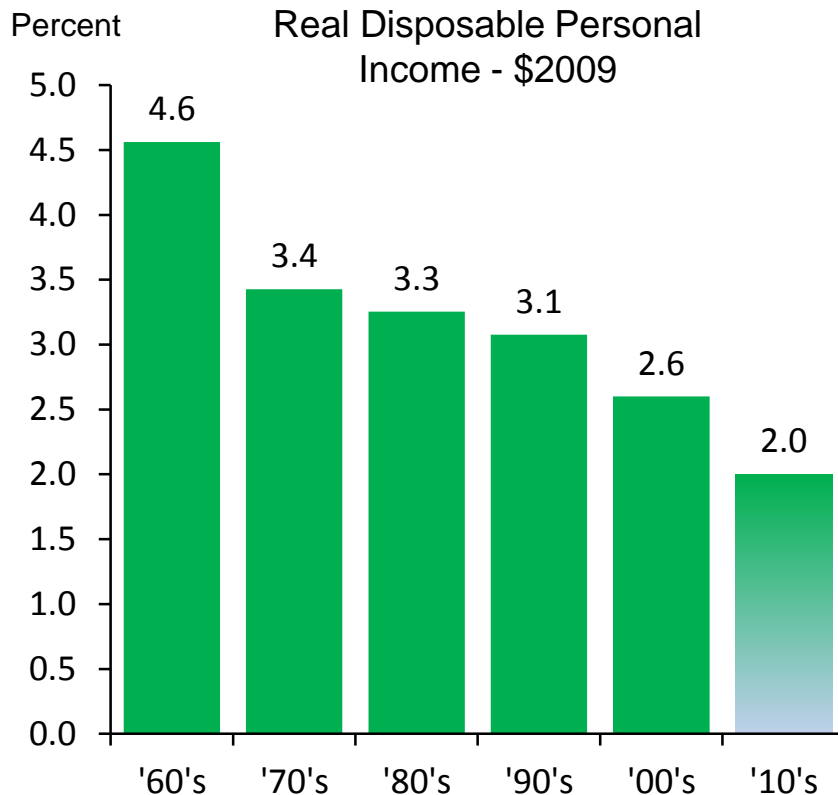


Source: U.S. Bureau of Economic Analysis



# Real DPI & Personal Savings Rate

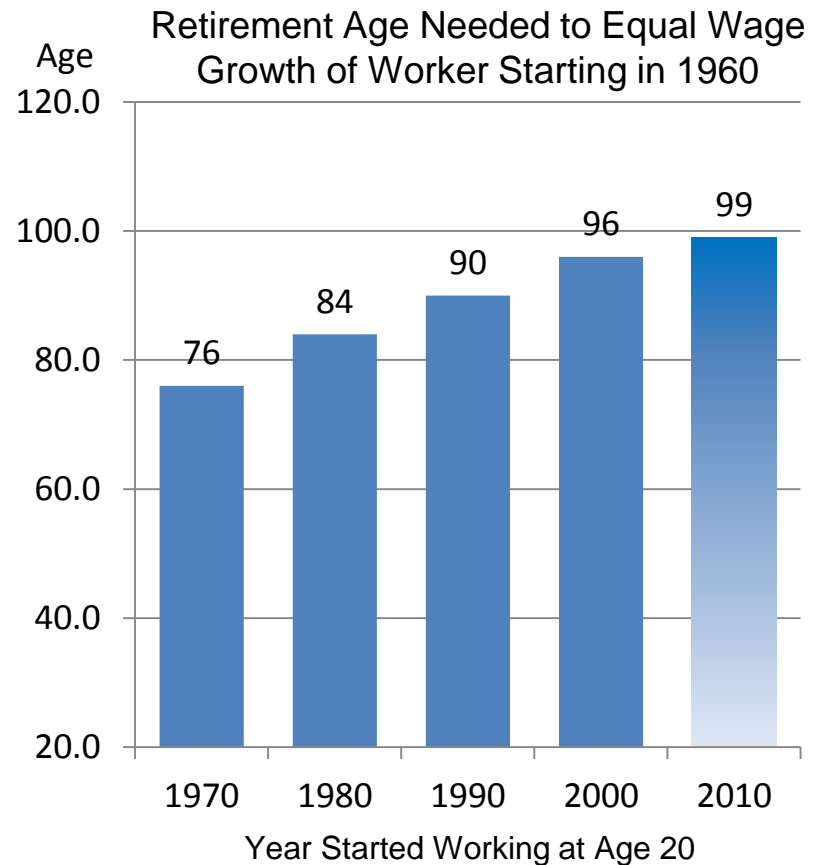
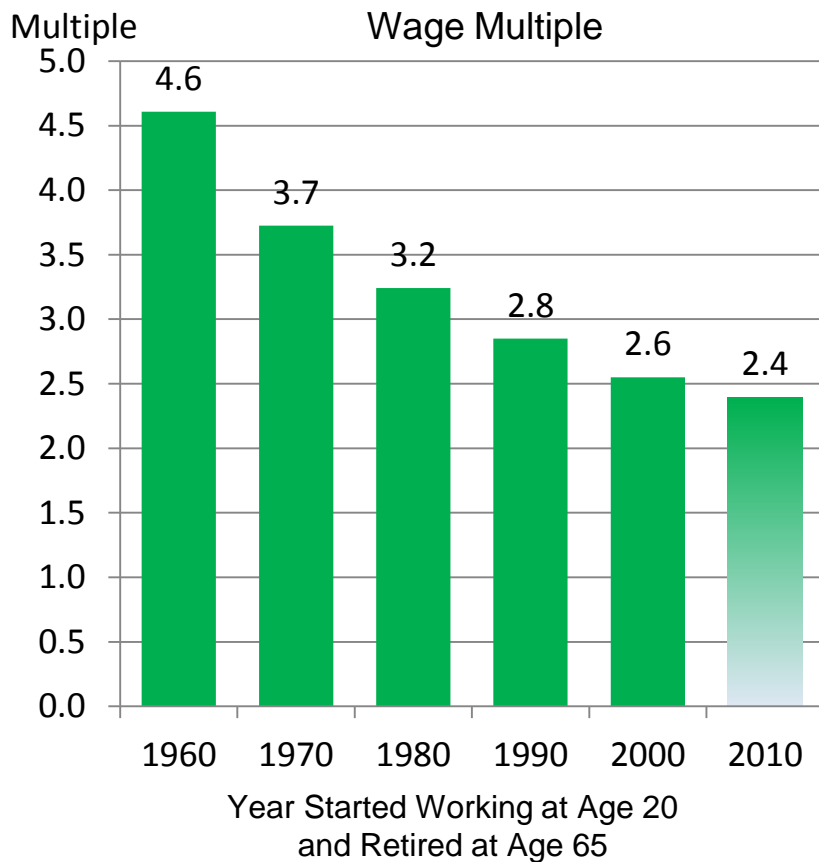
As Percent of Personal Income



Source: U.S. Bureau of Economic Analysis

# Real Disposable Income Growth

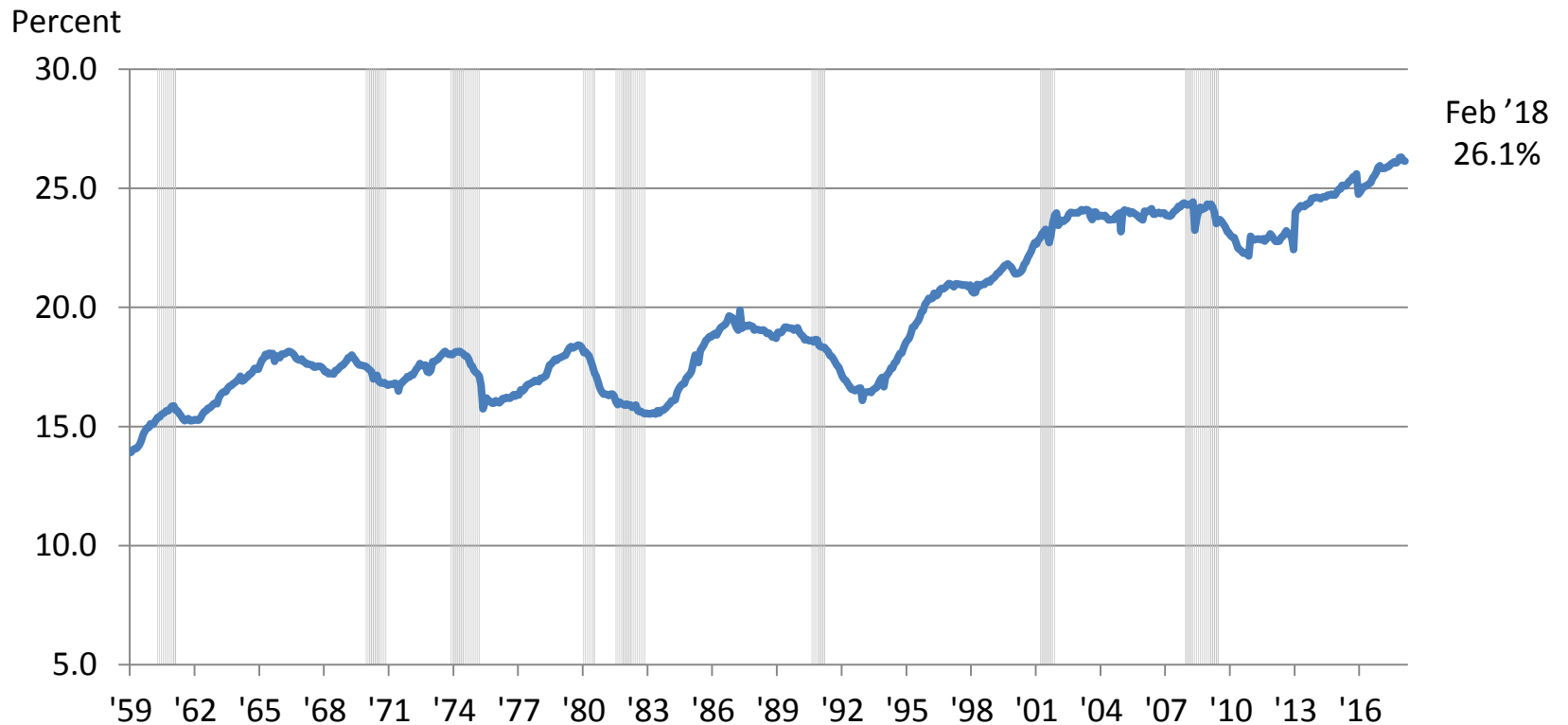
## Real DPI Multiple and Retirement Age



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

# Total Consumer Credit

## As a Percent of Disposable Personal Income

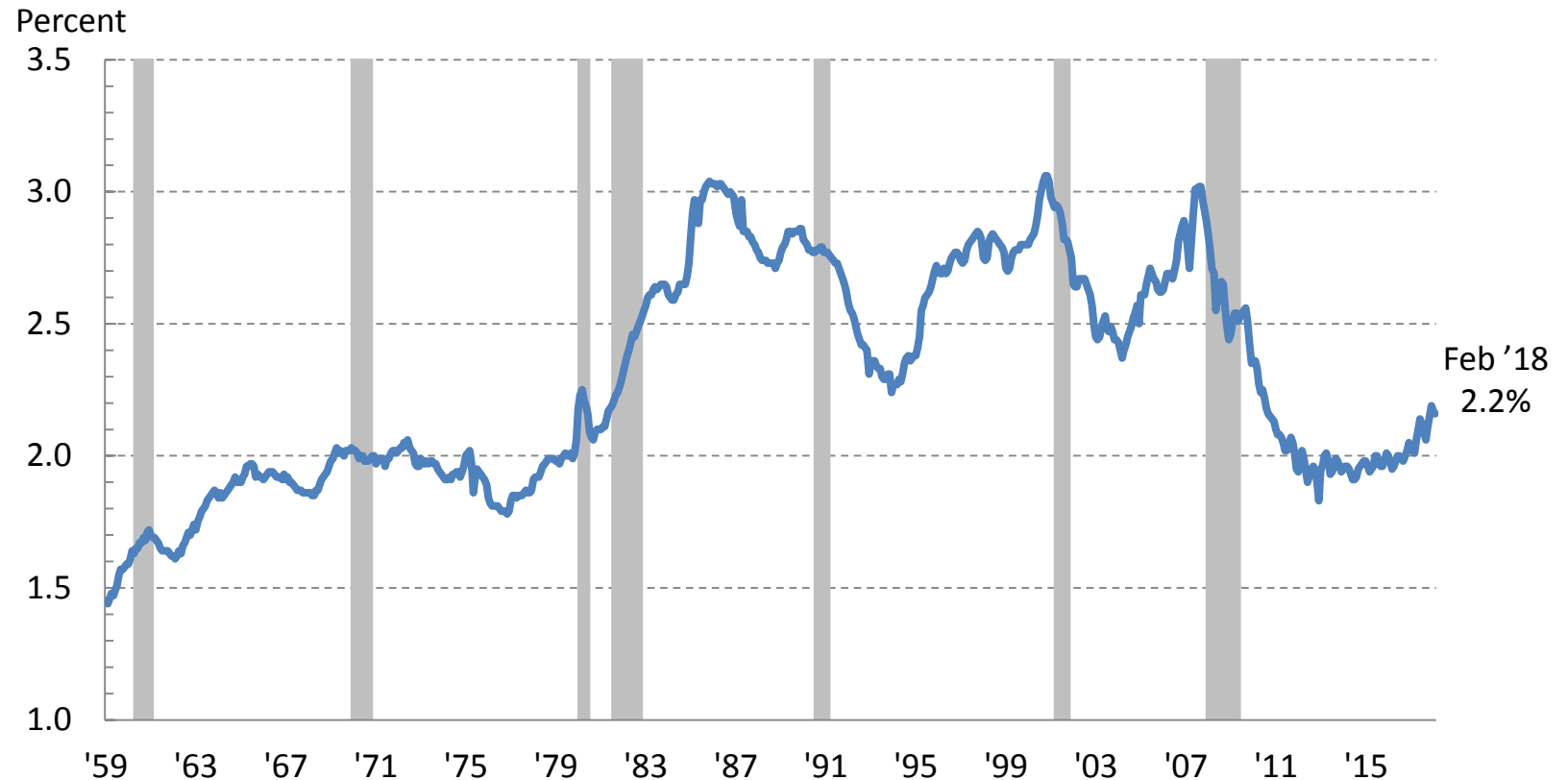


Includes: HE Revolving, Auto Loans, Credit Cards, and Student Loans.

Source: Federal Reserve Bank Board of Governors.

# Interest Payments

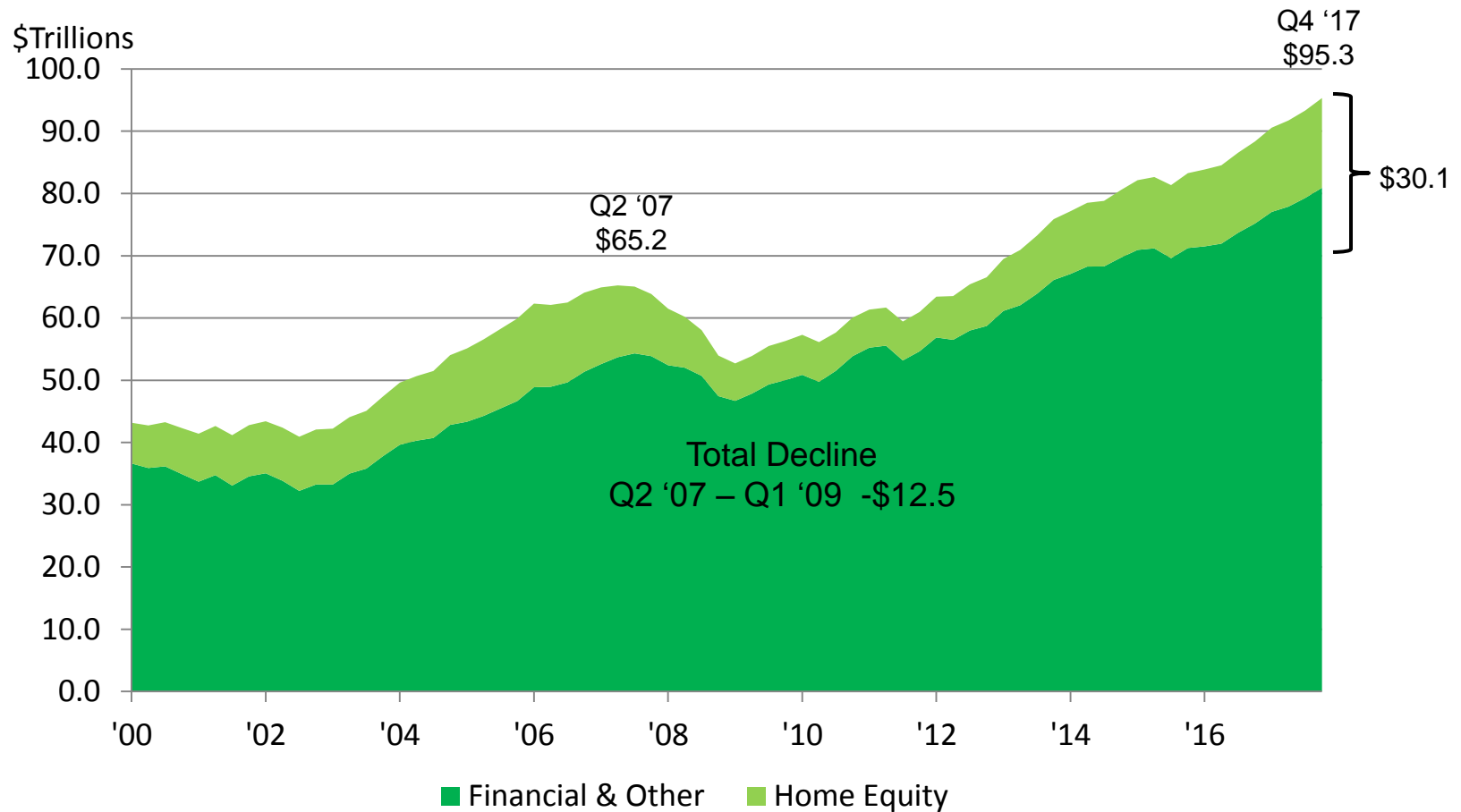
## As a Percent of Disposable Personal Income



Source: Federal Reserve Bank - Board of Governors

# Household Net Worth

Trillions of Current Dollars, Q1 '00 to Q1 '17



Source: Federal Reserve Z.1 Statistical Release ,Table B100, Households and Nonprofit Organizations

# Household Net Worth

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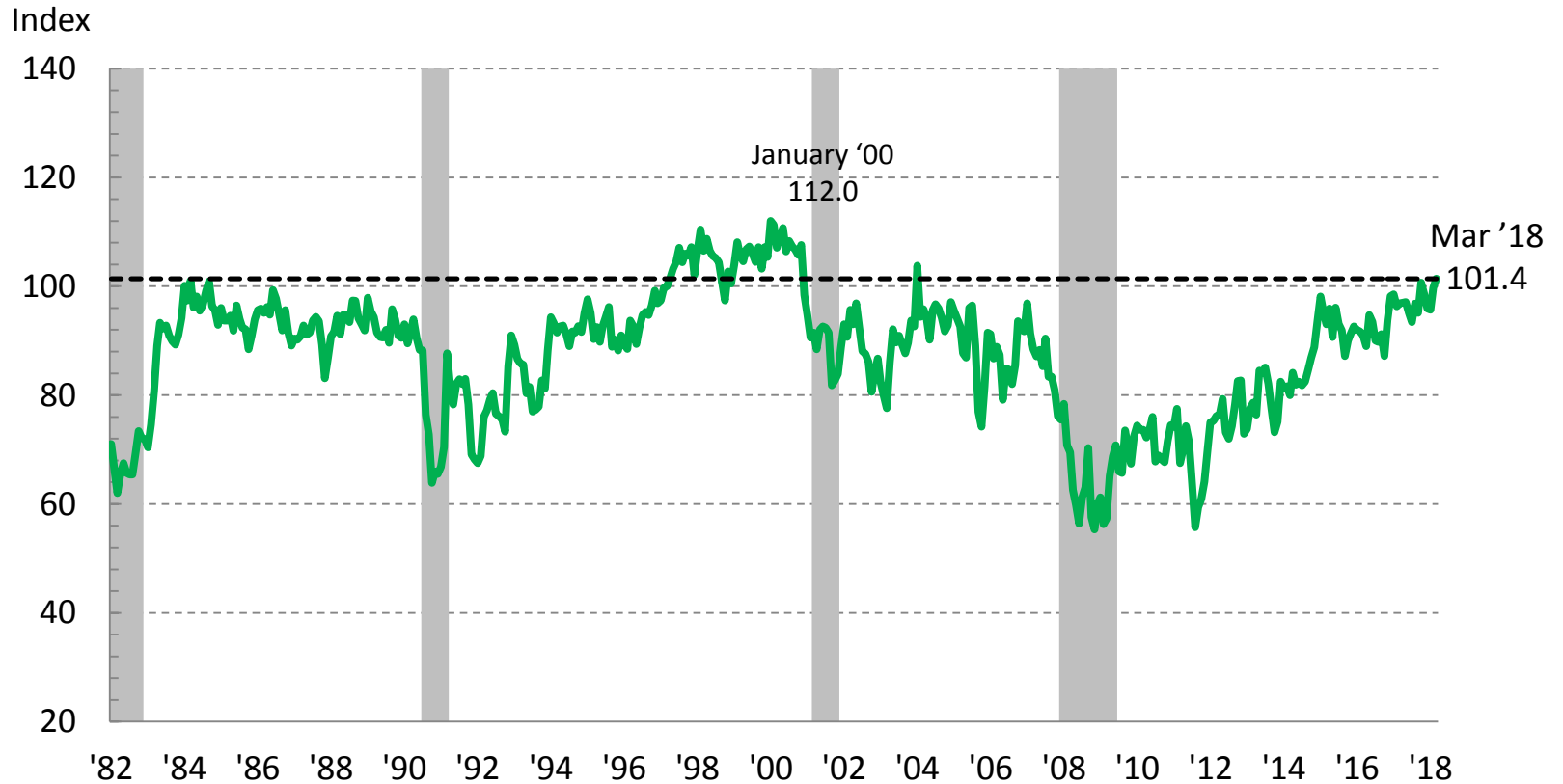
## Expansion From Previous Peak

<u>Real Estate</u>	<u>From Previous Peak to Q4 '17</u>
Change in Value	\$1.0 Trillion
Percent Change	7.3%
 <u>Financial &amp; Other</u>	
Change in Value	\$29.1 Trillion
Percent Change	49.0%
 <u>Total Net Worth</u>	
Change in Value	\$30.1 Trillion
Percent Change	46.1%

1. Net worth in real estate peaked in Q1 '06, financial and other peaked in Q3 '07, and total net worth peaked in Q2 '07.

# Consumer Sentiment

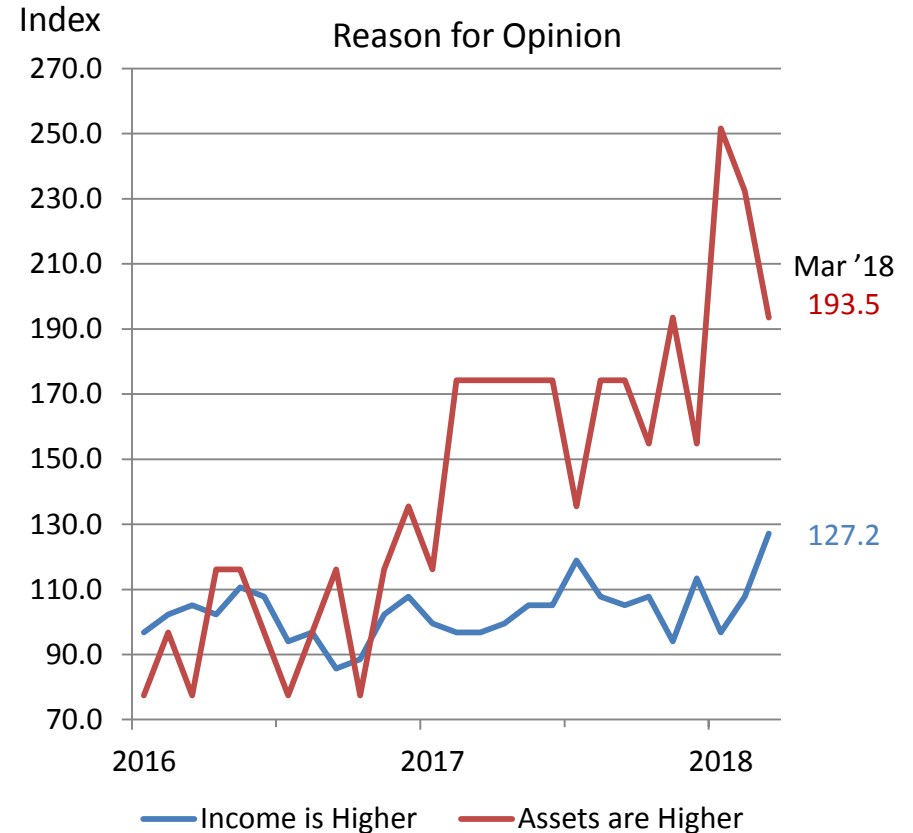
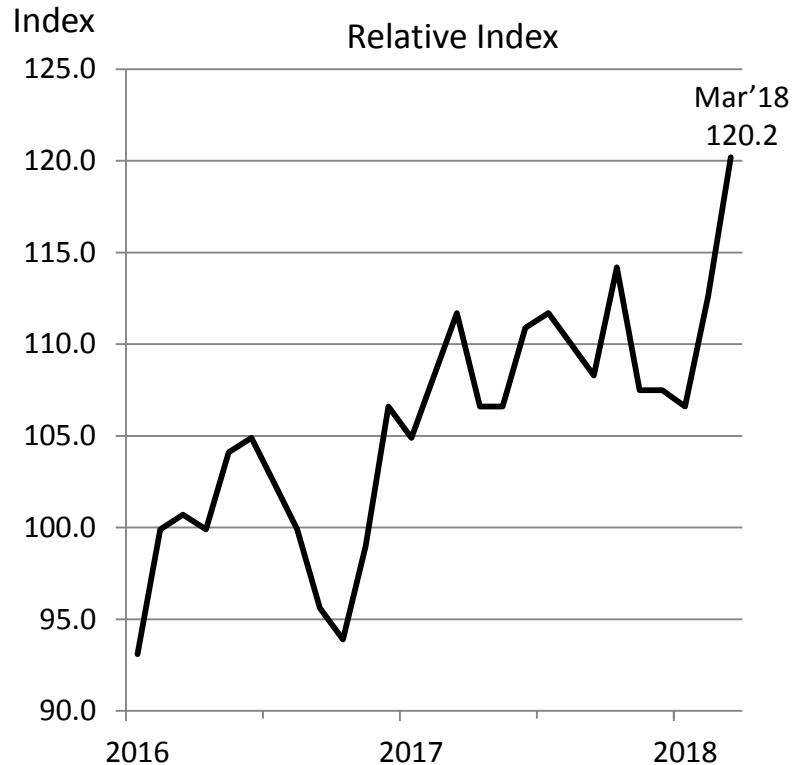
University of Michigan



Source: Thomson Reuters / University of Michigan

# Current Household Financial Situation

Compared to a Year Ago – Index 2016 = 100

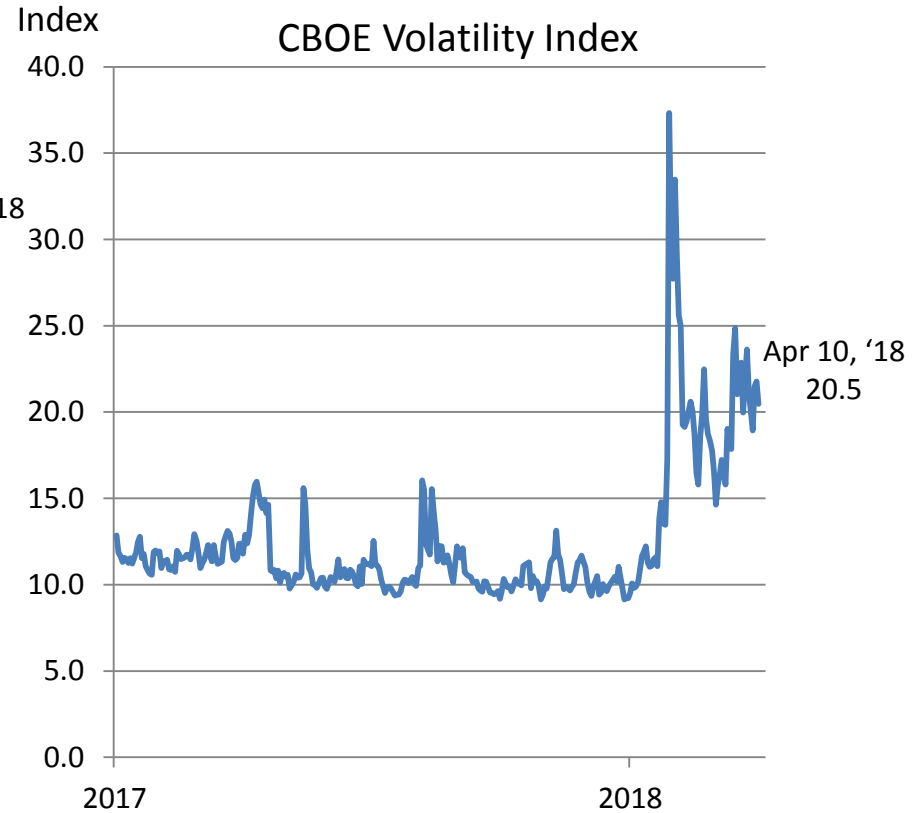


Source: University of Michigan Consumer Sentiment



# Stock Market

## S&P 500 and VIX



Source: Wall Street Journal, CBOE and Haver Analytics.

# Monetary Policy Employment & Inflation

# F.O.M.C Statement

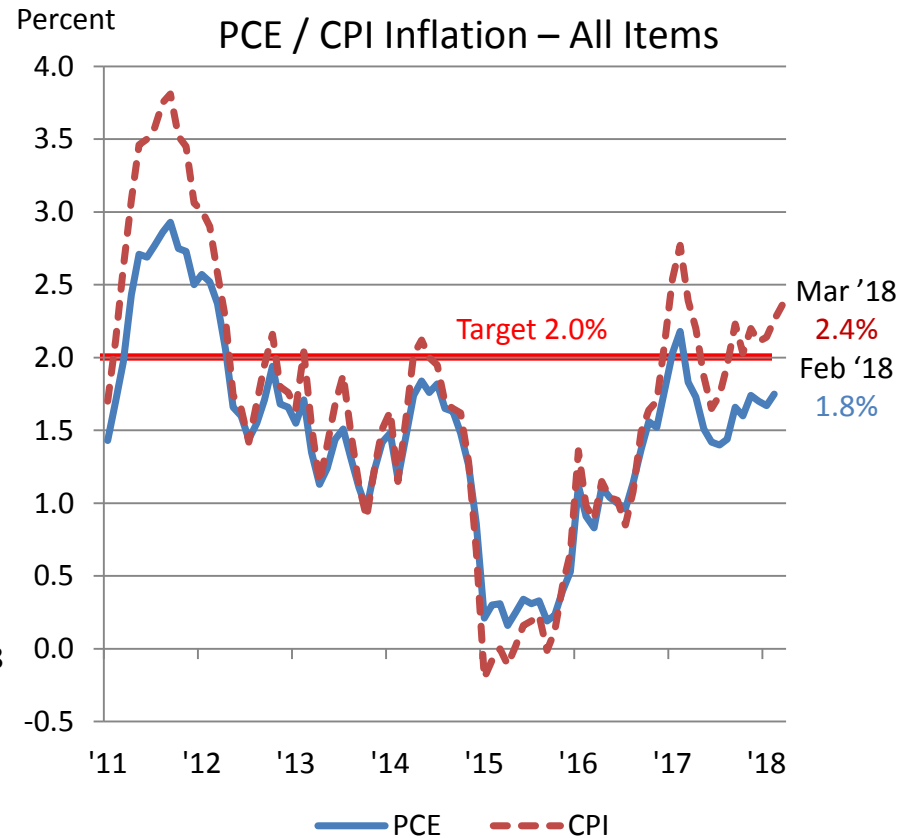
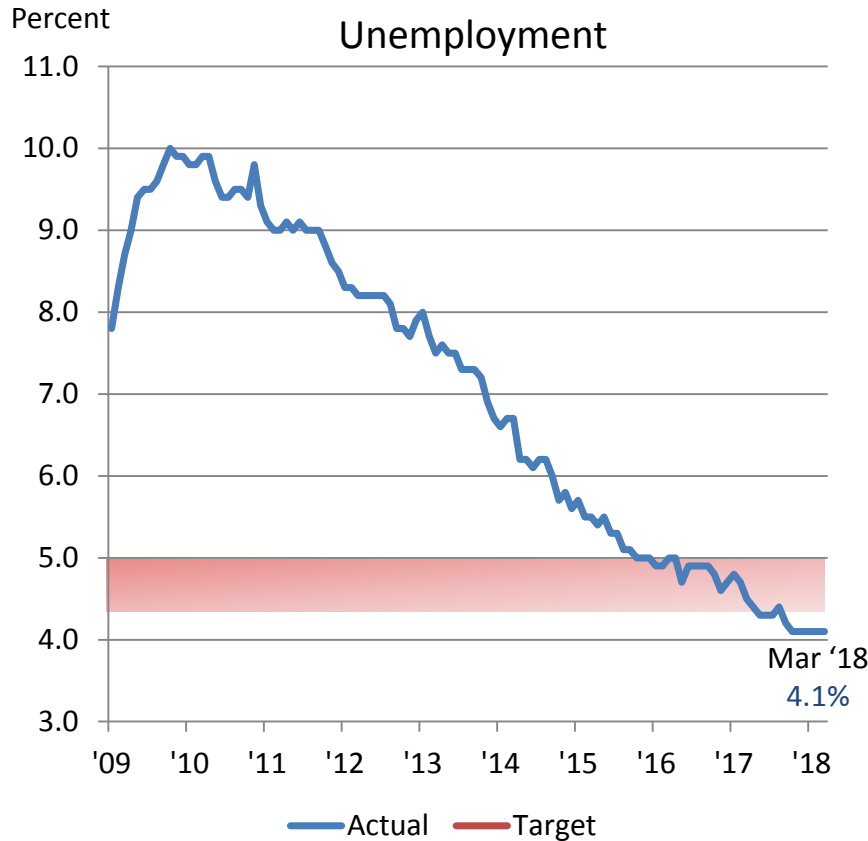
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March 21, 2018

1. Information received since the F.O.M.C. met in January indicates that the labor market has continued to strengthen and that economic activity has been rising at a moderate rate.
2. Job gains have been strong in recent months, and the unemployment rate has stayed low. Recent data suggests that the growth rates of household spending and business fixed investment have moderated from their strong fourth-quarter readings.
3. On a 12-month basis, both overall inflation and inflation for items other than food and energy have continued to run below 2 percent.
4. Market based measures of inflation compensation have increased in recent months but remain low; survey based measures of longer-term inflation expectations are little changed, on balance.

# Unemployment Rate & Prices

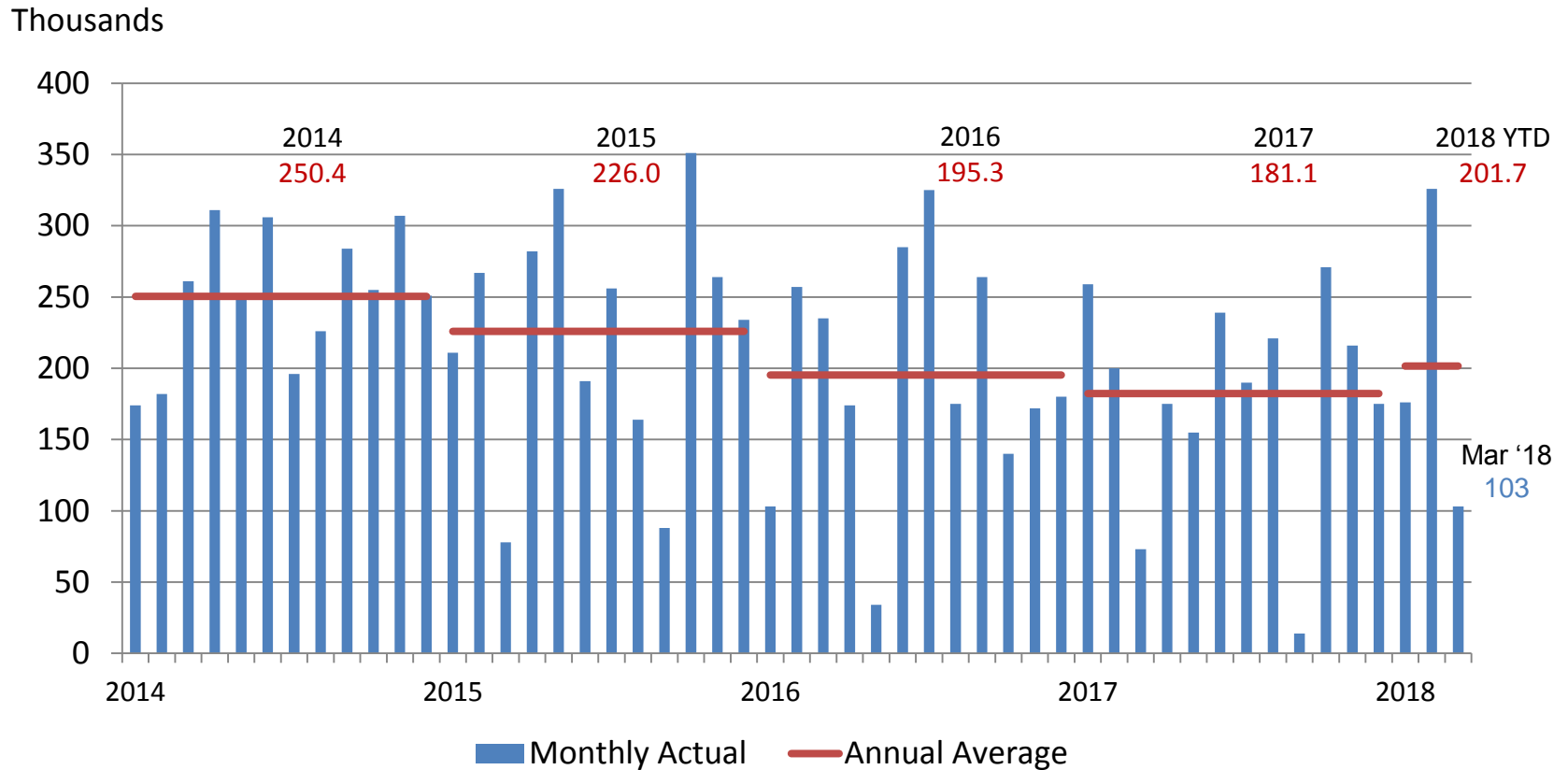
Percent Unemployed, PCE / CPI % Change Yr./Yr.



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

# U.S. Nonfarm Payrolls

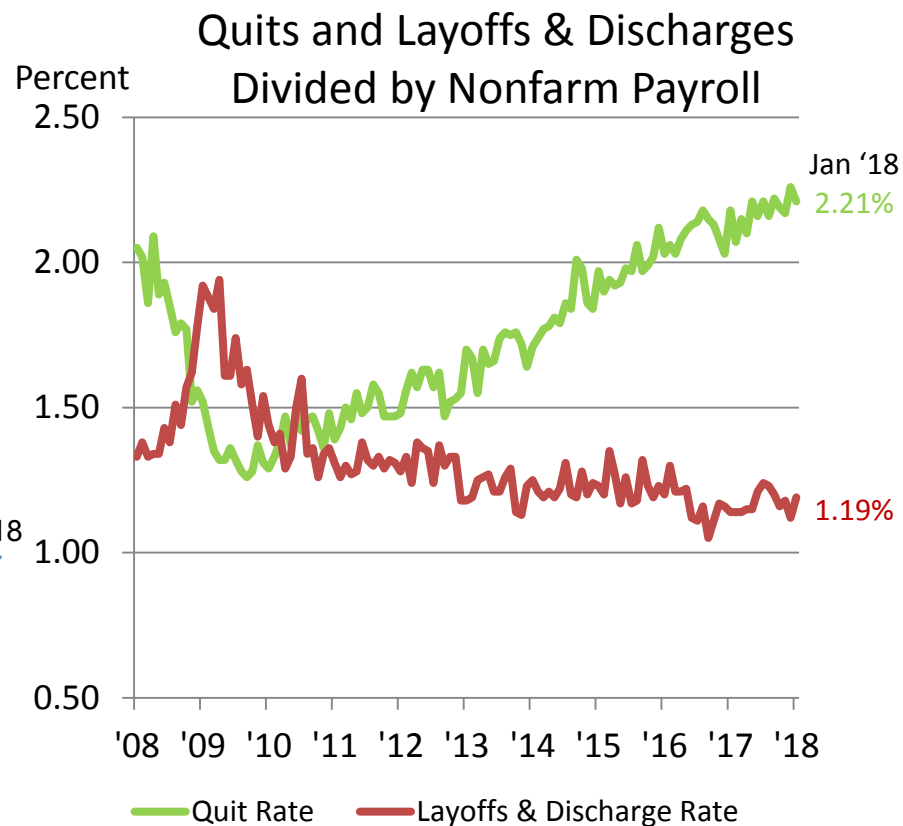
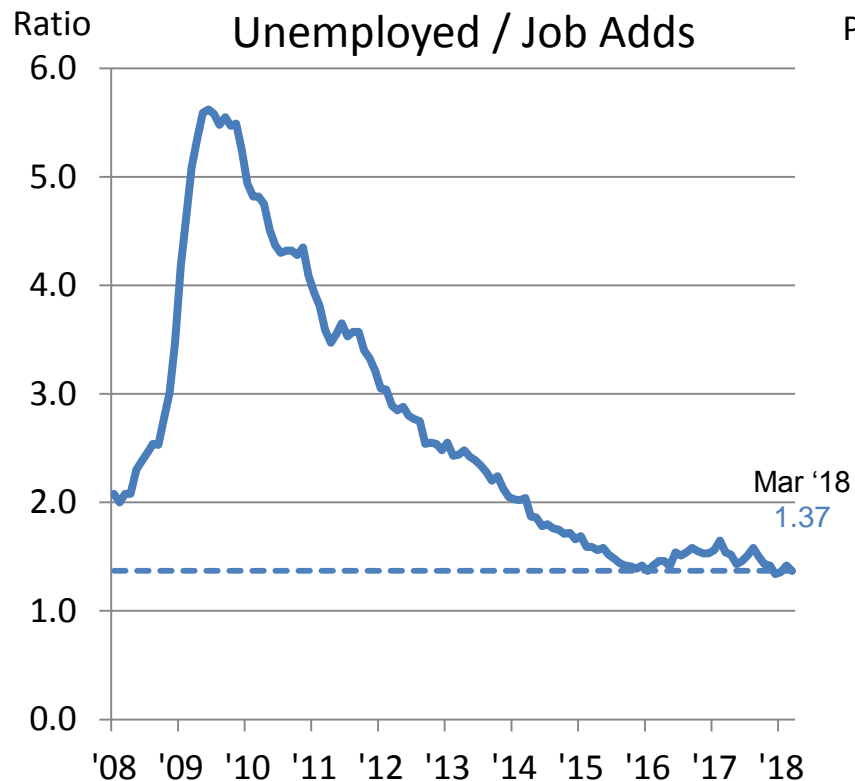
## Monthly and Annual Average Job Change – In Thousands



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

# Labor Conditions

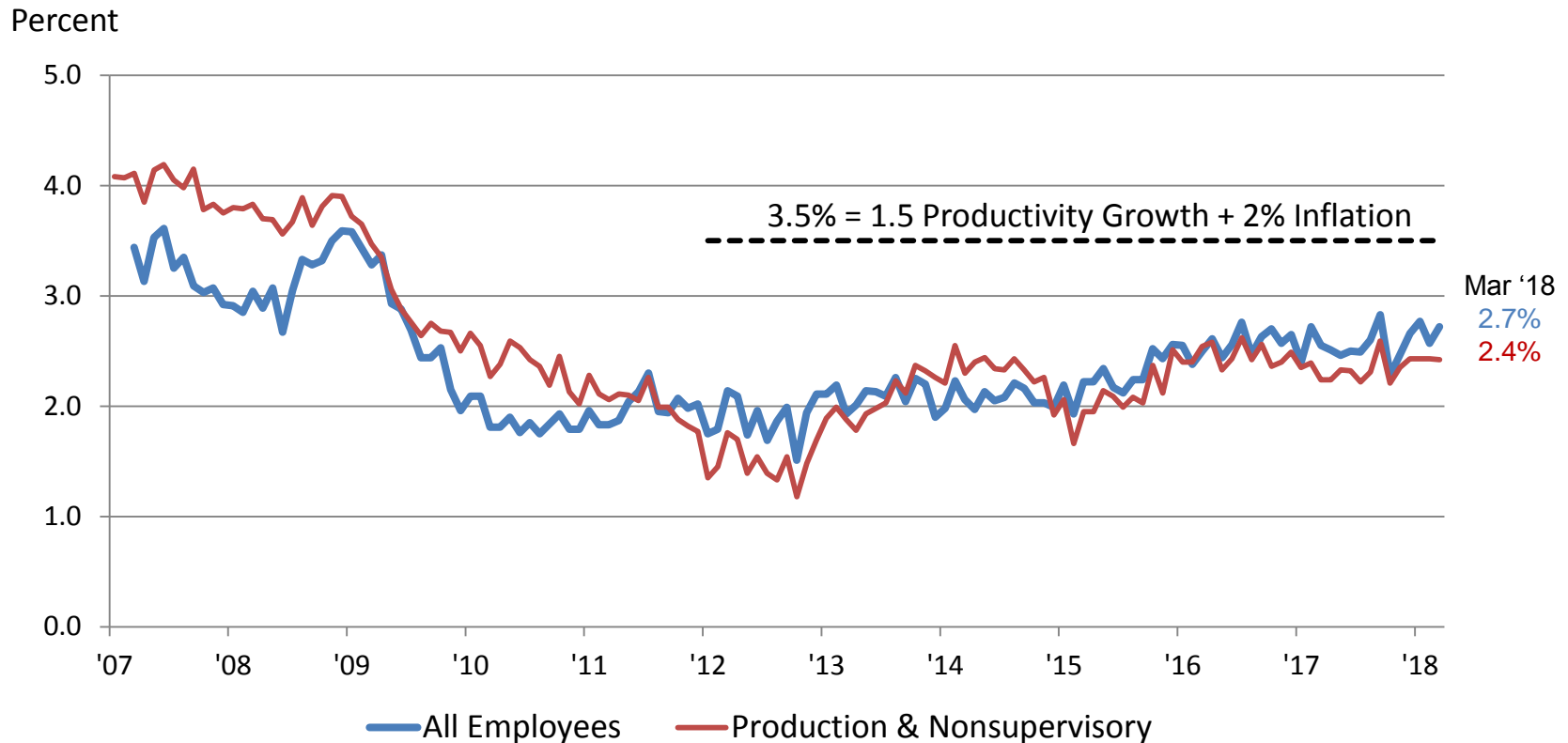
## Job Openings and Quit & Layoff Rates



Sources: U.S. Department of Labor – Job Openings and Labor Turnover Survey (JOLTS) and Conference Board – Help Wanted Online Data (HWOL)

# Average Hourly Earnings – Private Employees

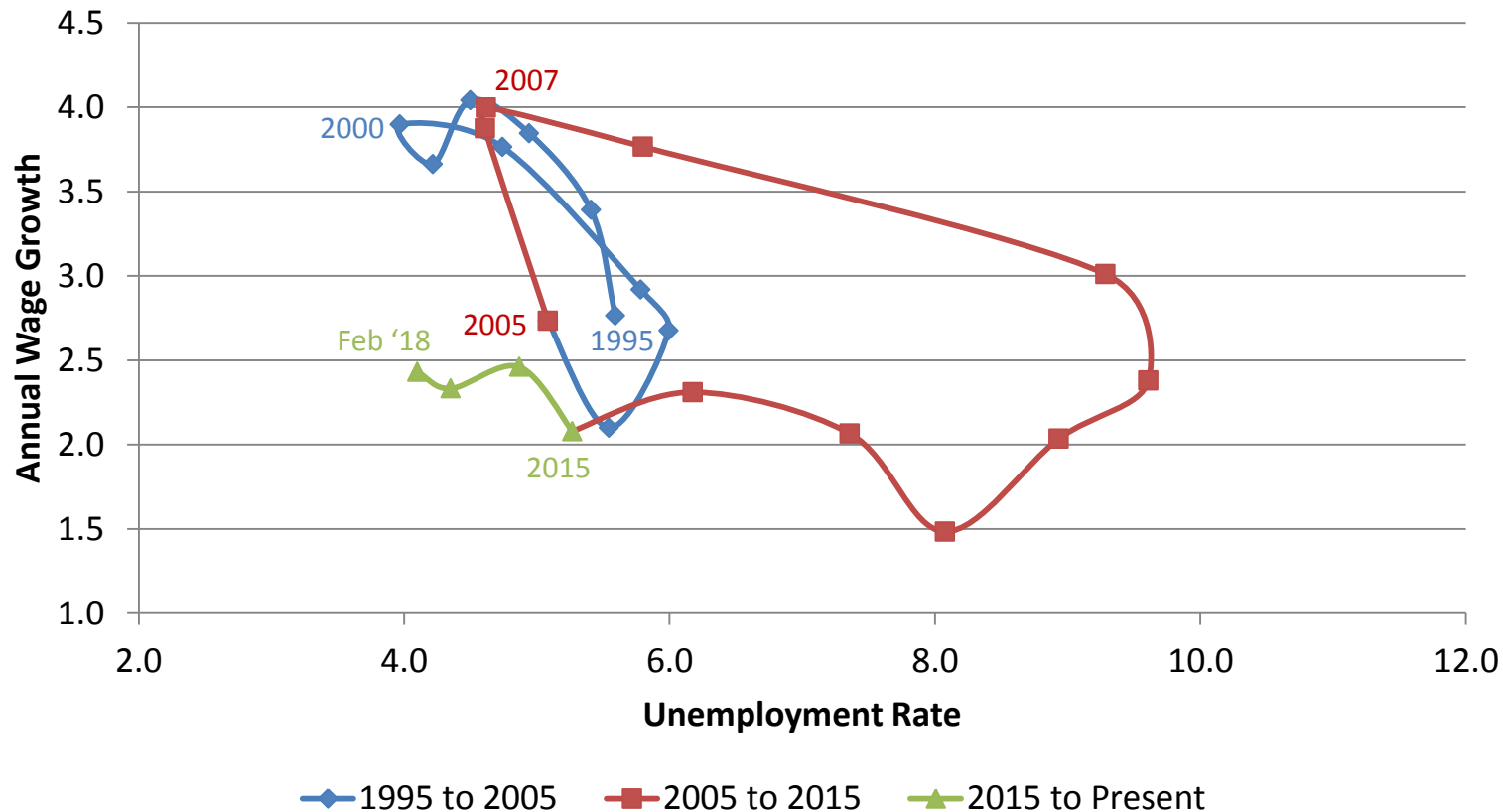
Percent Change Year / Year



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

# Phillips Curve

## Unemployment Rate and Wage Inflation

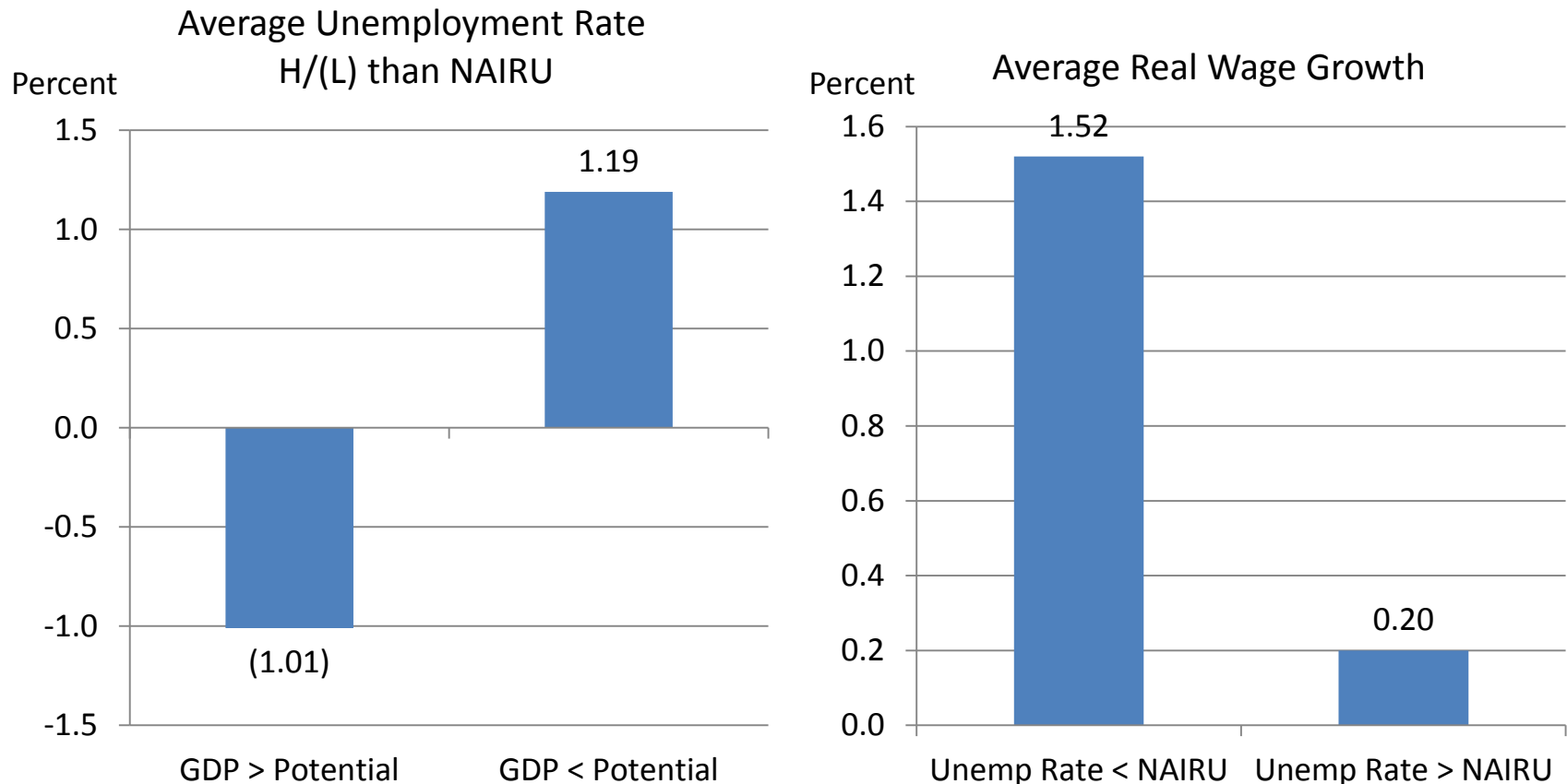


Source: William Phillips (1958) theory, and U.S. Bureau of Labor Statistics data.



# GDP Actual Greater than Potential

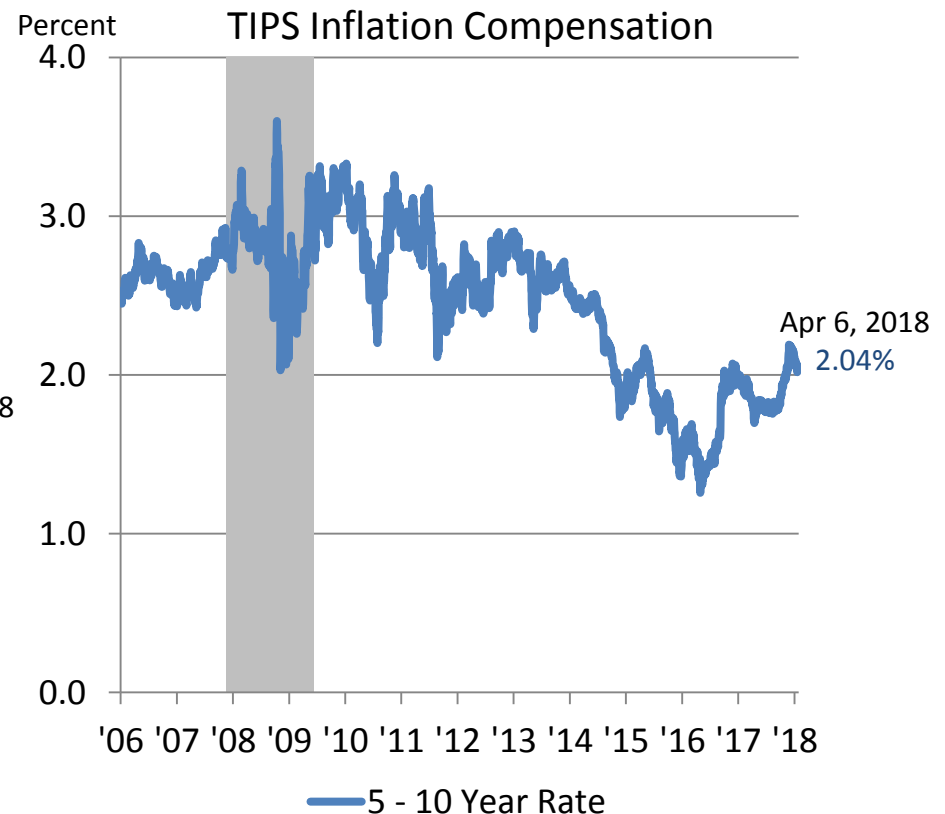
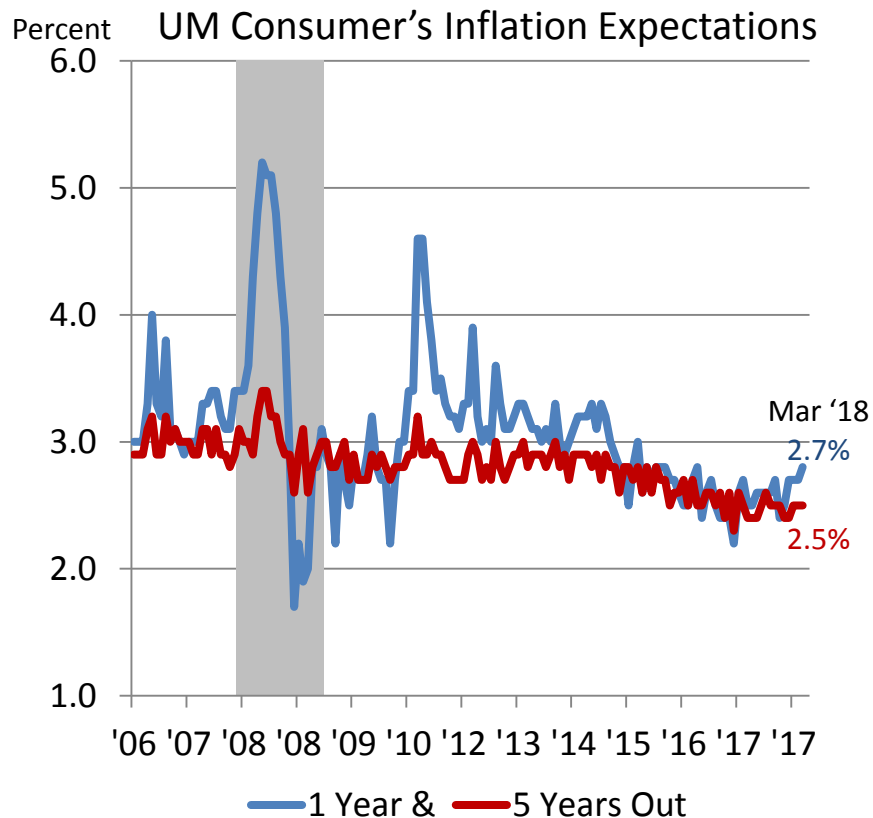
Impact on Unemployment Rate and Wage Inflation – 1965 to Present



Source: Author's calculations using Bureau of Labor Statistics and the U.S. Congressional Budget Office data.

# Inflation Expectations

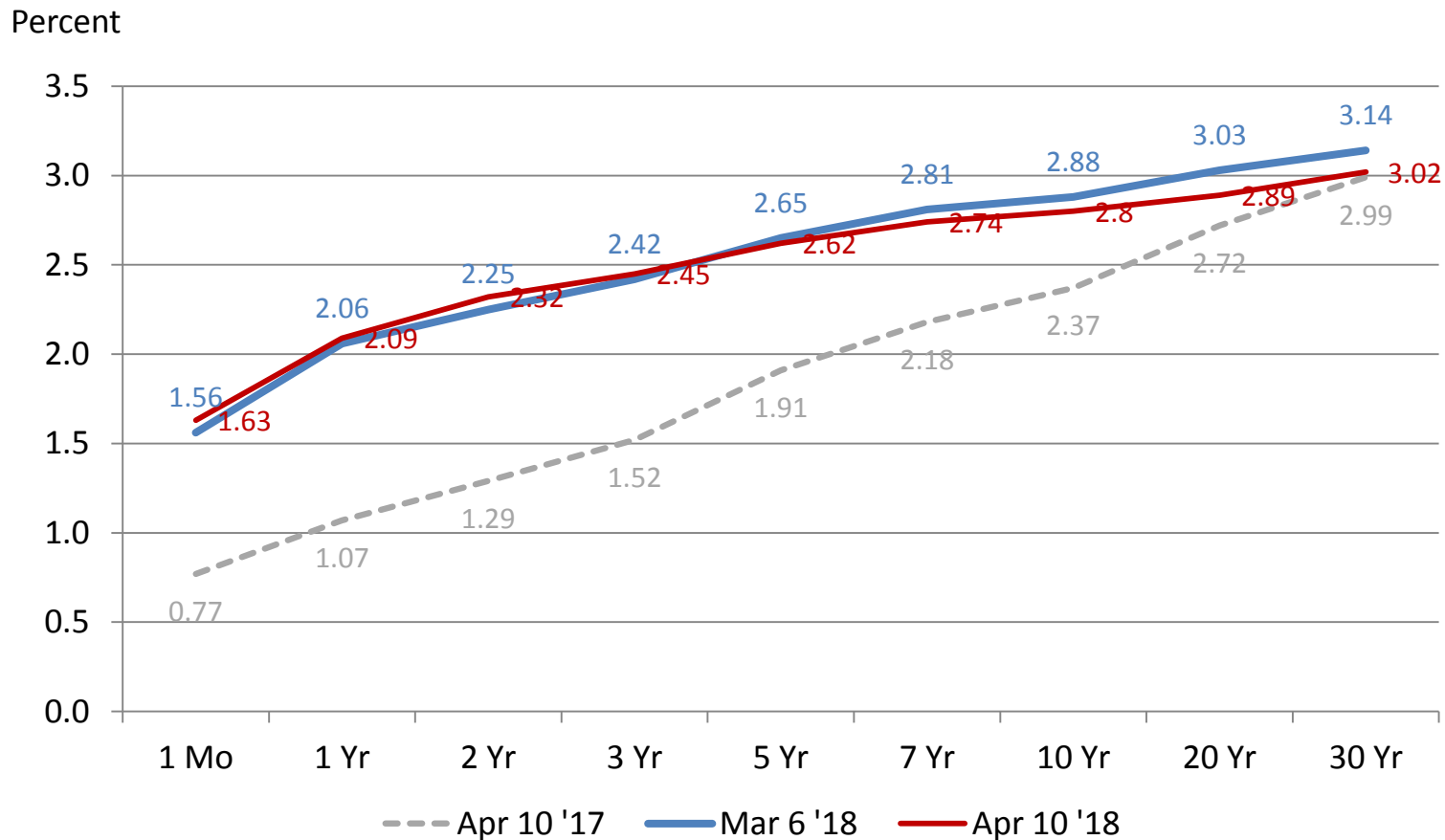
## 1-5 Year and 5-10 Year Inflation Expectations



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

# Yield Curve

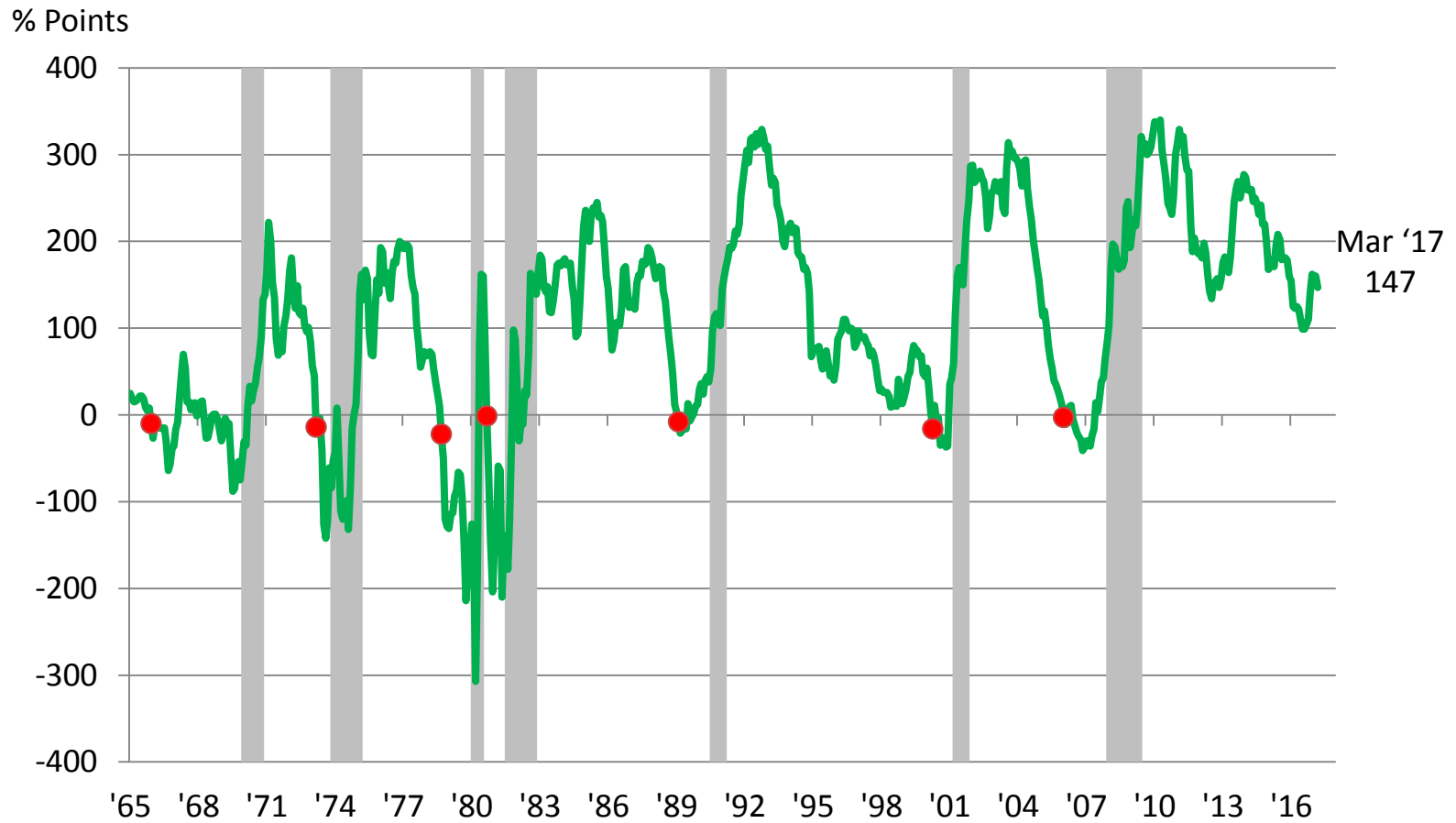
Treasury Yields, Mar 6, 2018 vs. April 6 2018 & April 10 ,2017



Source: Board of Governors – Federal Reserve System

# Yield Curve

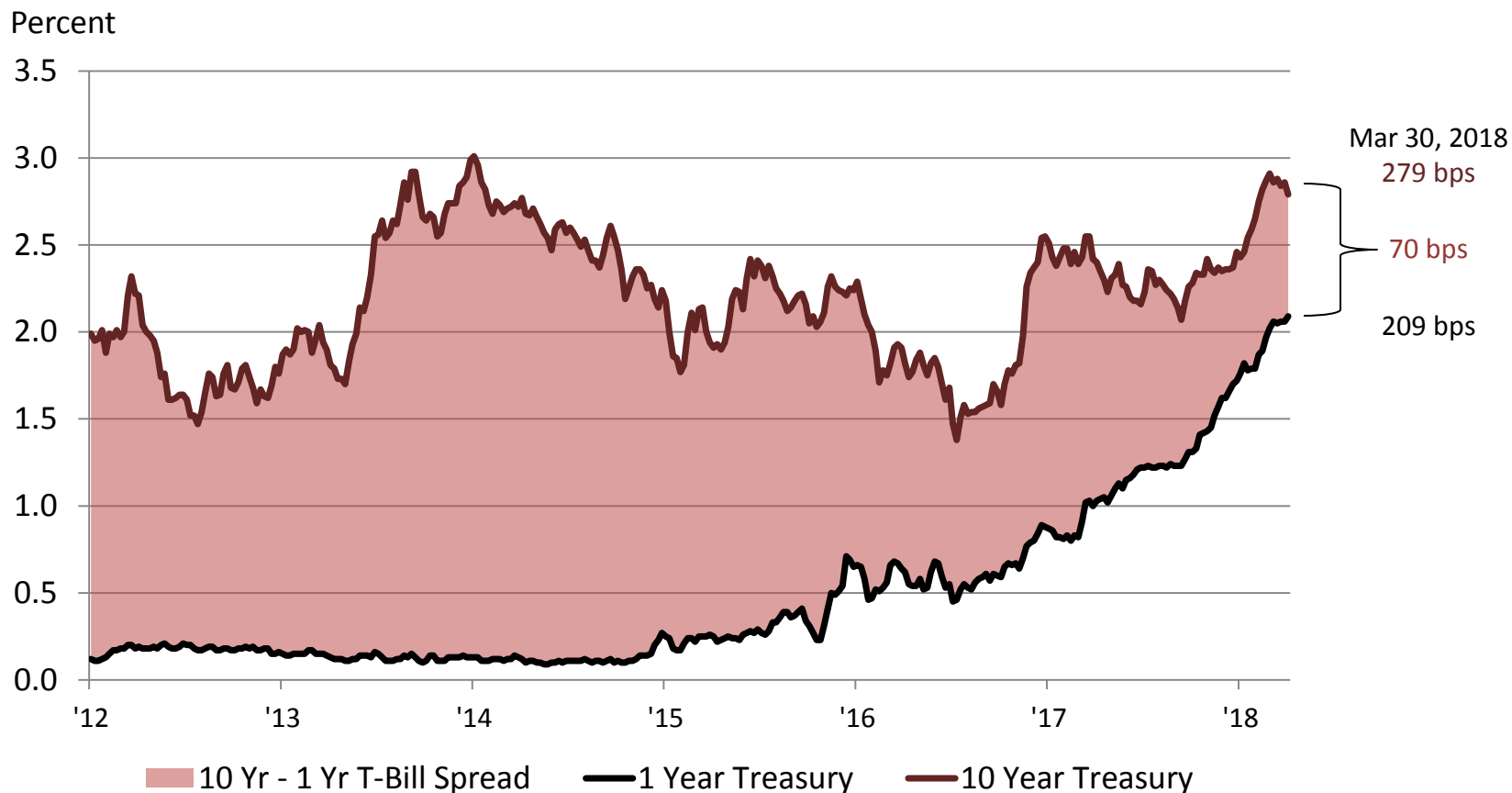
## 10 Year Minus 1 Year Treasury



Source: Board of Governors – Federal Reserve System

# Yield Curve

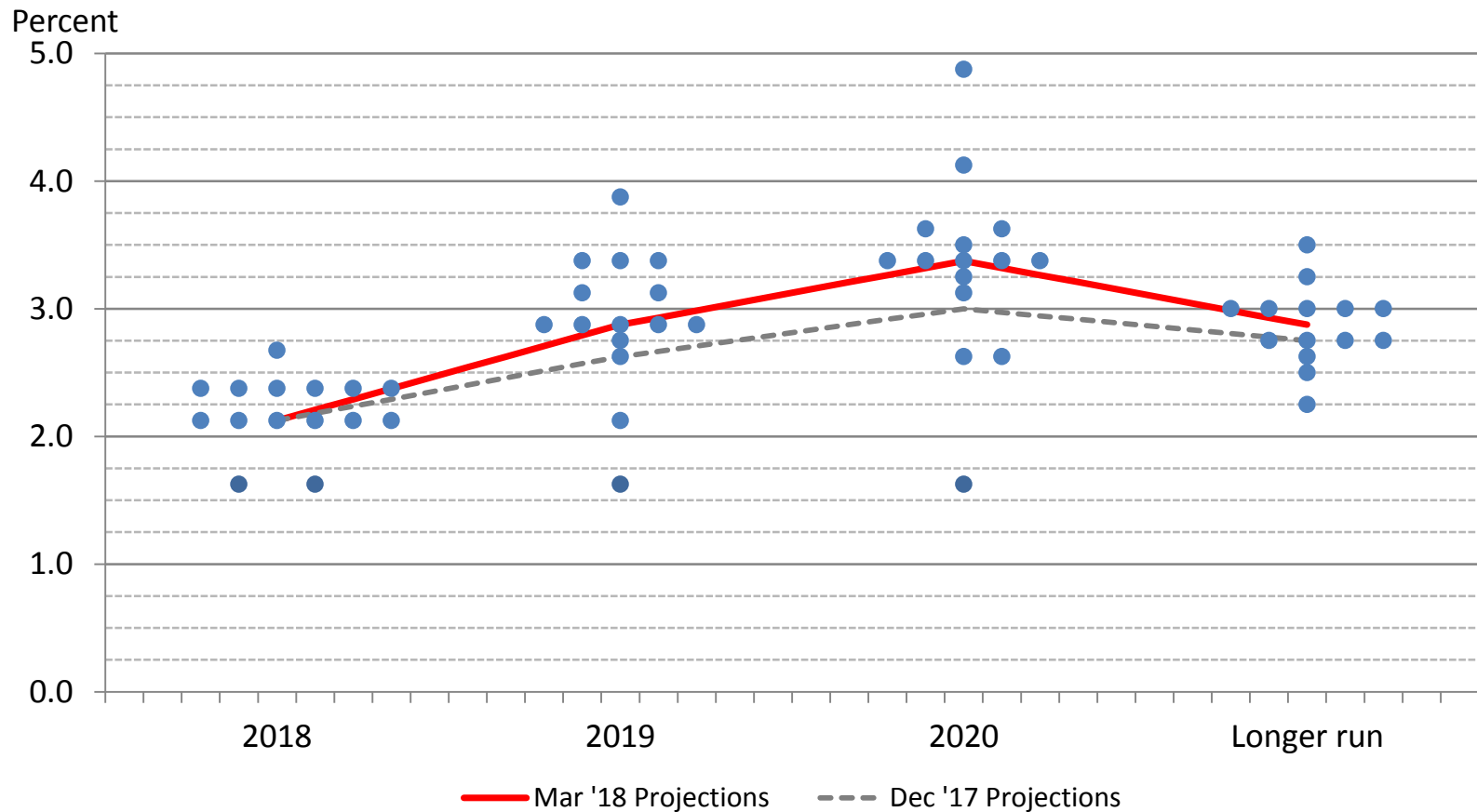
## 10 Year – 1 Year Treasuries in Basis Points, Week Ending



Source: Board of Governors – Federal Reserve System

# Appropriate pace of policy firming

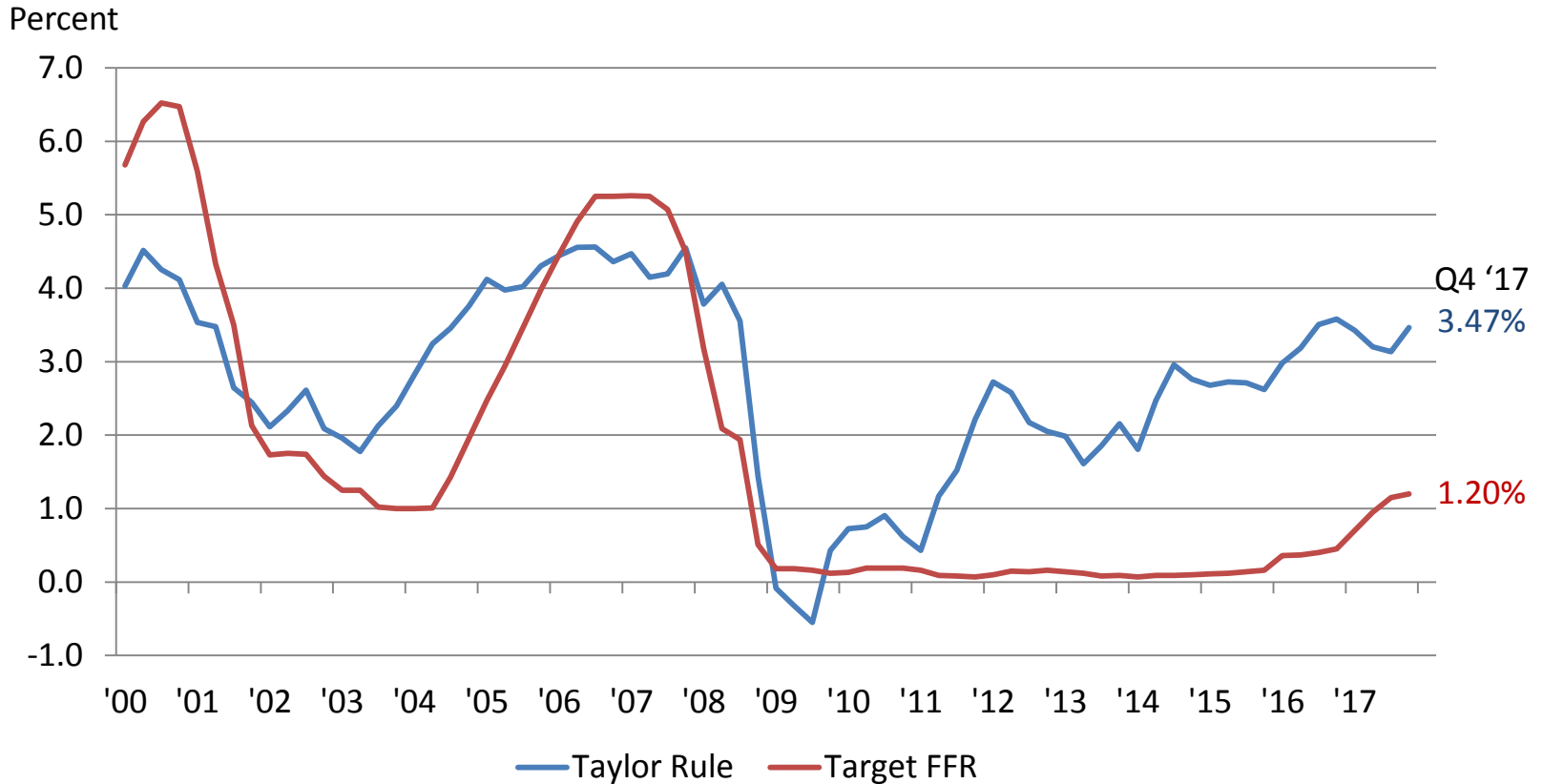
## Fed Funds Rate – Year End Projections



Source: Federal Reserve - F.O.M.C. participants, March 21, 2018

# Taylor Rule

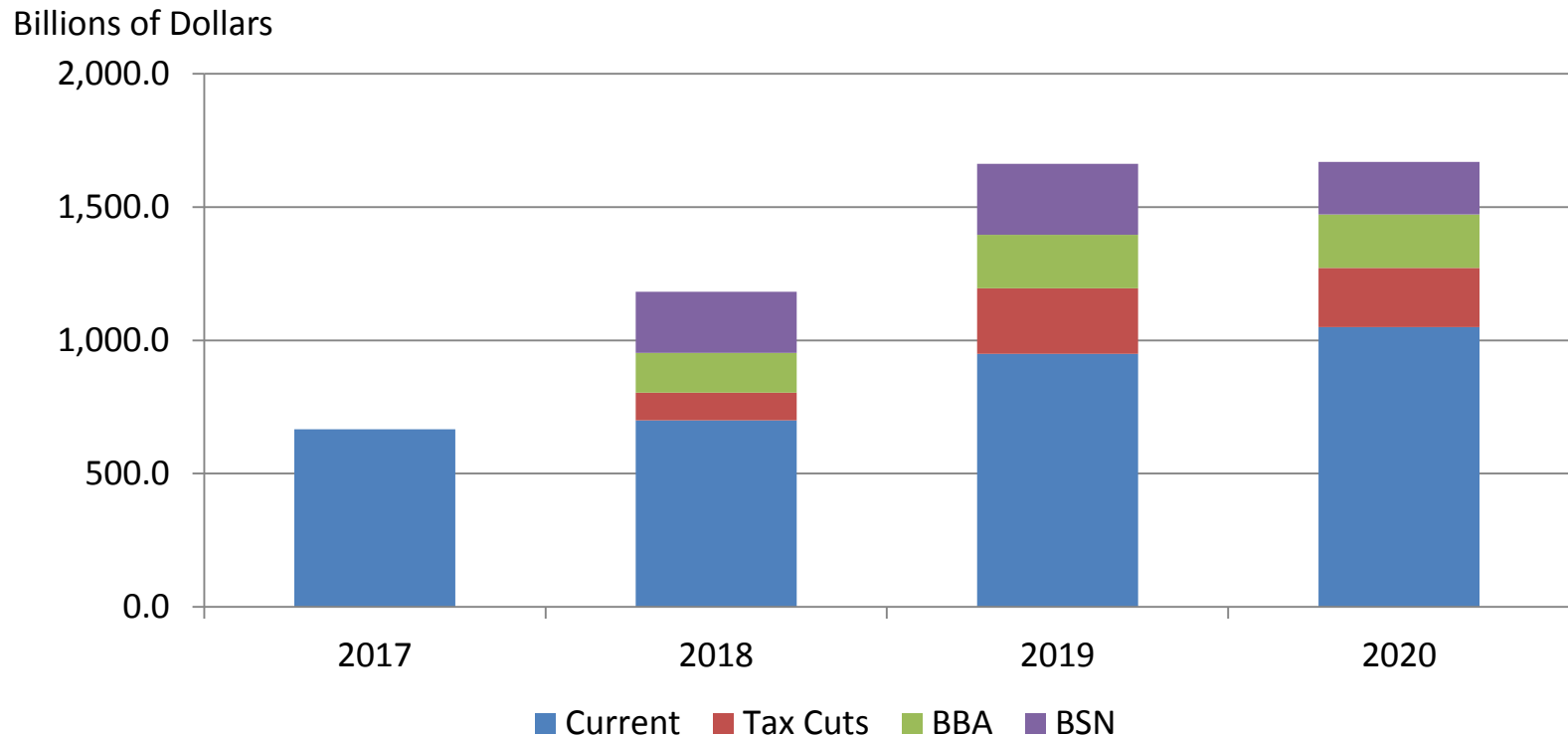
## CBO Output Gap, Core CPE Inflation, and Target FFR



Source: John B. Taylor (1993) theory, U.S. Bureau of Economic Analysis and Federal Reserve Bank.

# Ample Supply of Treasuries Coming

## Treasury Financing Needs and SOMA Treasury Reductions



System Open Market Account (SOMA)  
Bipartisan Budget Act (BBA)  
Balance Sheet Normalization (BSN)

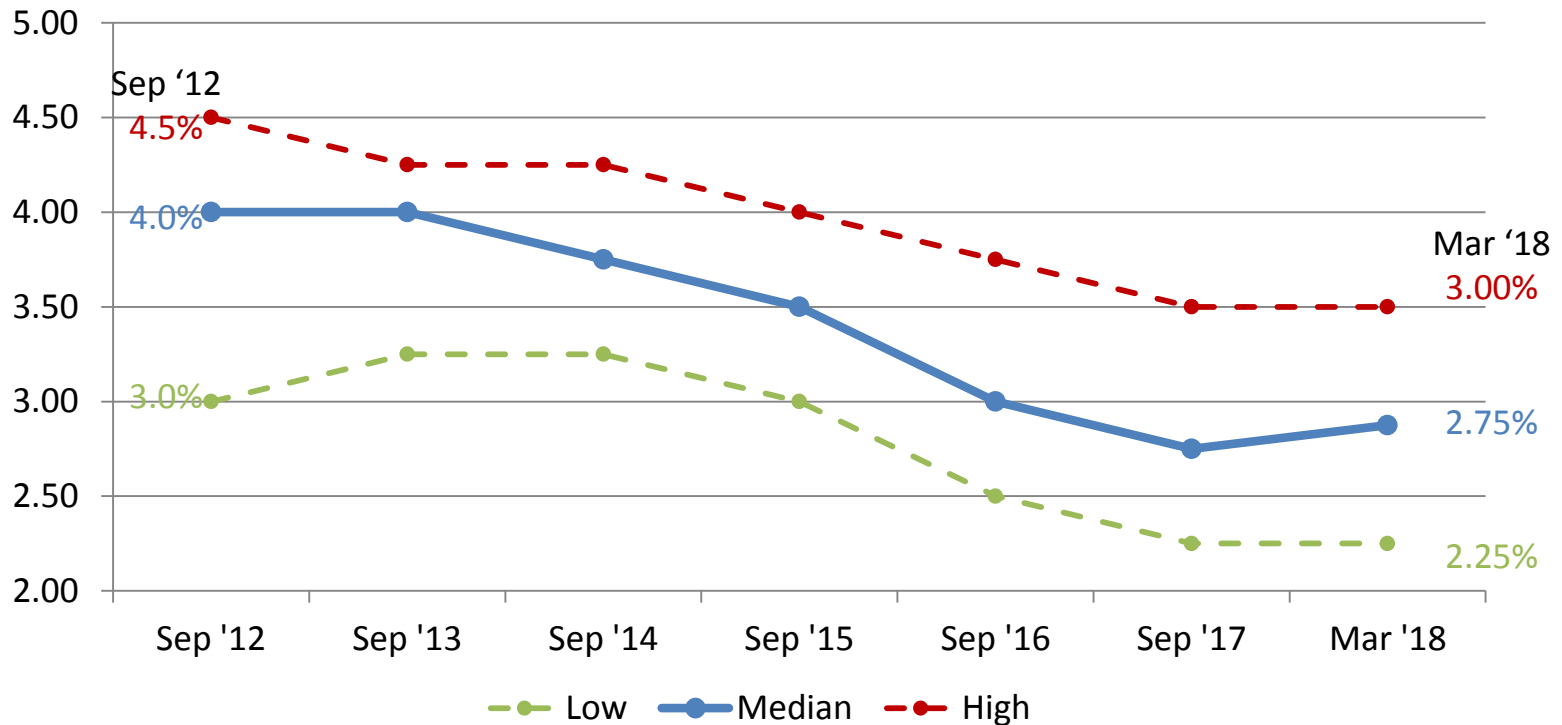
\* FRBCHI staff estimates.



# Target Federal Funds Rate

## Long Run Projections

Percent



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

*Thank You!*

