

# Economic Update

## Baker College - Flint

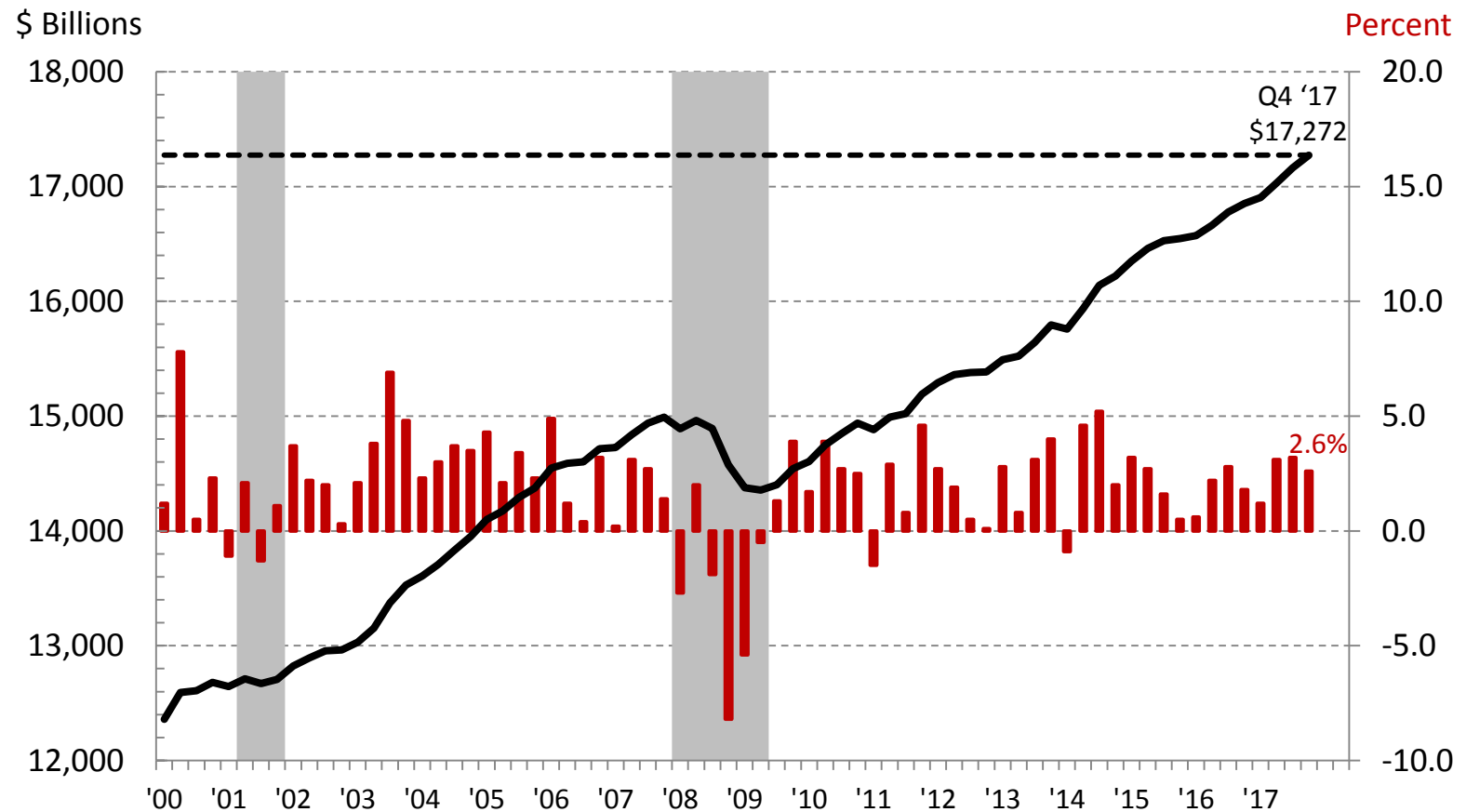
**Federal Reserve Bank of Chicago**  
February 13, 2018

**Paul Traub**  
Senior Business Economist



# U.S. Real GDP

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

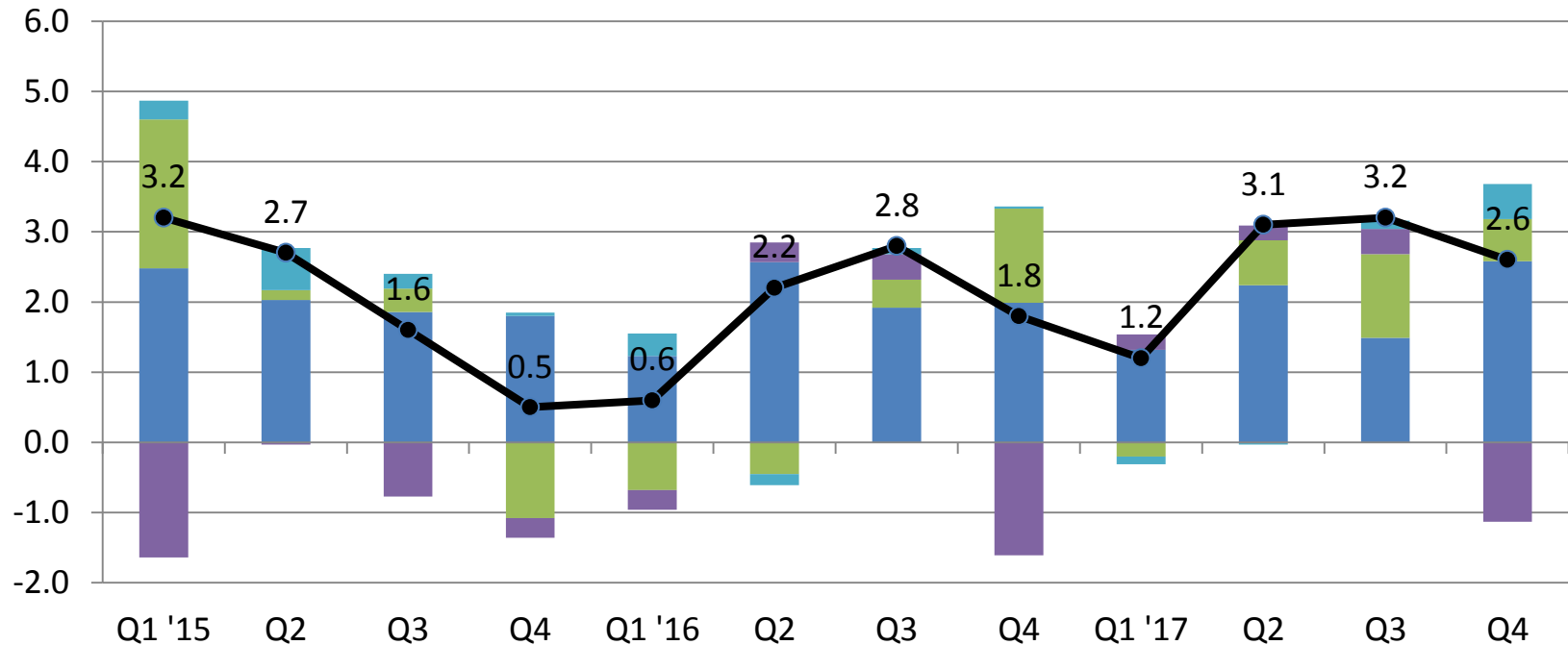


Source: U.S. Bureau of Economic Analysis

# U.S. Real GDP

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

Percent

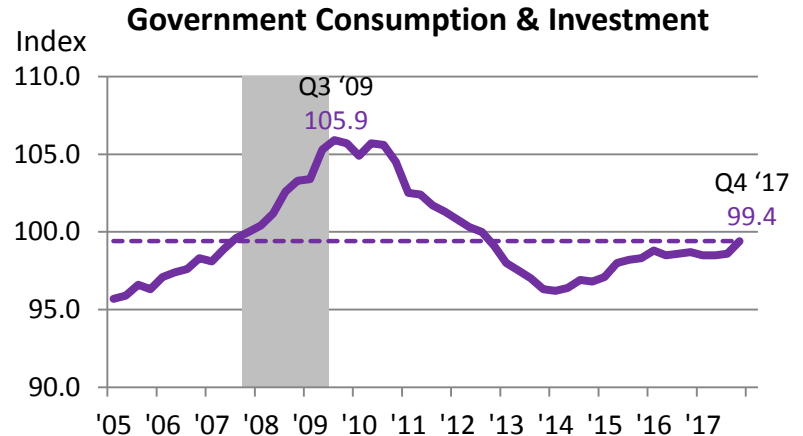
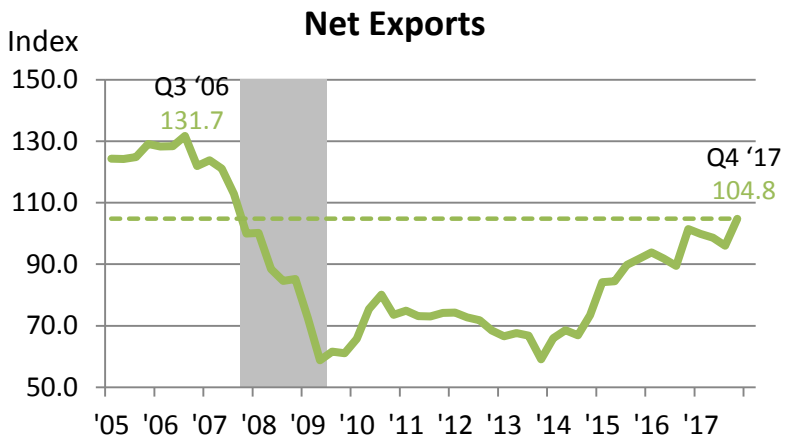
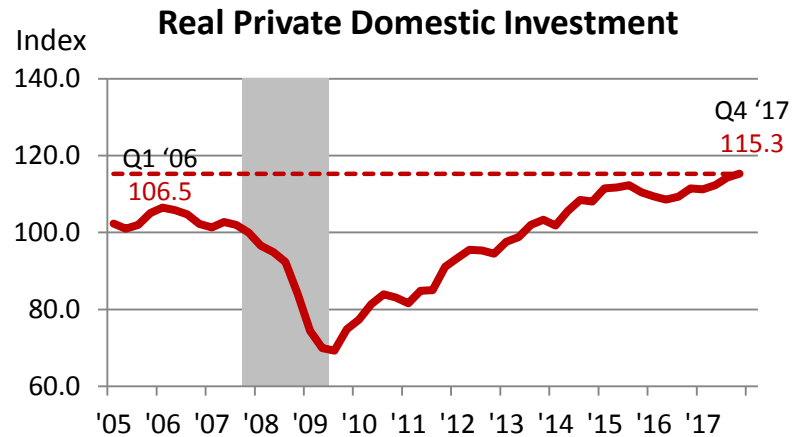
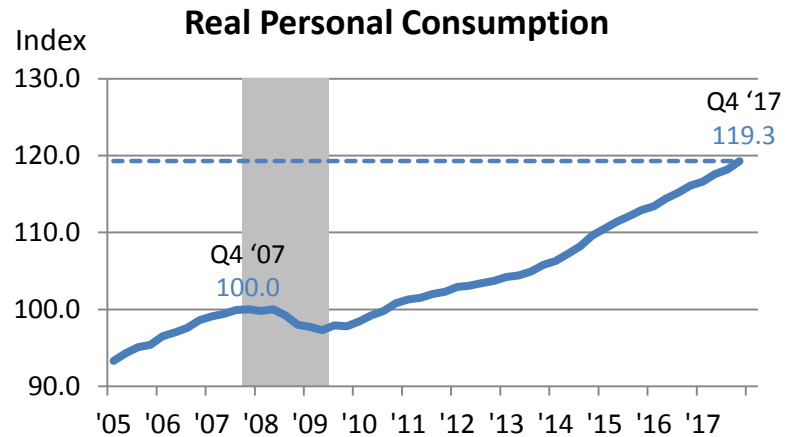


	<span style="color: blue;">■</span> PCE	<span style="color: green;">■</span> Private Investment	<span style="color: purple;">■</span> Net Exports	<span style="color: cyan;">■</span> Government	<span style="color: black;">●</span> GDP
Q3 2017					
Contribution	2.6%	0.6%	-1.1%	0.5%	2.6%

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

# Real GDP by Sector

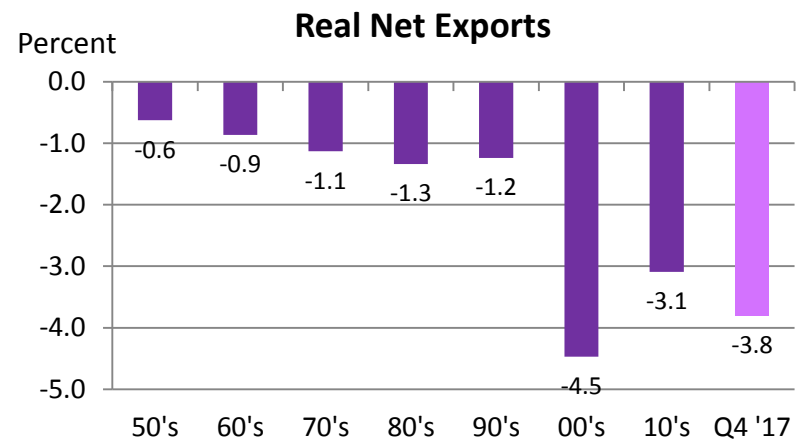
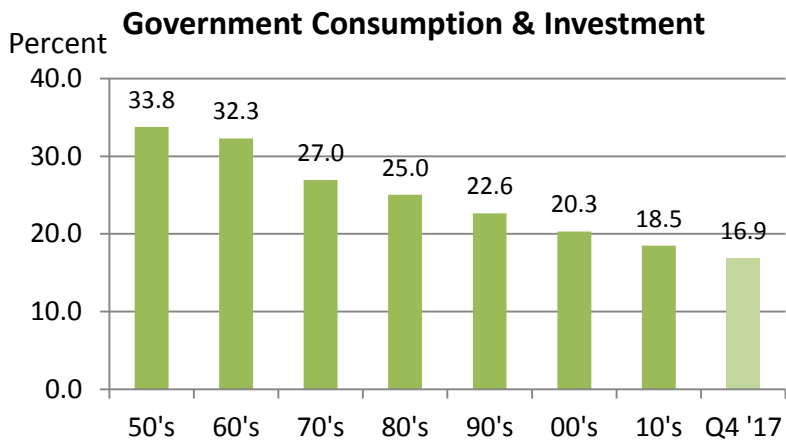
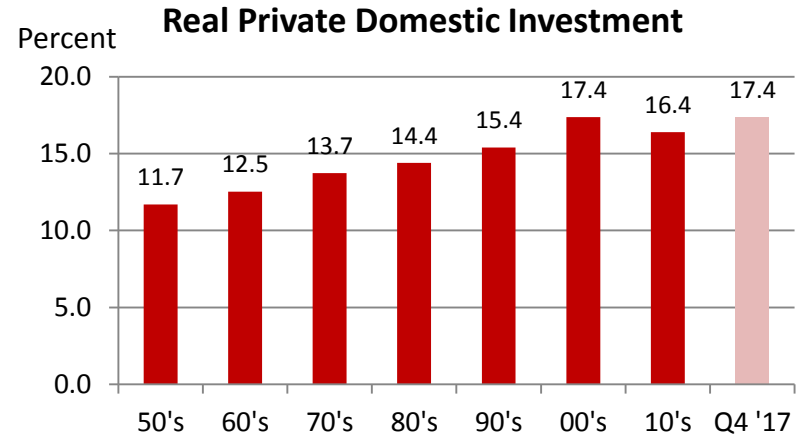
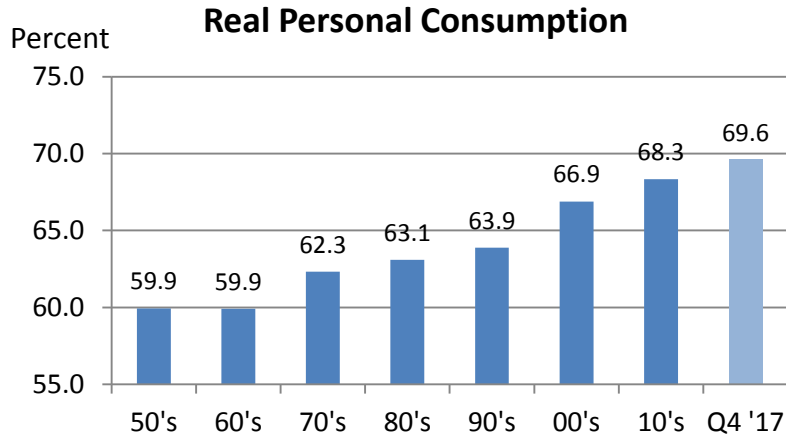
C + I + G + Nx, Index – Q4 2007 = 100



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

# Share of U.S. Real GDP

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

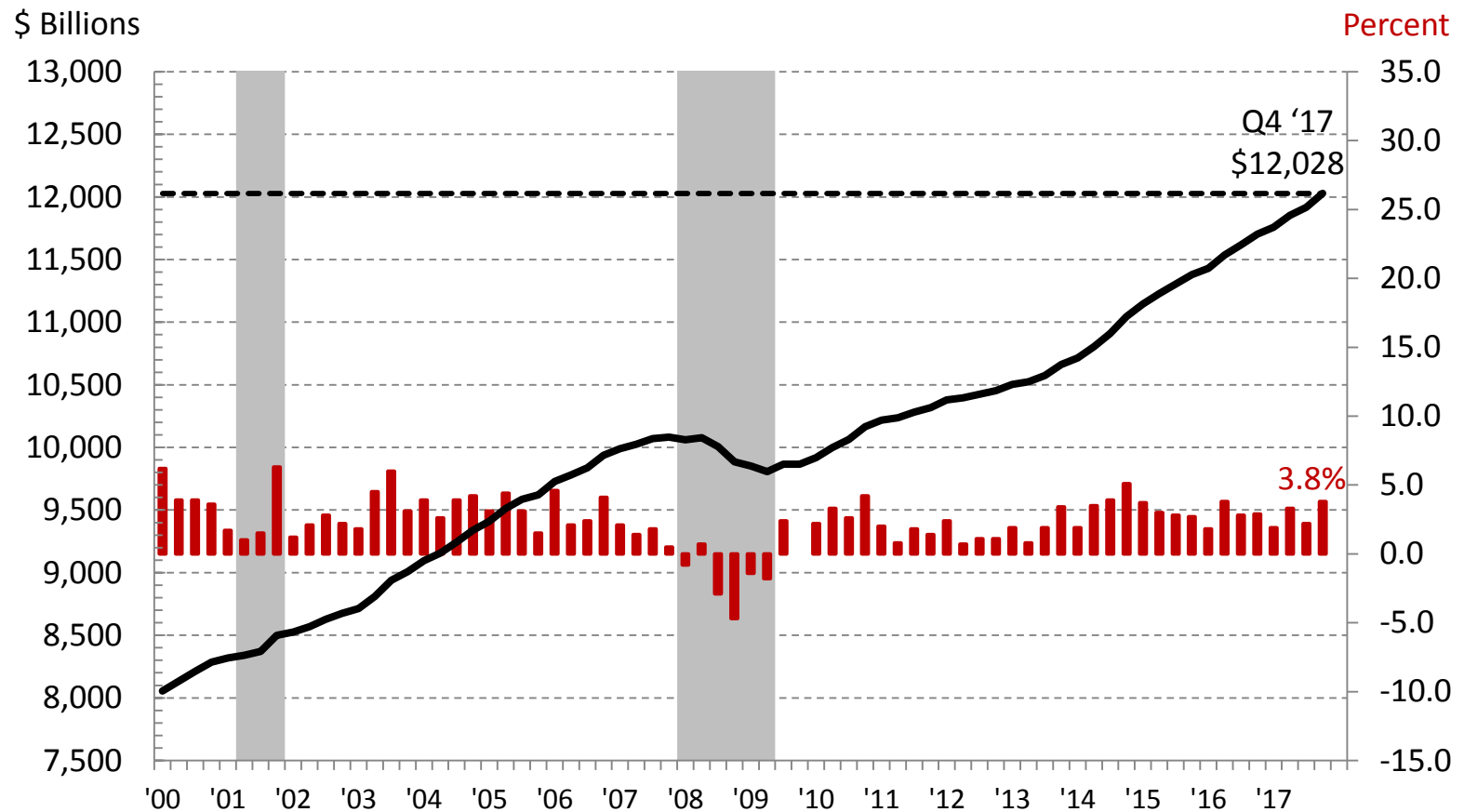


Totals may not add to 100.0 due to rounding and summing of averages.

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

# Real Personal Consumption Expenditures

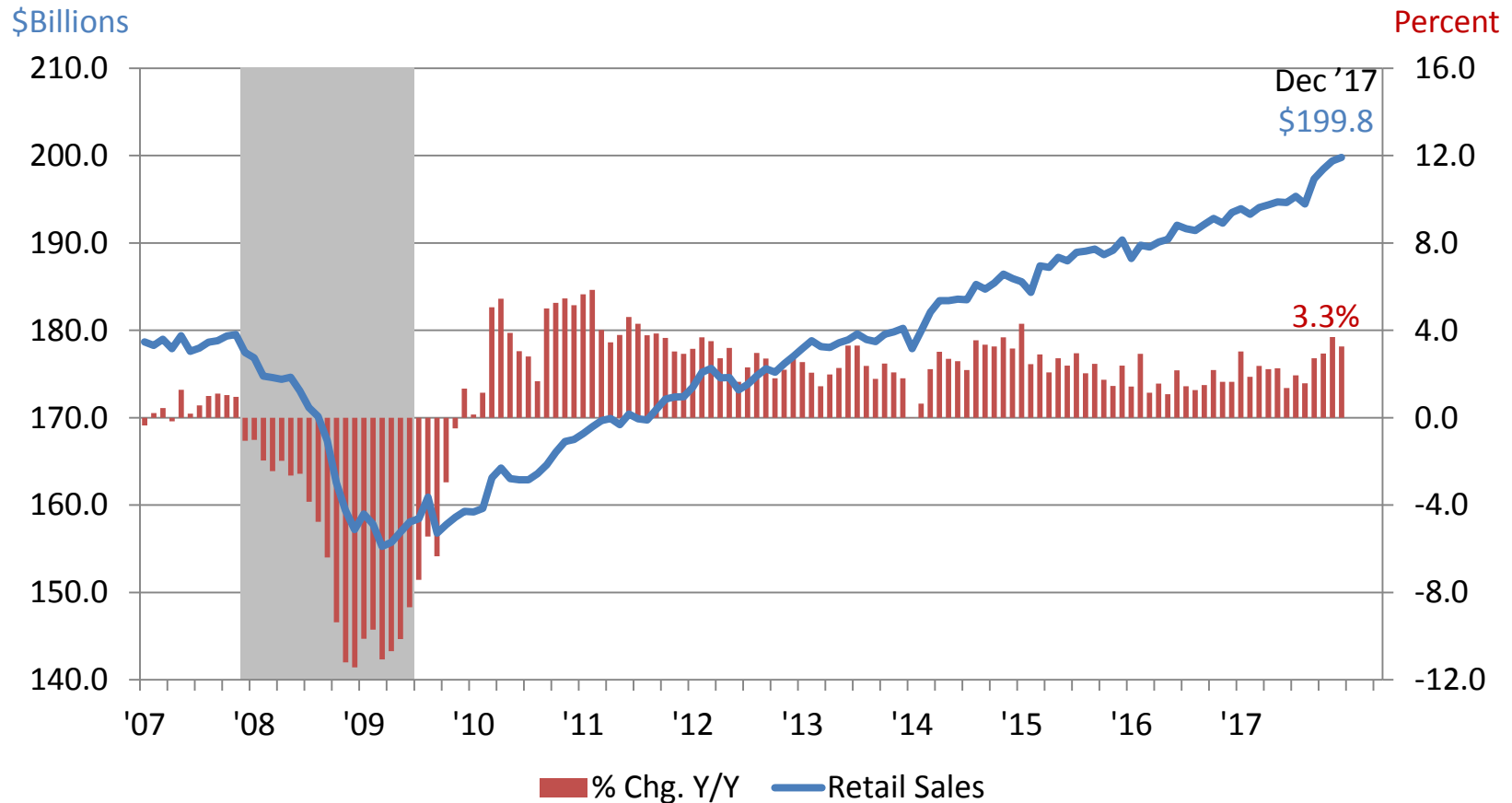
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Retail Sales

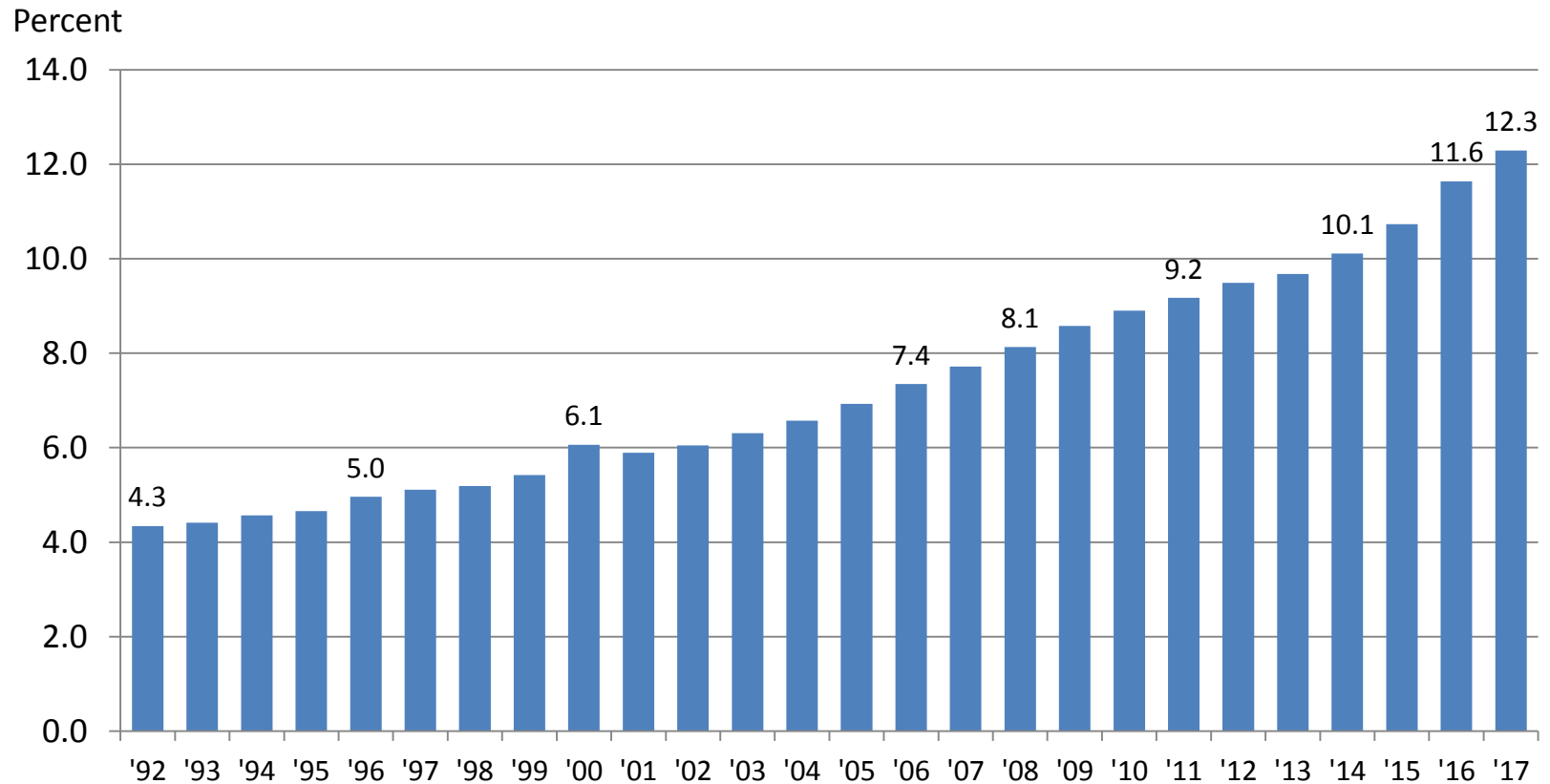
Real Retail & Food Services Sales, SA – Billions of \$2009 and % Chg. Yr./Yr.



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

# Nonstore Retail Sales

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

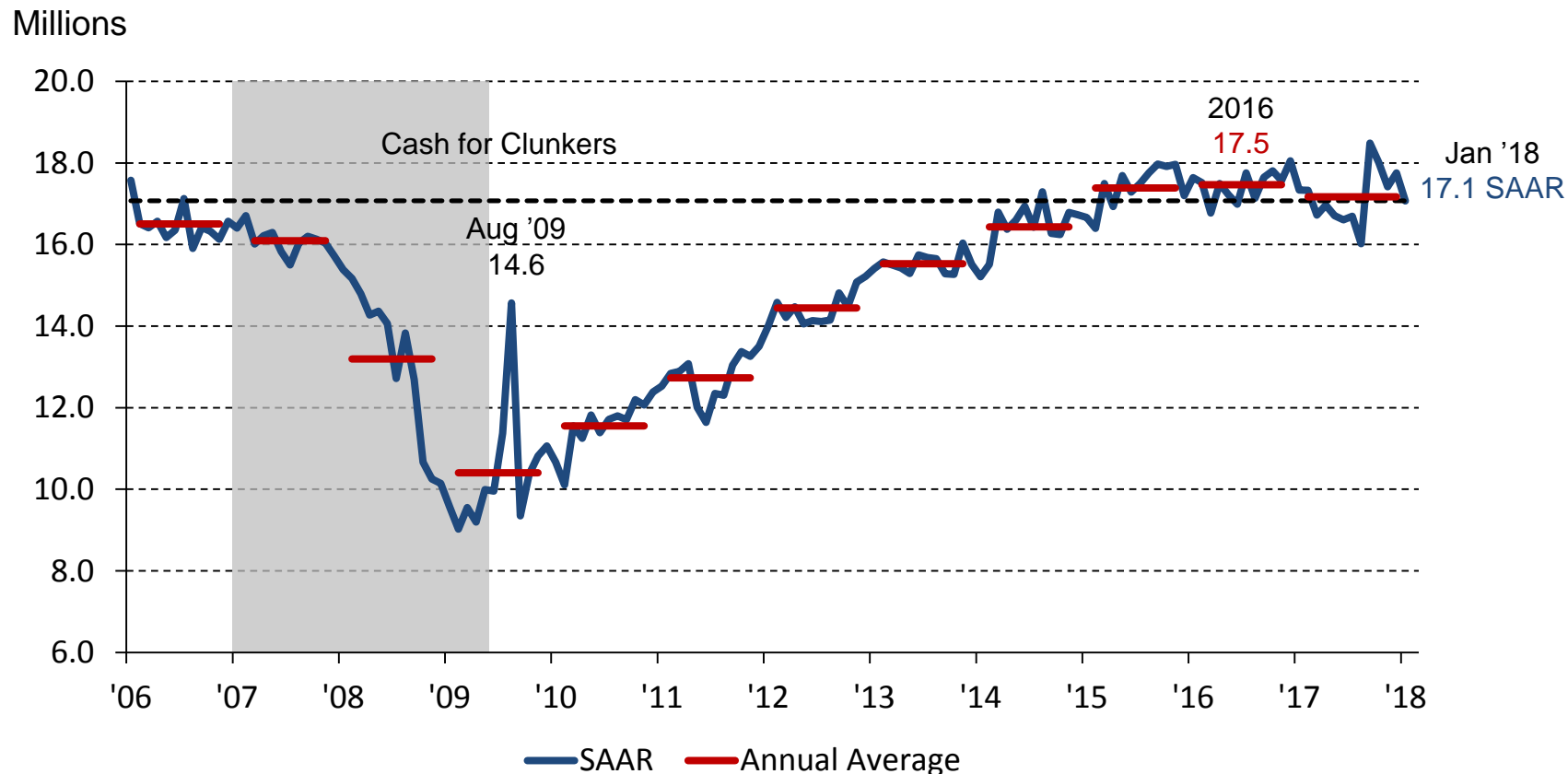


Source: Author's calculation using U.S. Census Bureau data.



# U.S. Light Vehicle Sales

S.A.A.R – Millions of Units

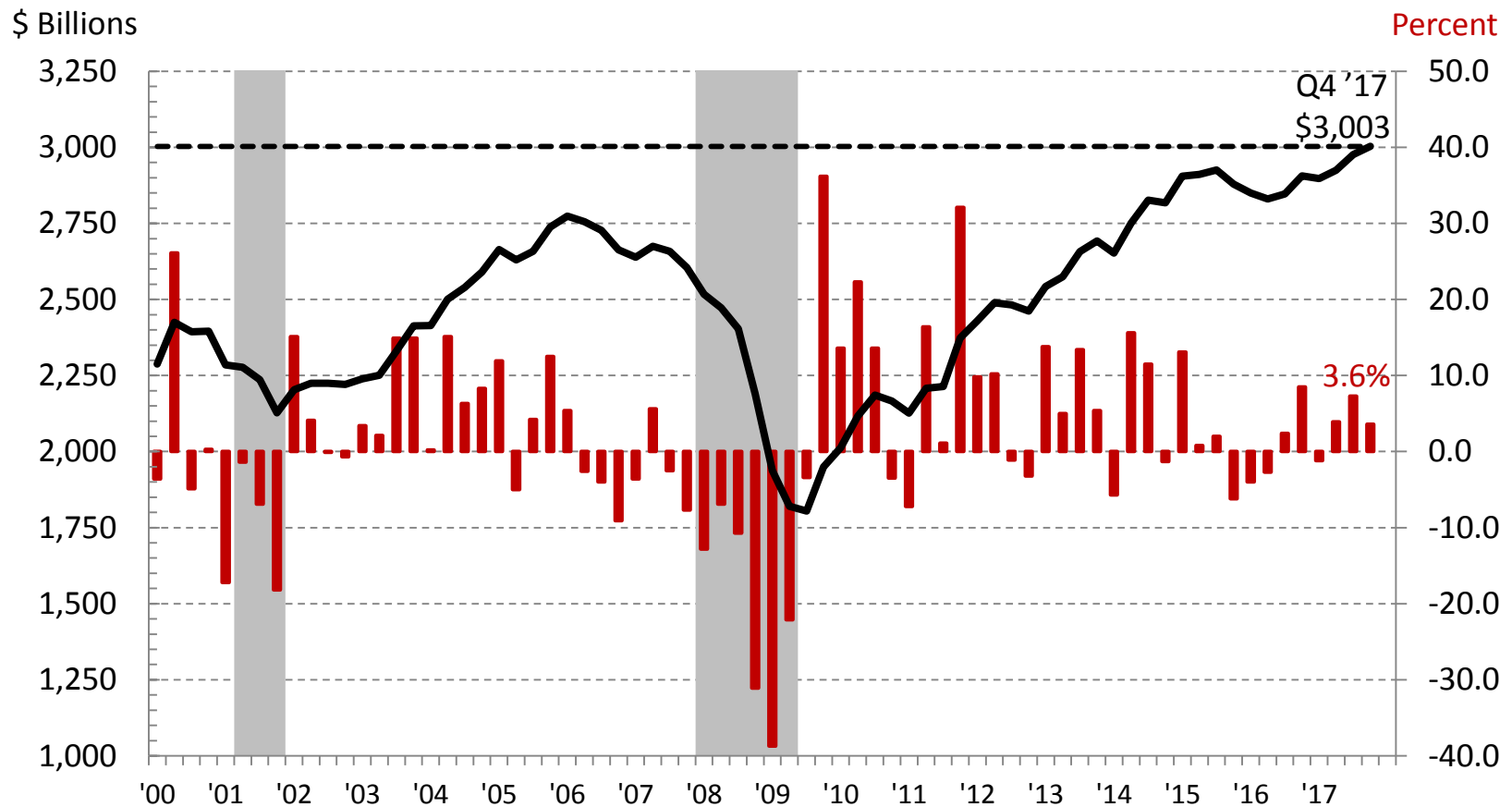


Note: Total 2016 Light Vehicle Sales: 17,465,020 / Including M/H: 17,866,260.

Source: Ward's Automotive and BEA

# Real Gross Private Domestic Investment

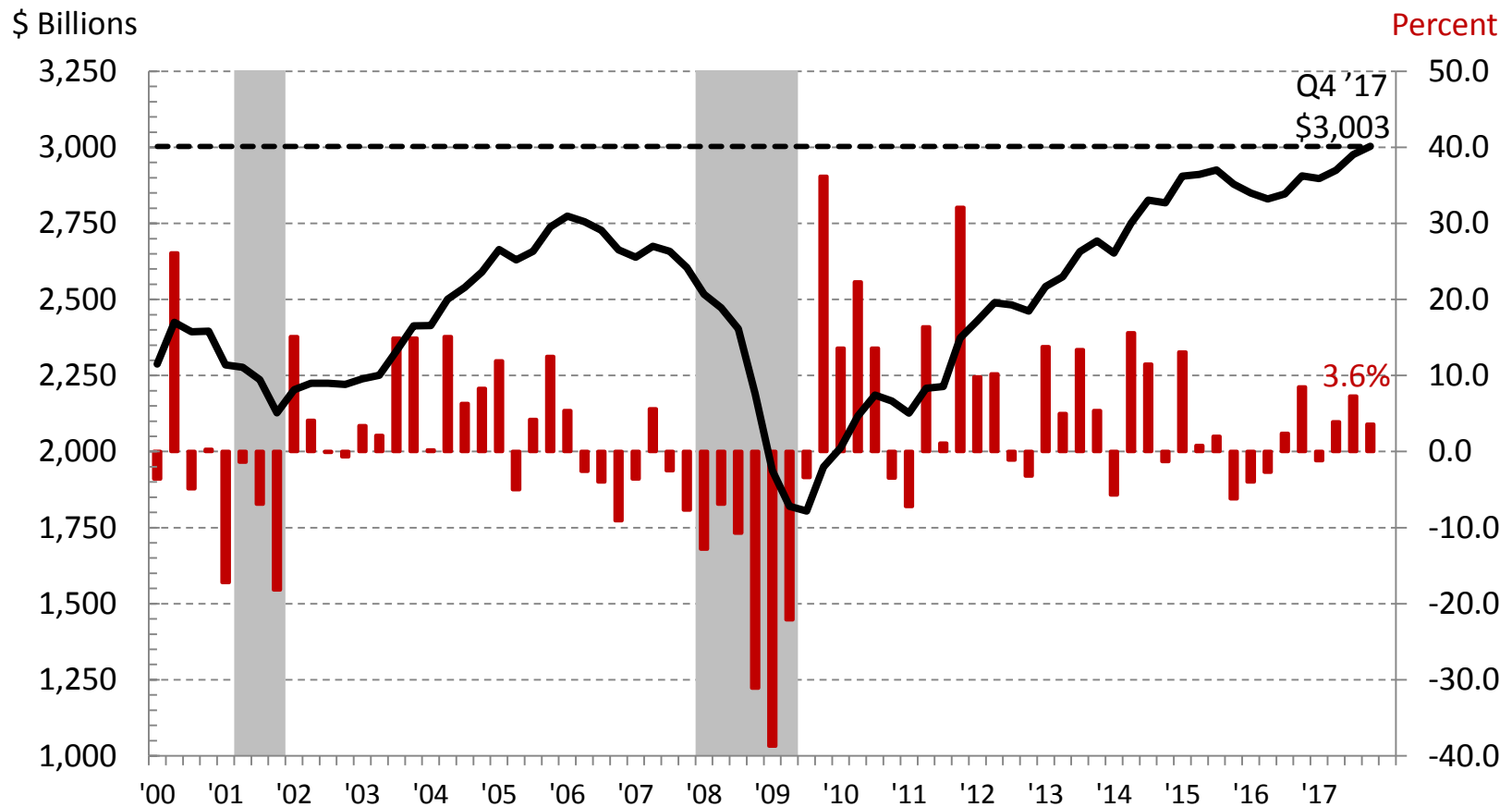
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Gross Private Domestic Investment

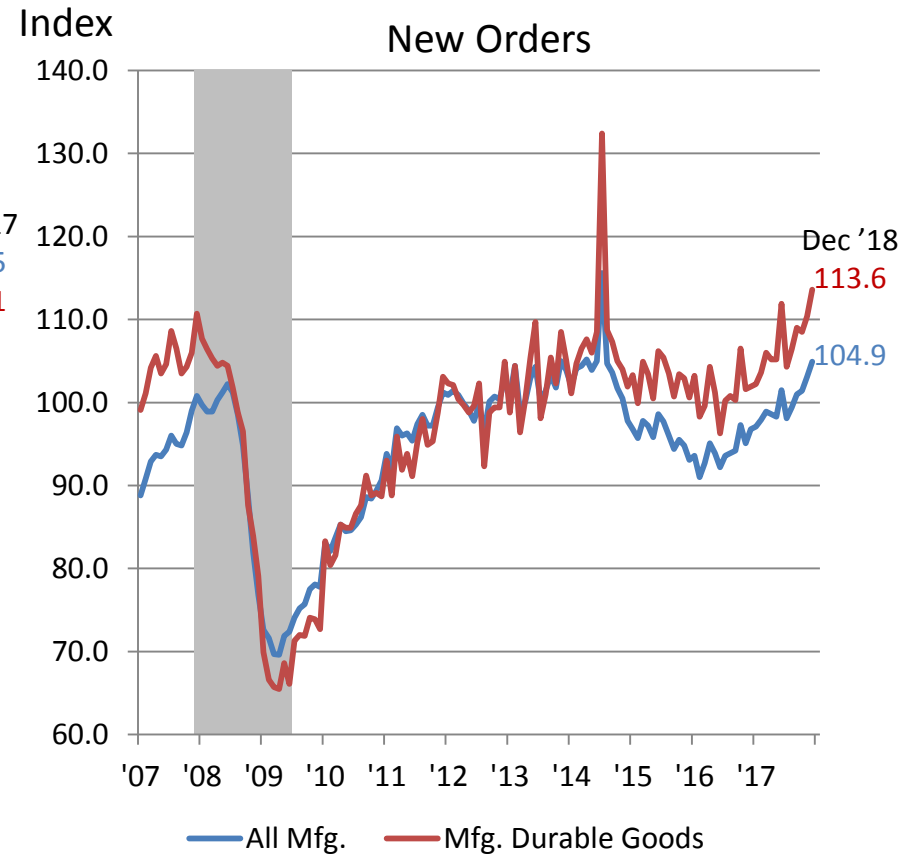
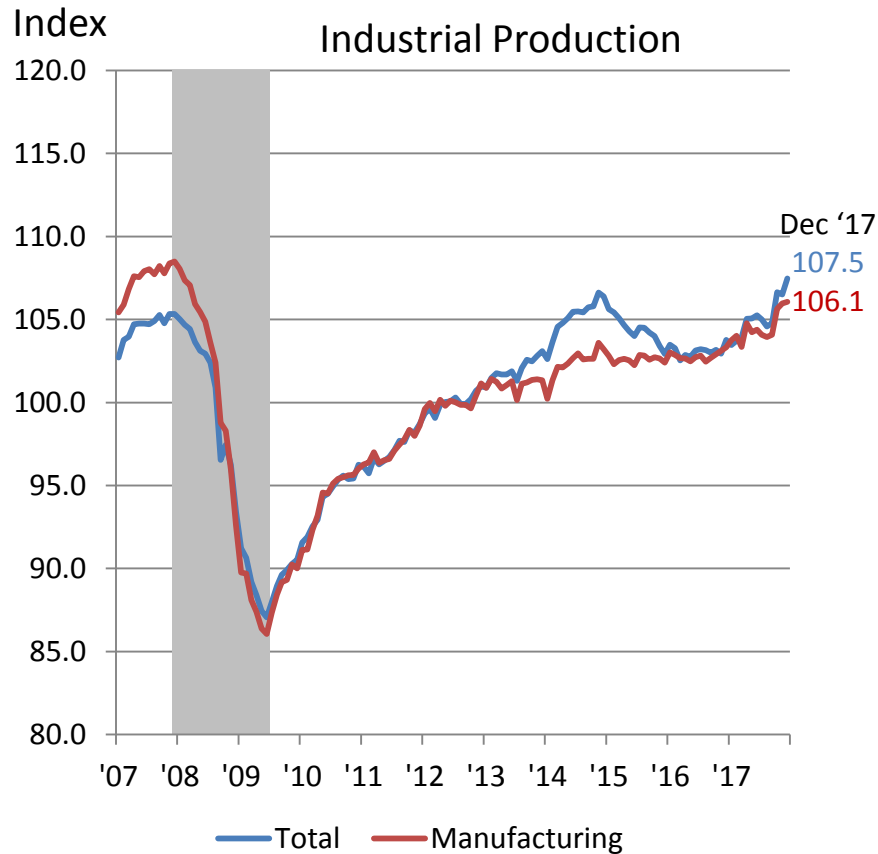
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Industrial Production & New Orders

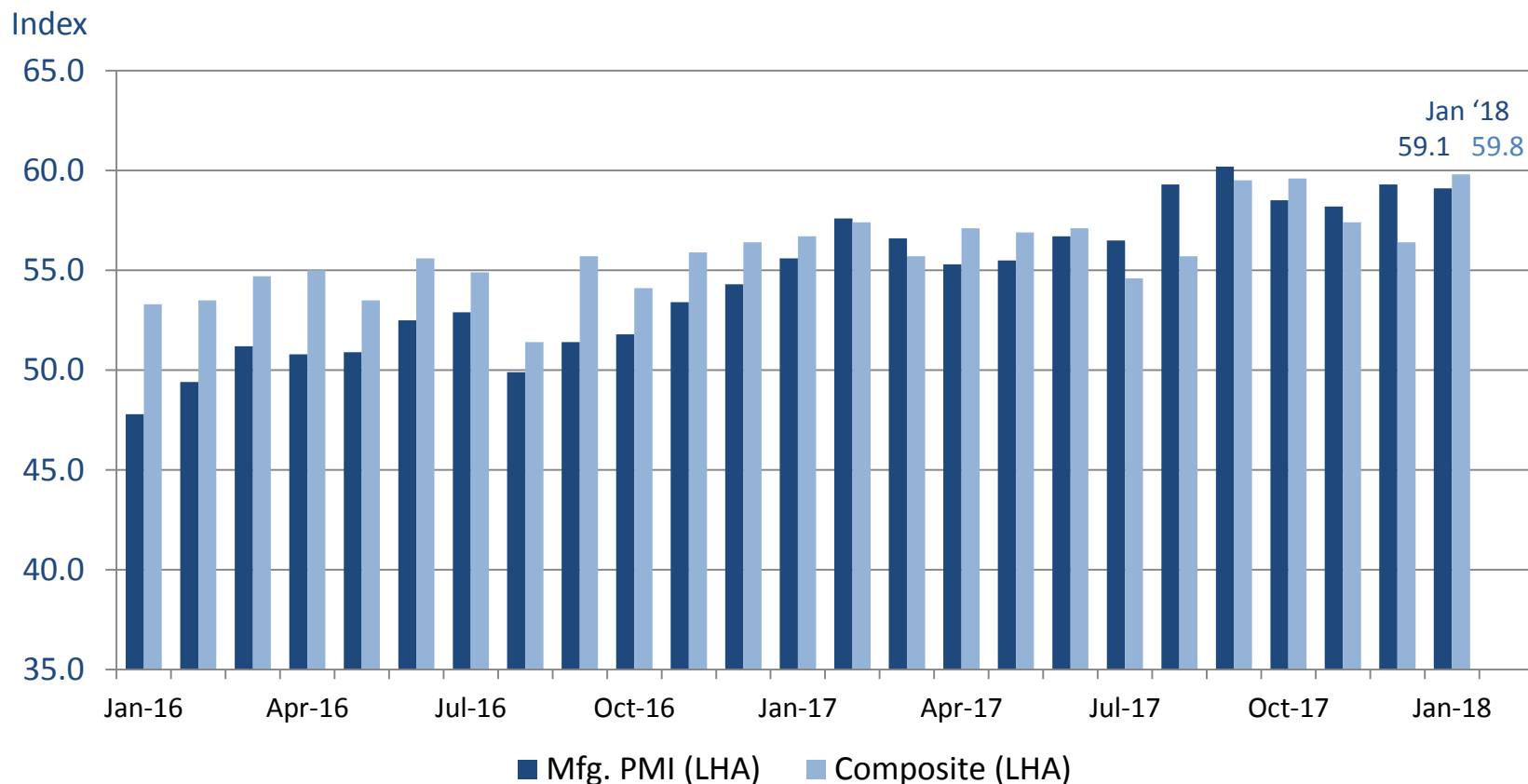
Index, 2012 = 100



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

# ISM Purchasing Managers Index

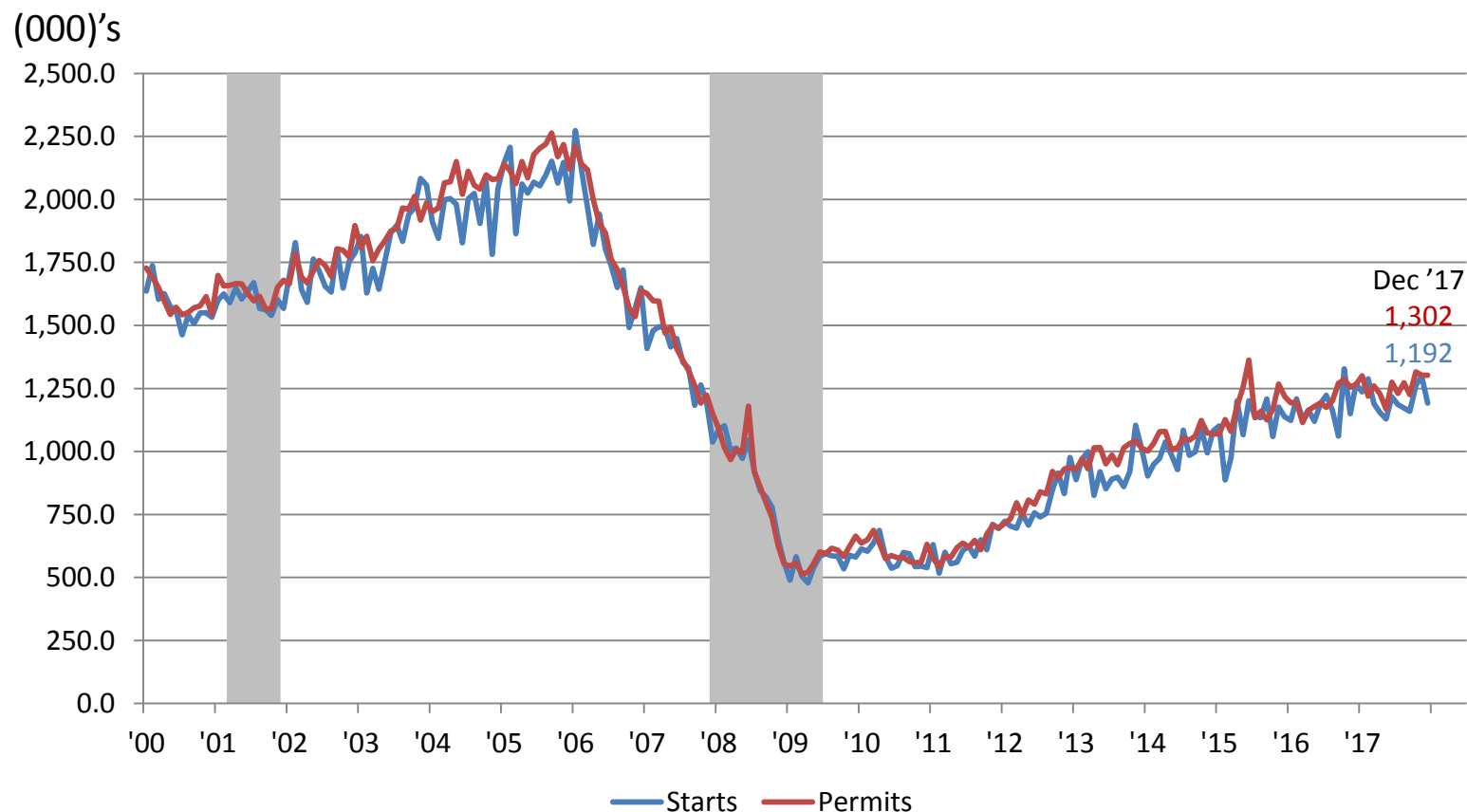
Manufacturing & Composite, SA - Greater than 50 = Expansion



Source: Institute for Supply Management , Haver Analytics and FRED

# New Private Housing

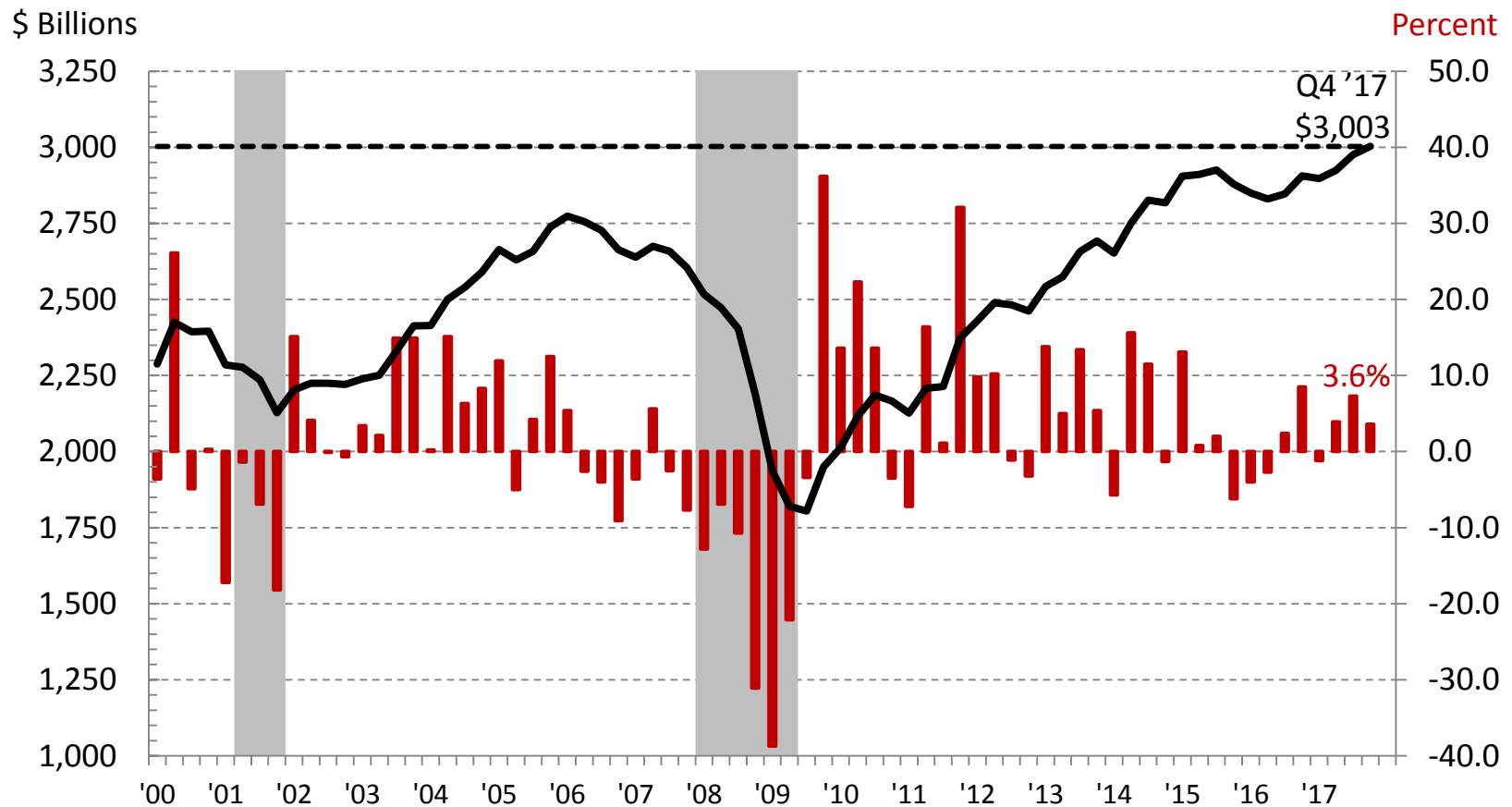
Starts, Permits & Real Median Sales Price – Units (SAAR) / \$2009



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

# Real Gross Private Domestic Investment

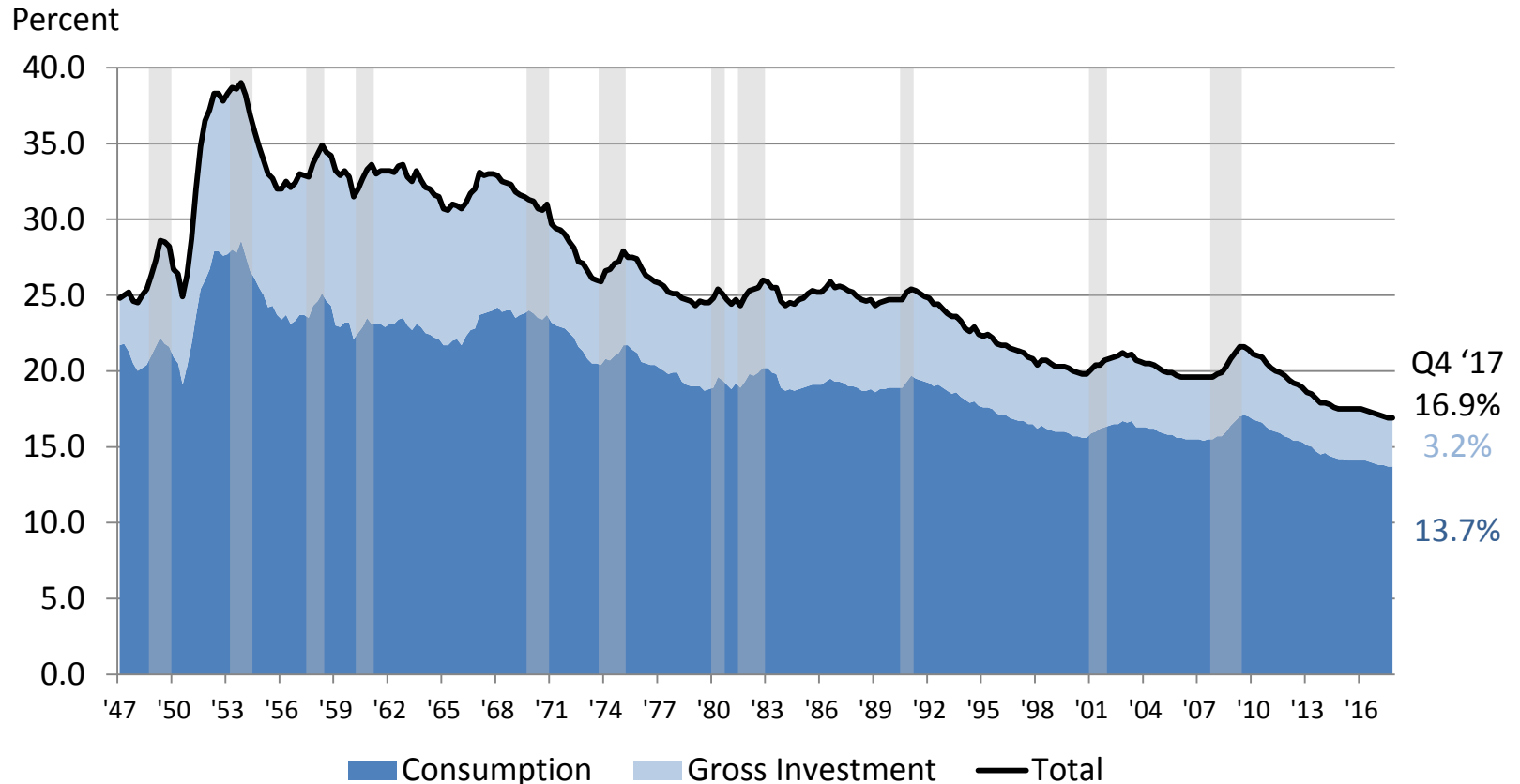
Billions Chained \$2009, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

# Real Government Consumption & Gross Investment

Percent of Total Real GDP - \$2009

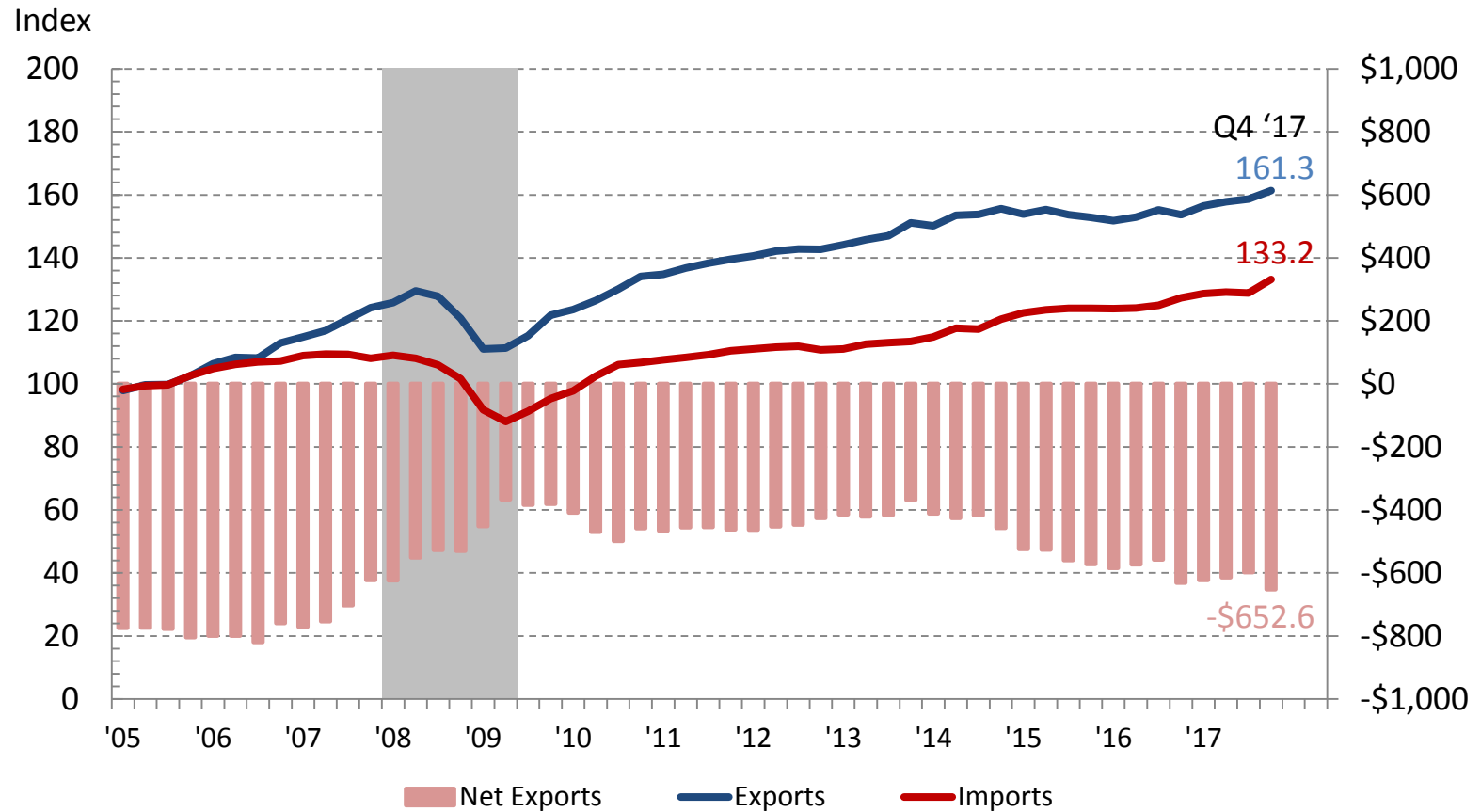


Source: Author's calculations using U.S. Bureau of Economic Analysis data.



# Real Imports and Exports

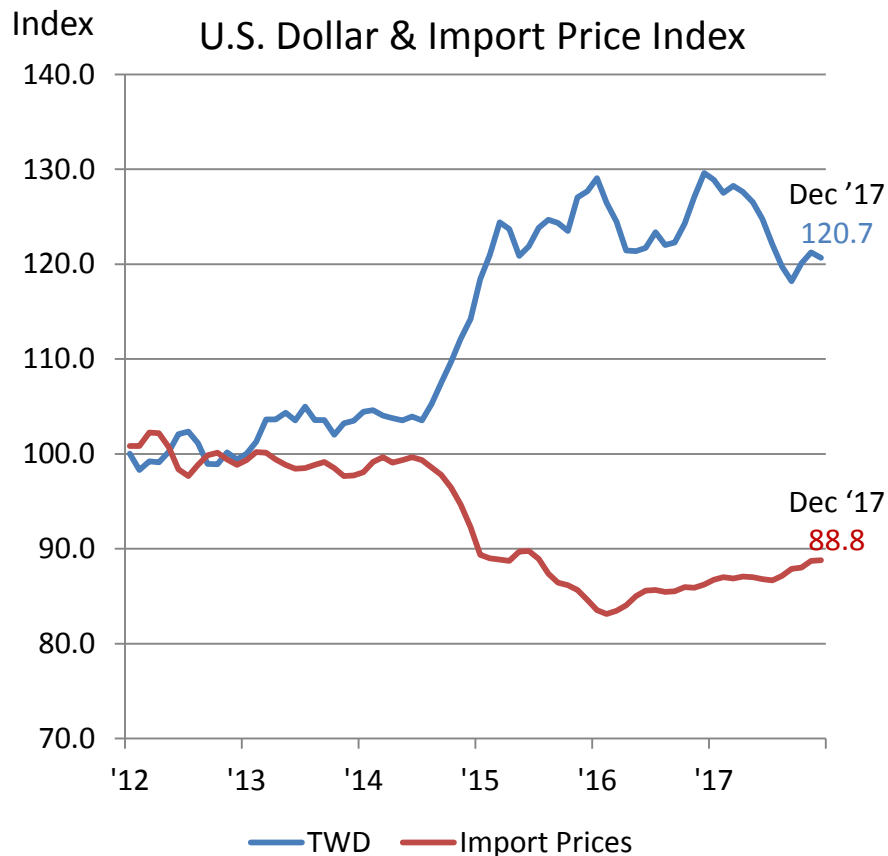
Billions Chained \$2009, Index – 2005 = 100



Source: U.S. Bureau of Economic Analysis

# The U.S. Dollar and Trade Deficit

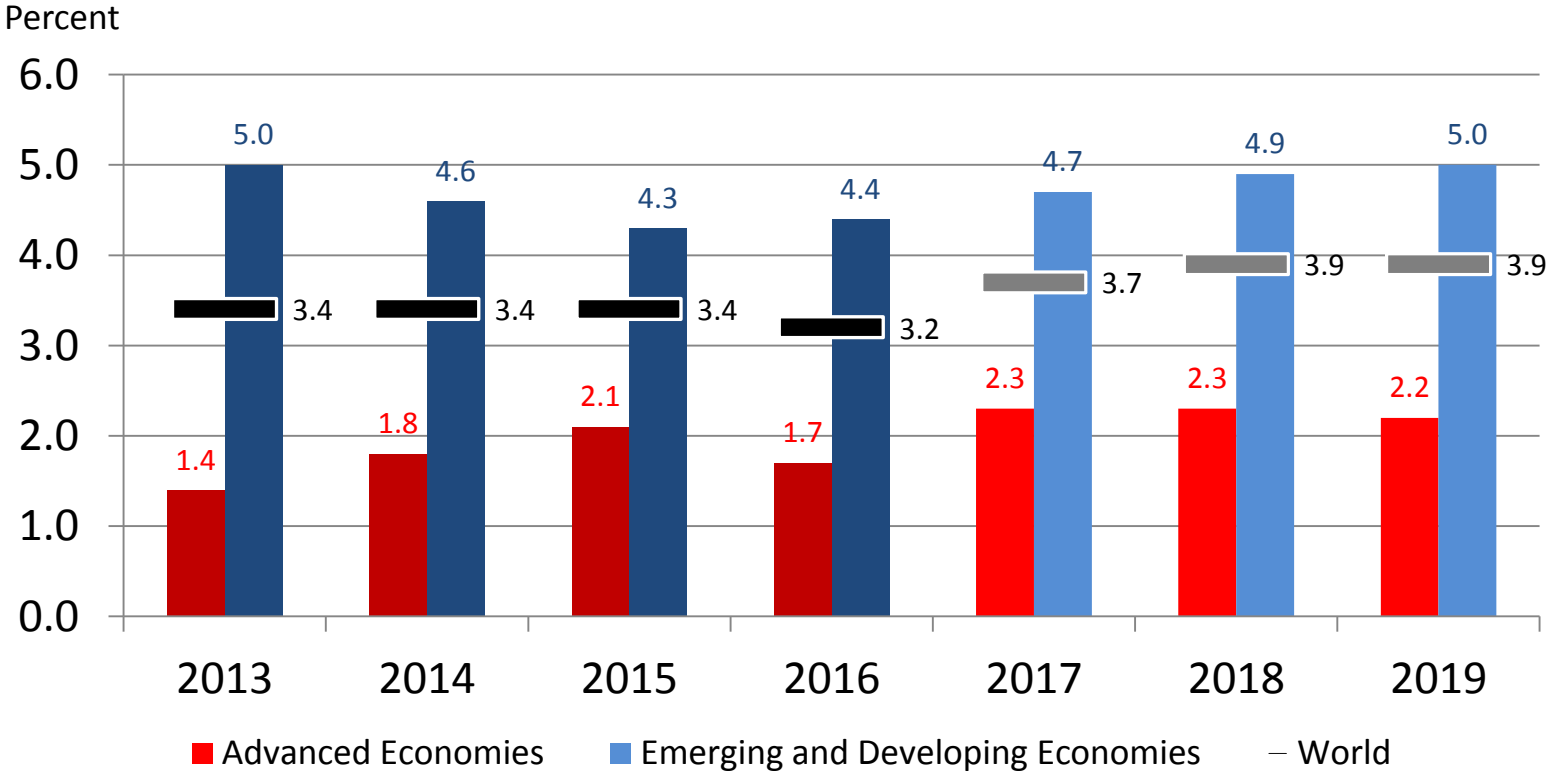
Index 2012 = 100



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

# Global Outlook

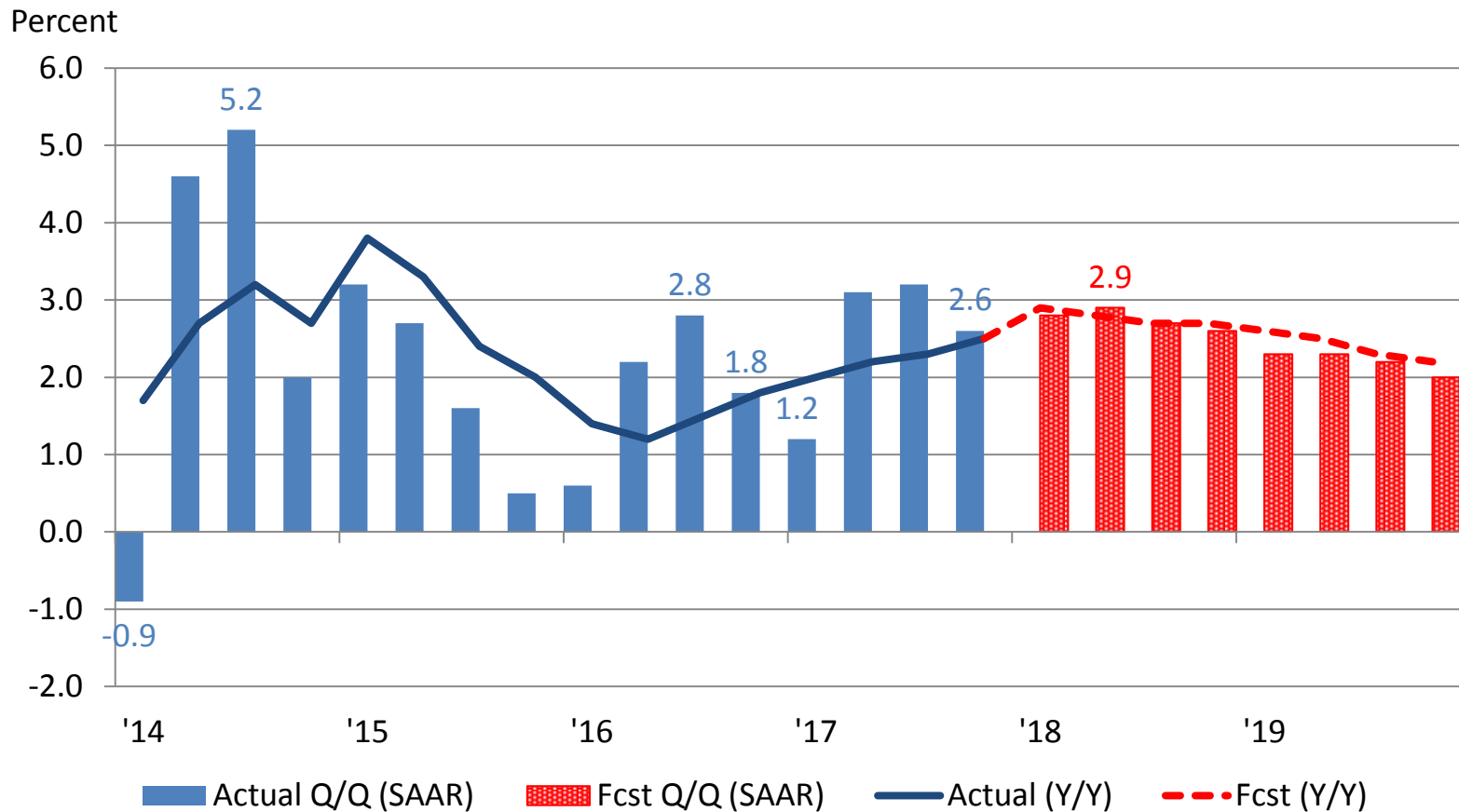
IMF Forecast for Growth (Jan '18 Interim Forecast), % Chg. Yr./Yr.



Source: IMF - World Economic Outlook

# U.S. Real GDP Blue Chip Forecast

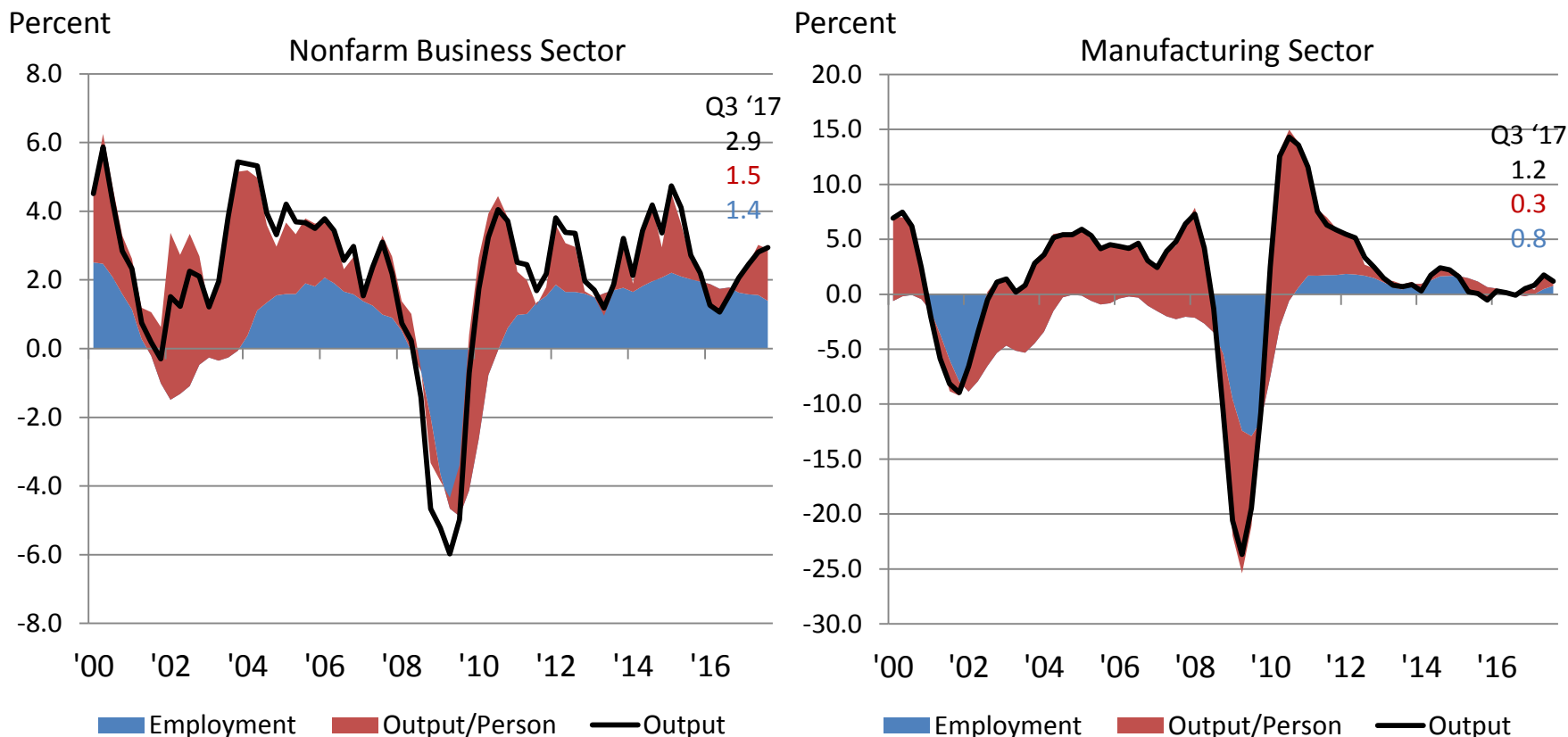
Percent Change – Billions of Chained \$2009



Source: BEA and January 2018 Blue Chip Economic Indicators

# Employment, Productivity, and Output

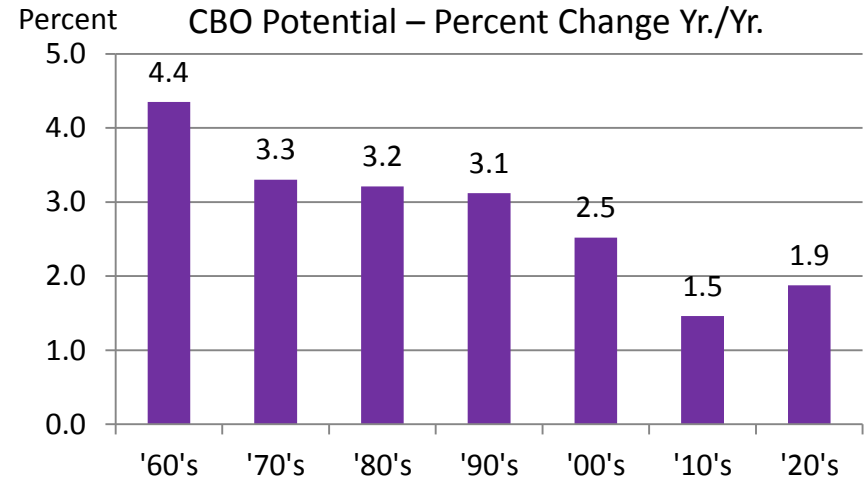
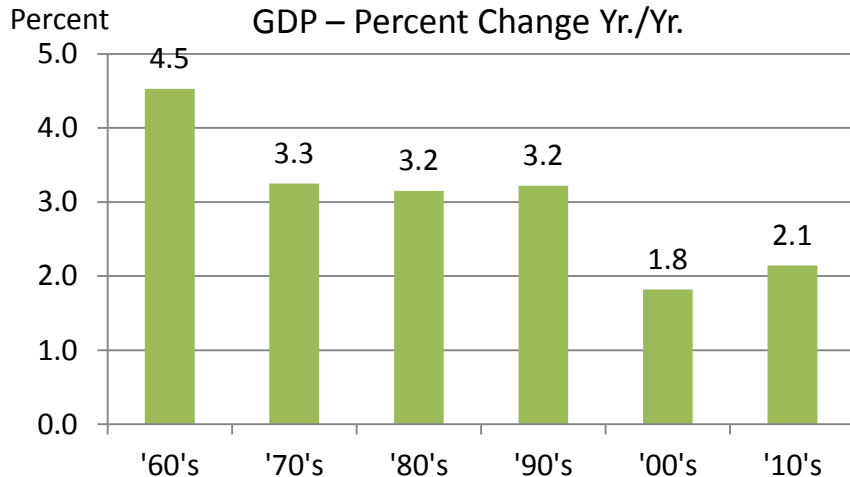
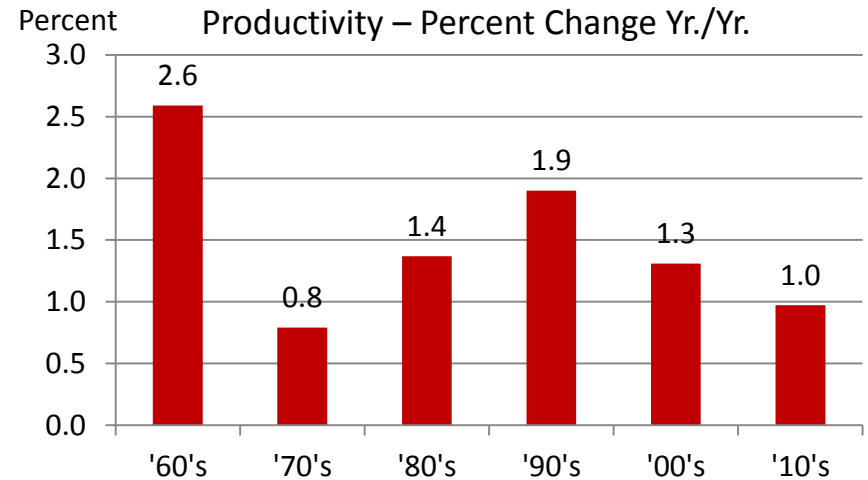
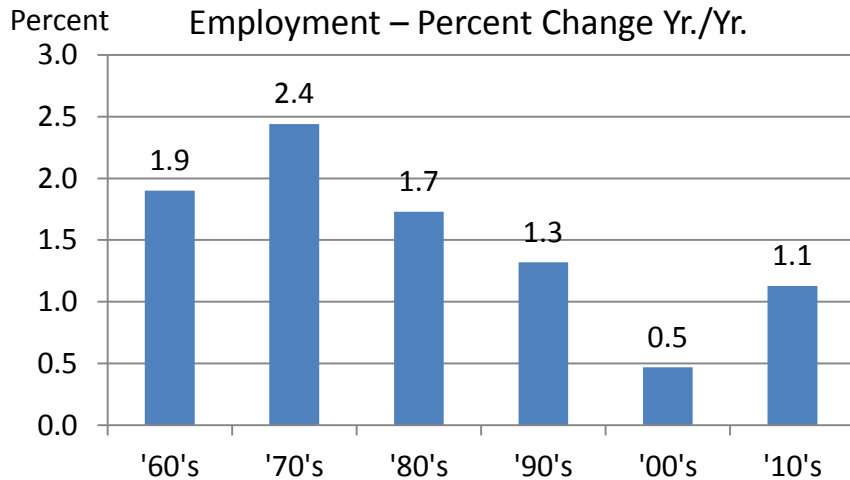
Nonfarm and Manufacturing – Percent Change Yr./Yr.



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

# Employment, Productivity, and GDP Growth

## Percent Change Yr./Yr.



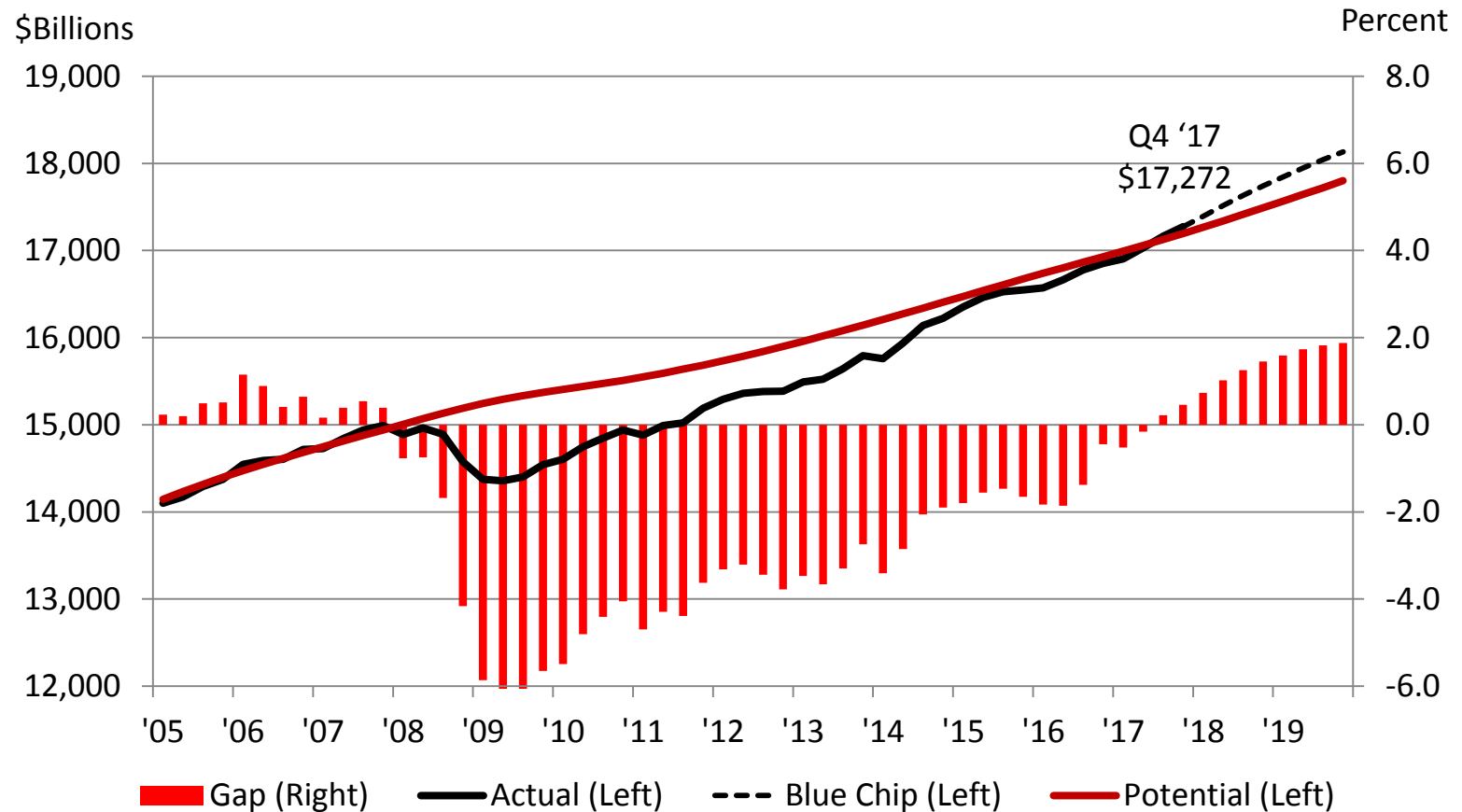
Source: Author's Calculations using BEA, BLS, and Fed data.

February 13, 2018

Federal Reserve Bank of Chicago

# U.S. Real GDP – Actual and Potential

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

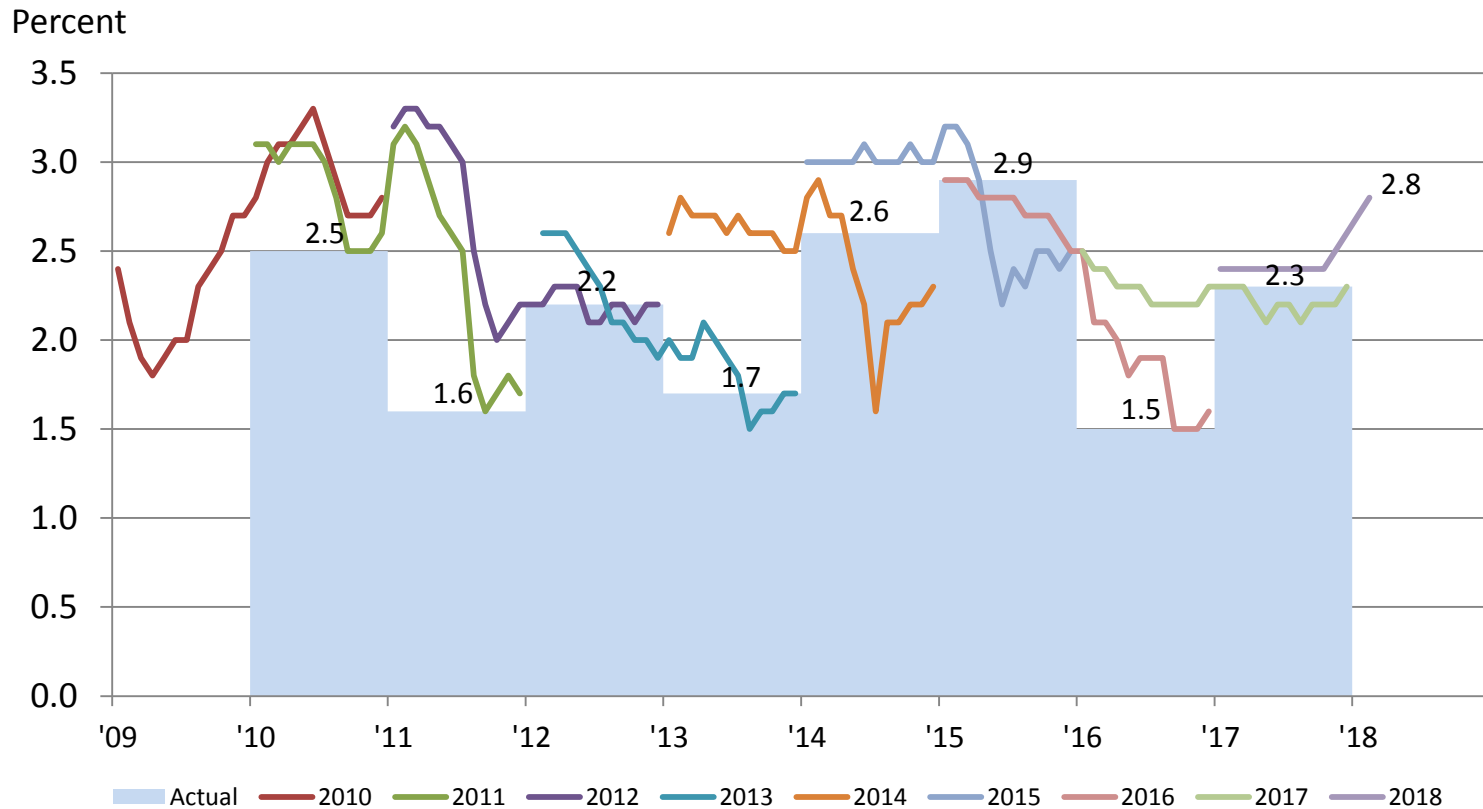


Source: Bureau of Economic Analysis and the U.S. Congressional Budget Office

February 13, 2018

# Blue Chip Forecasts

## Real U.S. GDP Percent Change Yr./Yr. – Historical Forecast



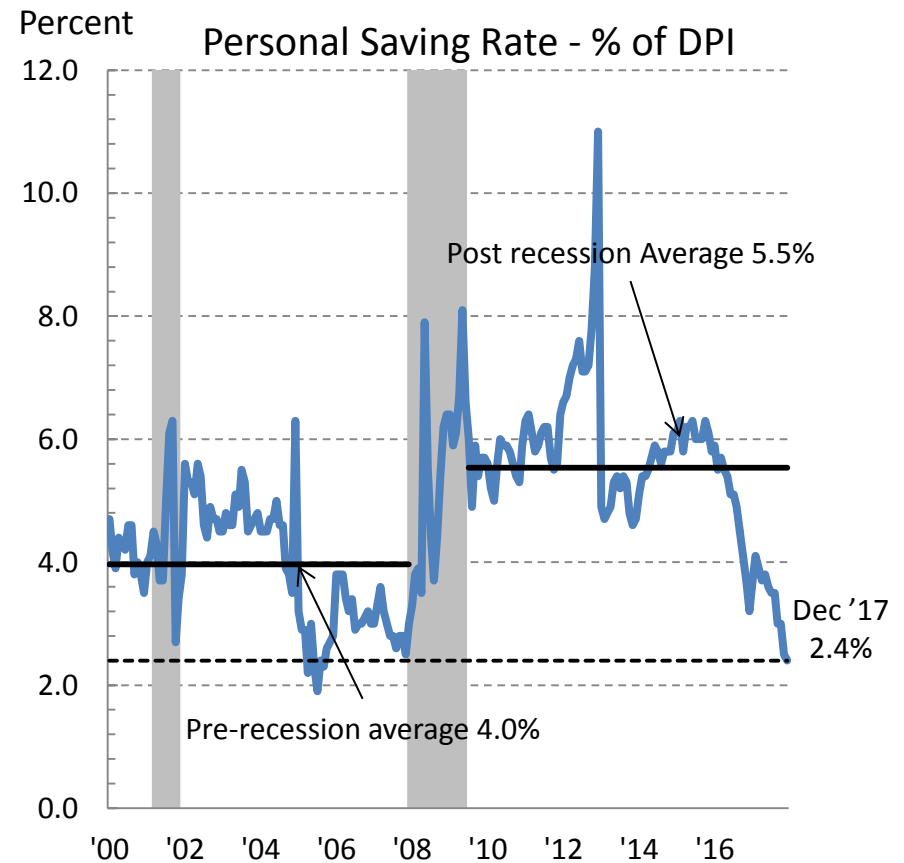
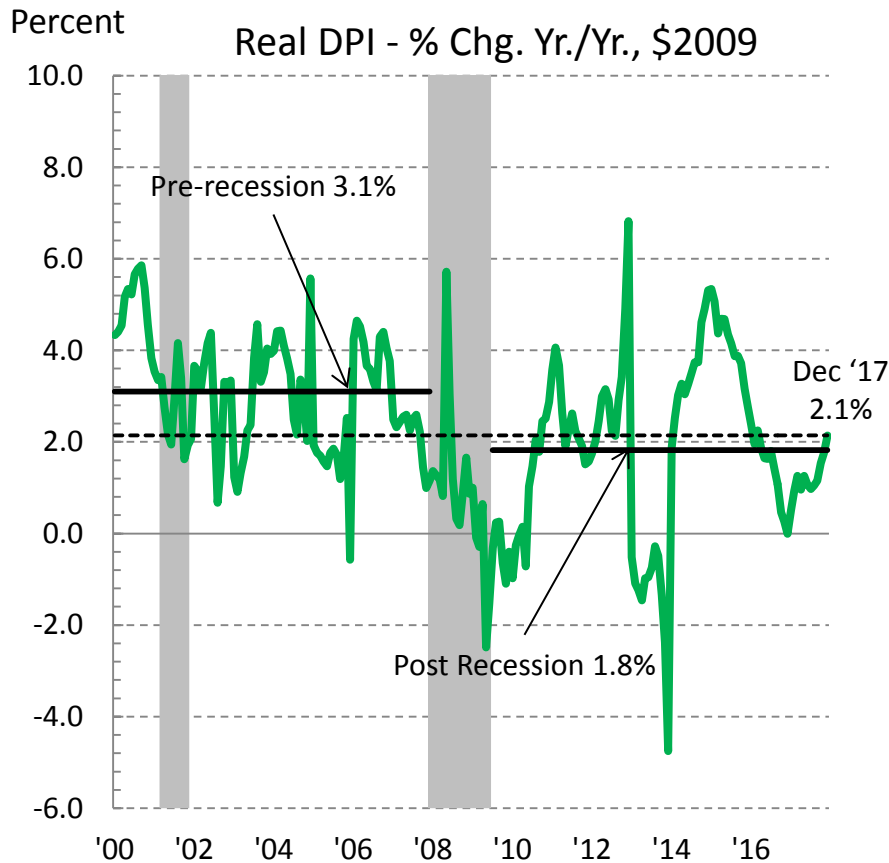
Source: BEA, 2018 Blue Chip Economic Indicators, and Haver Analytics



# U.S. Consumer

# Income and Savings Rate

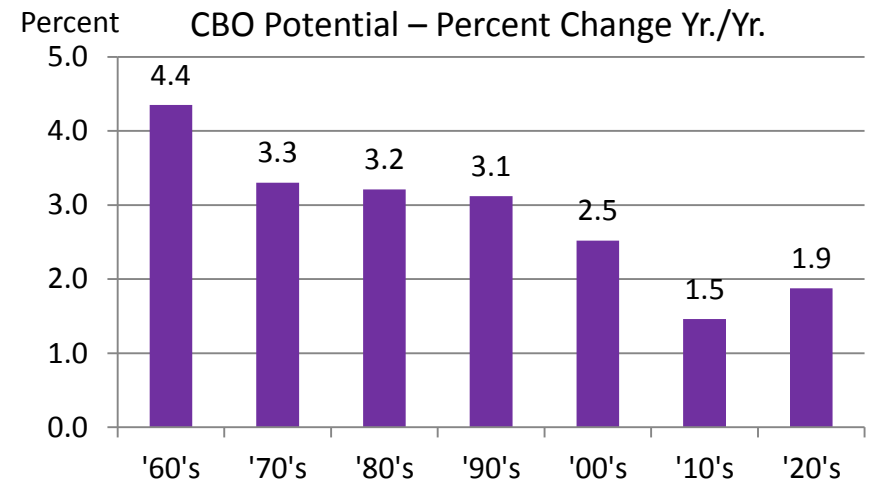
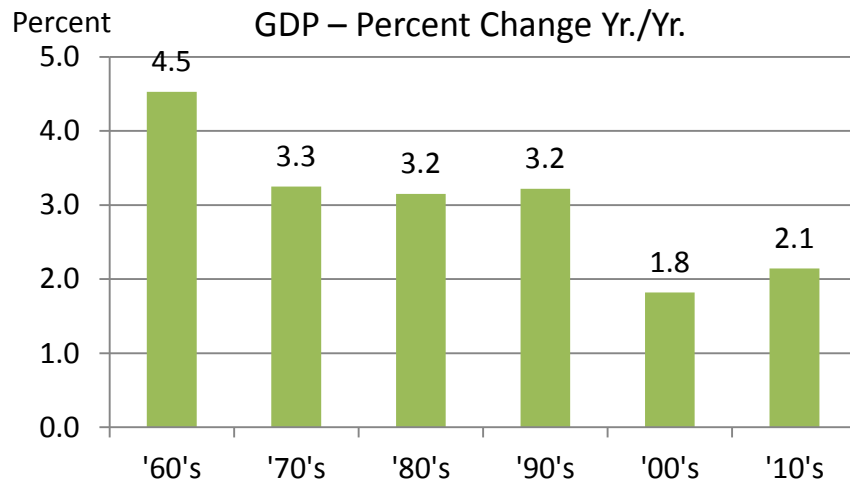
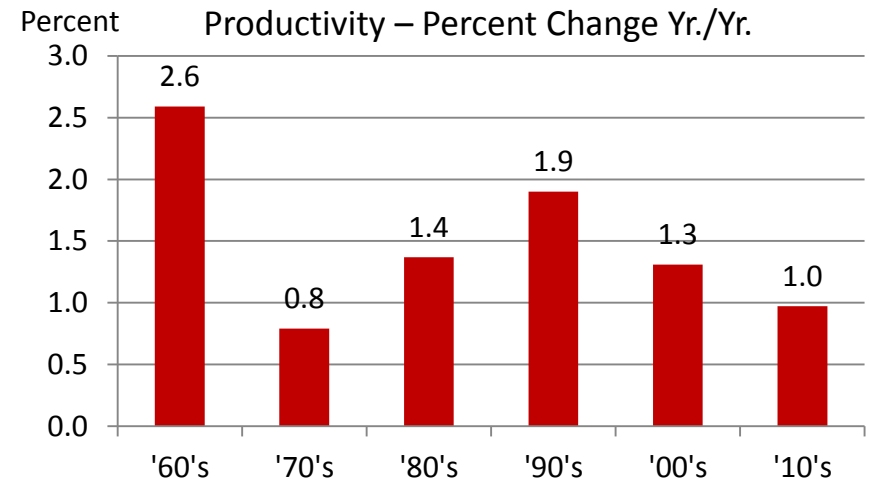
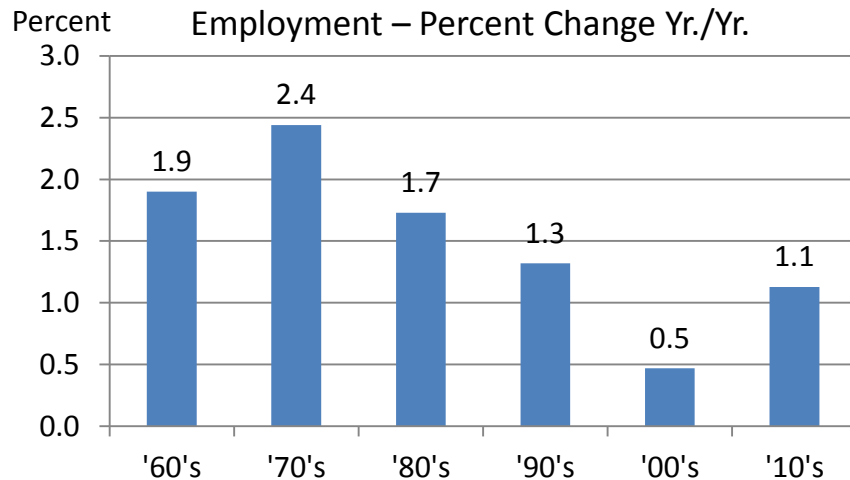
## Percent Change and Percent of DPI



Source: U.S. Bureau of Economic Analysis

# Employment, Productivity, and GDP Growth

## Percent Change Yr./Yr.



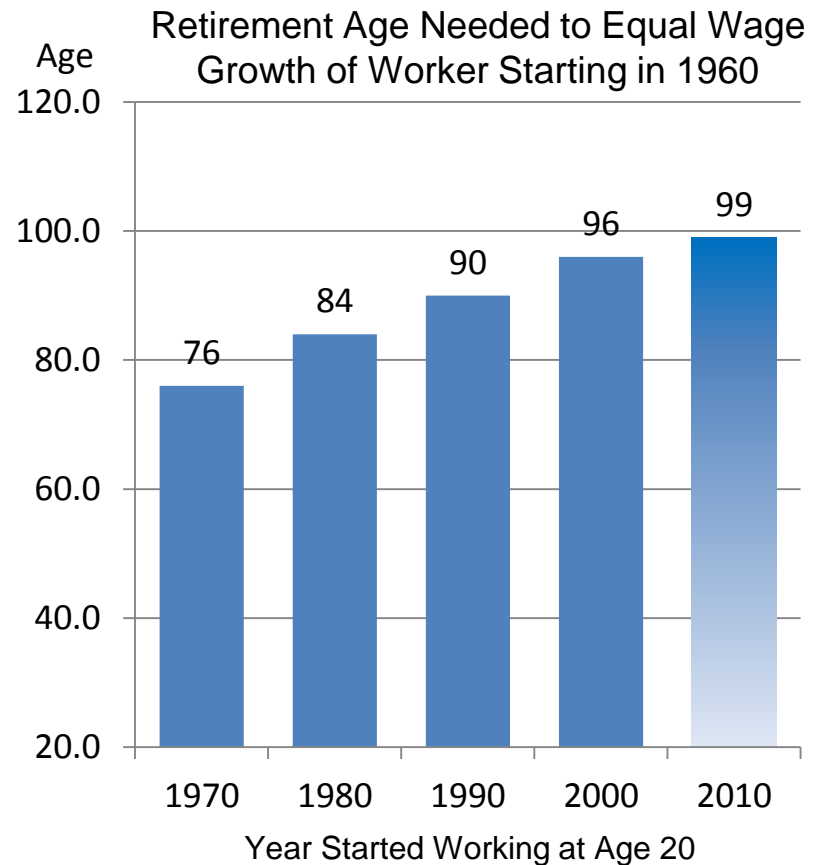
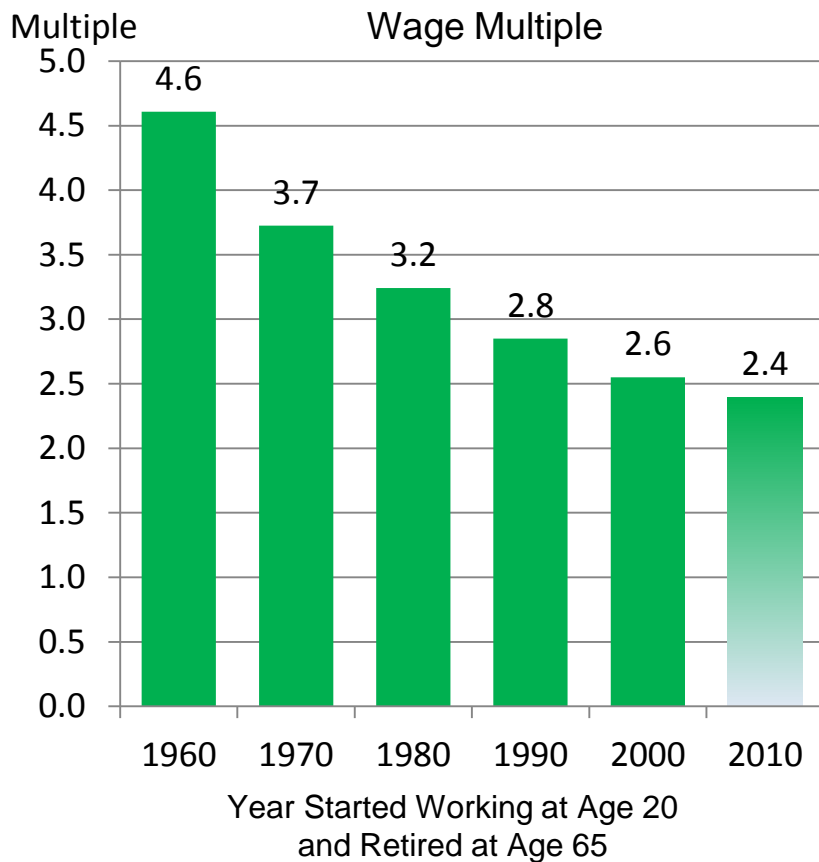
Source: Author's Calculations using BEA, BLS, and Fed data.

February 13, 2018

Federal Reserve Bank of Chicago

# Real Disposable Income Growth

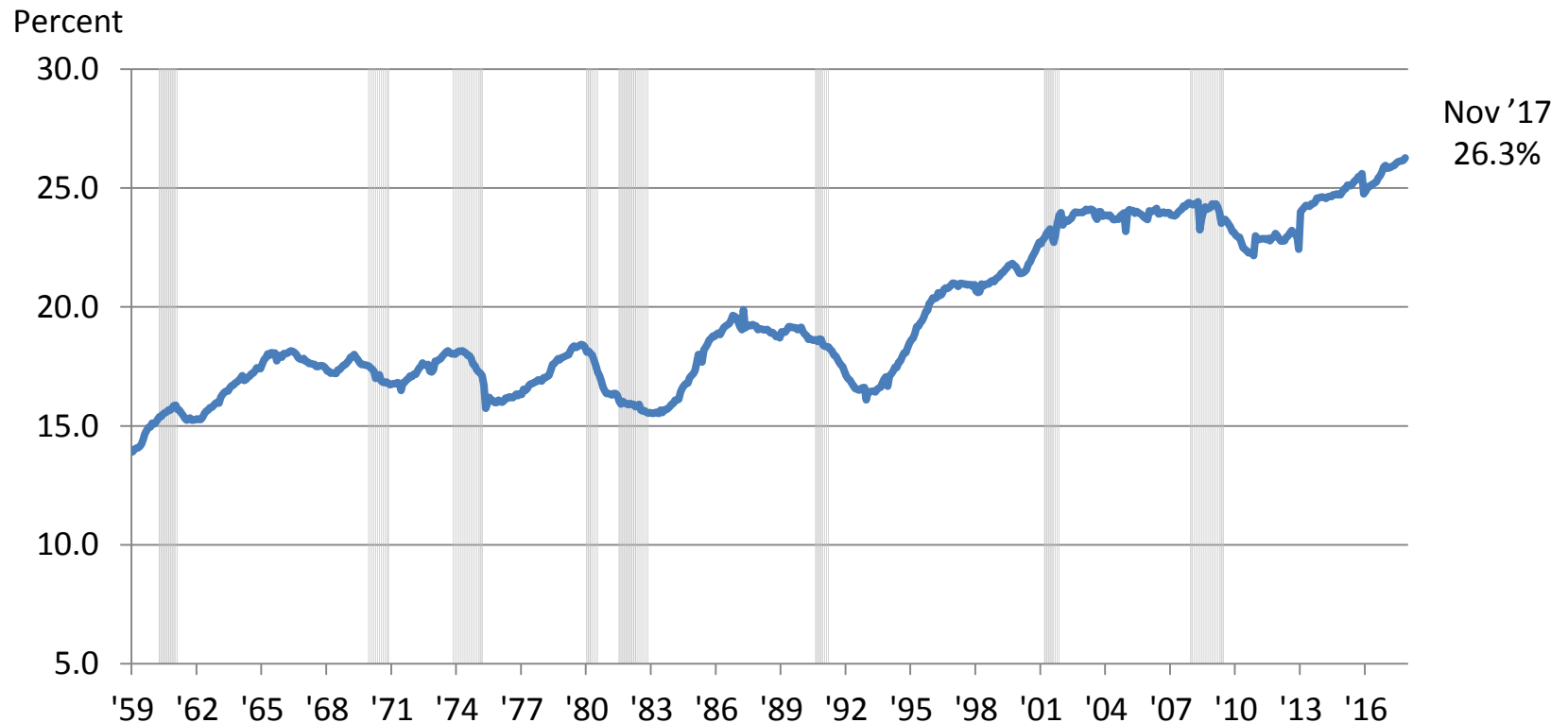
## Real DPI Multiple and Retirement Age



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

# Total Consumer Credit

## As a Percent of Disposable Personal Income

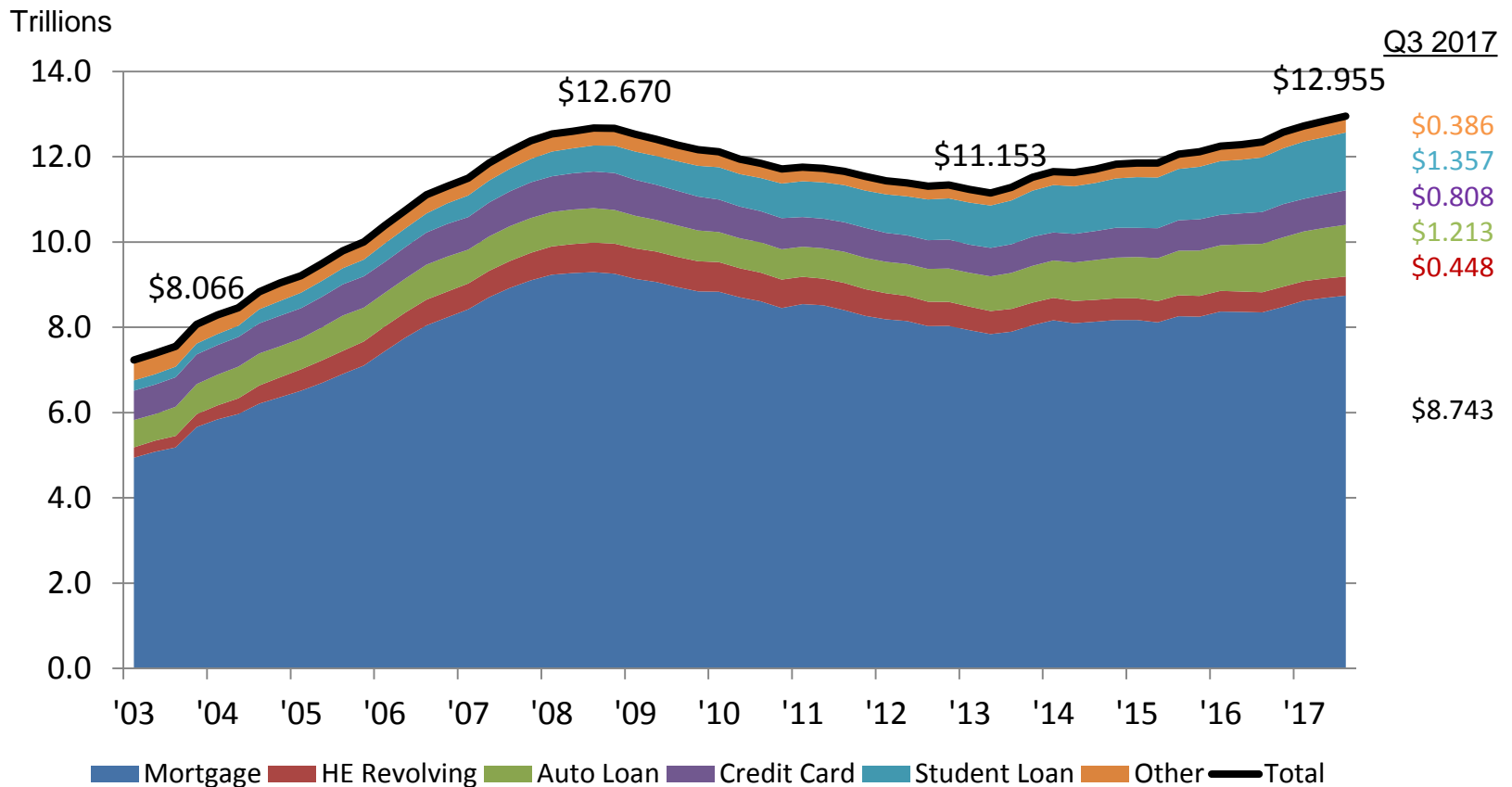


Includes: HE Revolving, Auto Loans, Credit Cards, and Student Loans.

Source: Federal Reserve Bank Board of Governors.

# Total Consumer Debt by Composition

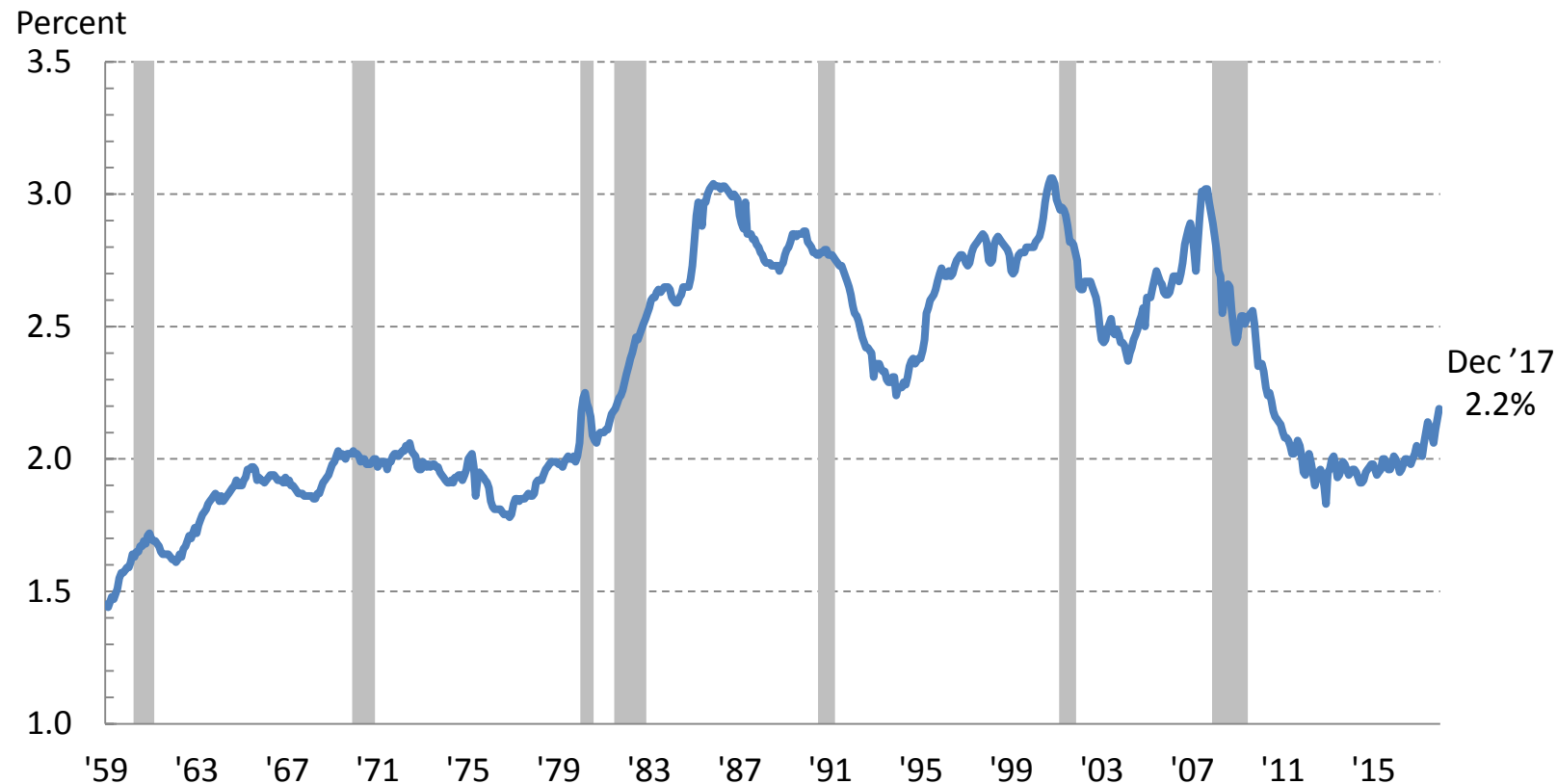
Trillions of Dollars



Source: Federal Reserve Bank of New York and Equifax

# Interest Payments

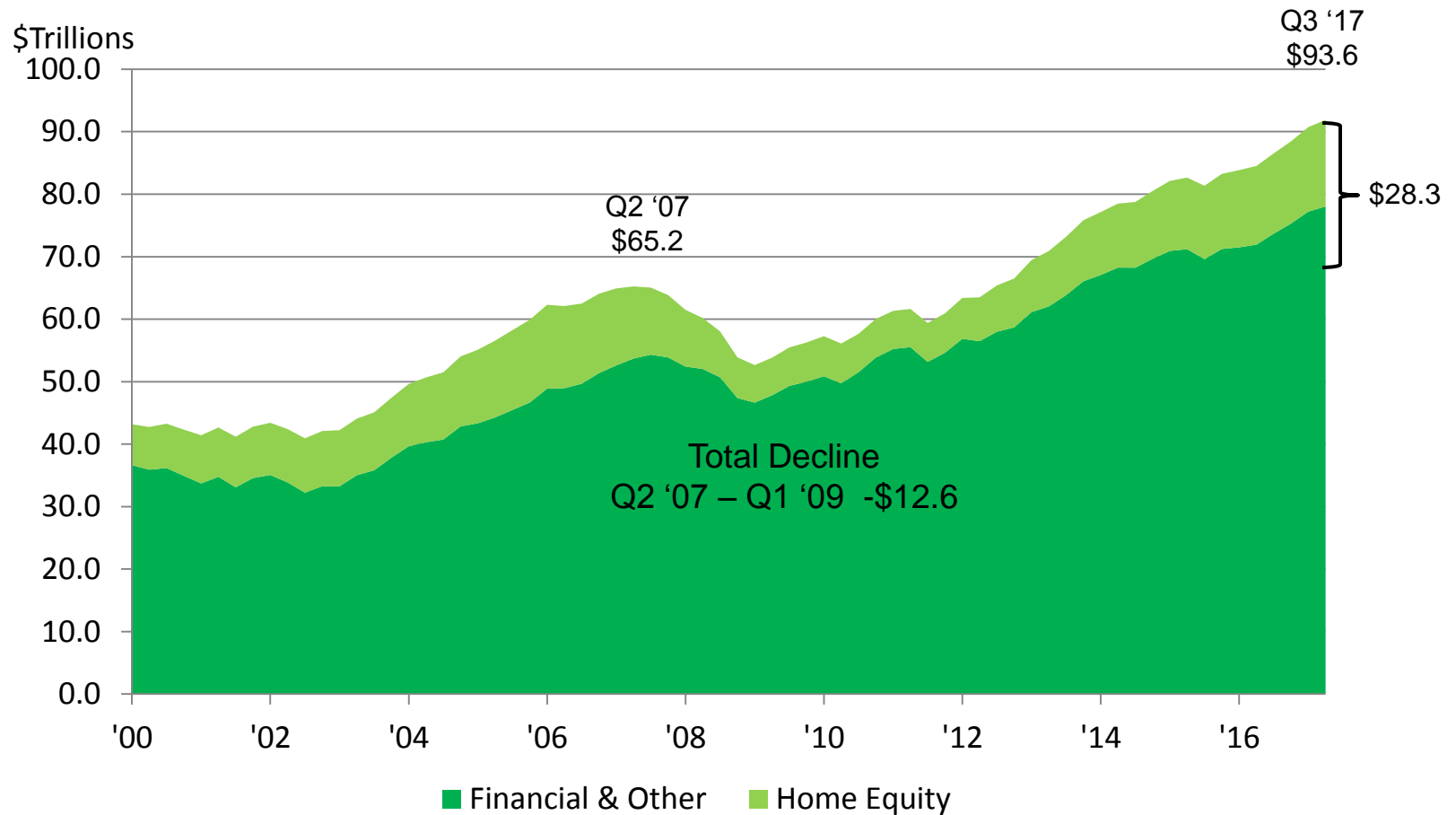
## As a Percent of Disposable Personal Income



Source: Federal Reserve Bank - Board of Governors

# 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

---

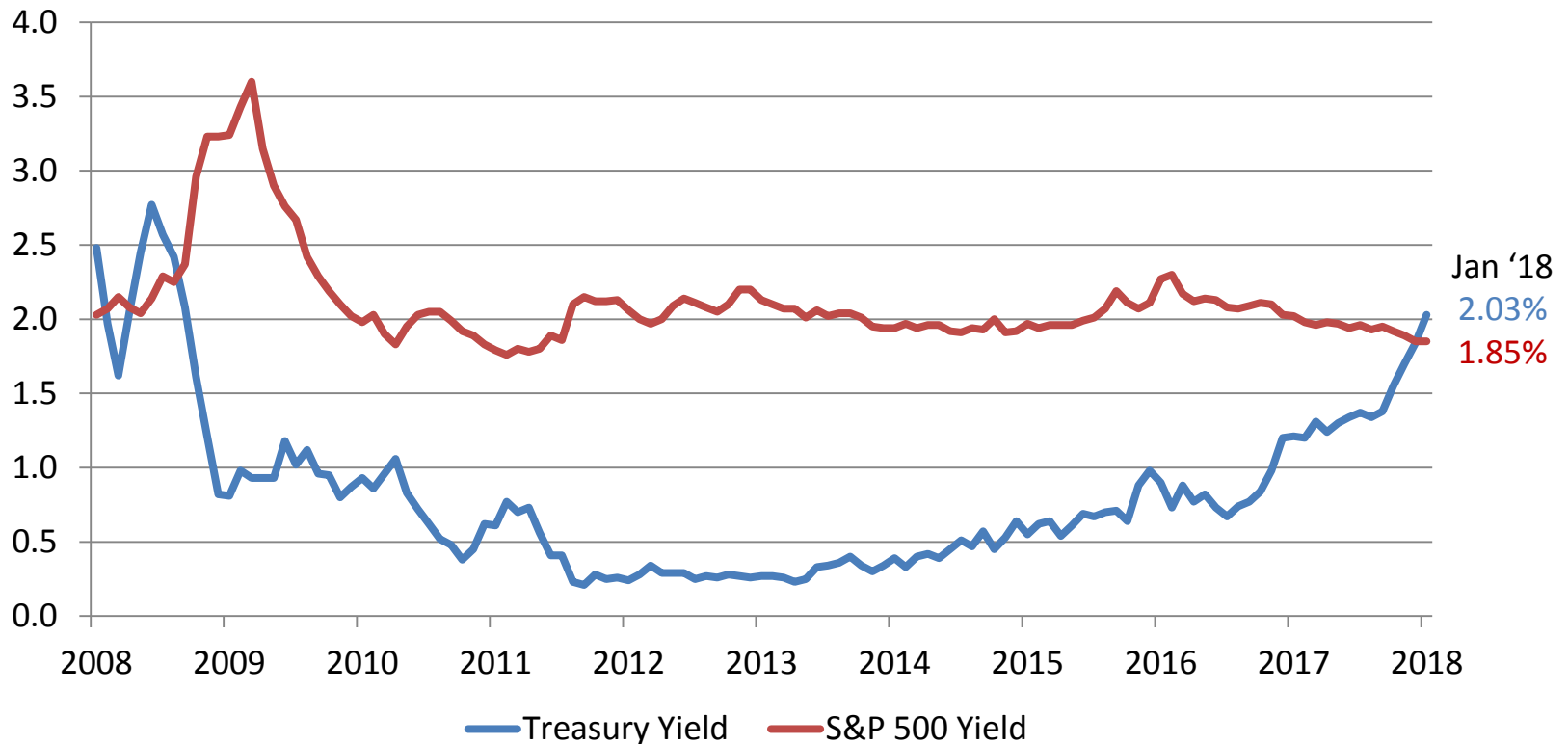
## Business Cycle Expansion and Contraction, Q1 '01 to Q3 '17

	<u>Peak to Trough<sup>1</sup></u>	<u>Trough to Q3 '17</u>	<u>From Previous Peak to Q2 '17</u>
<u>Real Estate</u>			
Change in Value	-\$7.4 Trillion	\$8.1 Trillion	\$0.7 Trillion
Percent Change	-55.2%	125.58%	5.1%
<u>Financial &amp; Other</u>			
Change in Value	-\$7.7 Trillion	\$32.8 Trillion	\$25.1 Trillion
Percent Change	-14.1%	70.3%	46.3%
<u>Total Net Worth</u>			
Change in Value	-\$12.6 Trillion	40.9 Trillion	\$28.3 Trillion
Percent Change	-19.3%	77.8%	43.5%

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.

# S&P 500 Dividend Yield & 2 Year Treasury

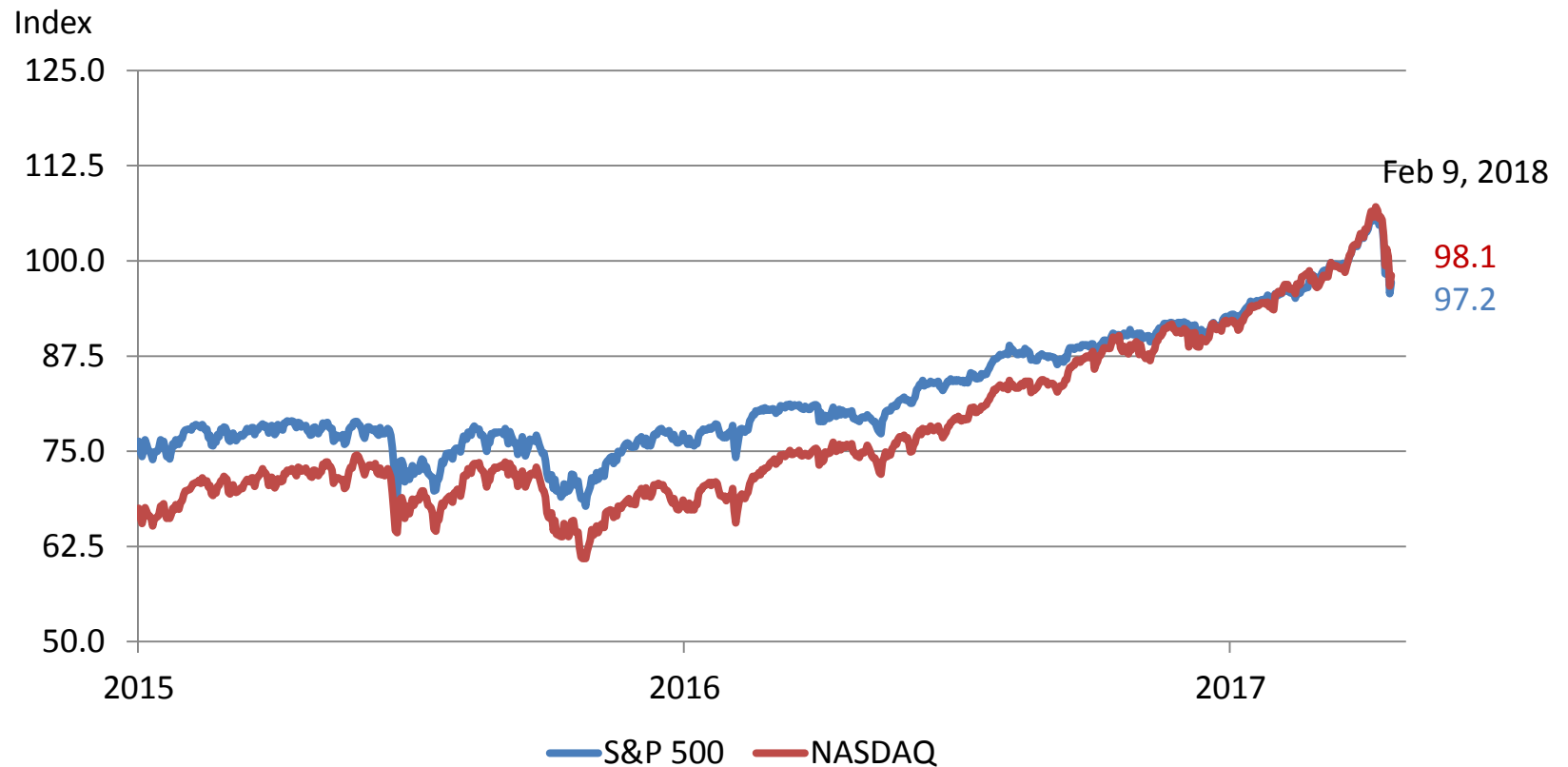
## S&P 500 12 Month Dividend / Price & Treasury Rate



Source: Federal Reserve System and Multpl.com.

# Stock Market

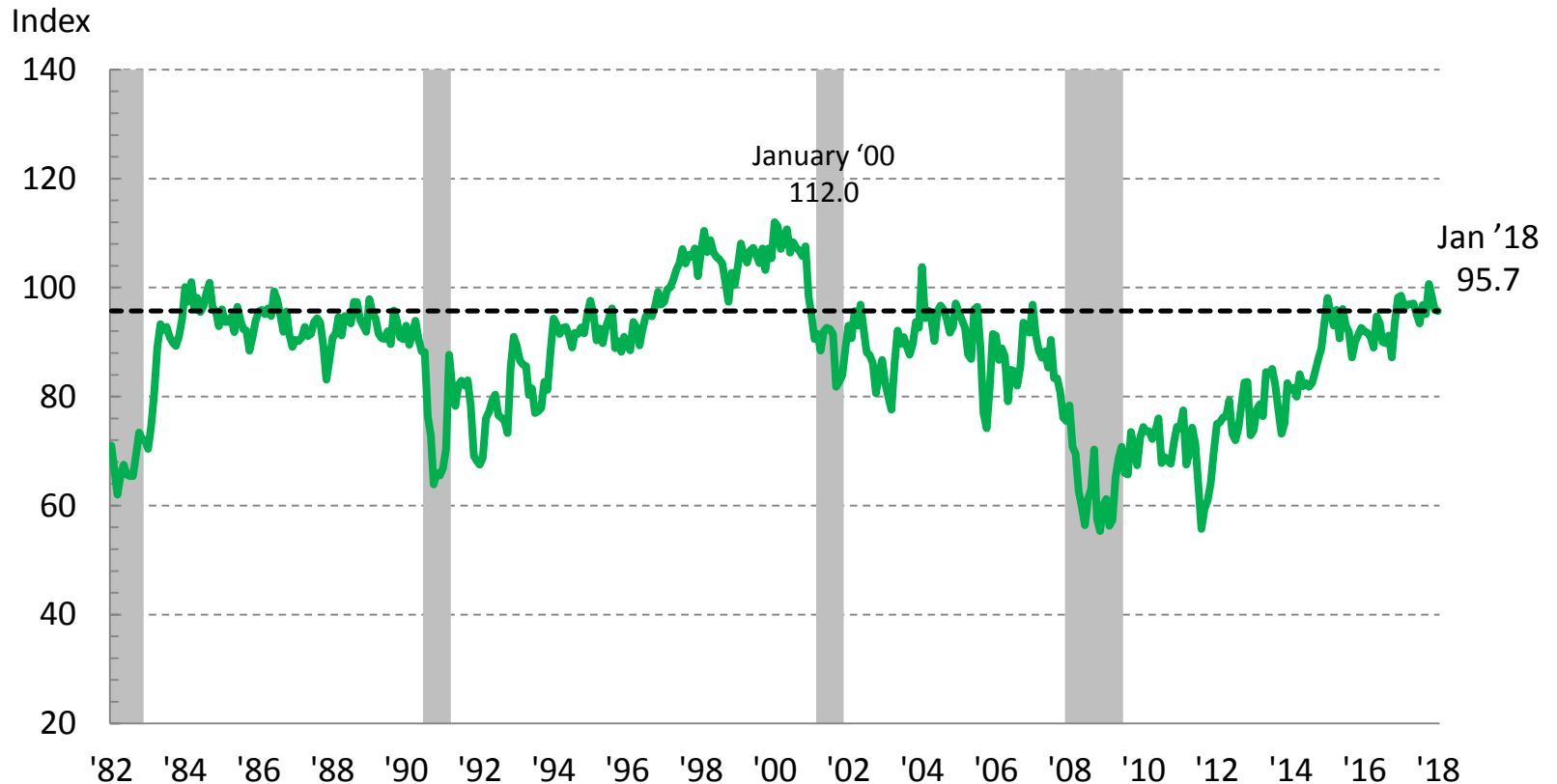
S&P 500 and NASDAQ, Index January 2, 2018 = 100



Source: Author's calculations using Haver Analytics data.

# Consumer Sentiment

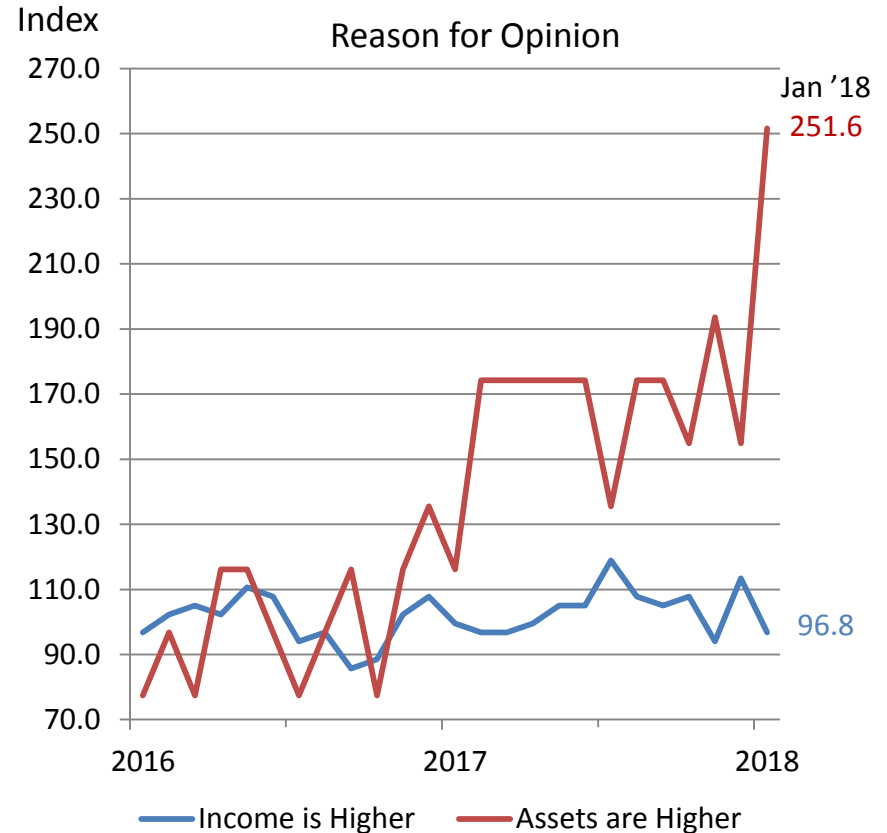
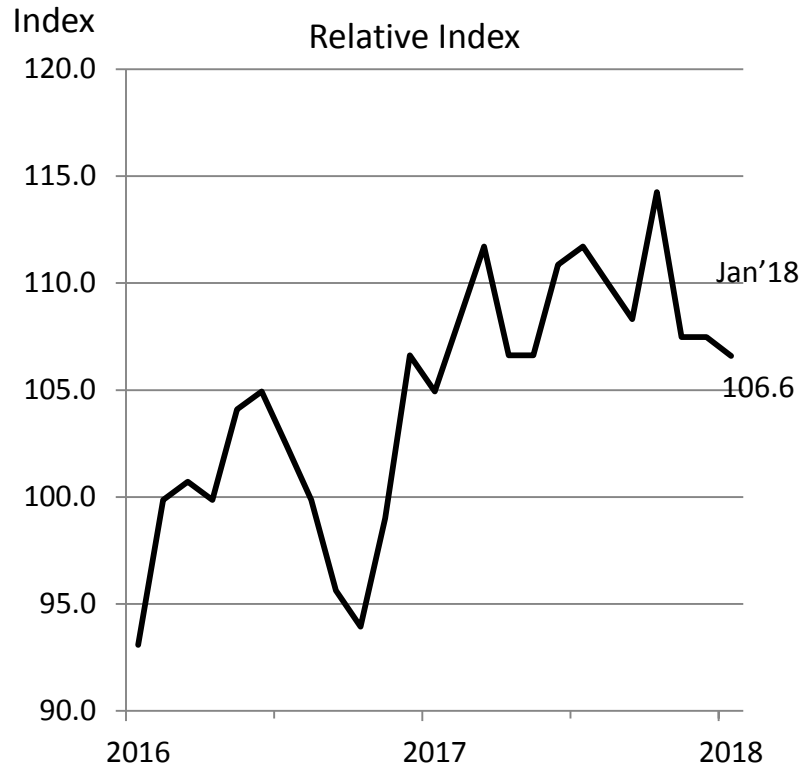
University of Michigan



Source: Thomson Reuters / University of Michigan

# Current Household Financial Situation

Compared to a Year Ago – Index 2016 = 100

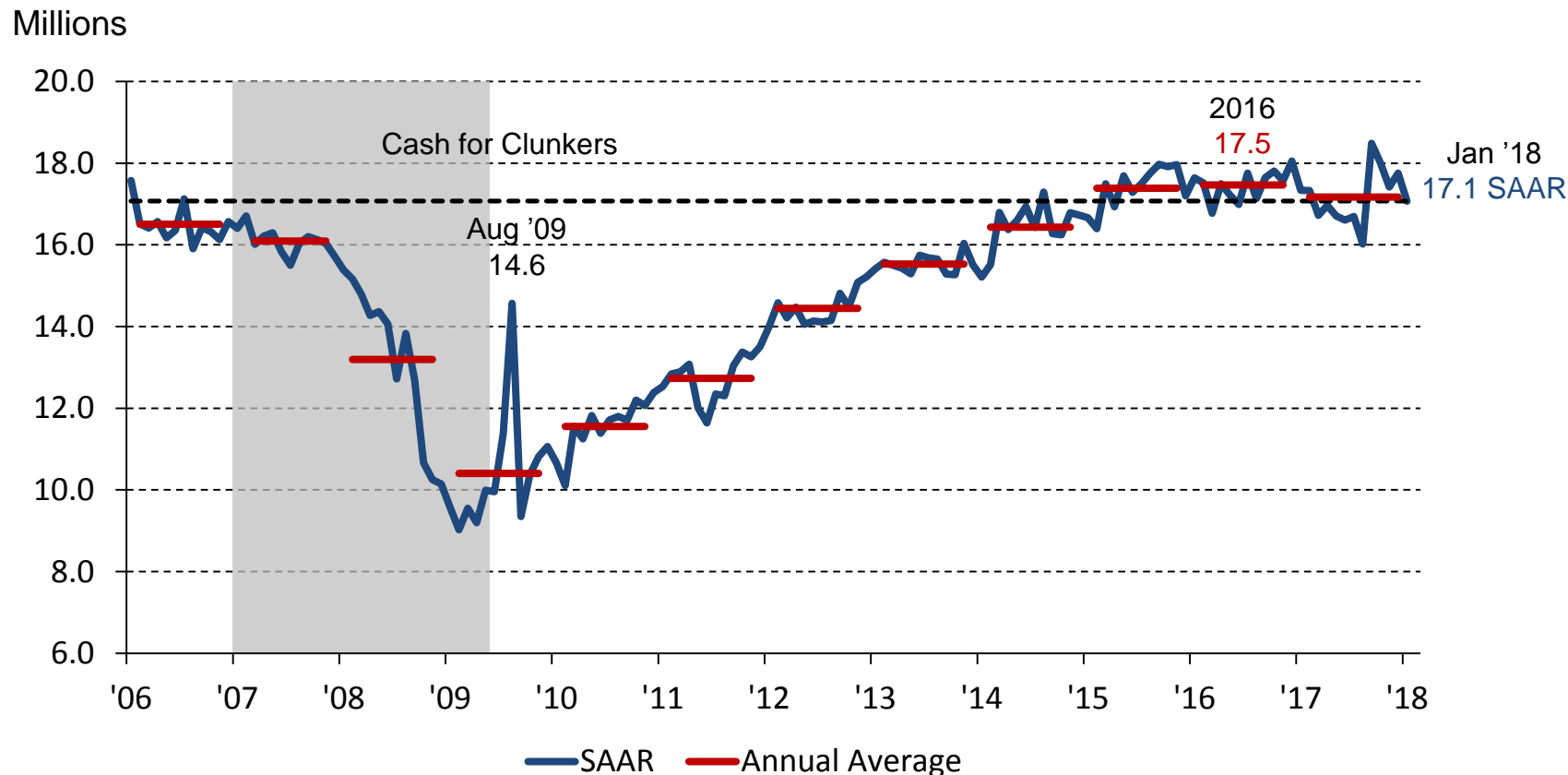


Source: University of Michigan Consumer Sentiment

# U.S. Auto Industry

# U.S. Light Vehicle Sales

S.A.A.R – Millions of Units

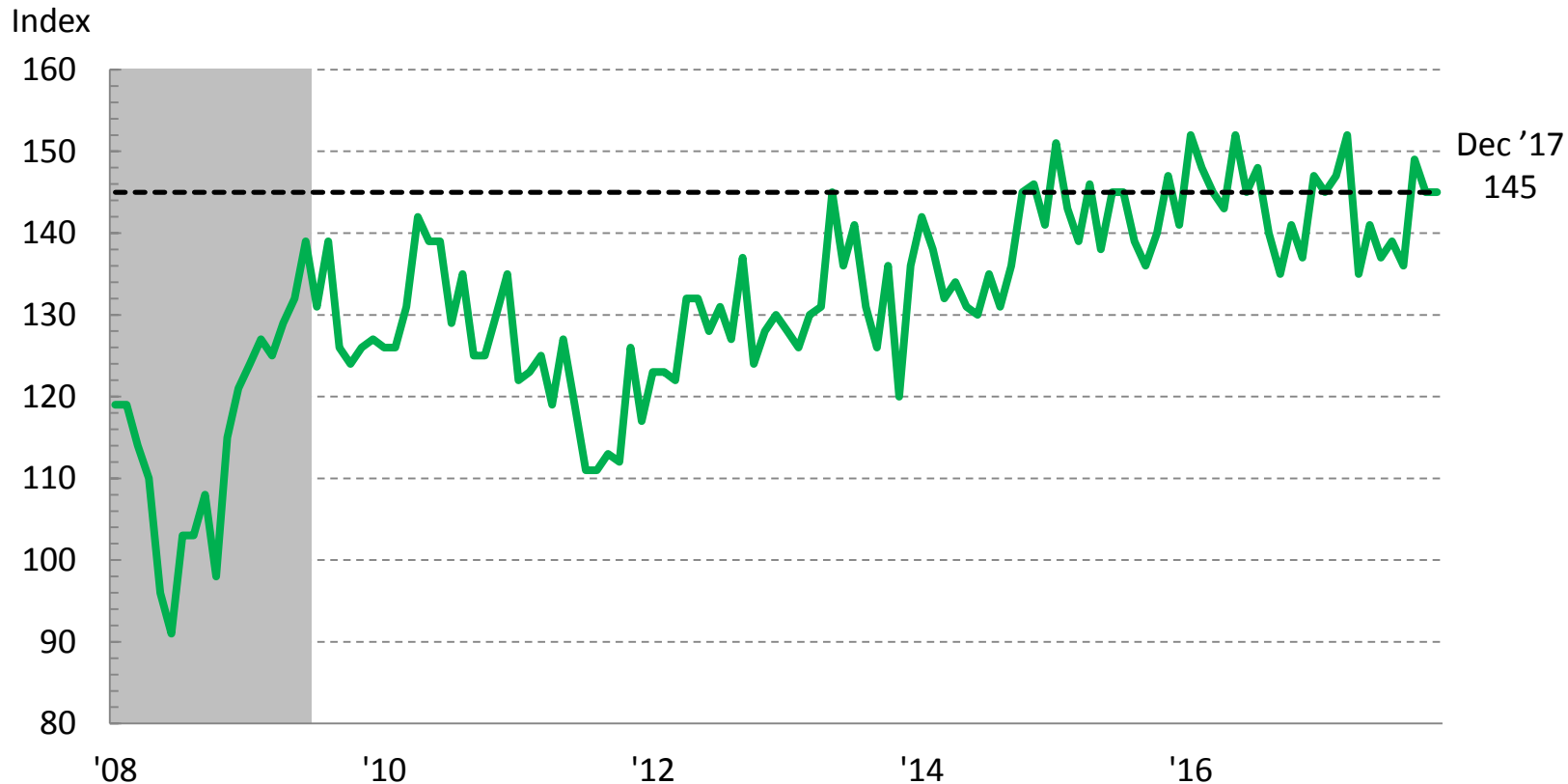


Note: Total 2016 Light Vehicle Sales: 17,465,020 / Including M/H: 17,866,260.

Source: Ward's Automotive and BEA

# Buying Conditions for Vehicles

University of Michigan



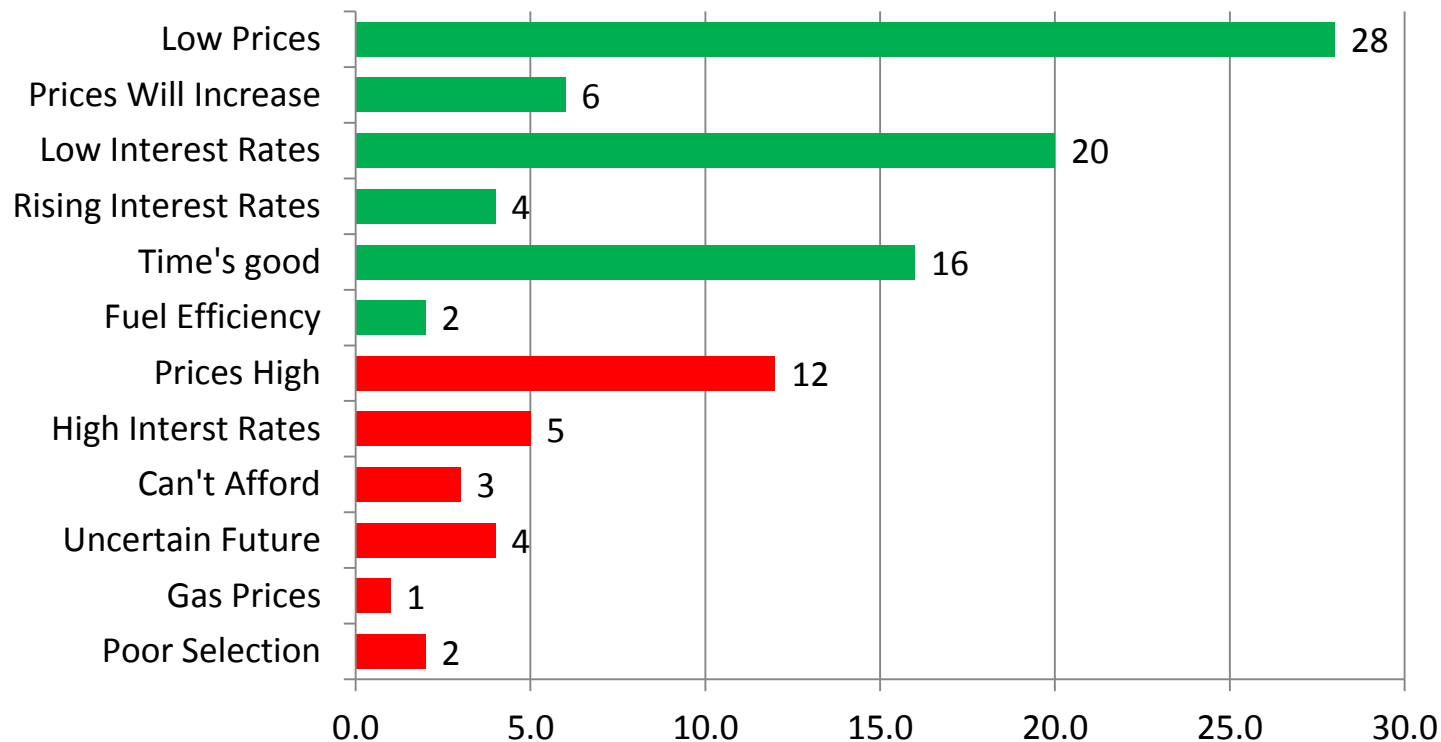
Source: Thomson Reuters / University of Michigan



# Reasons for Buying Conditions for Vehicles

University of Michigan

Good / Bad Reason: *Why do you say so?*

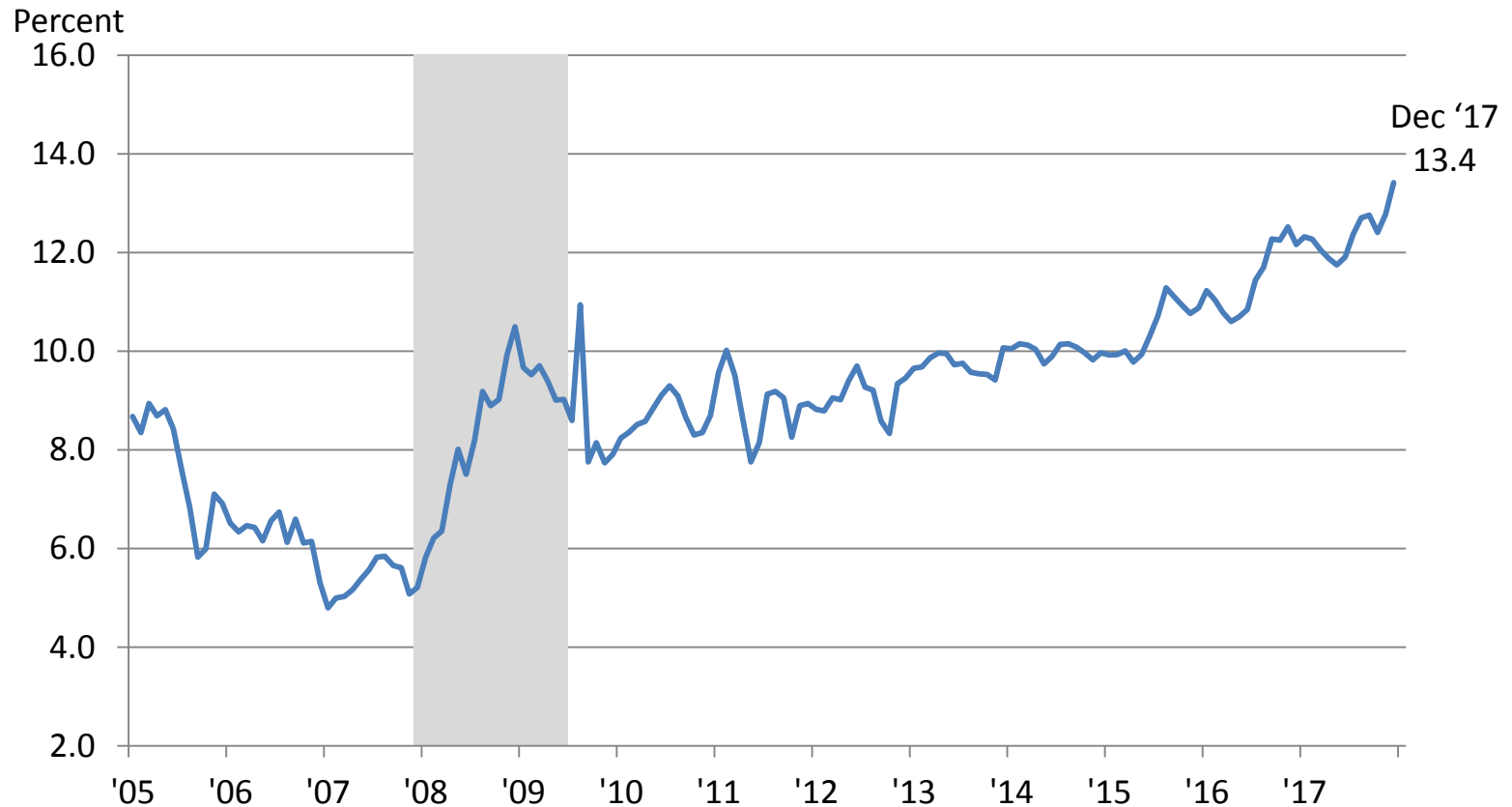


Note: May add to more than a 100 due to multiple mentions.

Source: University of Michigan Survey of Consumers – December 2017 survey

# Vehicle Incentives

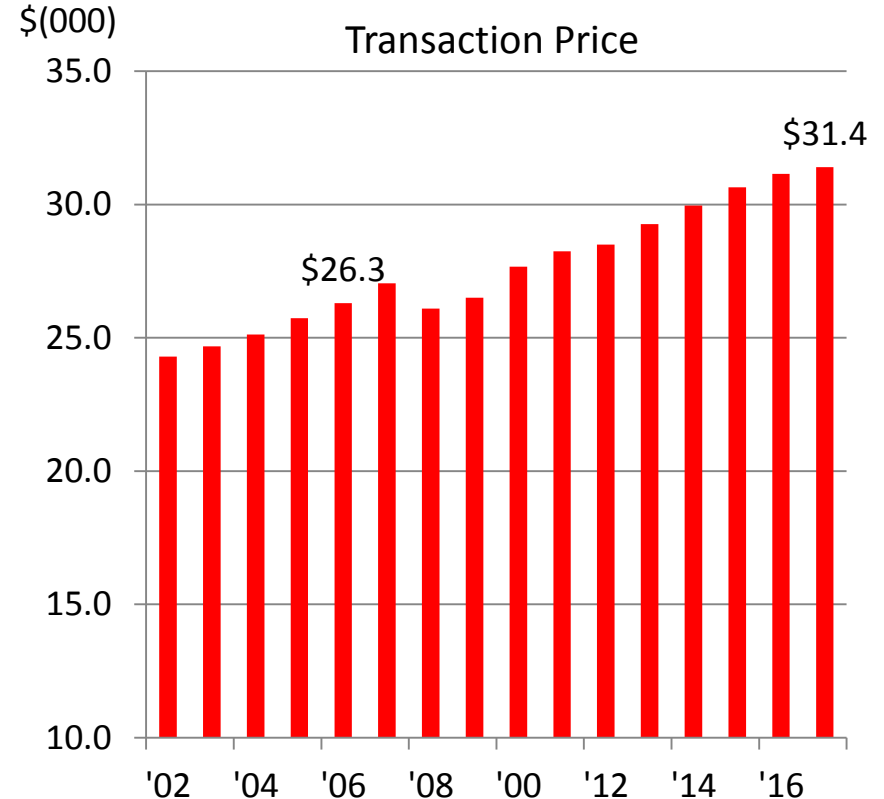
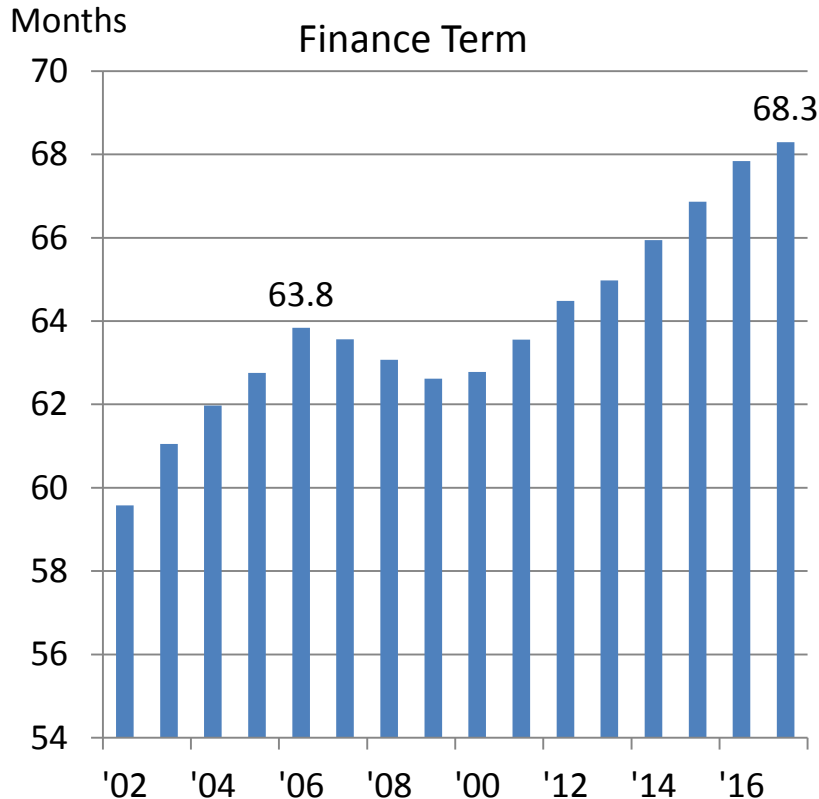
As Percent of Transaction Price - SA



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

# Average Finance Term & Transaction Price

## Months to Term and Annual Average Transaction Price

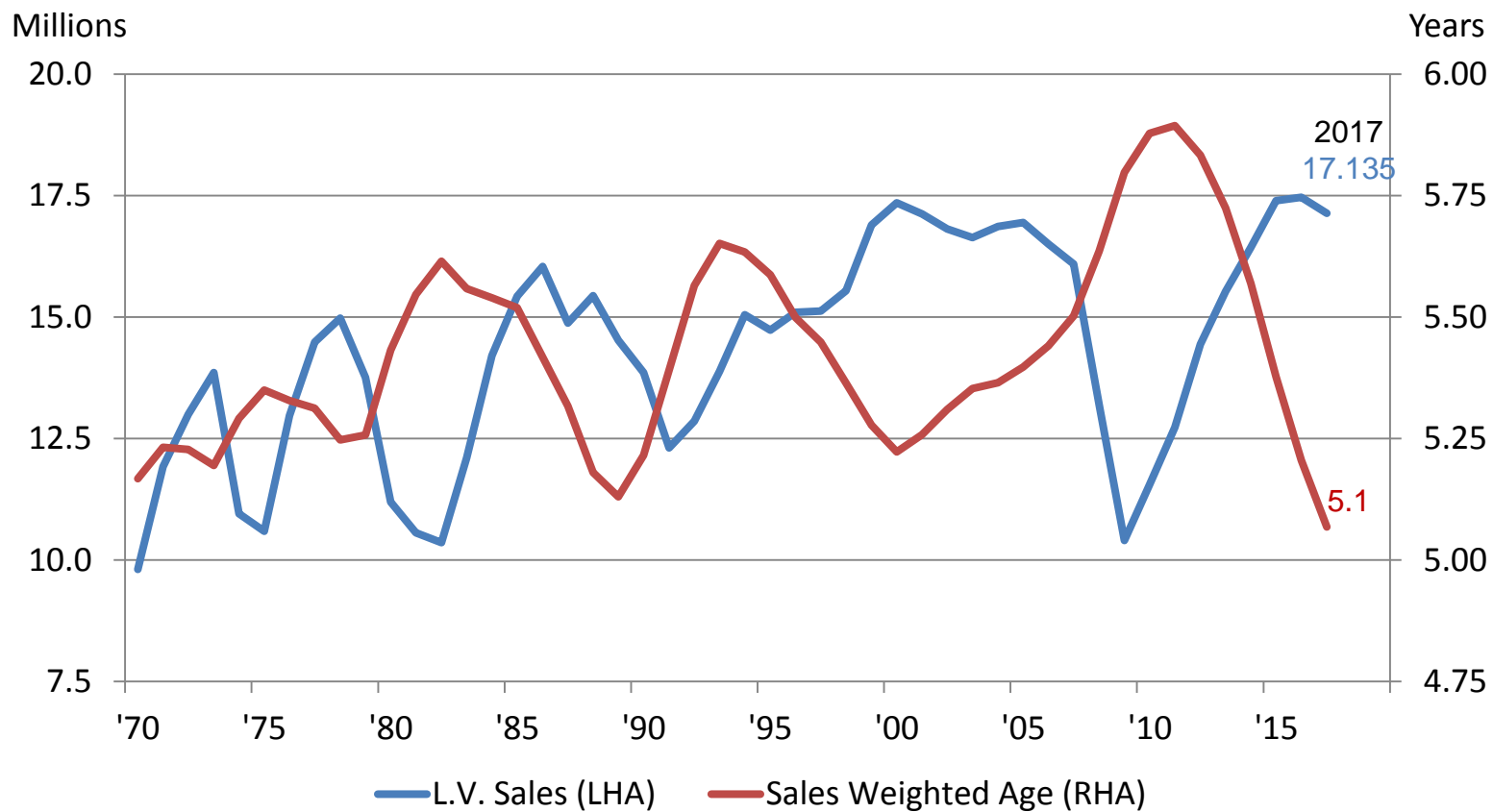


Note: 2017 data is September year-to-date.

Source: J.D. Power data.

# Sales Weighted Vehicle Age

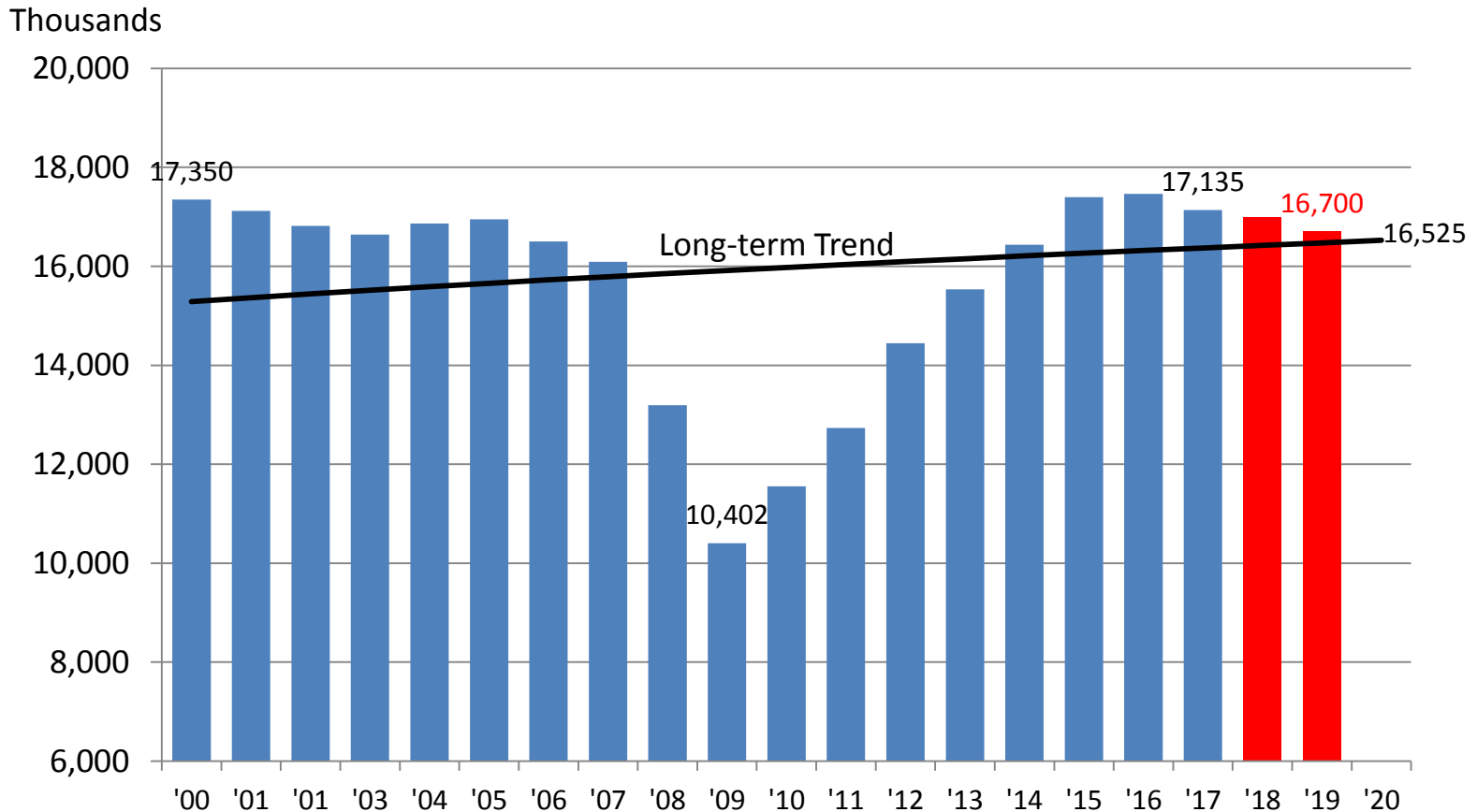
## 10 Year Moving Average



Source: Author's calculations using WardsAuto data.

# U.S. Light Vehicle Sales

Calendar Year Sales – Millions of Units



Source: WardsAuto

# Monetary Policy

# F.O.M.C Statement

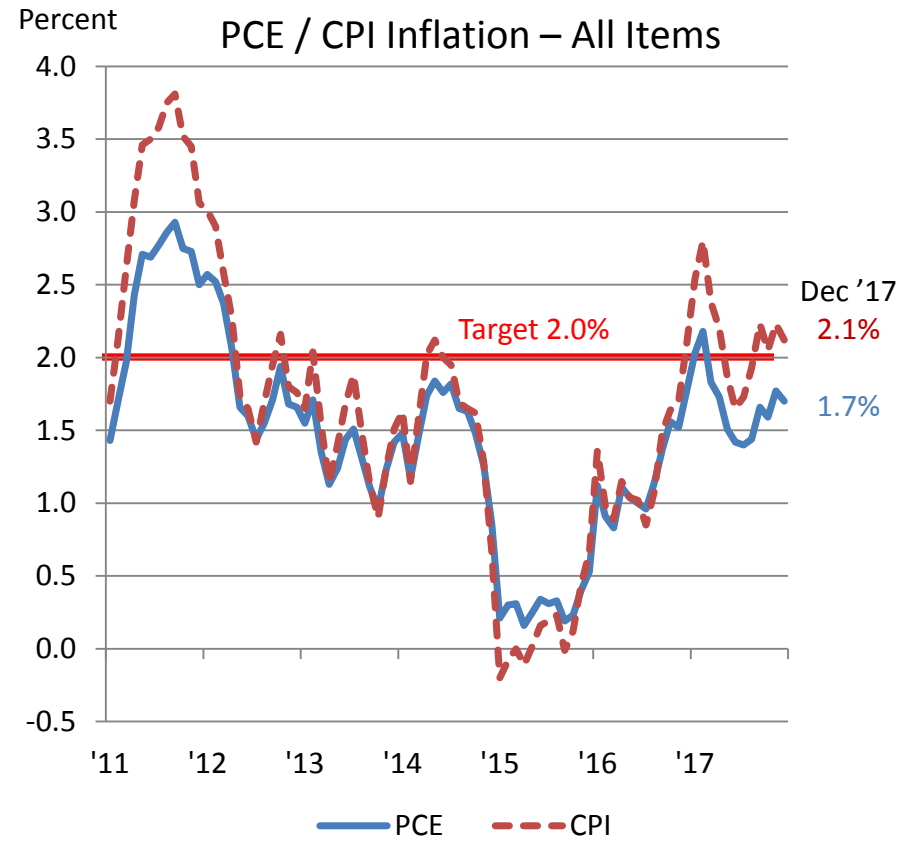
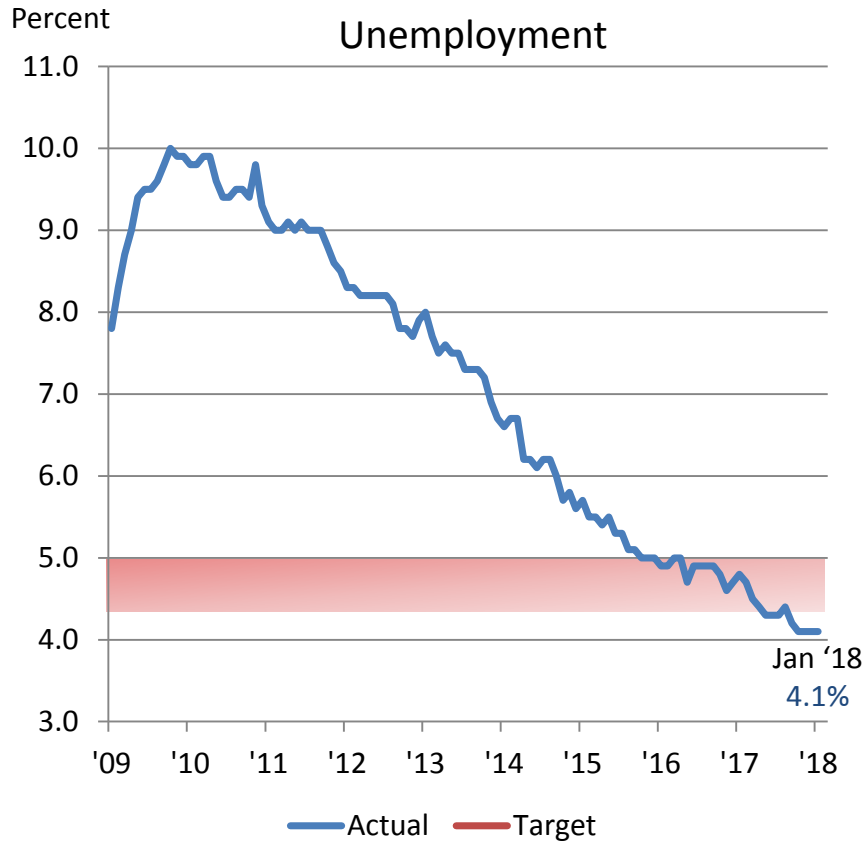
---

January 31, 2018

1. Information received since the F.O.M.C. met in December indicates that the labor market has continued to strengthen and that economic activity has been rising at a solid rate.
2. Gain in employment, household spending, and business fixed investment have been solid, and the unemployment rate has stayed low.
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.



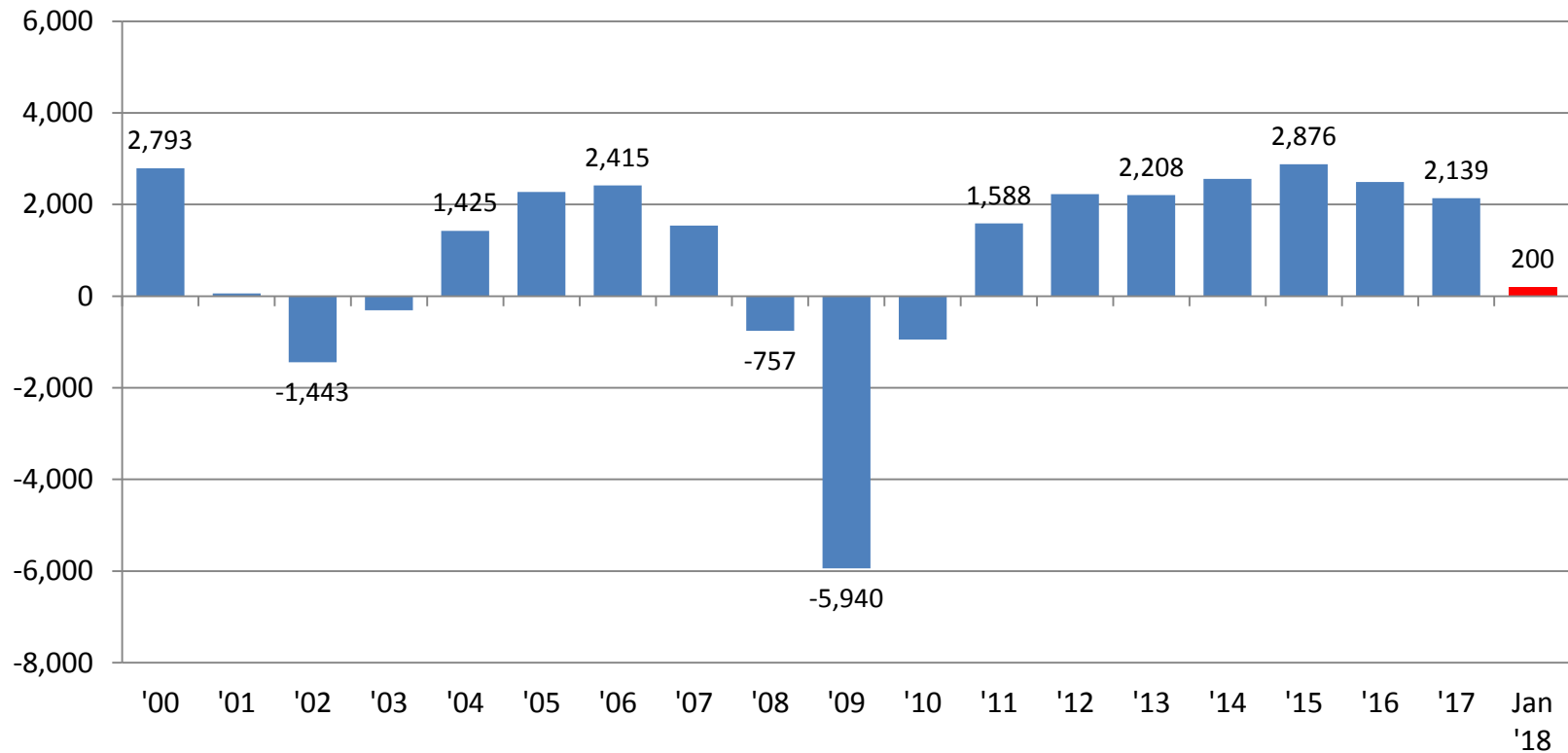
Source: U.S. Department of Labor: Bureau of Labor Statistics, Bureau of Economic Analysis and the Federal Reserve



# U.S. Nonfarm Payrolls

## Annual Job Change – In Thousands

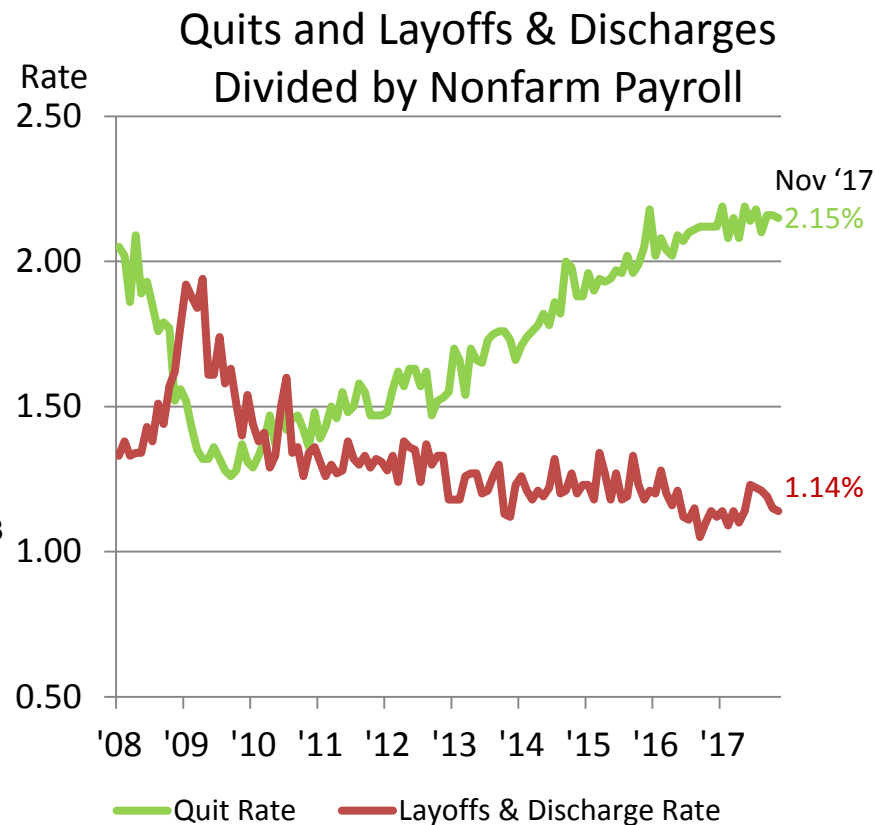
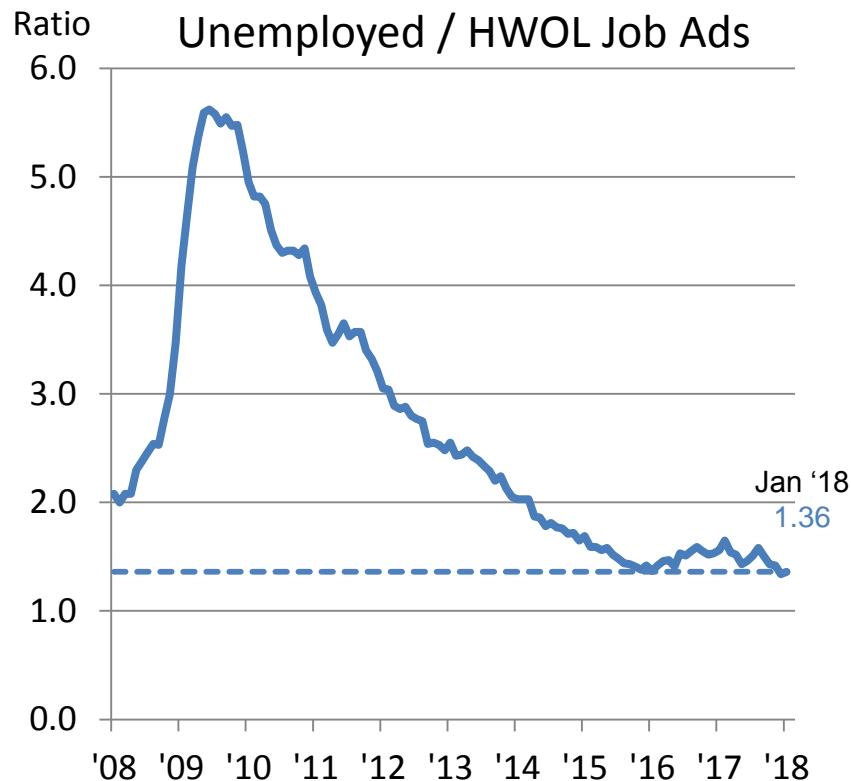
Thousands



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

# Labor Conditions

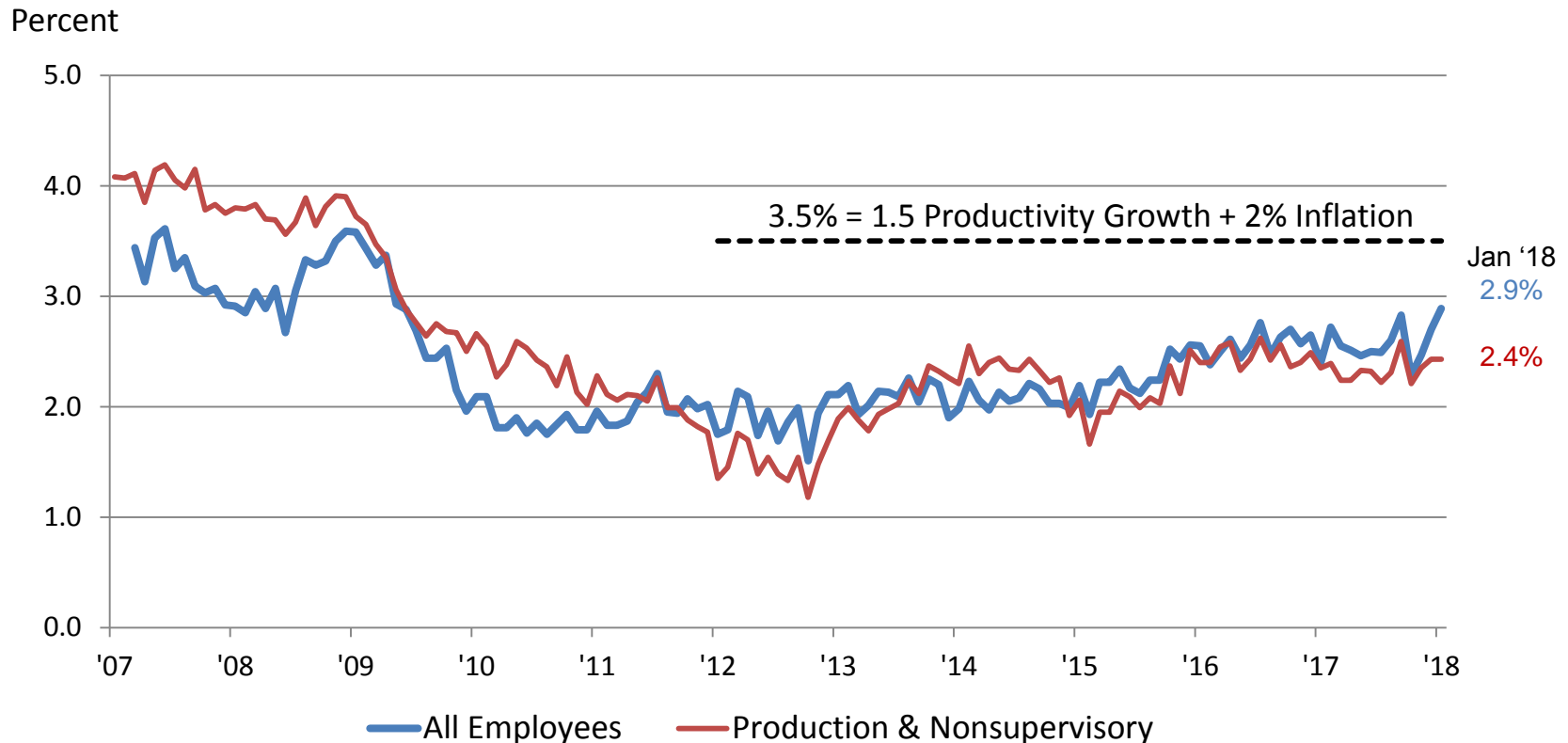
## Job Openings and Quit & Layoff Rates



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

# Average Hourly Earnings – Private Employees

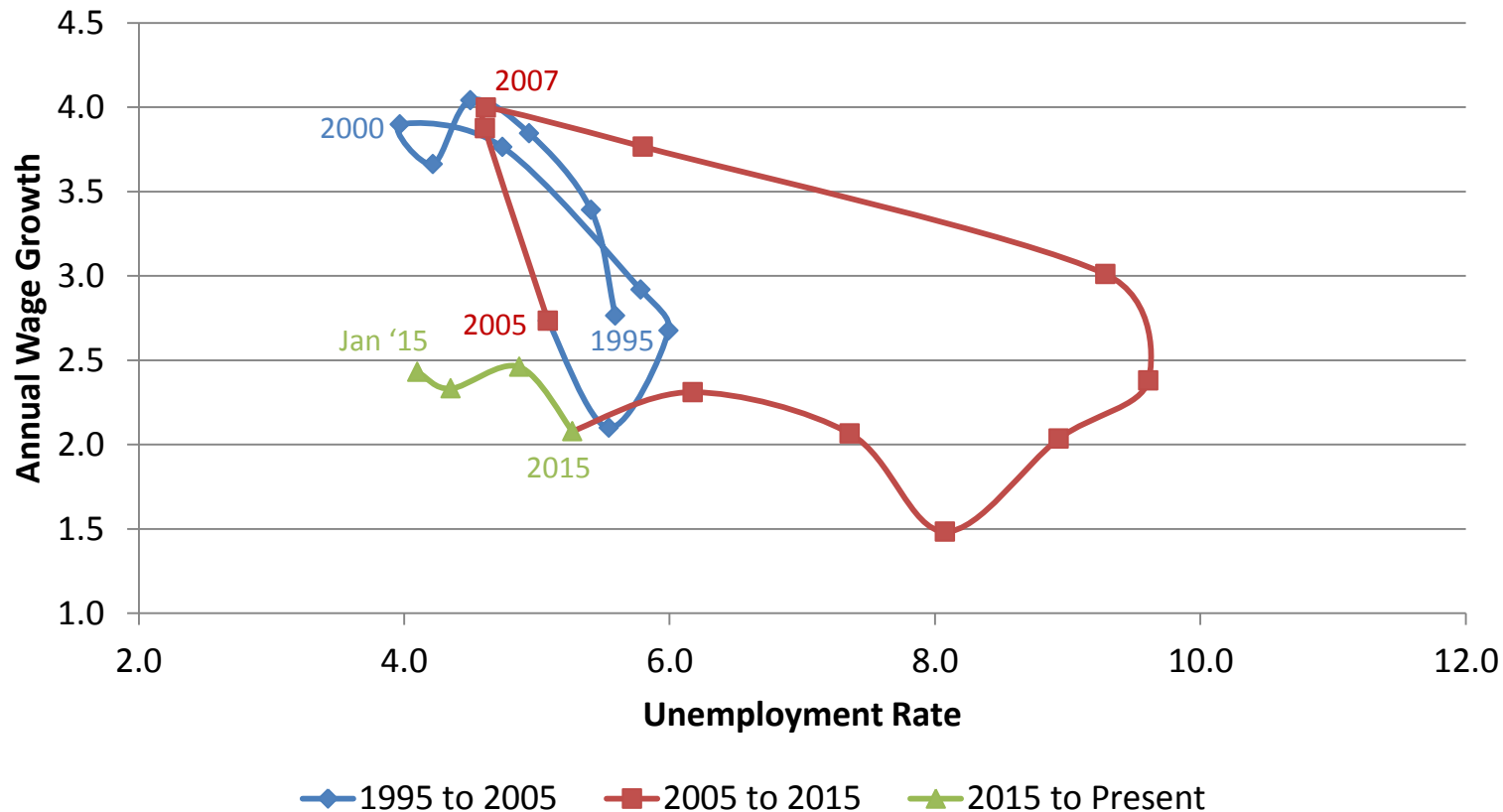
Percent Change Year / Year



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

# Phillips Curve

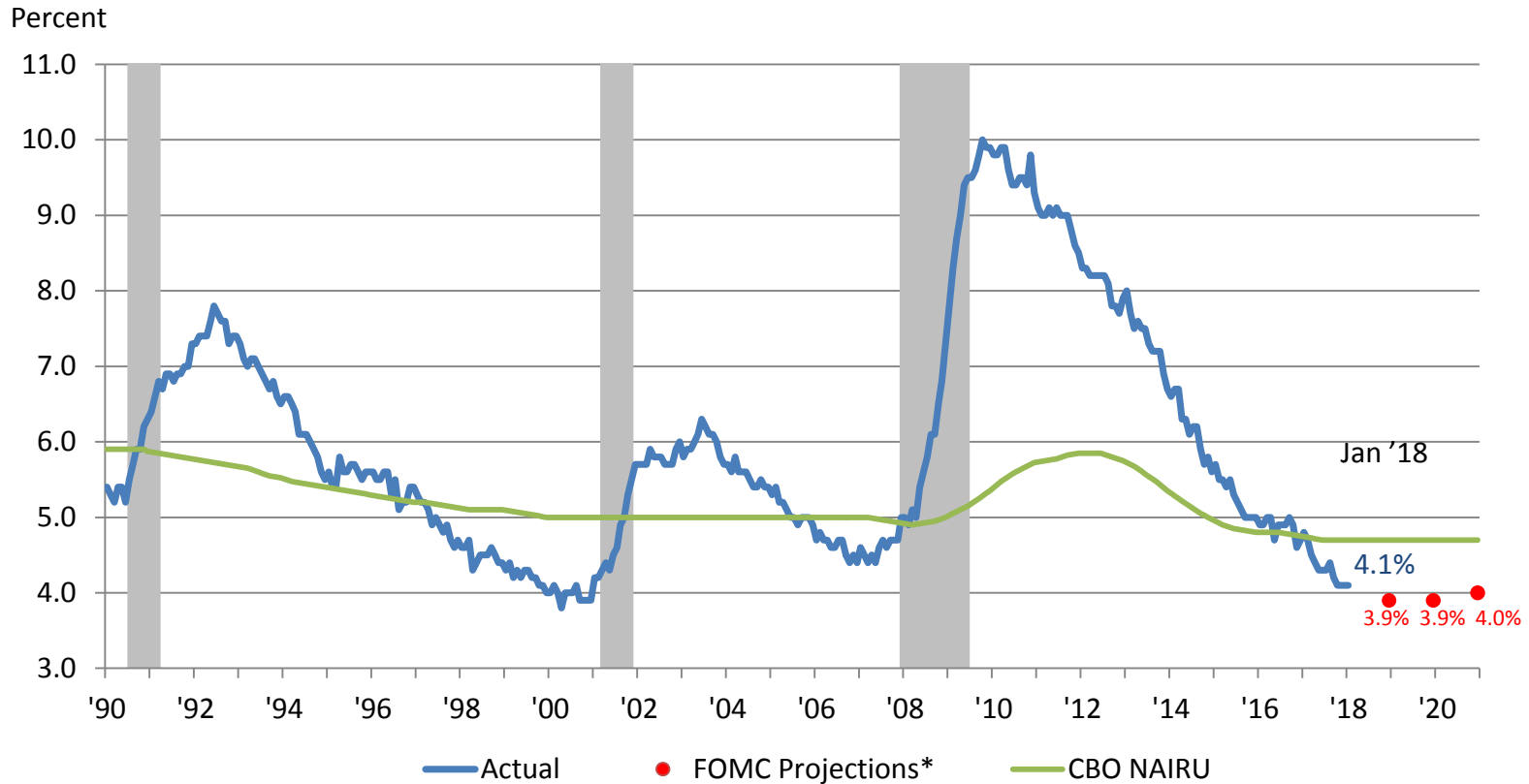
## Unemployment Rate and Wage Inflation



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

# Unemployment Rate

## Percent of Labor Force Unemployed

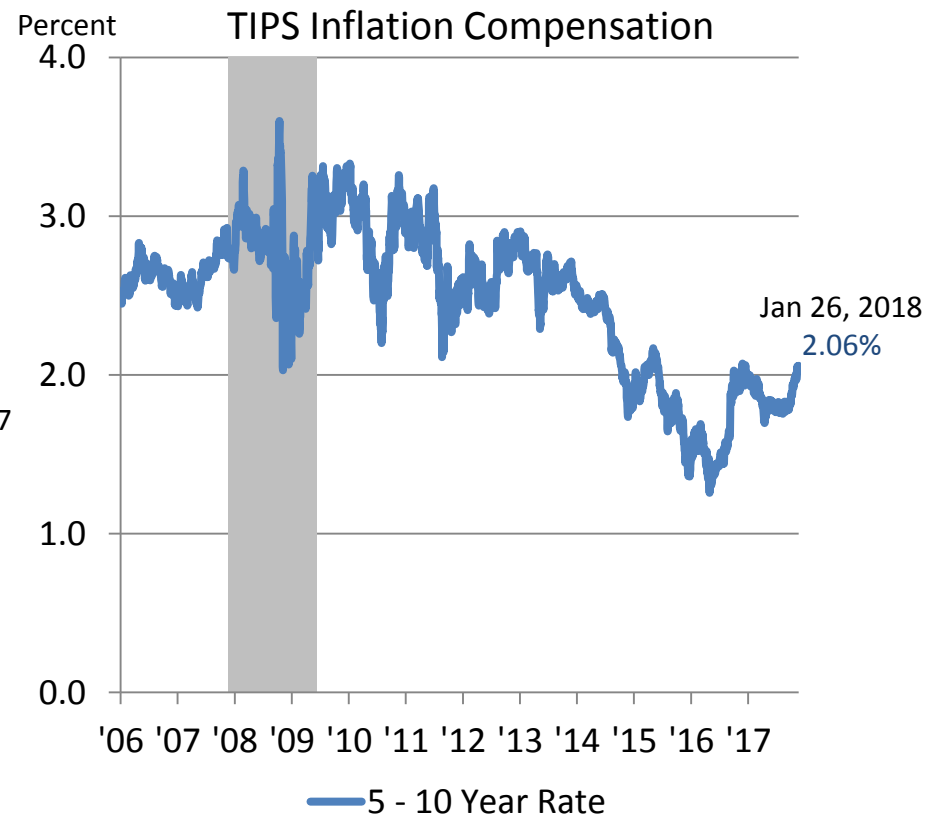
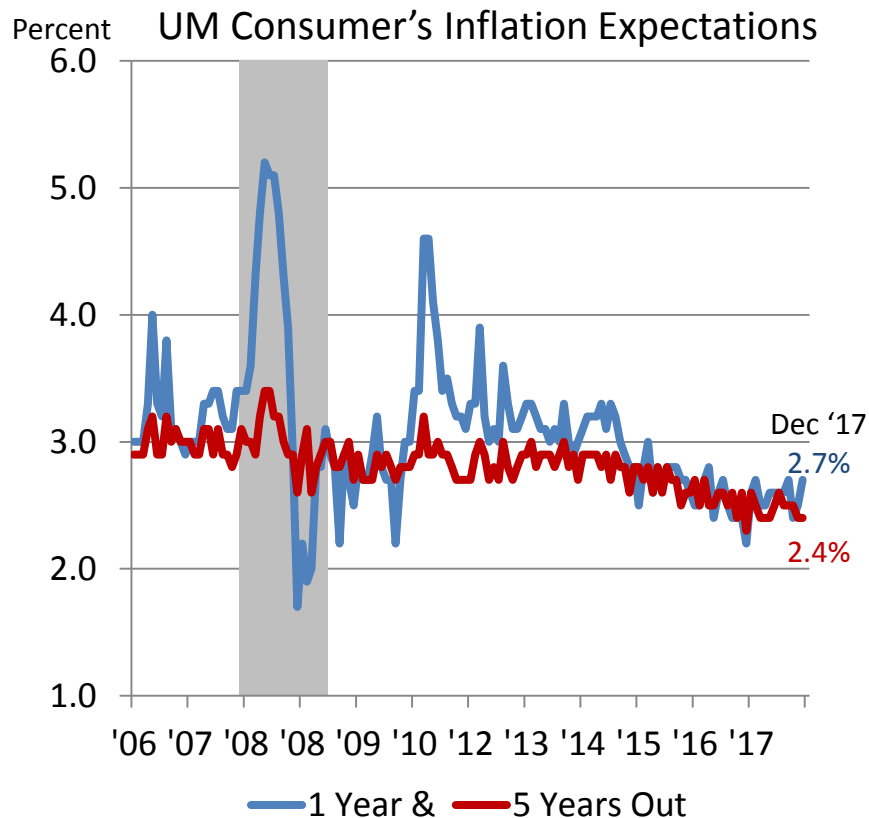


\* Midpoint of the projections made by the FOMC participants as of December 13, 2017

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

# Inflation Expectations

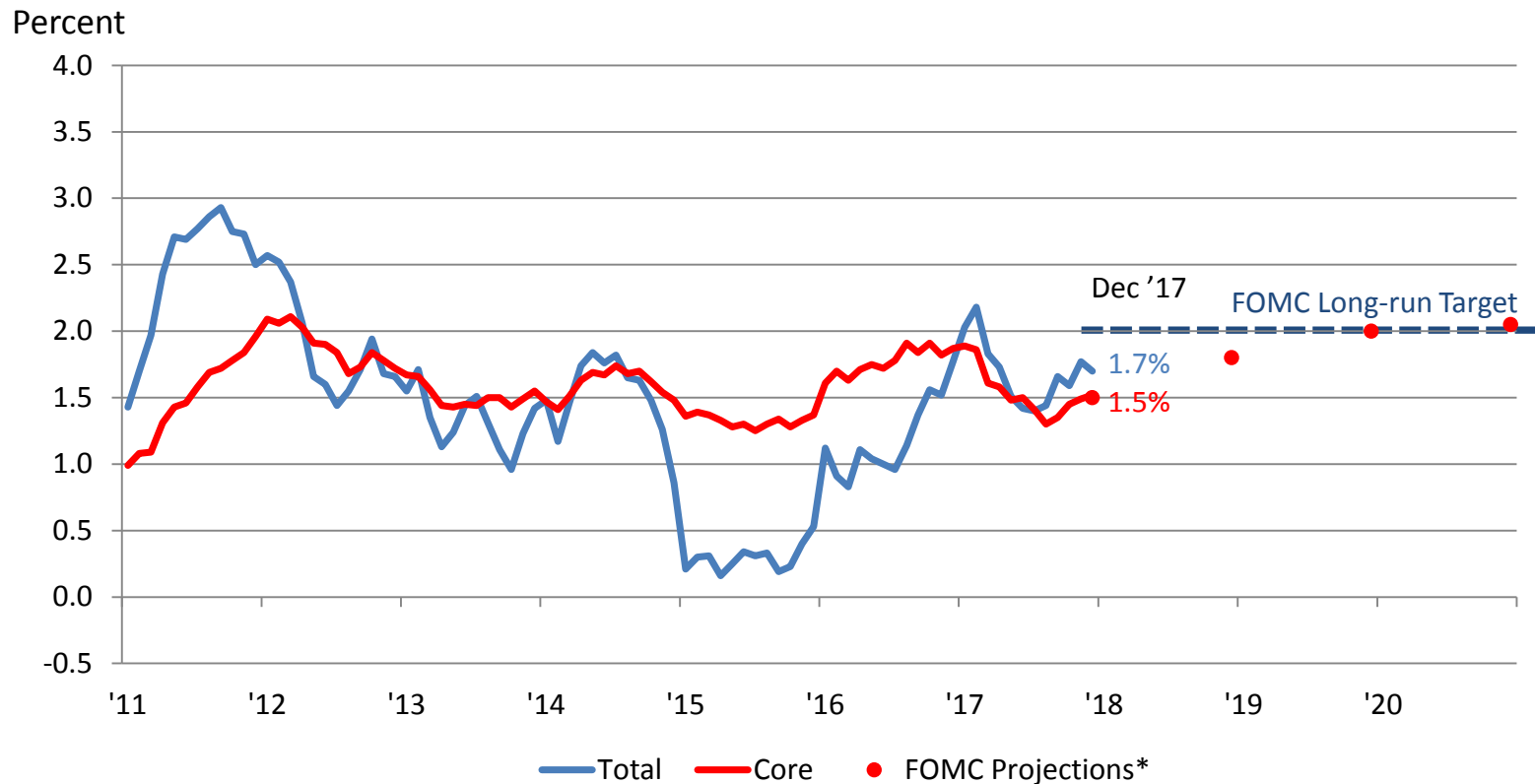
## 1-5 Year and 5-10 Year Inflation Expectations



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

# Consumer Prices

## PCE – All Items & Core Inflation, 12-Month Percent Change

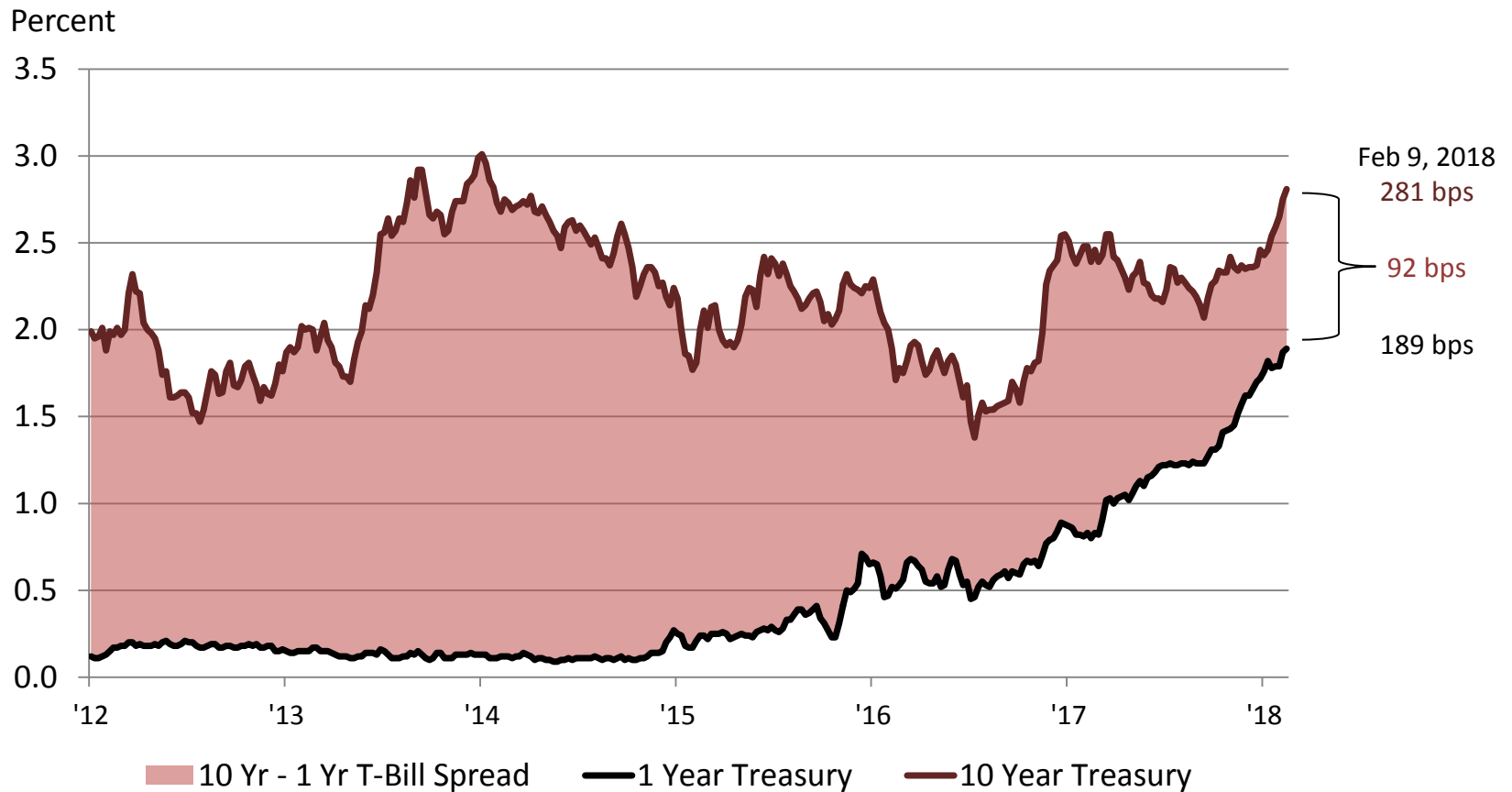


\* Midpoint of the central tendency of forecasts made by the FOMC participants as of December 13, 2017

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

# Yield Curve

## 10 Year – 1 Year Treasuries in Basis Points



Source: Board of Governors – Federal Reserve System



# Taylor Rule

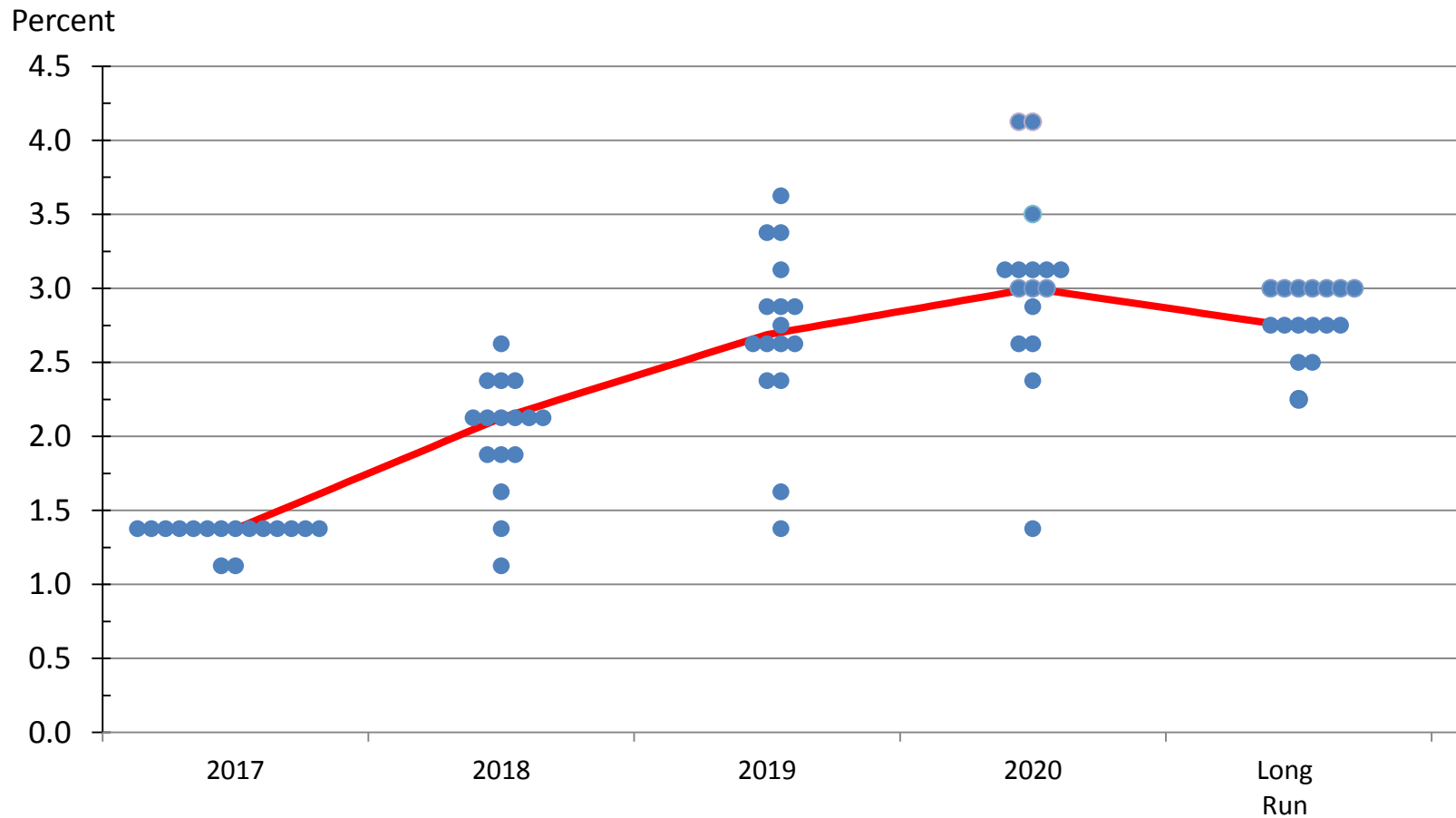
## CBO Output Gap, Core CPE Inflation, and Target FFR



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

# Appropriate pace of policy firming

## Fed Funds Rate – Year End Projections

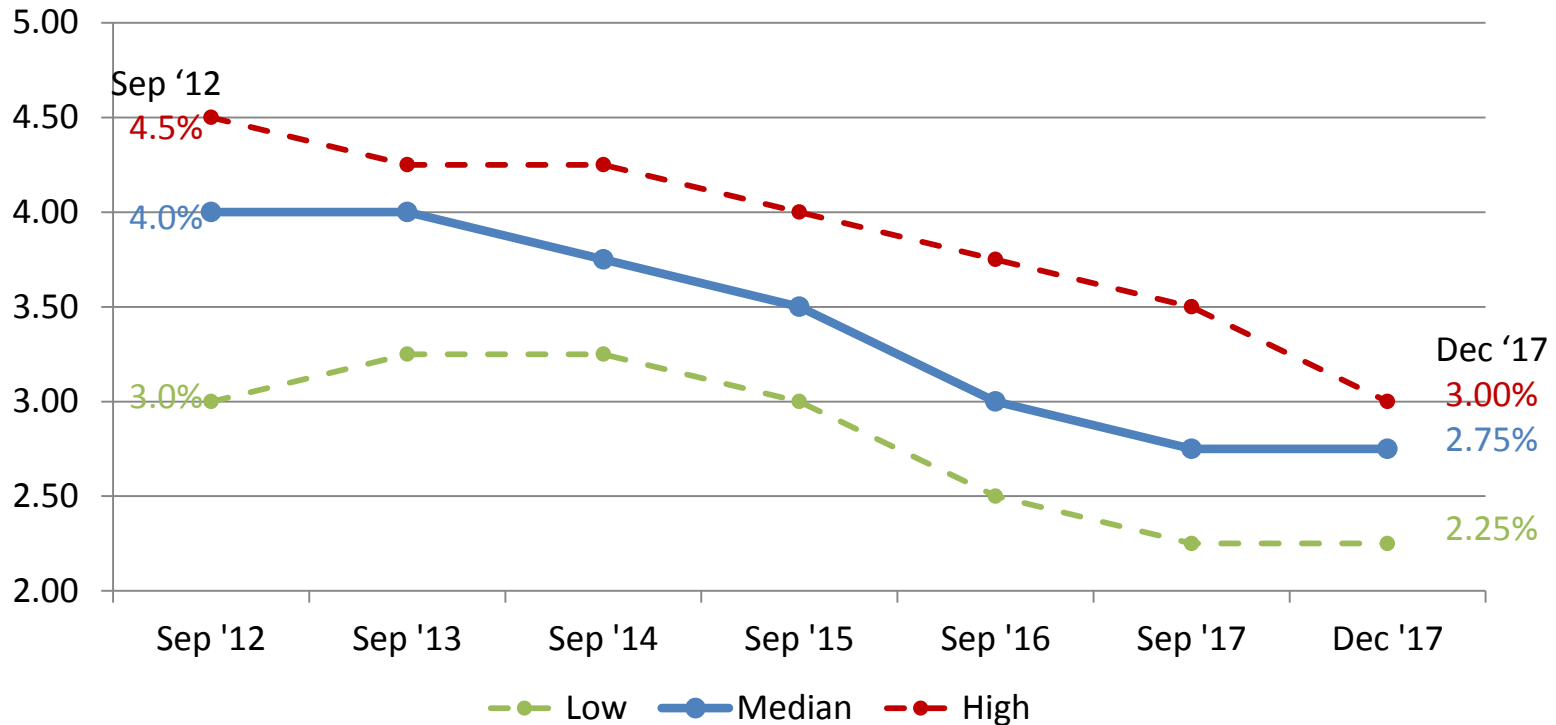


Source: Federal Reserve - F.O.M.C. participants, September 20, 2017

# Target Federal Funds Rate

## Long Run Projections

Percent



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

*Thank You!*

