



Economic Update

Wards Intelligence Outlook Conference

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The views expressed here are my 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.

Main Economic Indicators

Year-over-year Comparison

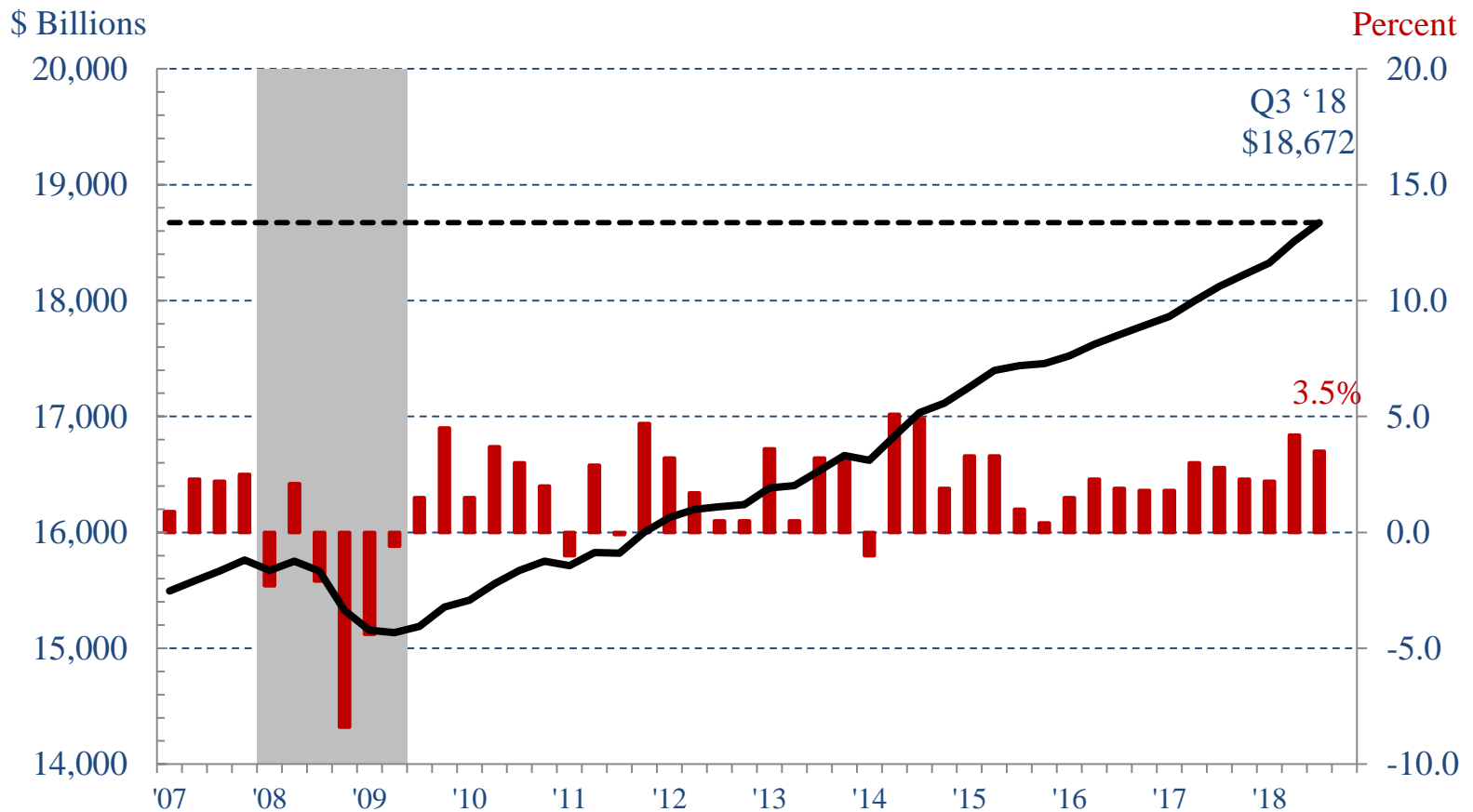
	<u>2016</u>	<u>2017</u>	<u>2018 YTD</u>
GDP – Annual Growth Rate ¹	1.9%	2.5%	3.0%
Nonfarm Job Growth ²	195.3	182.3	206.2
Unemployment Rate ³	4.9%	4.4%	3.9%
Private Wage Growth ⁴	2.6%	2.6%	2.8%
PCE Inflation Yr. / Yr. ⁴	0.9%	1.6%	2.1%

1. Year-over-year - 2016 & 2017 Q4/Q4, 2018 Q3/Q3
2. Average Monthly Job Growth in Thousands- SA
3. Annual Average YTD
4. Percent Change Year-over-year – Annual Average YTD

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

Real Gross Domestic Product

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

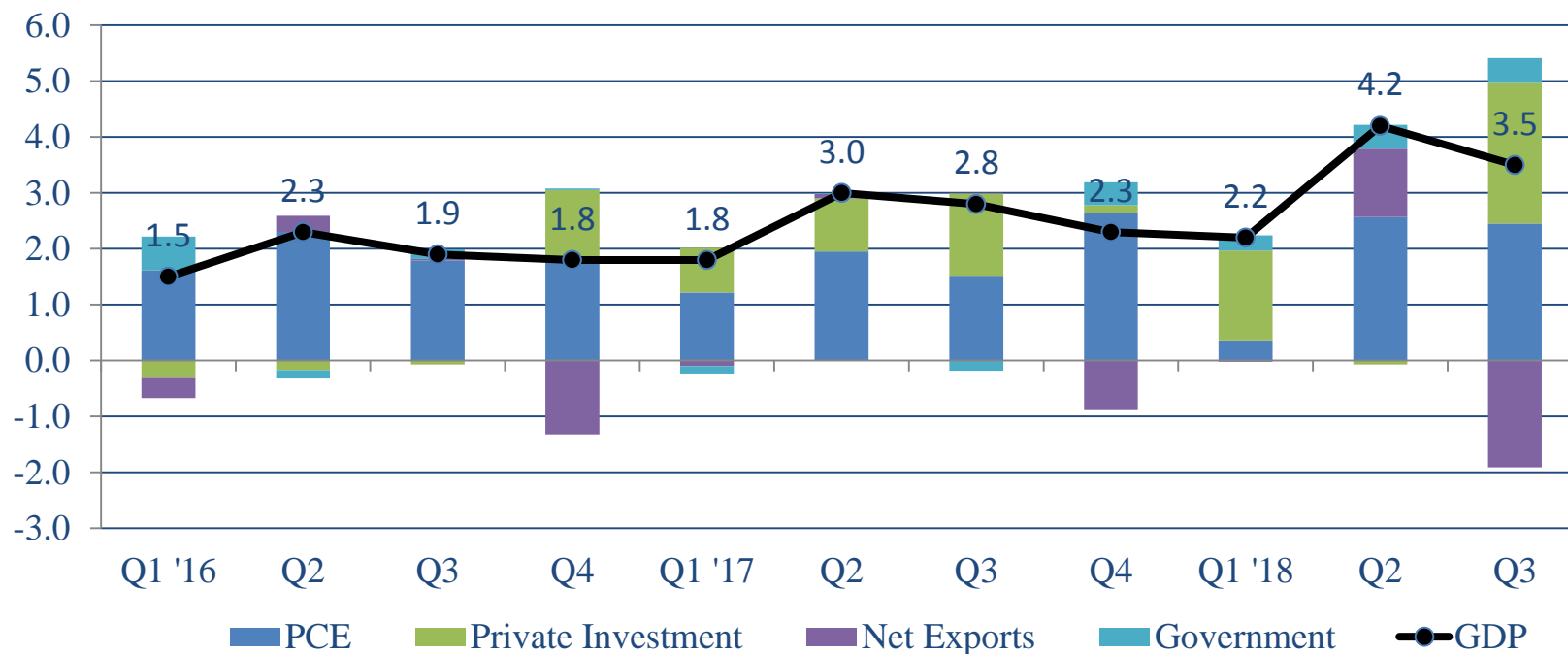


Source: U.S. Bureau of Economic Analysis

U.S. Real GDP

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

Percent



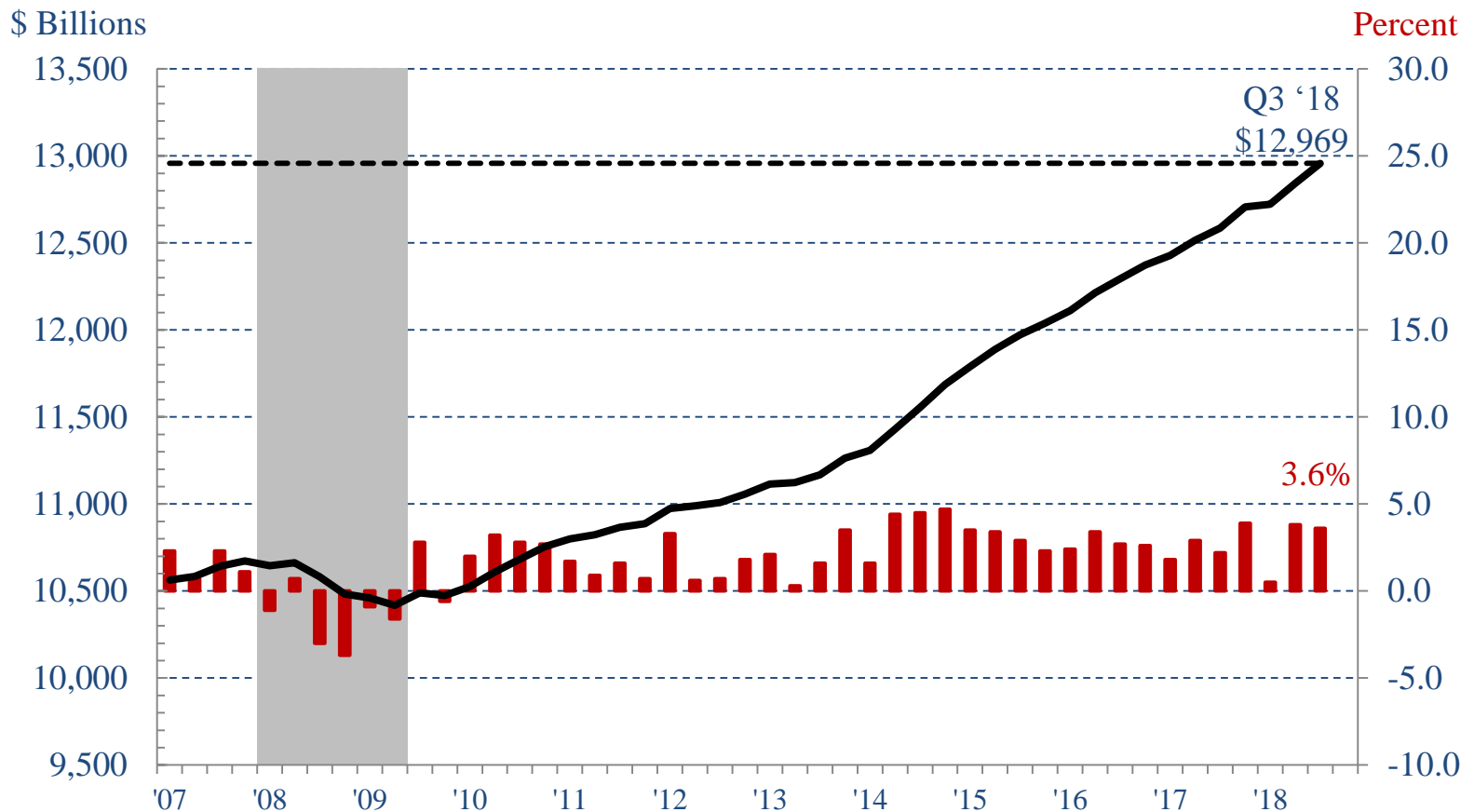
Contribution 2.5% 2.5% -1.9% 0.4% 3.5%

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

Source: U.S. Bureau of Economic Analysis.

Real Personal Consumption Expenditures

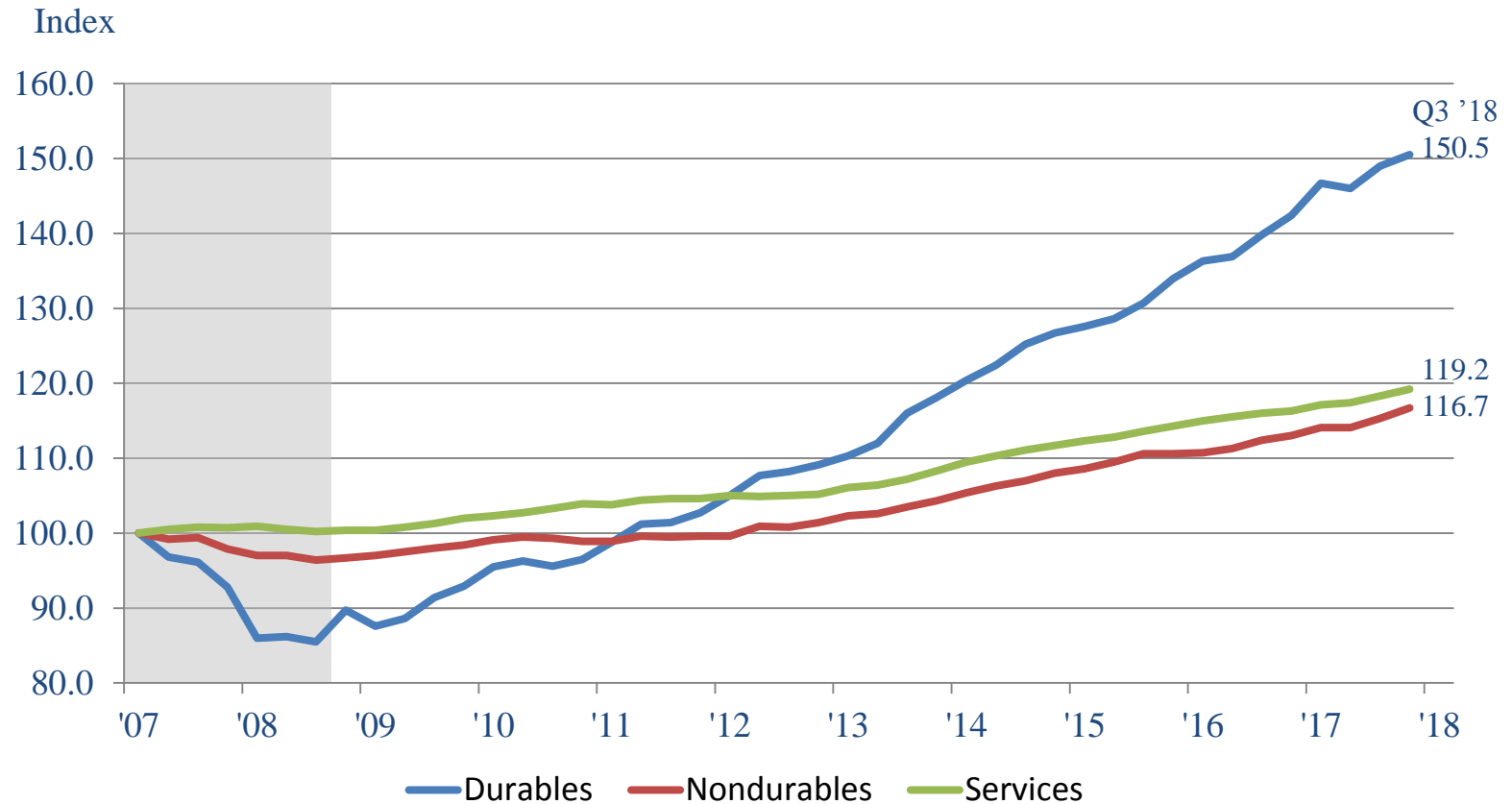
Billions Chained \$2012, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

Real Personal Consumption Expenditures

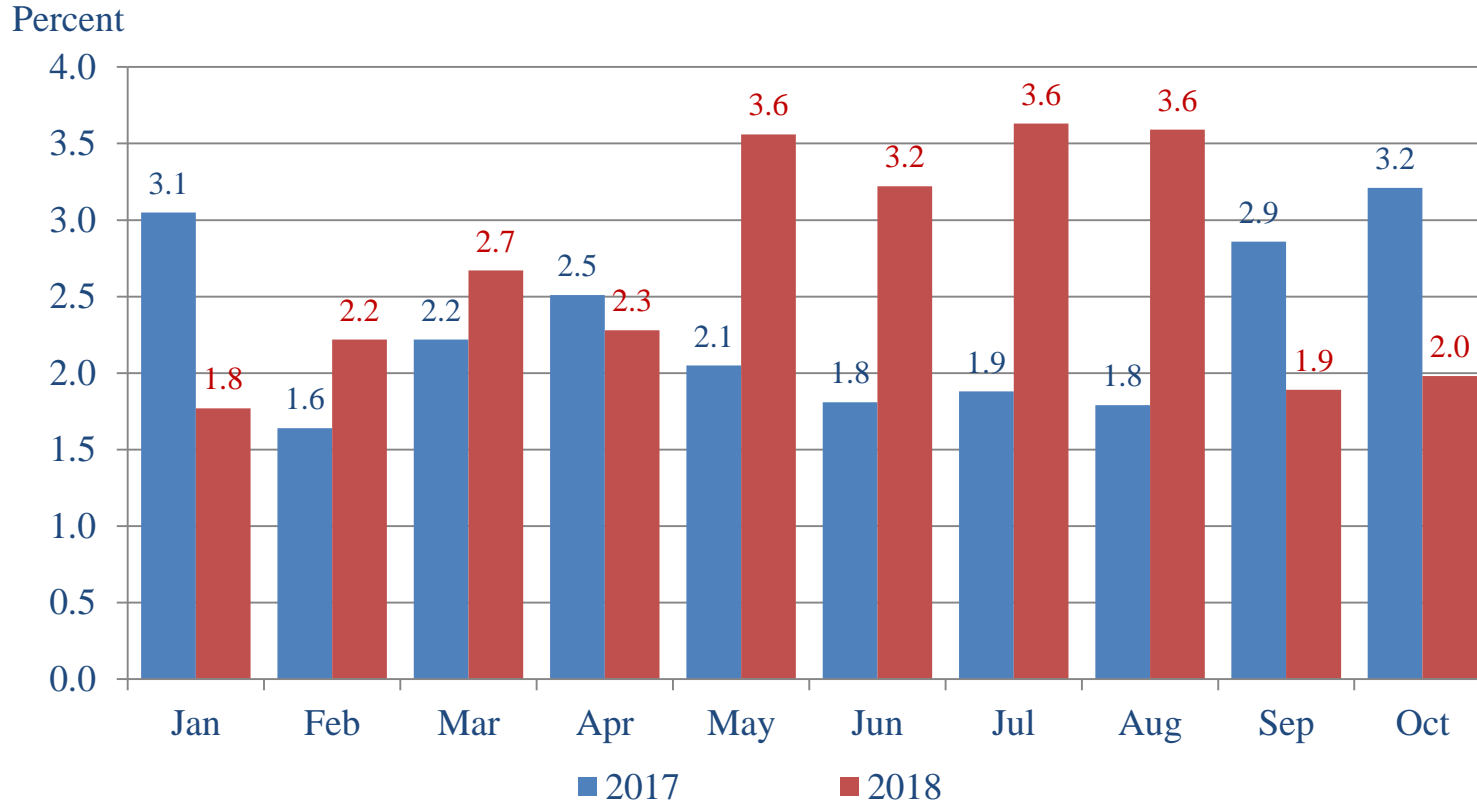
Billions Chained \$2012, Index – Q4 '07 = 100



Source: Author's calculations using data from the BEA

Real Retail & Food Service Sales

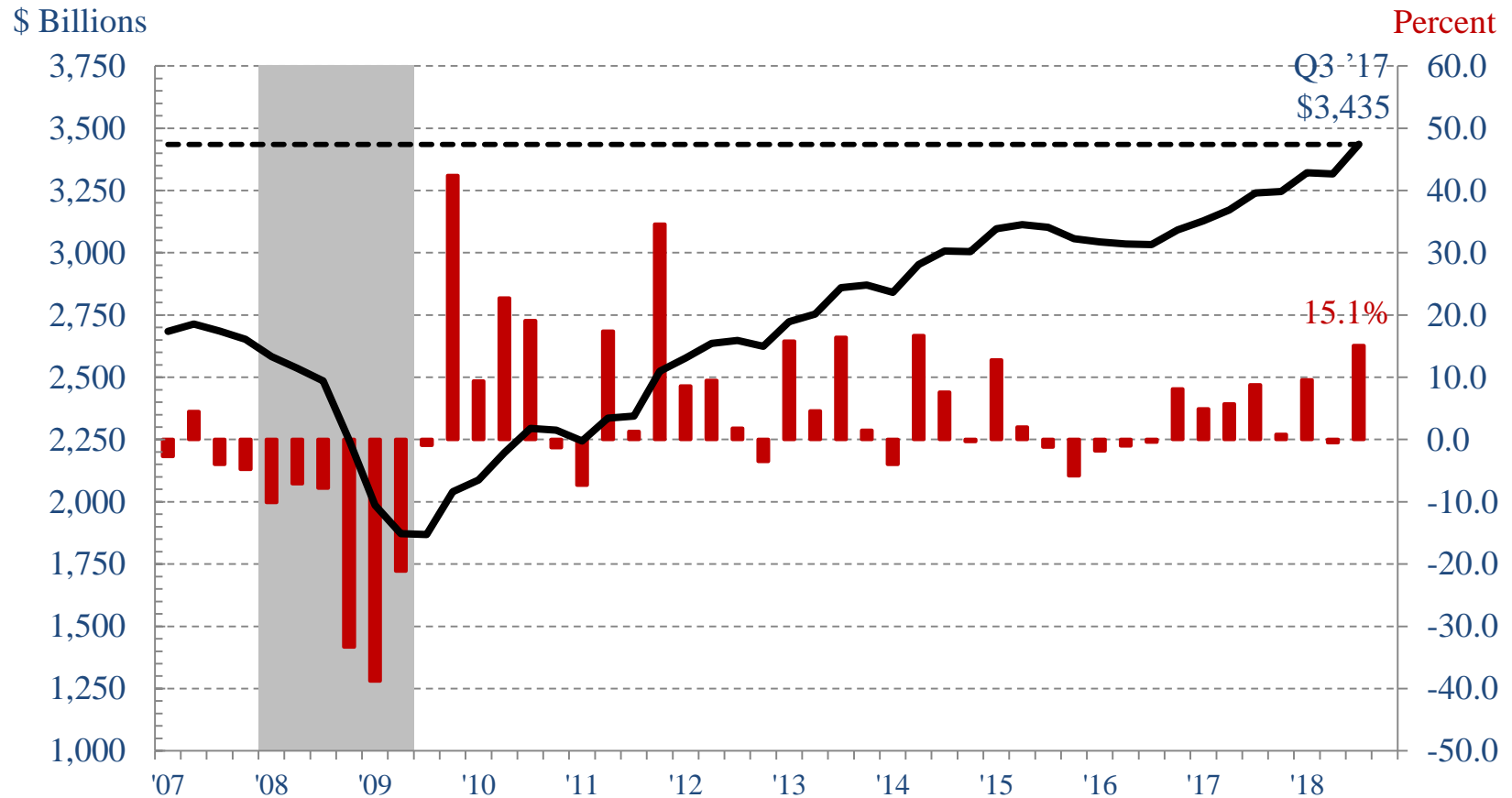
Millions Chained \$2012, Percent Change Yr./Yr.



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

Real Gross Private Domestic Investment

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

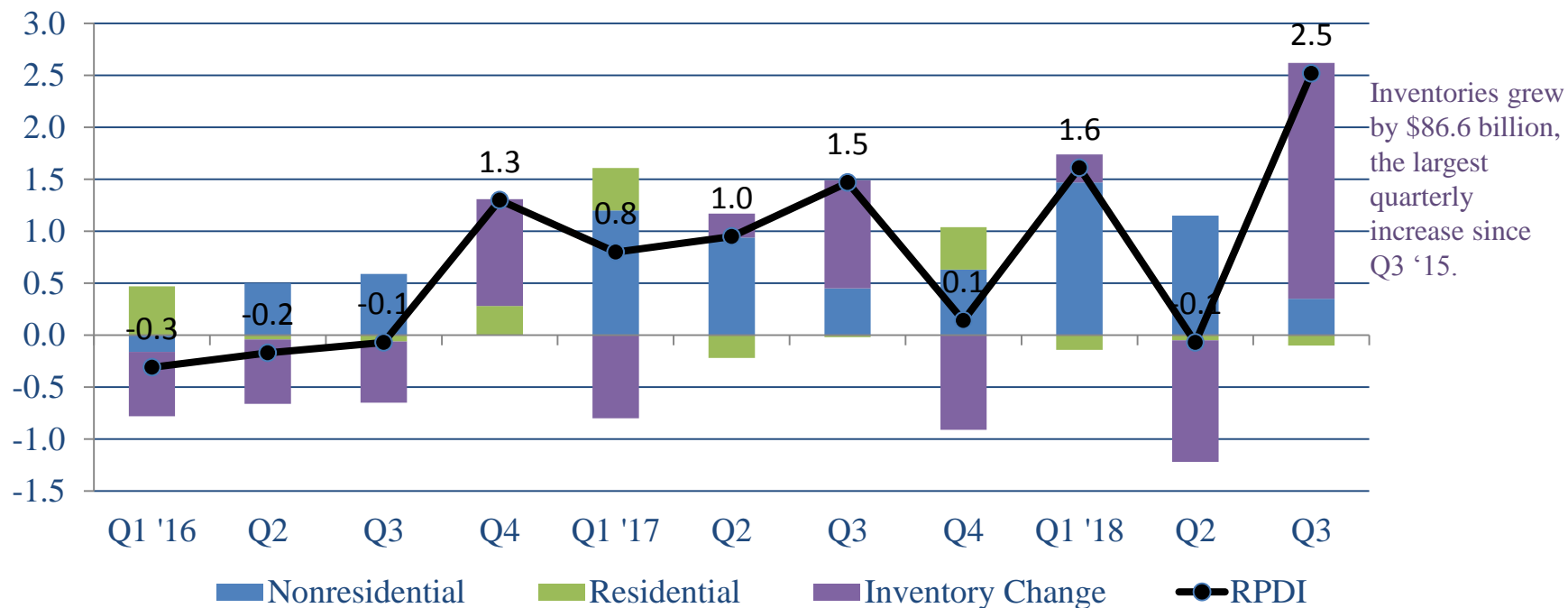


Source: U.S. Bureau of Economic Analysis

U.S. Real Private Domestic Investment

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

Percent



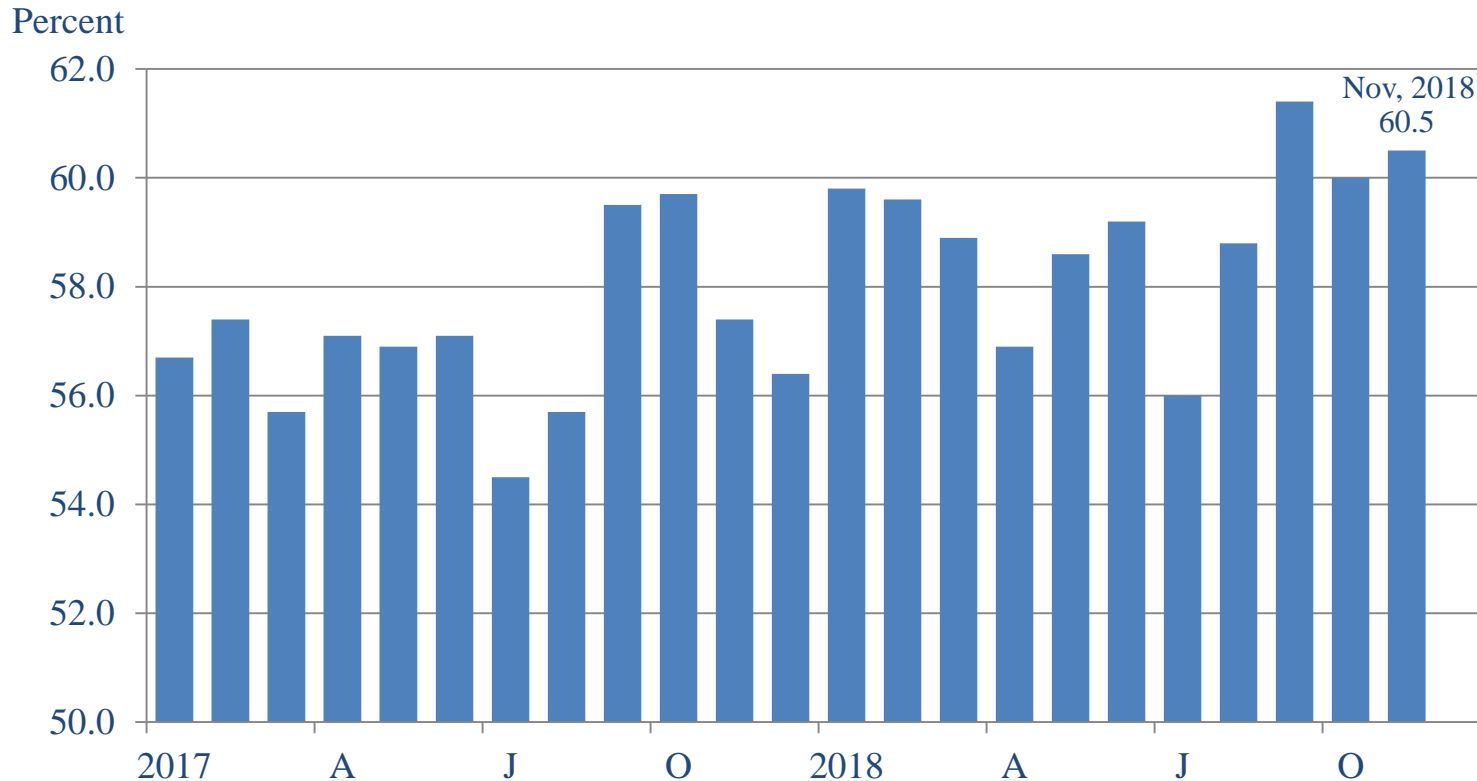
Q3 '18 0.1% -0.2% 2.1% 2.0%

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

Source: U.S. Bureau of Economic Analysis.

ISM Purchasing Managers Indexes

Composite Index, SA - Greater than 50 = Expansion

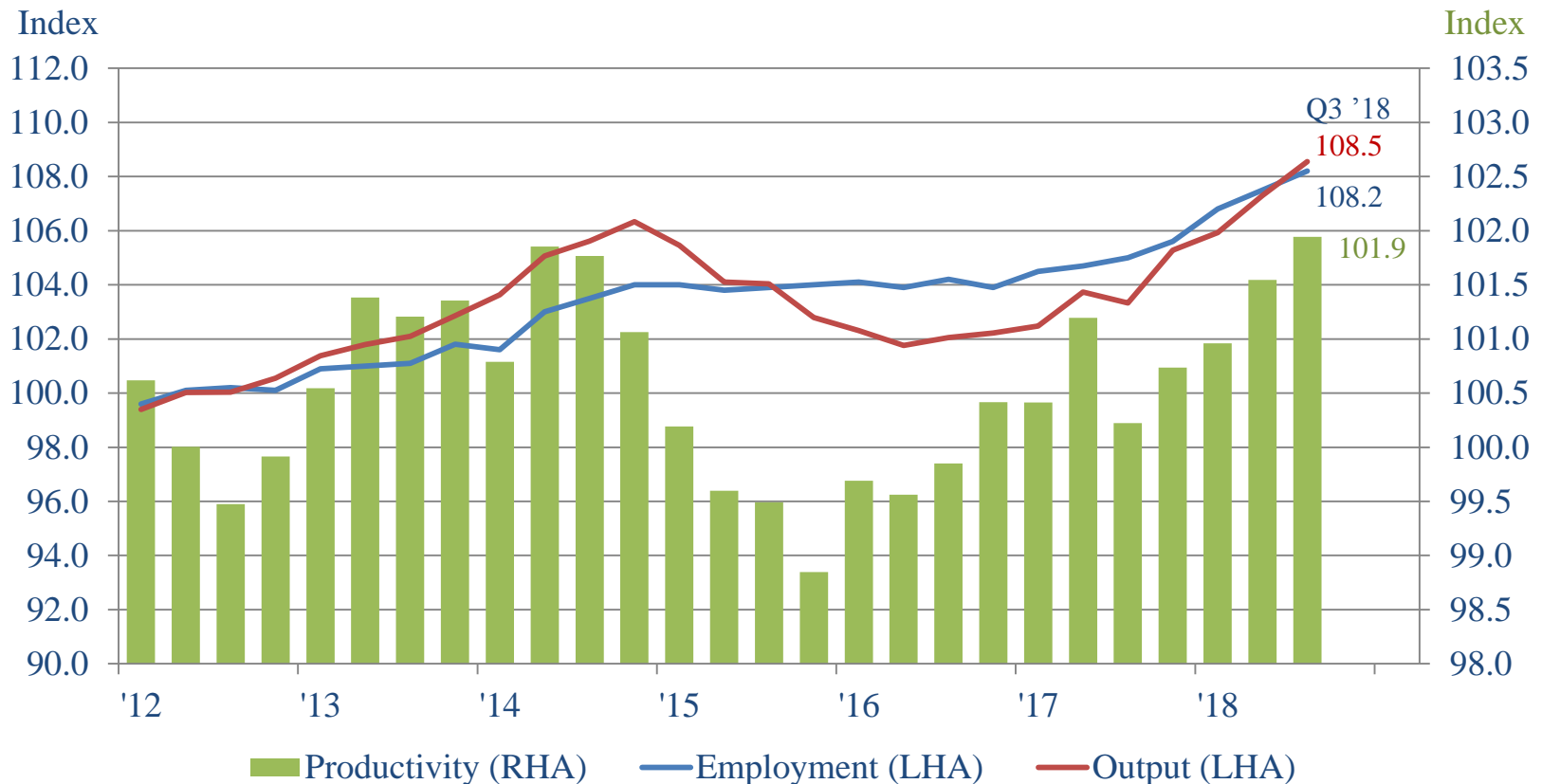


Note: Composite of Manufacturing and Nonmanufacturing calculated by Haver Analytics.

Source: Institute for Supply Management and Haver Analytics.

Manufacturing Sector

Employment, Output, and Productivity – Index, 2012 = 100

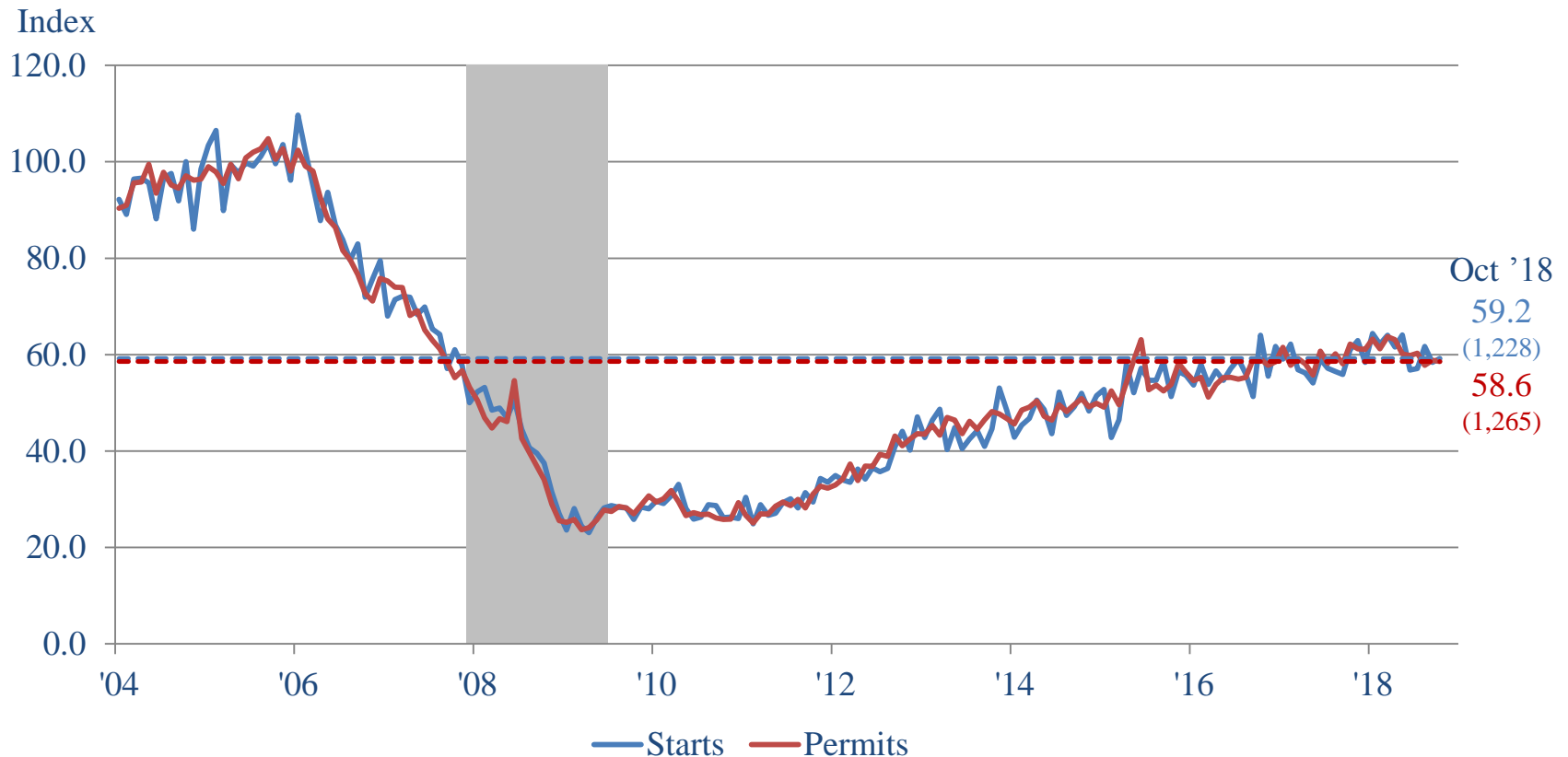


Note: Actual values in parentheses are in thousands.

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

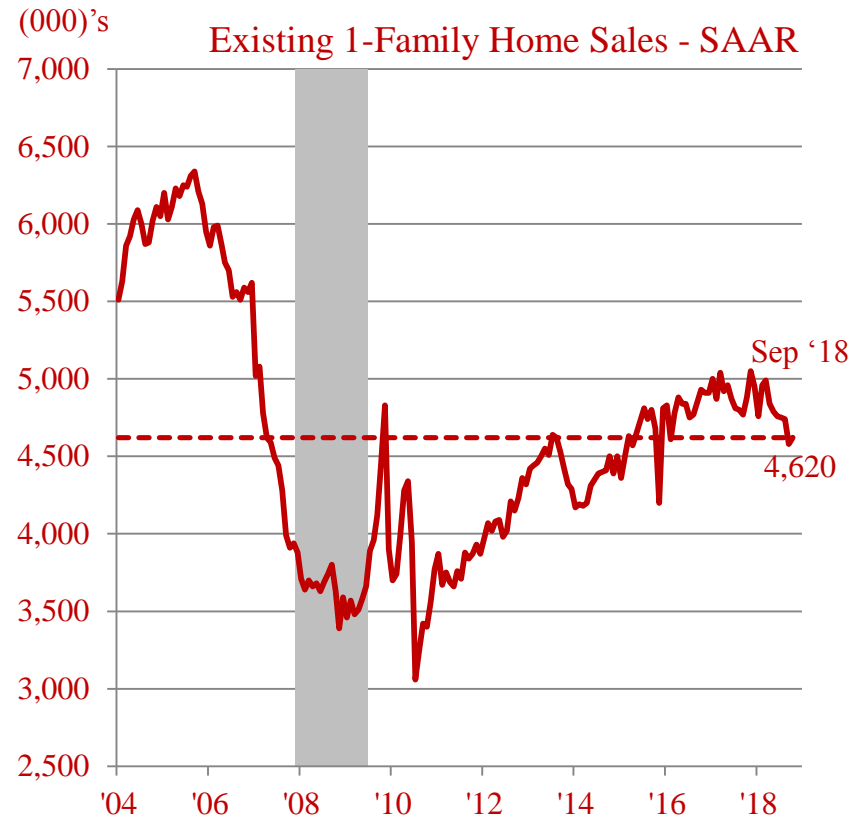
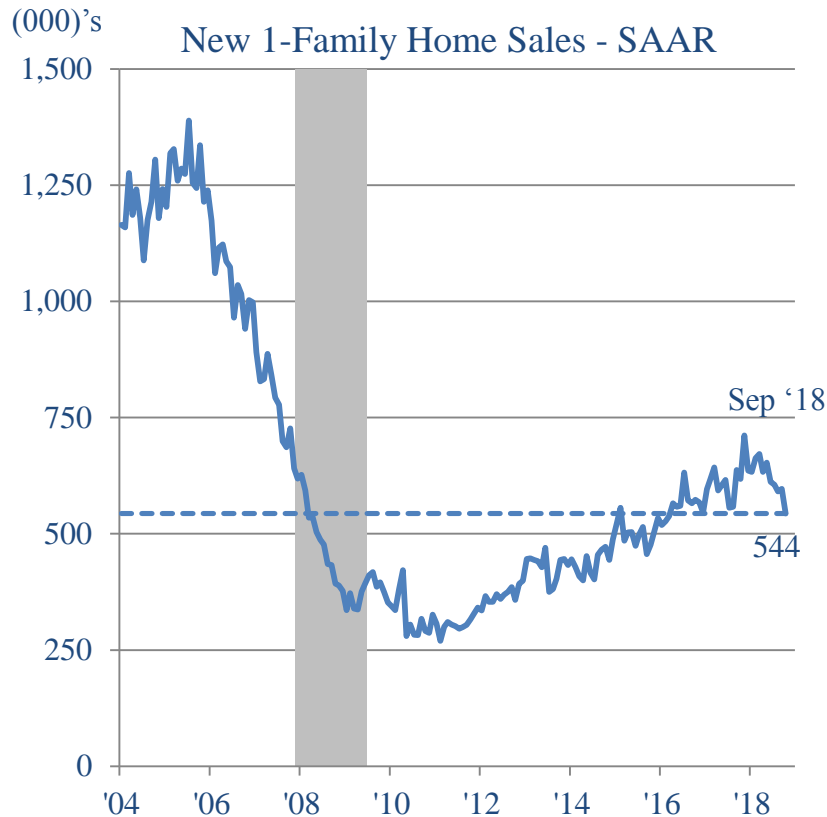
15 Year and 30 Year Fixed & 5/1 Adjustable



Source: New York Times and Haver Analytics

New Private Housing

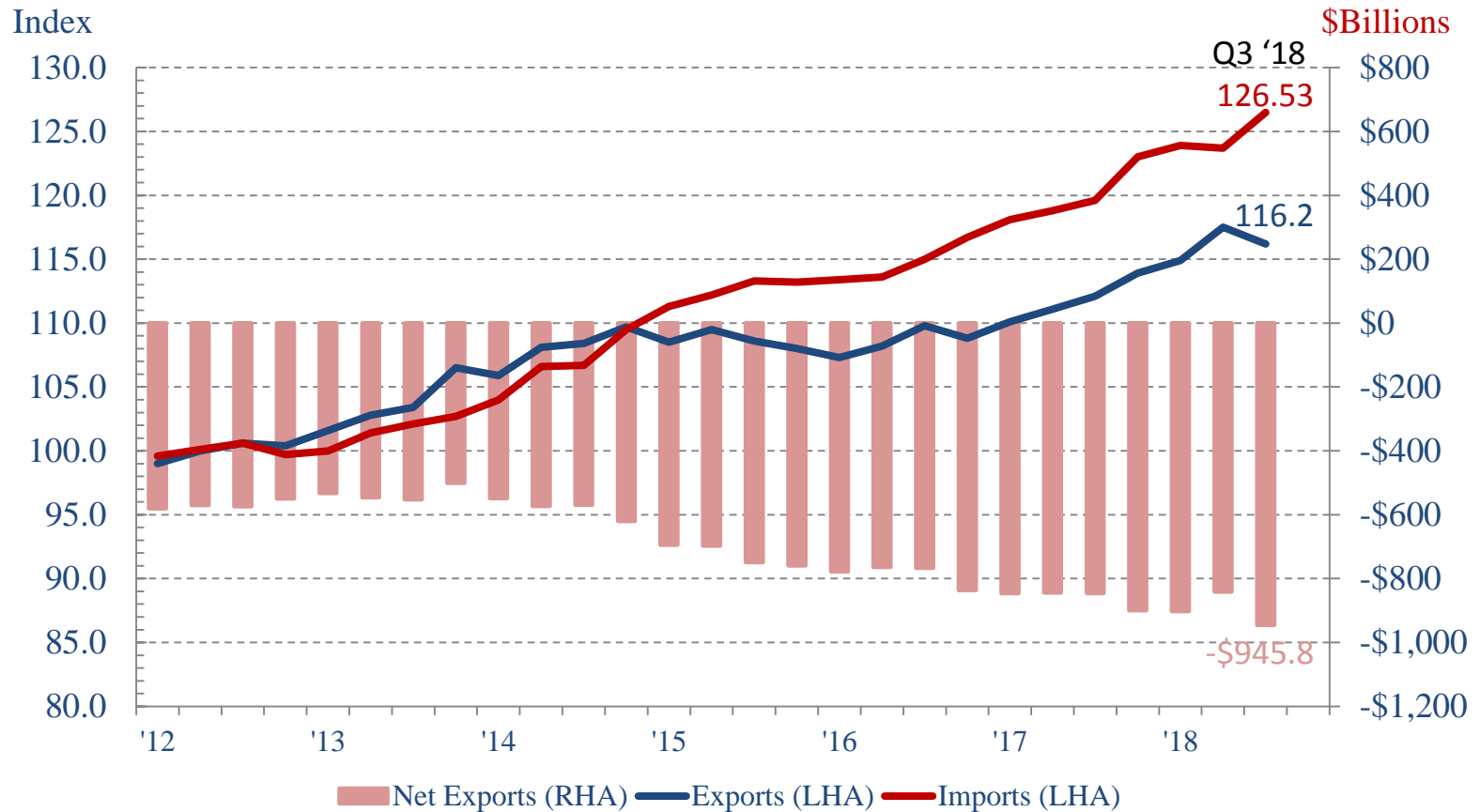
New and Existing Home Sales



Source: U.S. Census Bureau, National Association of Realtors, and Haver Analytics.

Real Imports and Exports

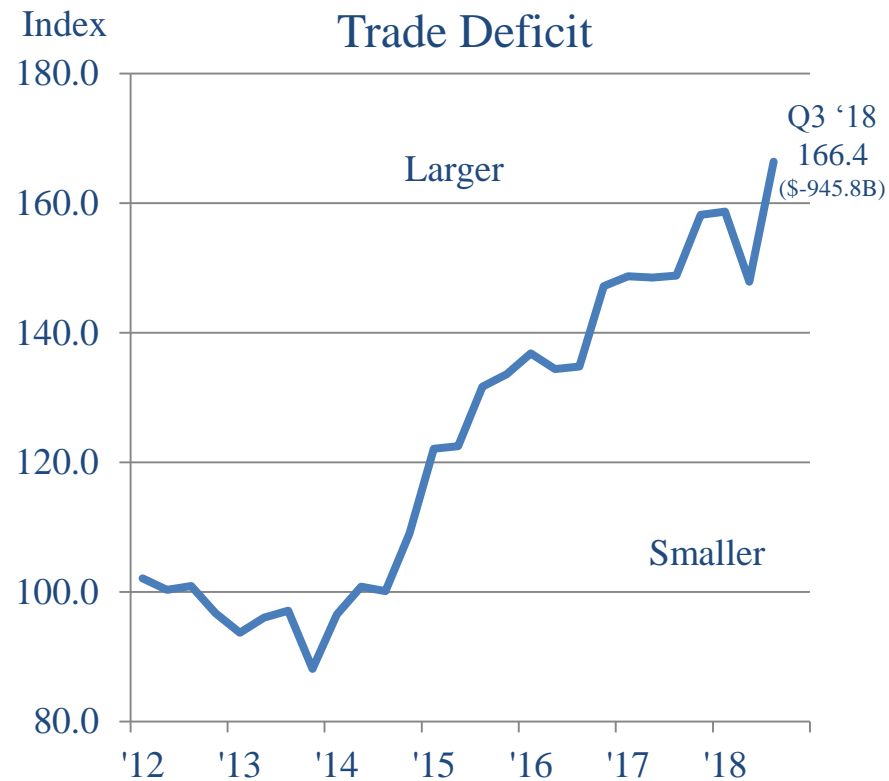
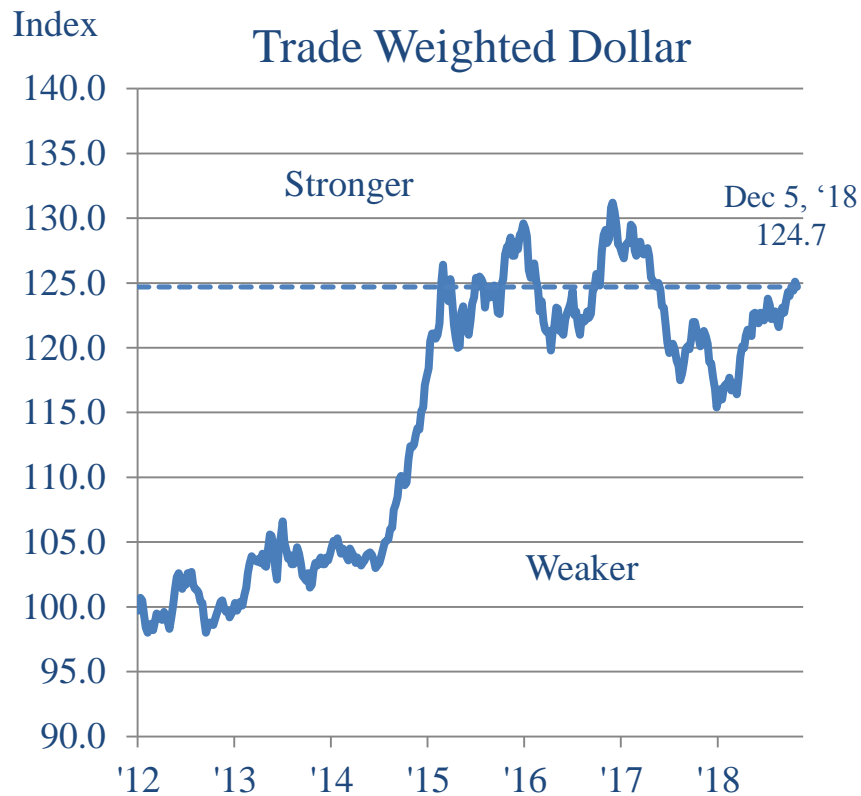
Billions Chained \$2012, Index – 2012 = 100



Source: U.S. Bureau of Economic Analysis

The U.S. Dollar & The Trade Deficit

Trade Weighted Dollar- Index 2012 = 100, Trade Deficit – Index 2012 = 100



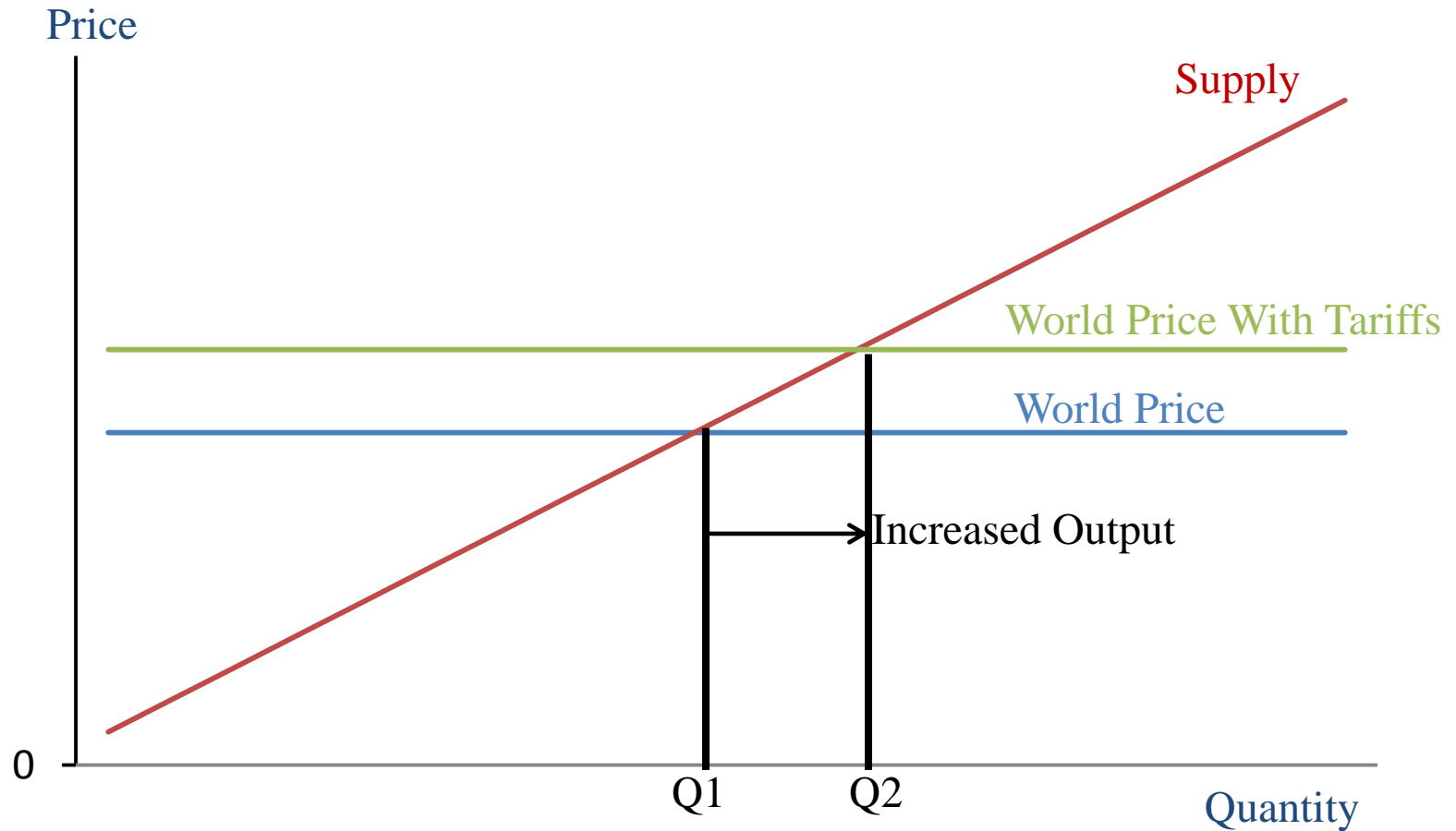
Source: Federal Reserve Board and Haver Analytics

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

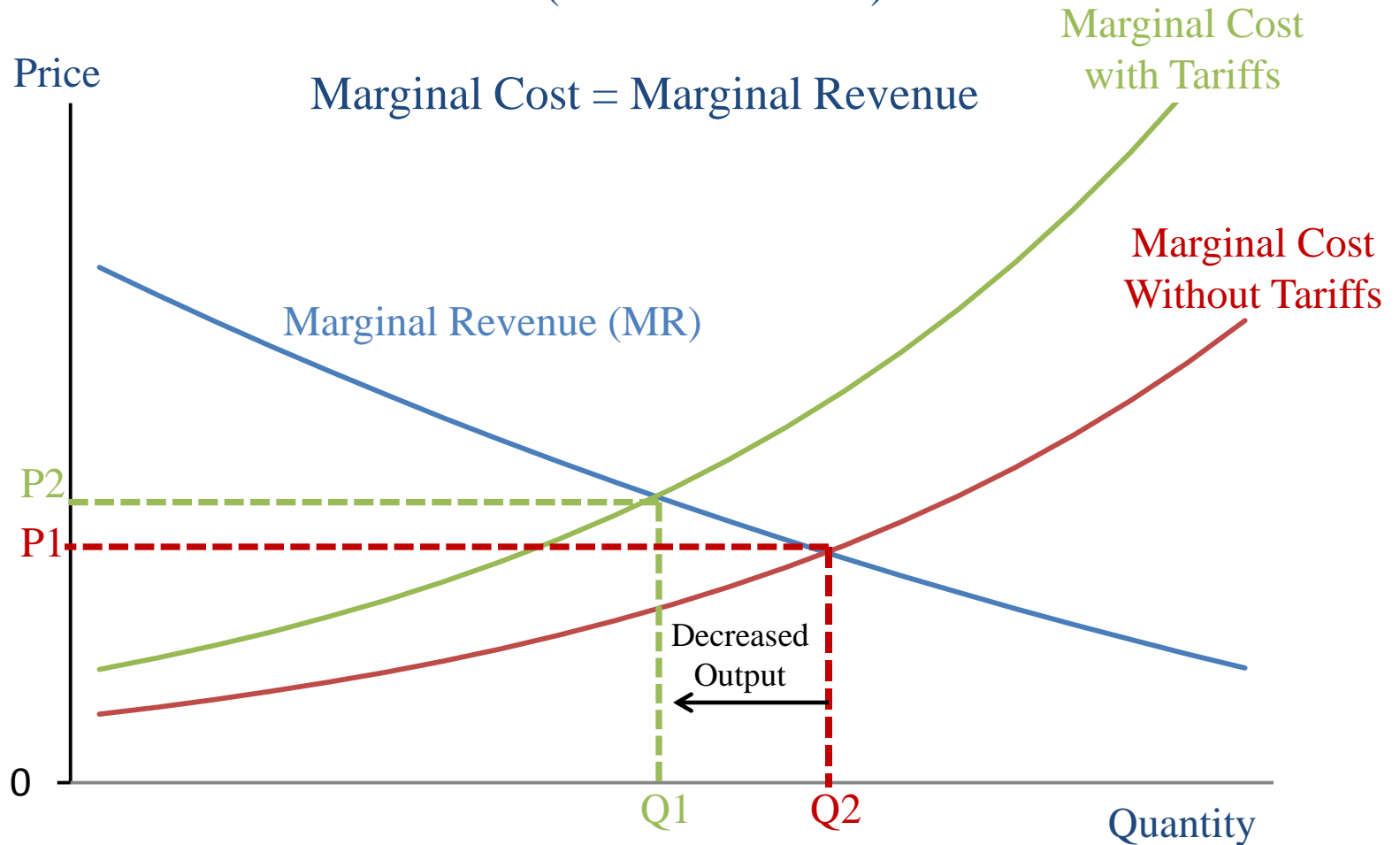
Trade and Tariffs

Impact on Intermediate Goods Production (Steel)



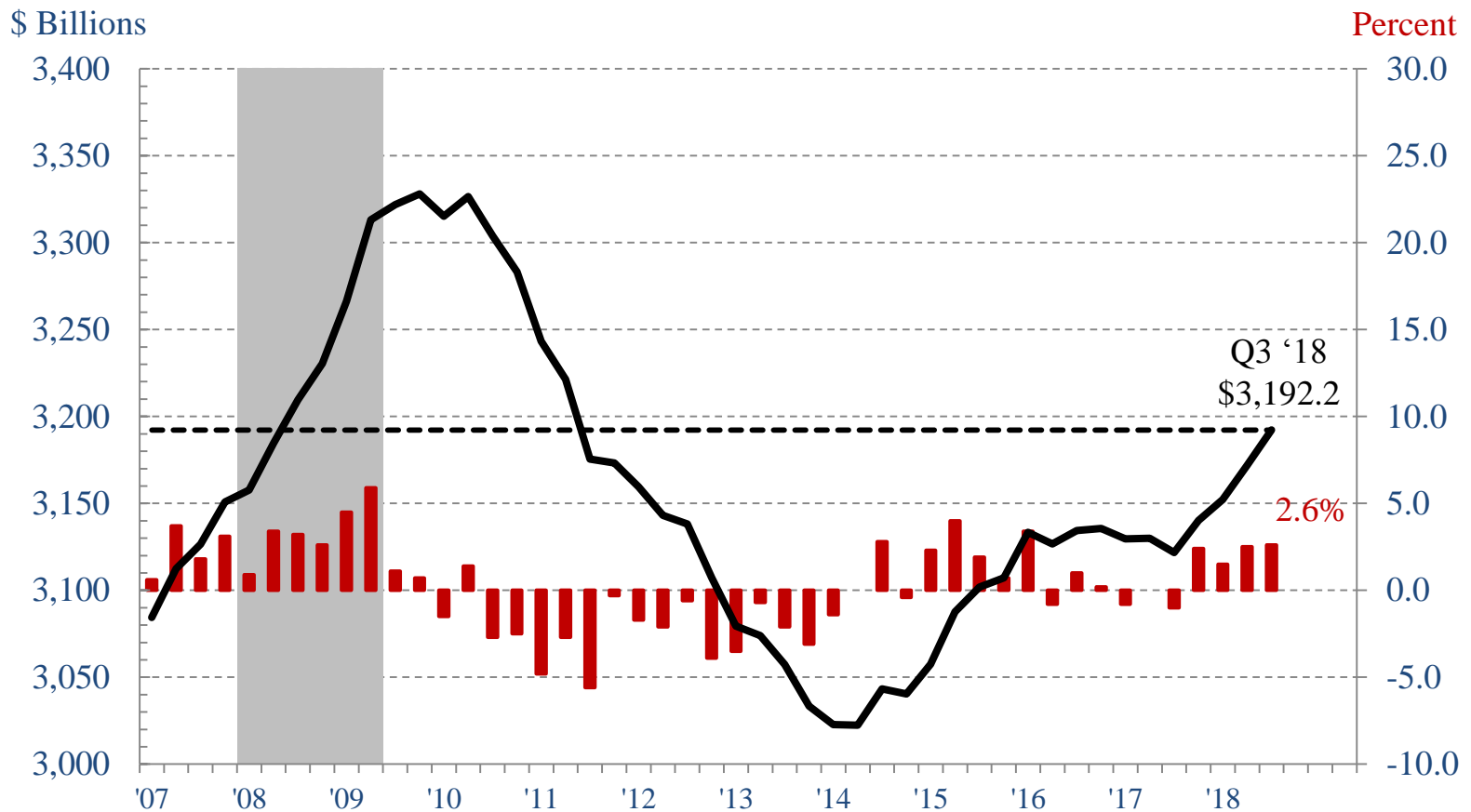
Trade and Tariffs

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



Real Government Consumption & Investment

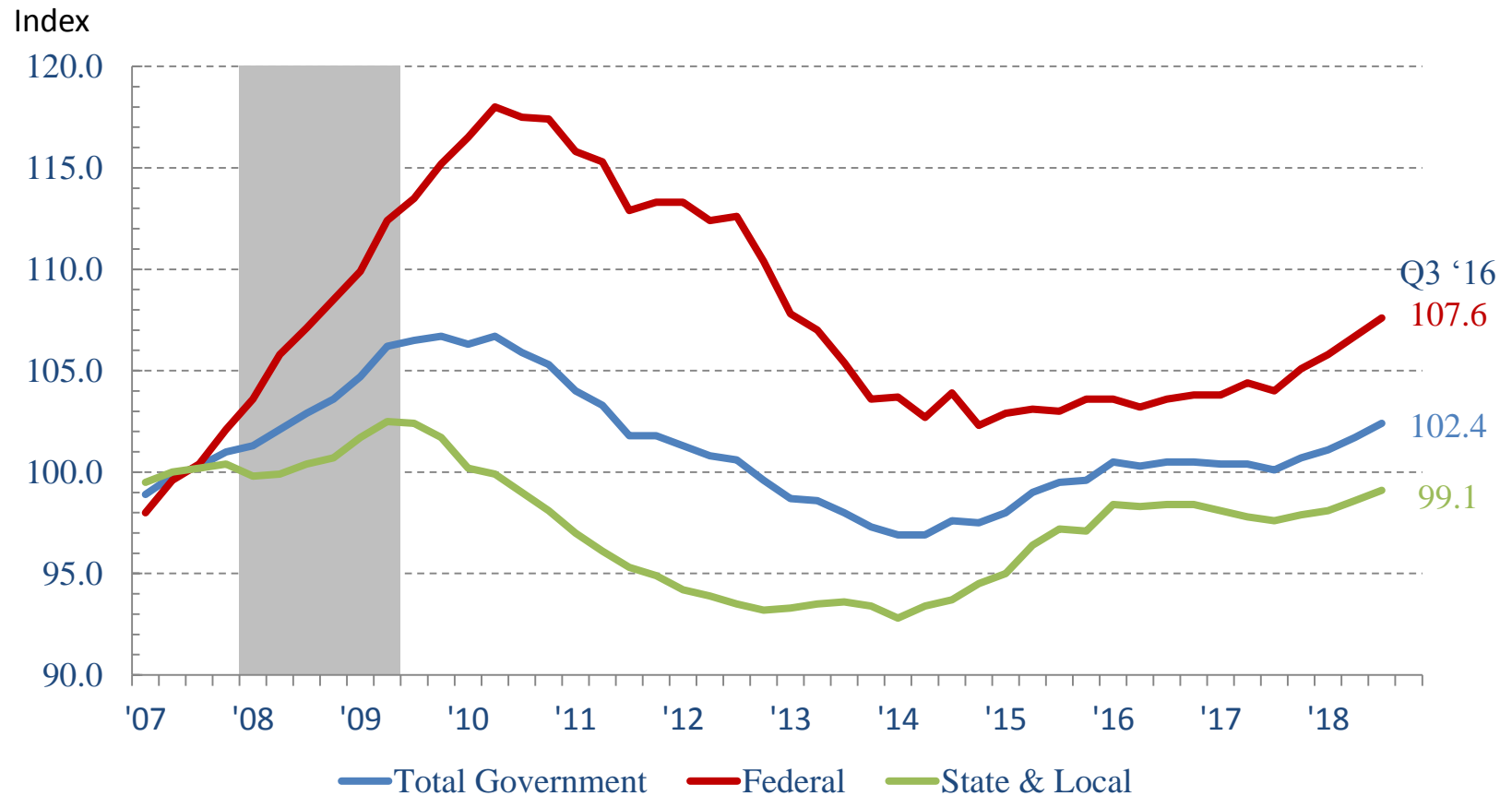
Billions Chained \$2012, % Change Q/Q at SAAR



Source: U.S. Bureau of Economic Analysis

Real Government Consumption & Investment

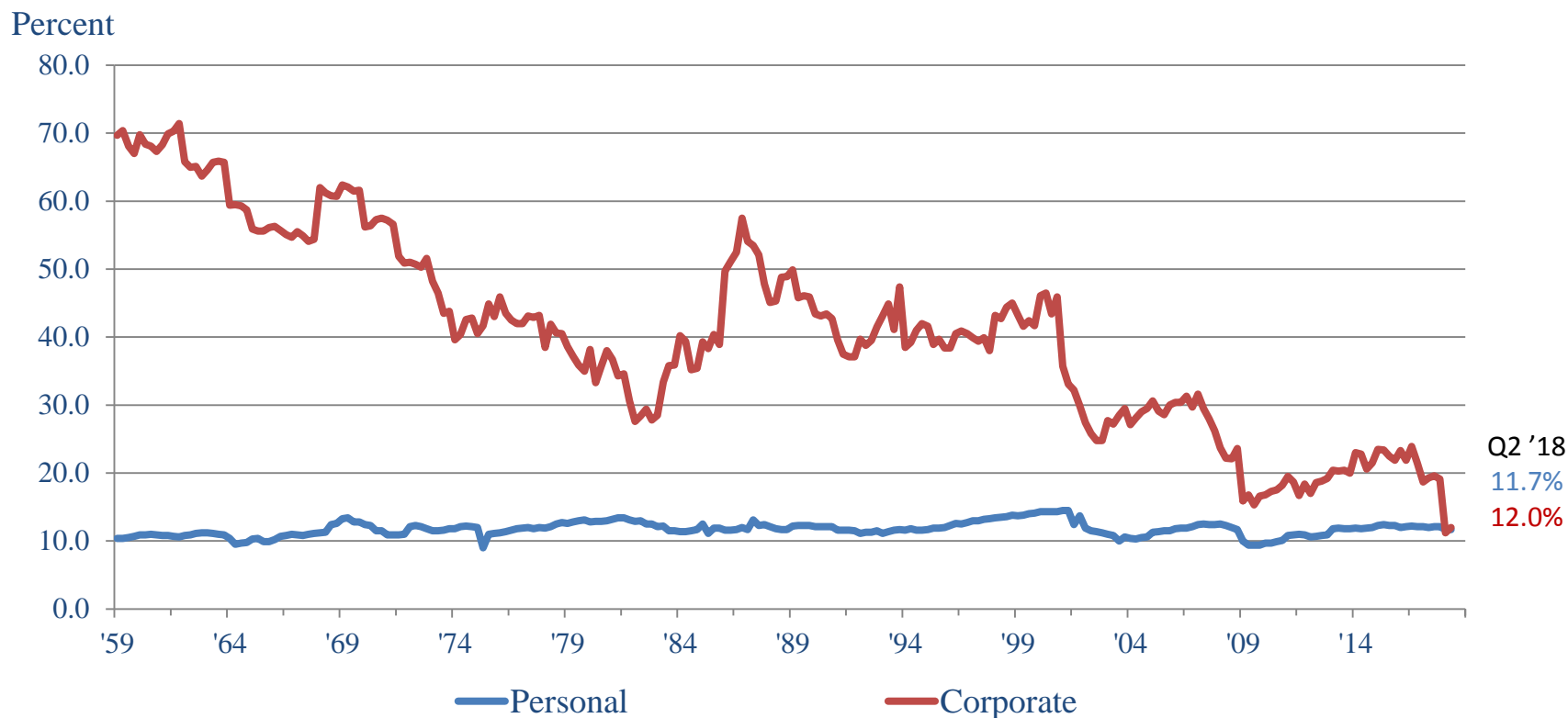
Billions Chained \$2009, Index – 2007 = 100



Source: U.S. Bureau of Economic Analysis

Average Tax Rates

Personal and Corporate

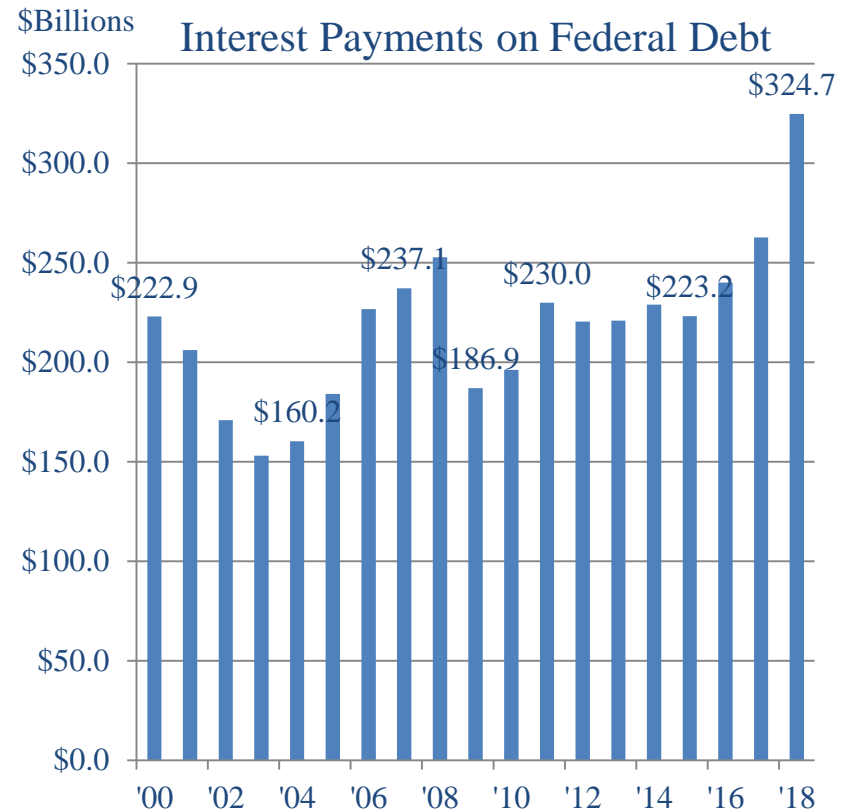
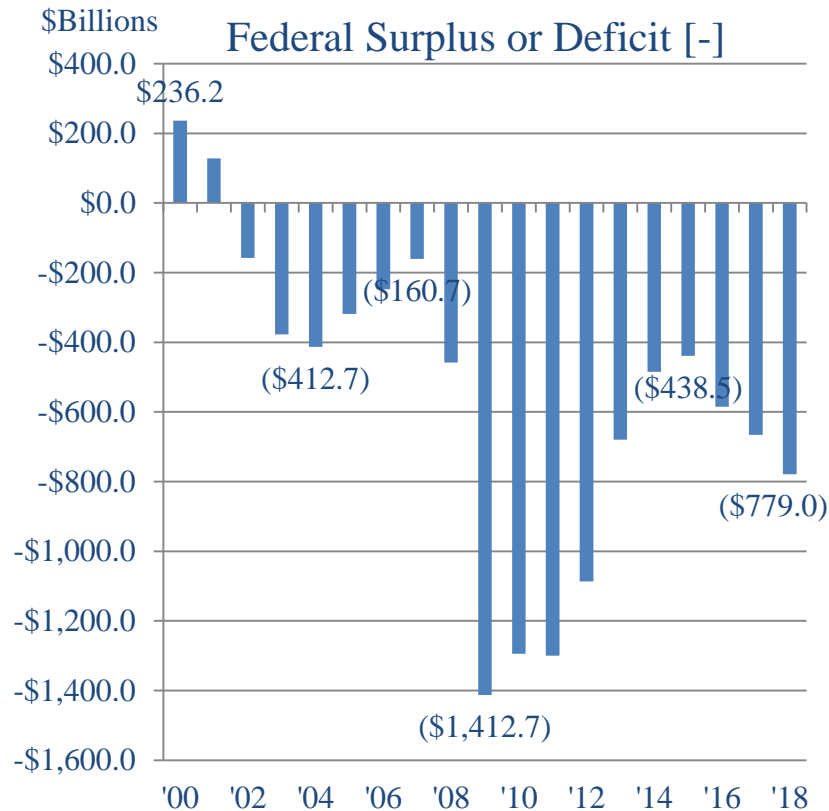


Notes: Corporate Tax Rate = (Corporate Profits Before Taxes / Corporate Profits After Taxes) – 1, both without IVA & CCAdj.
Personal Tax Rate = Personal Current Taxes / Personal Income (NIPA).

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

Federal Debt and Interest on Debt

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



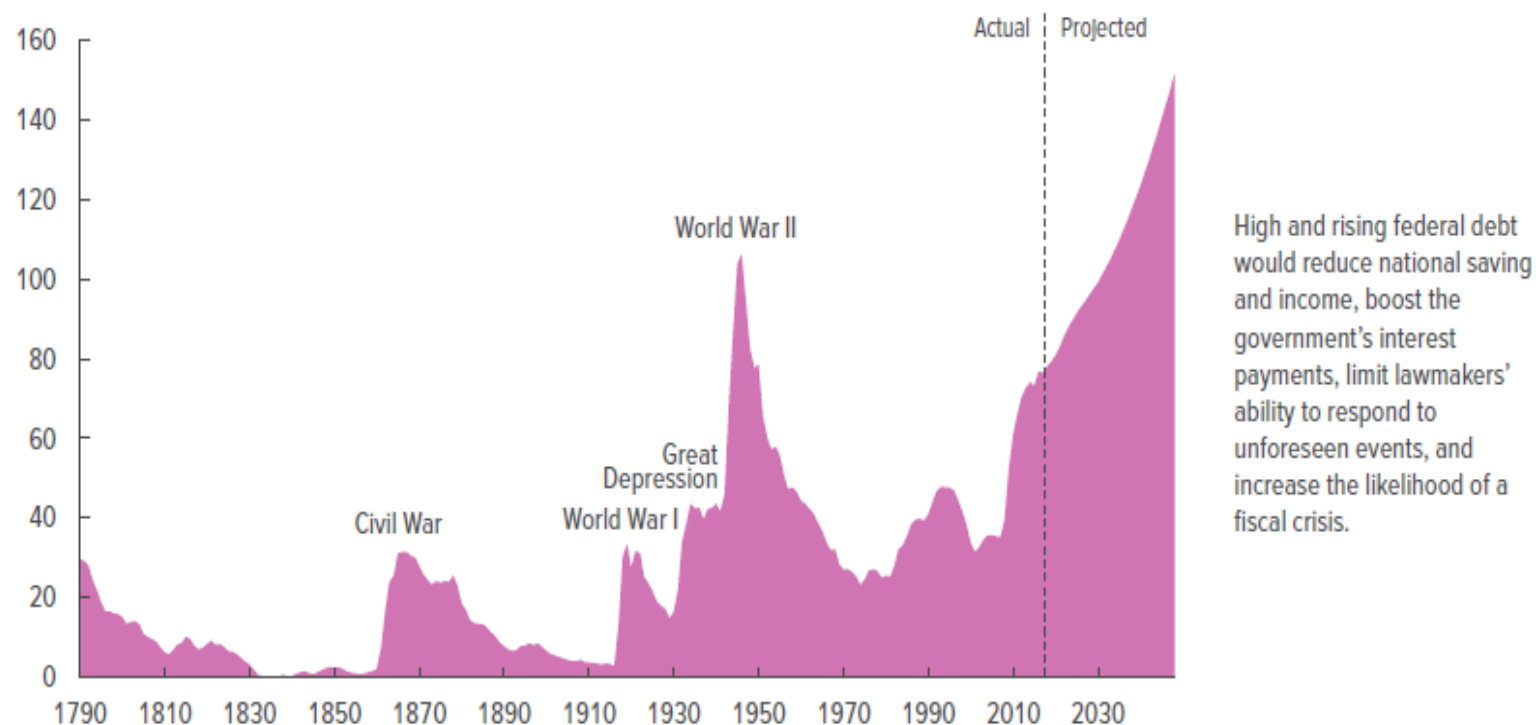
Source: Office of Management and Budget.

Debt Projections in Historical Context

Figure 3.

Federal Debt Held by the Public

Percentage of Gross Domestic Product

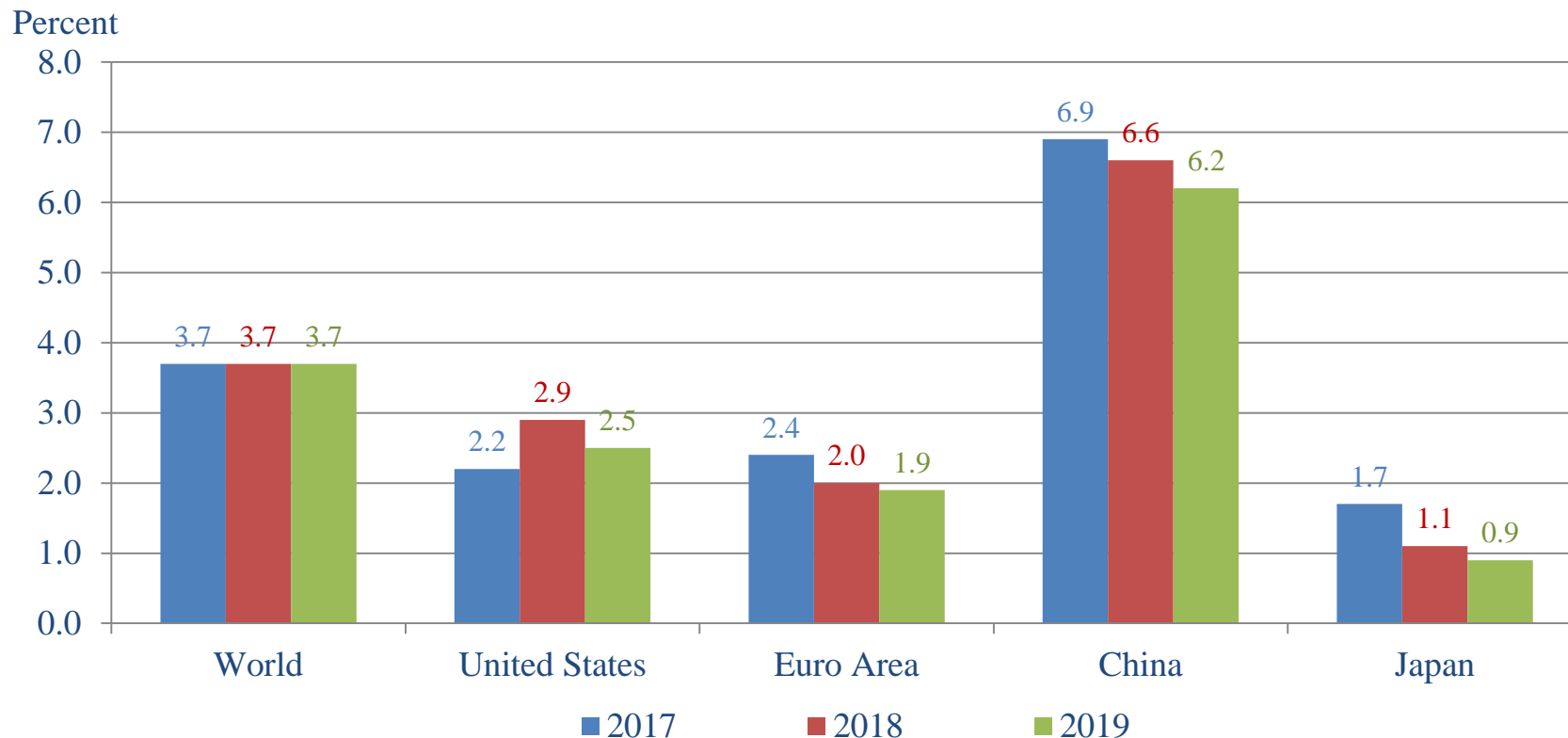


High and rising federal debt would reduce national saving and income, boost the government's interest payments, limit lawmakers' ability to respond to unforeseen events, and increase the likelihood of a fiscal crisis.

Source: Congressional Budget Office.

Global Outlook for 2018 & 2019

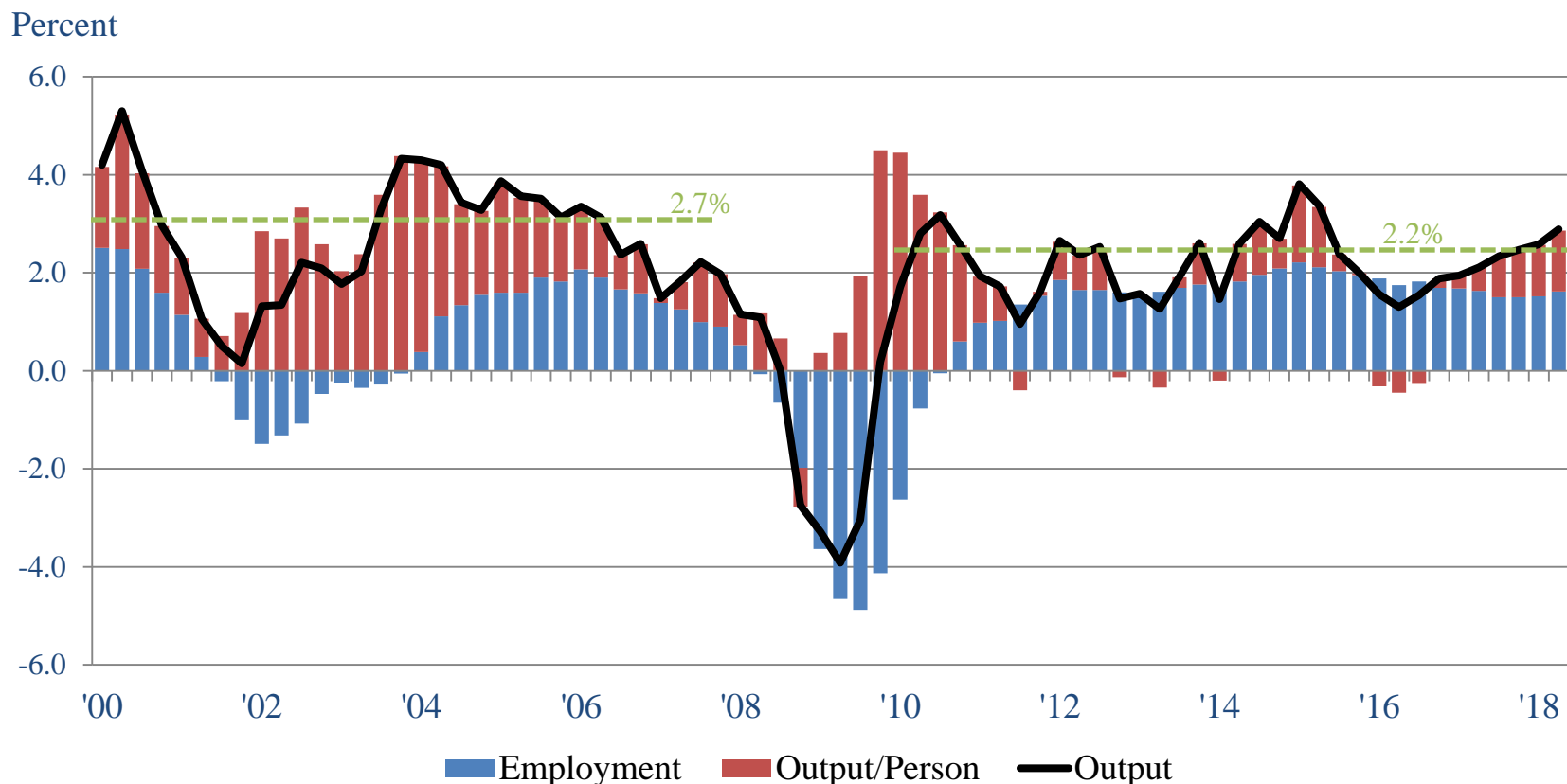
IMF Forecast for Growth, % Chg. Yr./Yr.



Source: IMF World Economic Outlook

Employment, Productivity, and Output

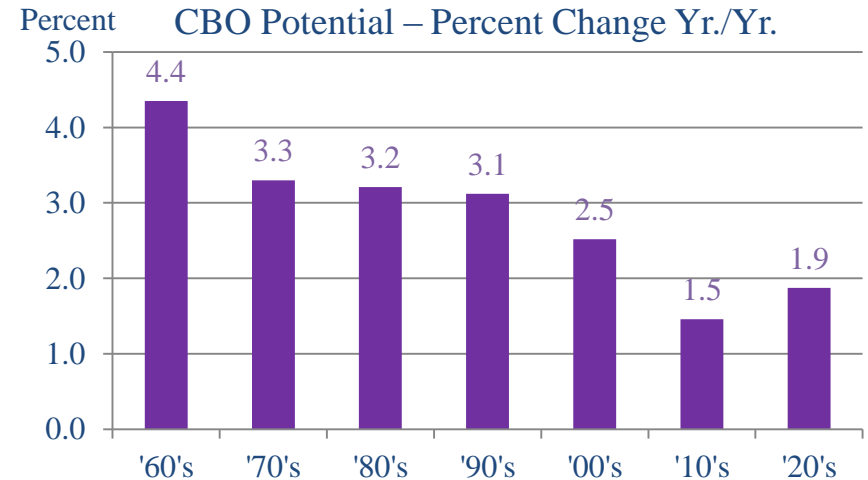
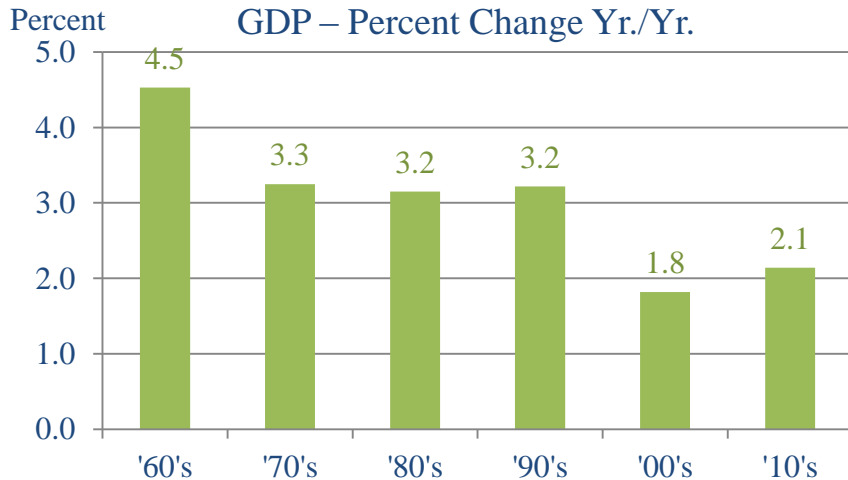
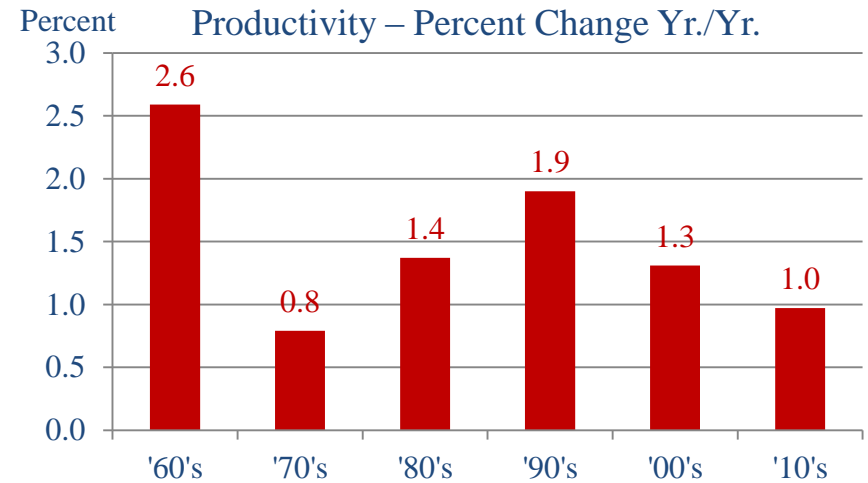
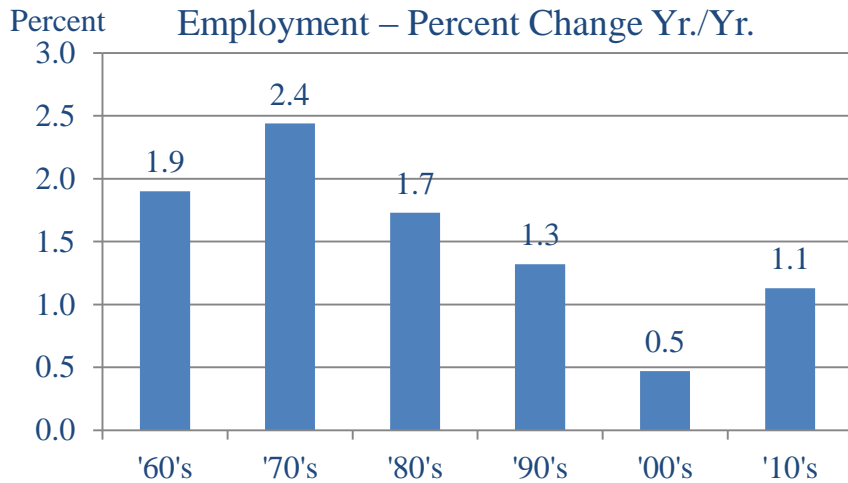
Nonfarm Business Sector – Percent Change Yr./Yr.



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

Employment, Productivity, and GDP Growth

Percent Change Yr./Yr.



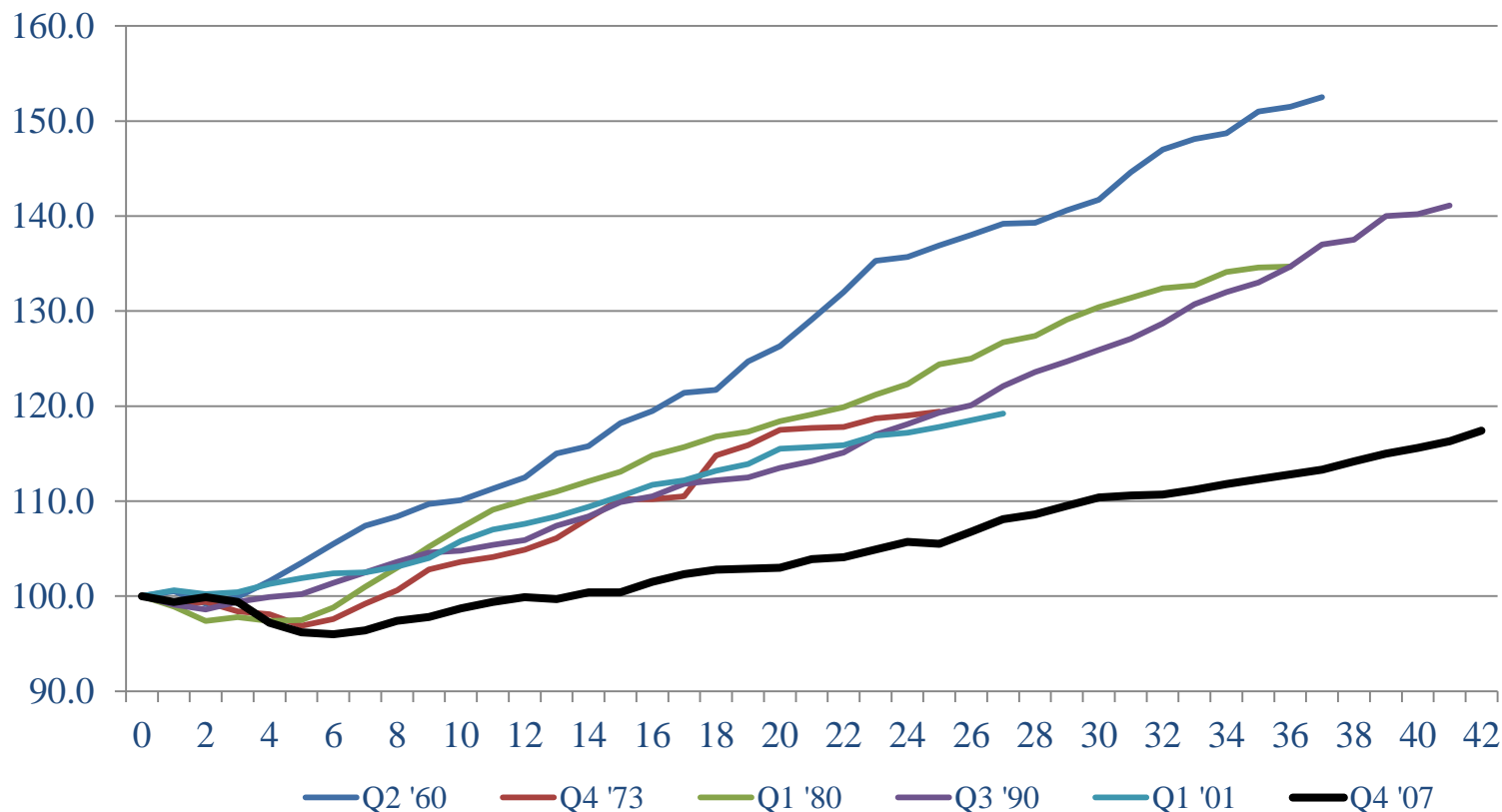
Source: Author's Calculations using BEA, BLS, and Fed data.

December 13, 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%

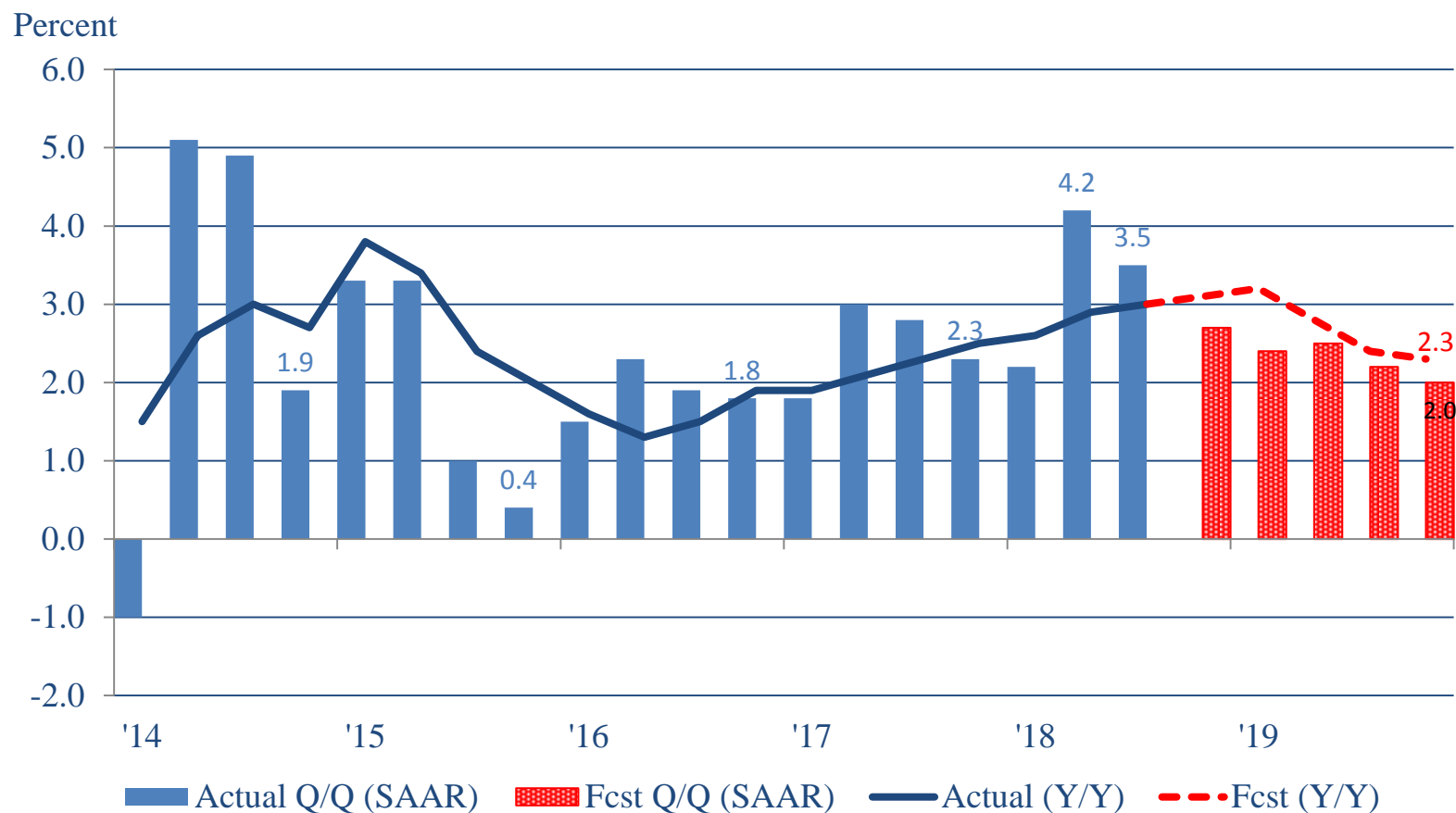
2.5%

1.5%

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

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

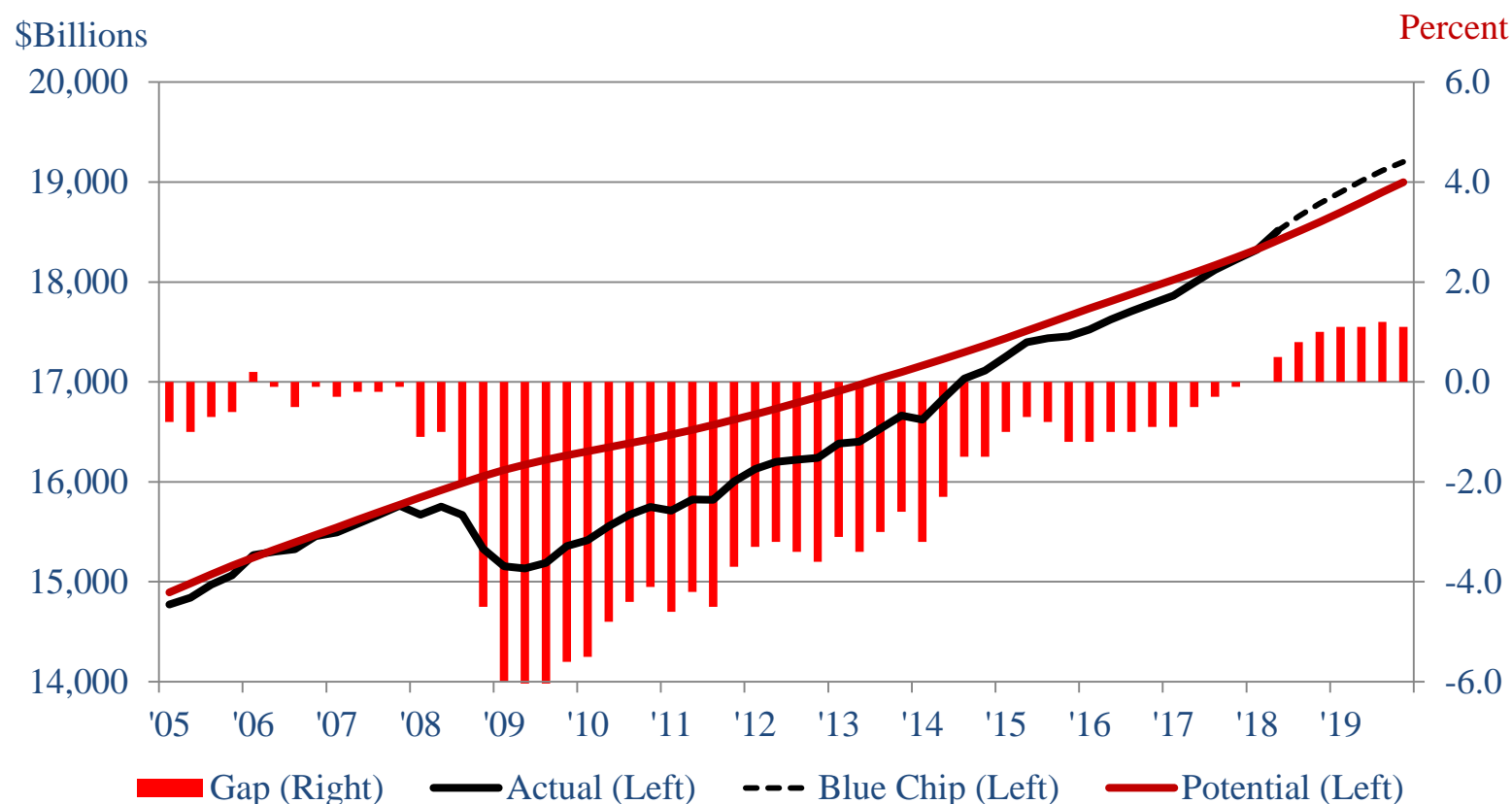
Percent Change – Billions of Chained \$2009



Source: BEA and November 2018 Blue Chip Economic Indicators

U.S. Real GDP – Actual and Potential

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

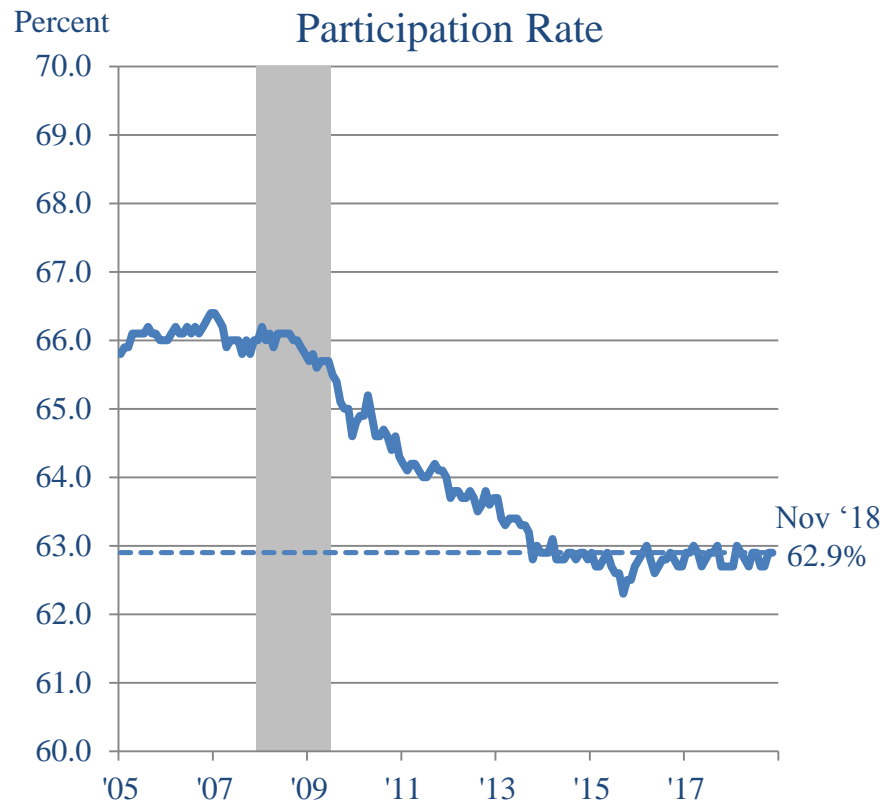
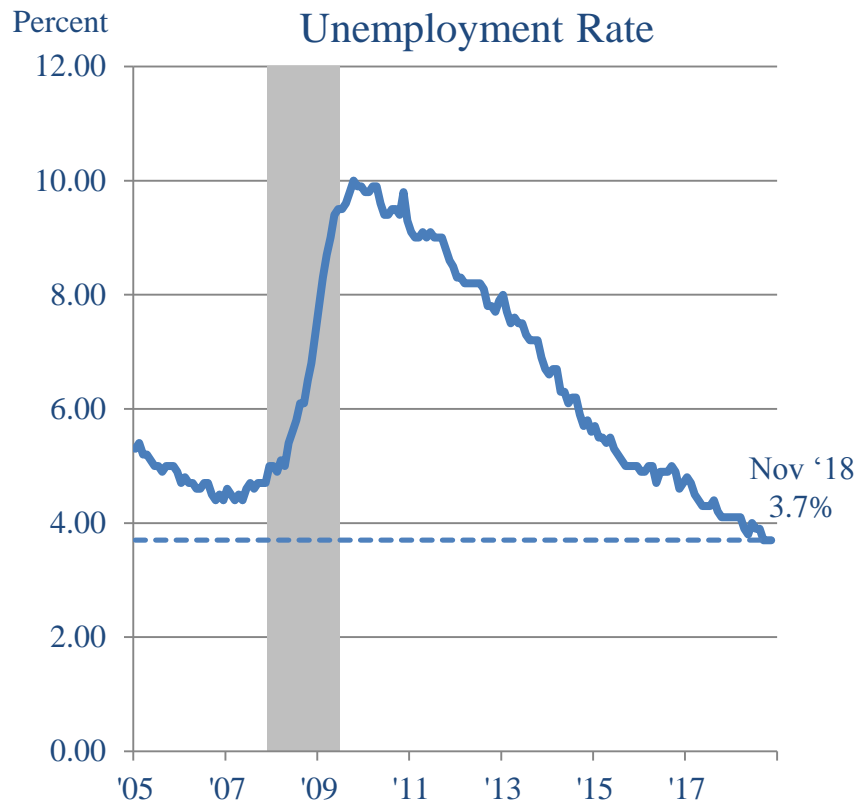


Source: Author's calculations using Bureau of Economic Analysis and the U.S. Congressional Budget Office and Blue Chip Consensus forecast data.

U.S. Consumer

Labor Force

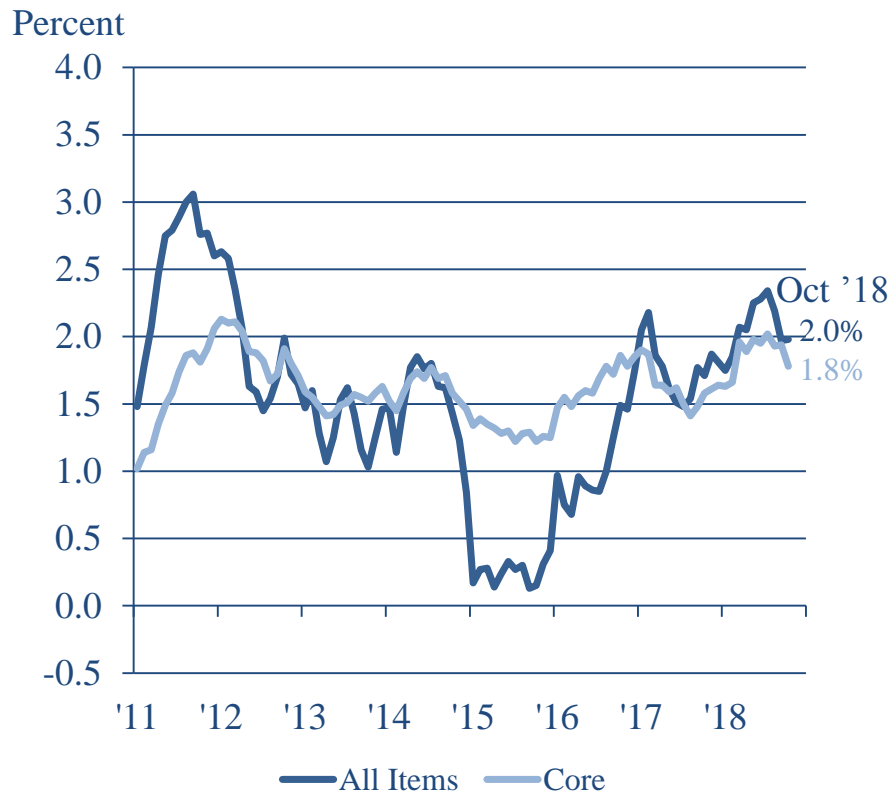
Unemployment & Participation Rates



Sources: U.S. Department of Labor.

CPI & PCE Inflation

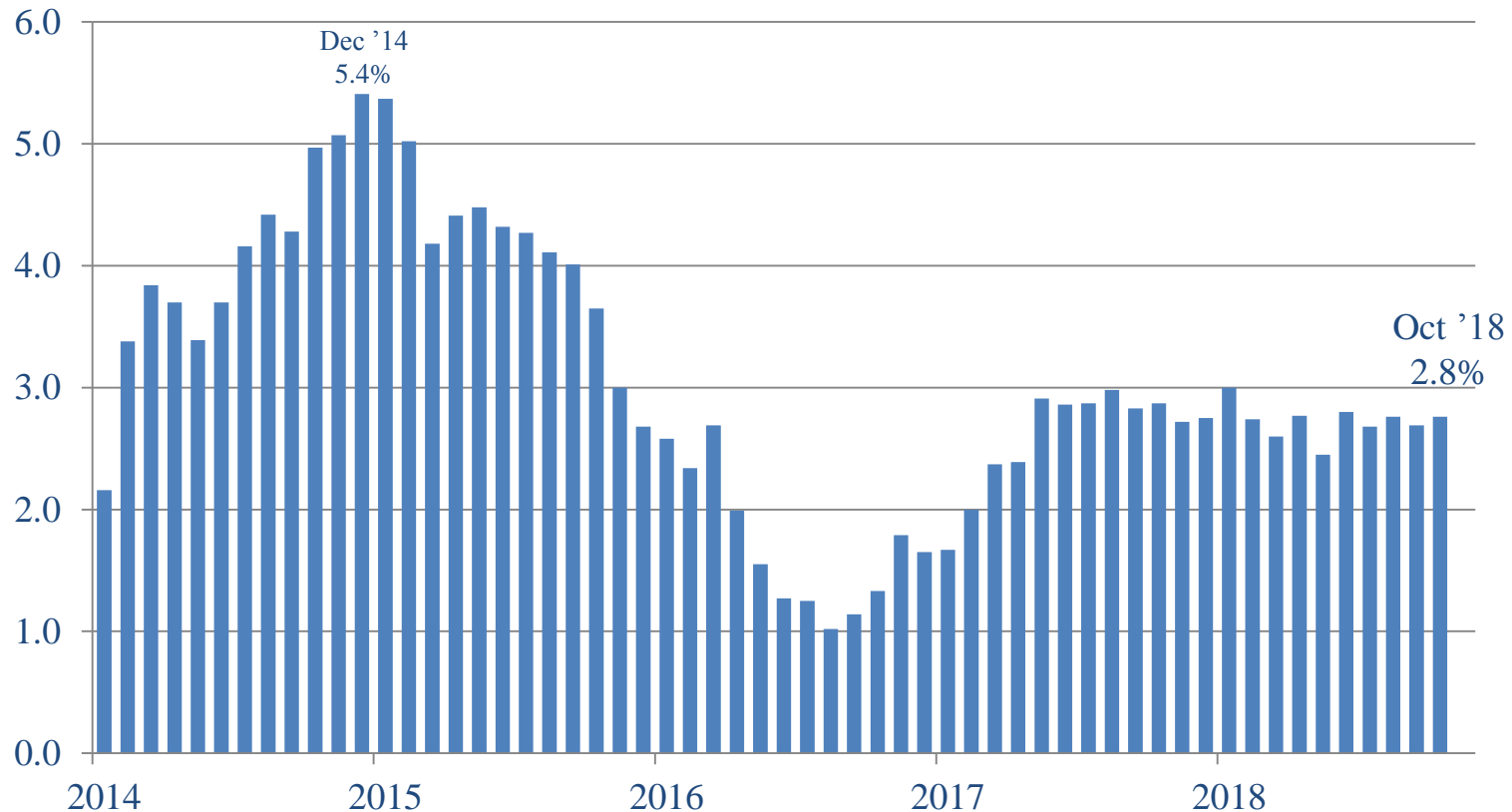
All Items & Core, 12-Month Percent Change



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

Real Disposable Income

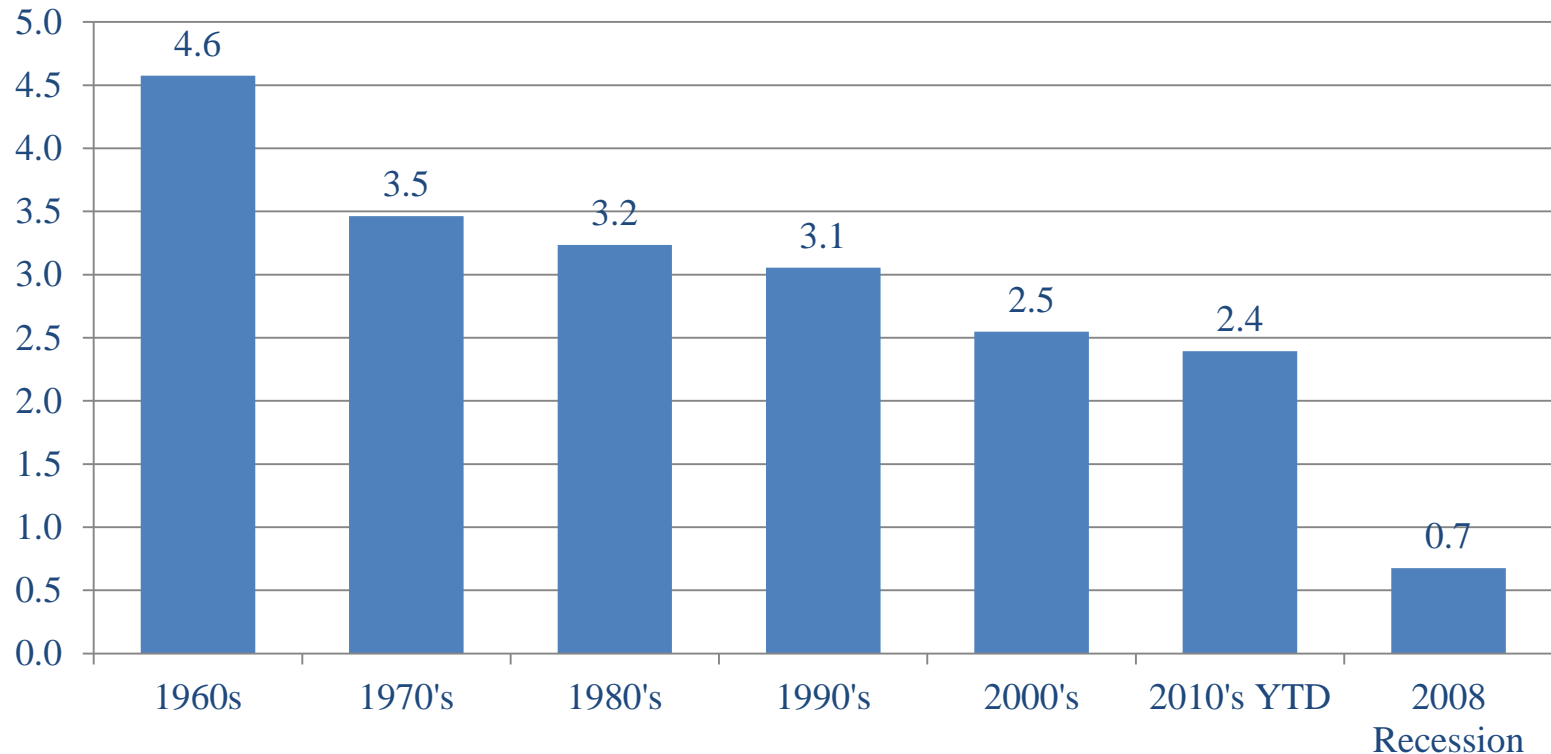
Billions of Chained 2012 Dollars - Percent Change Yr./Yr.



Source: Bureau of Economic Analysis.

Real Disposable Income

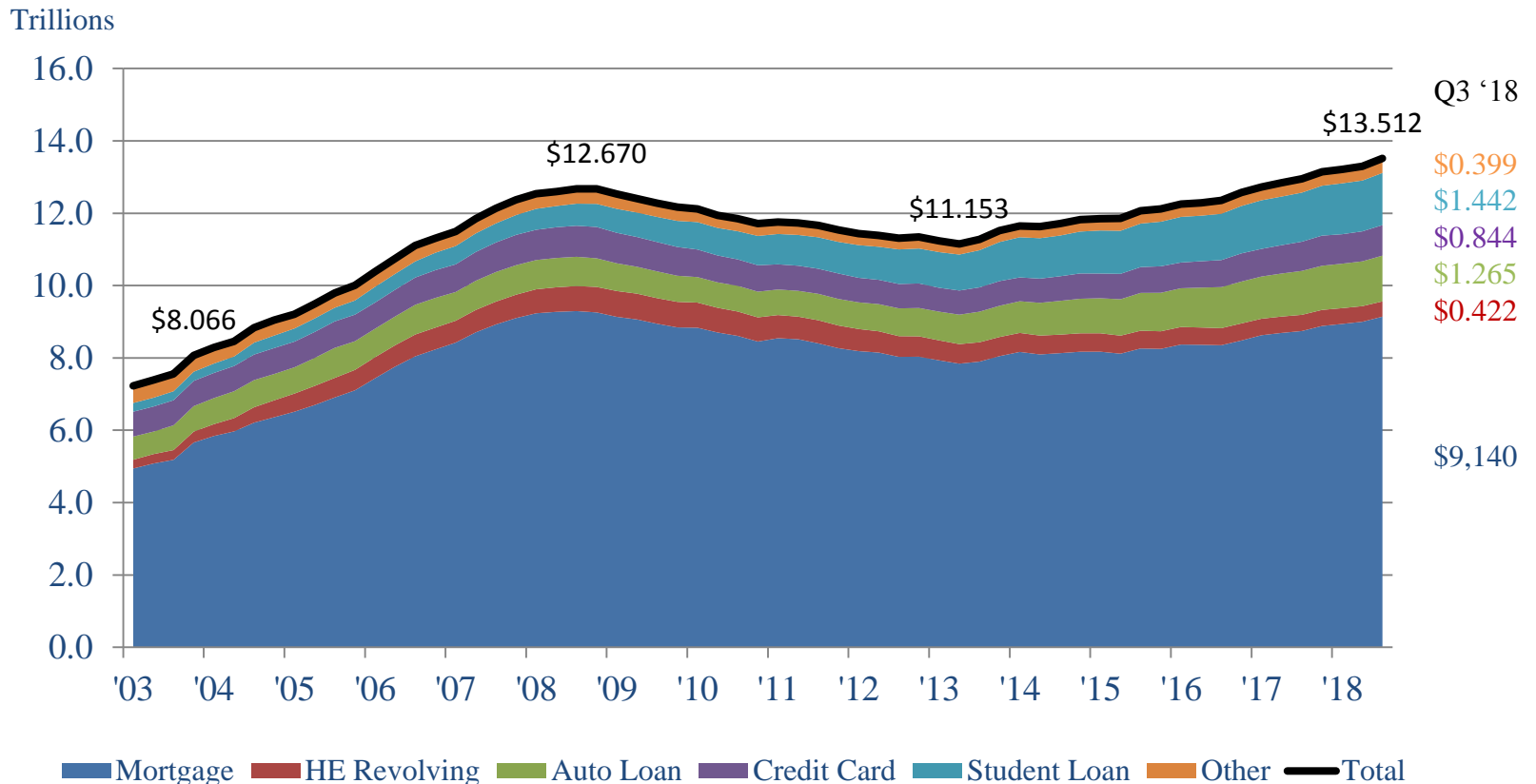
Average Growth Rates by Decade – 1960 through 2018 and 2008 Recession



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

Total Consumer Debt by Composition

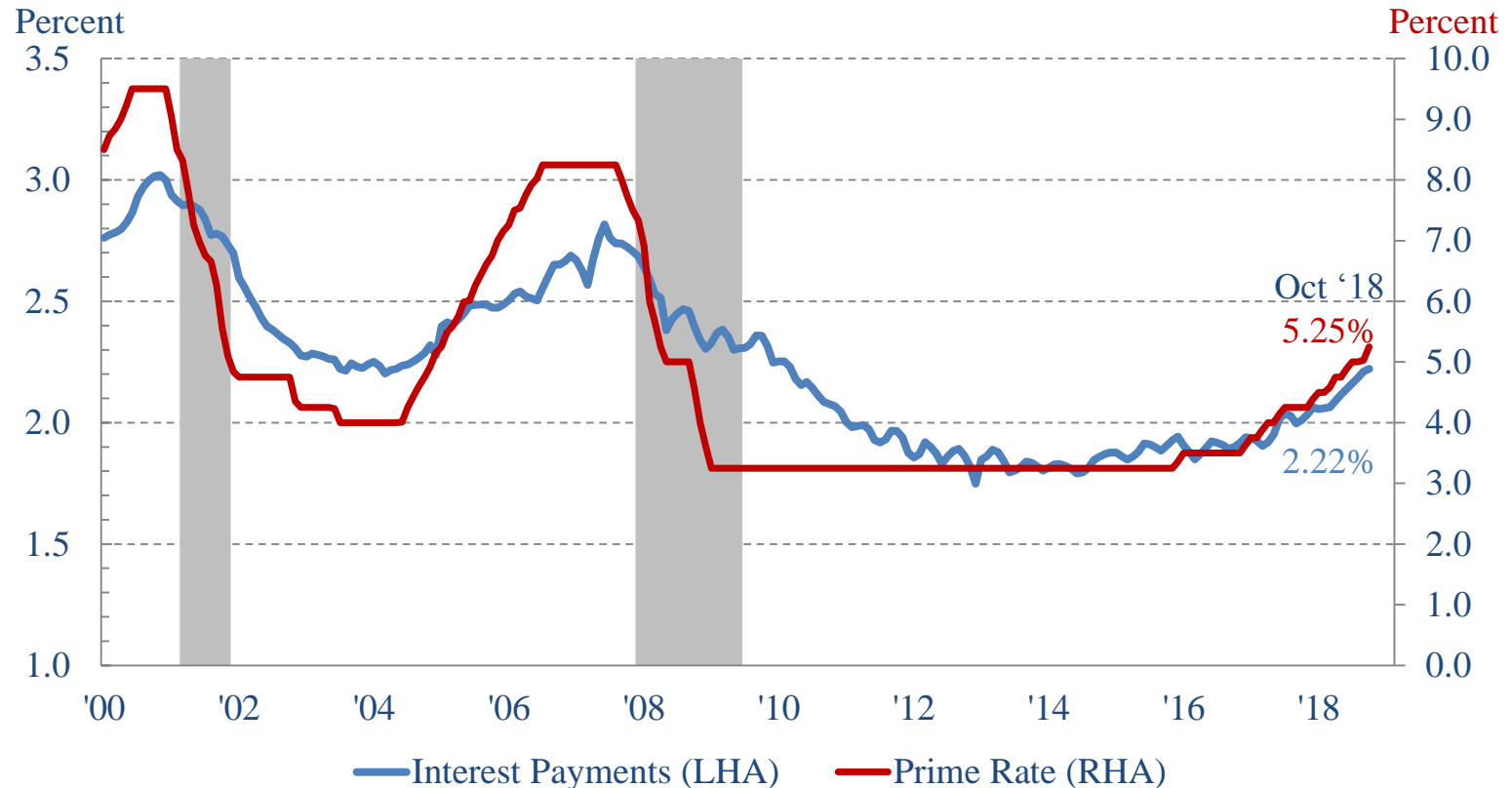
Trillions of Dollars



Source: Federal Reserve Bank of New York and Equifax

Interest Payments

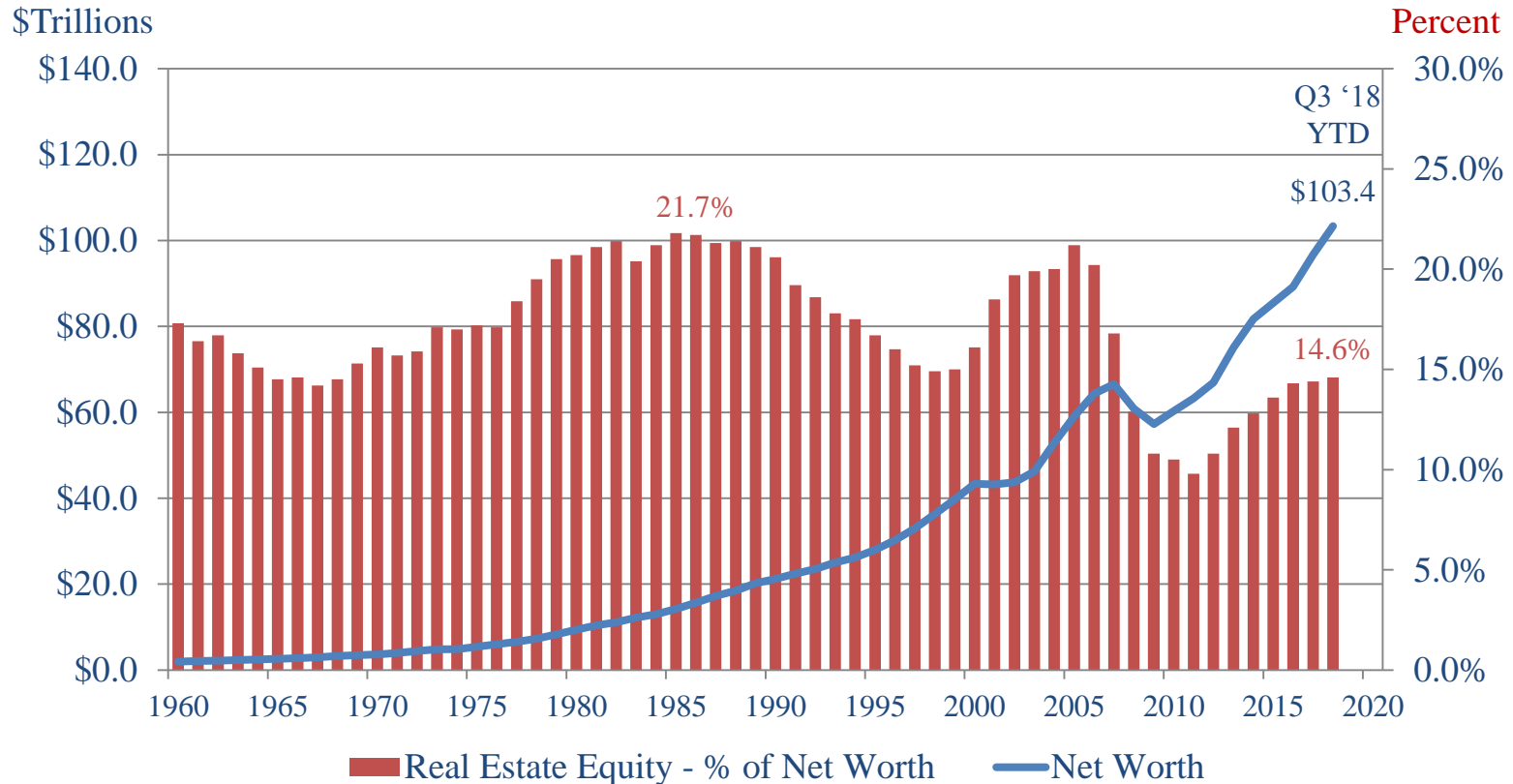
As a Percent of Disposable Personal Income



Source: Federal Reserve Bank - Board of Governors

Household Net Worth

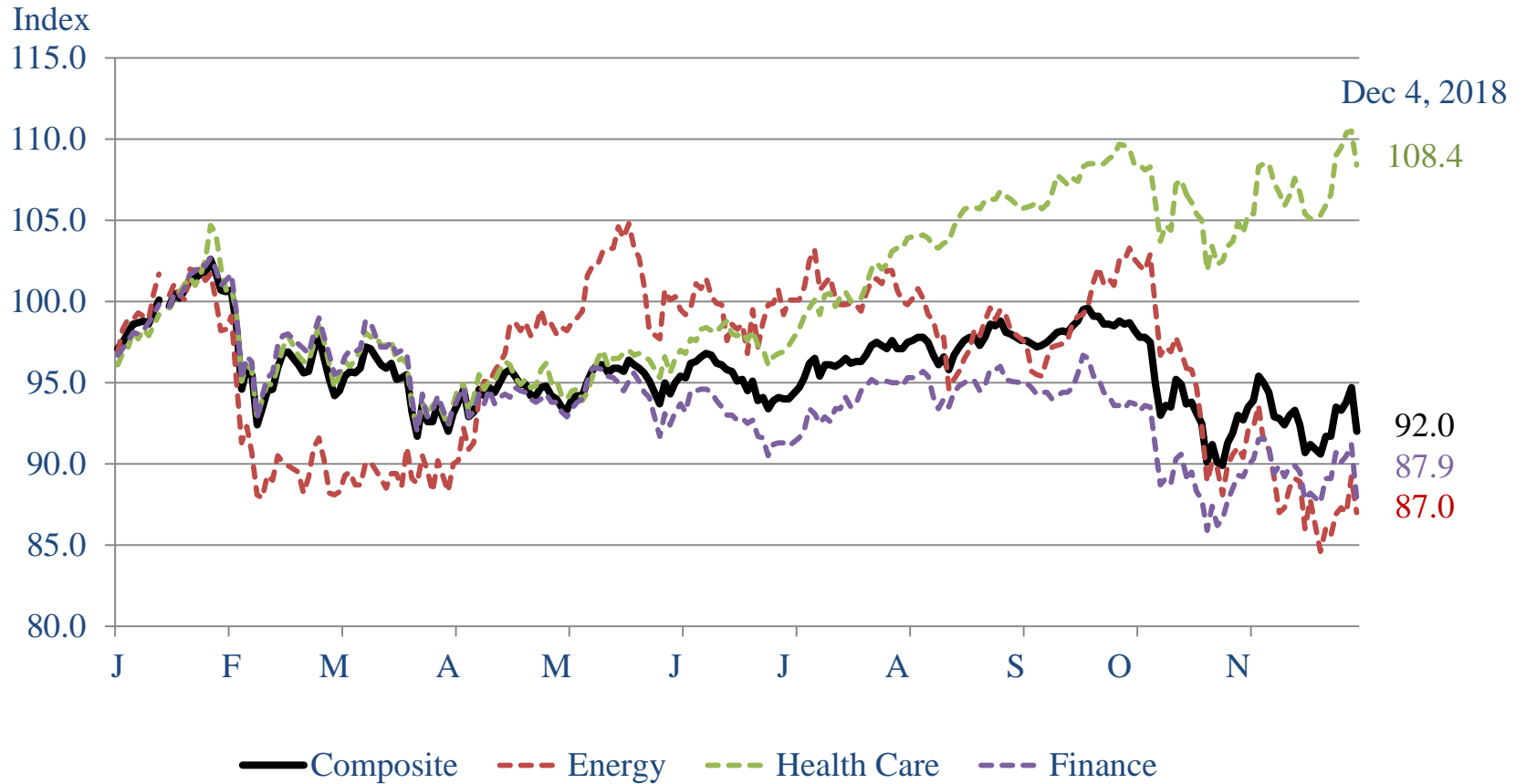
Trillions of Current Dollars & Percent – Annual Average



Source: Bureau of Economic Analysis.

Stock Market

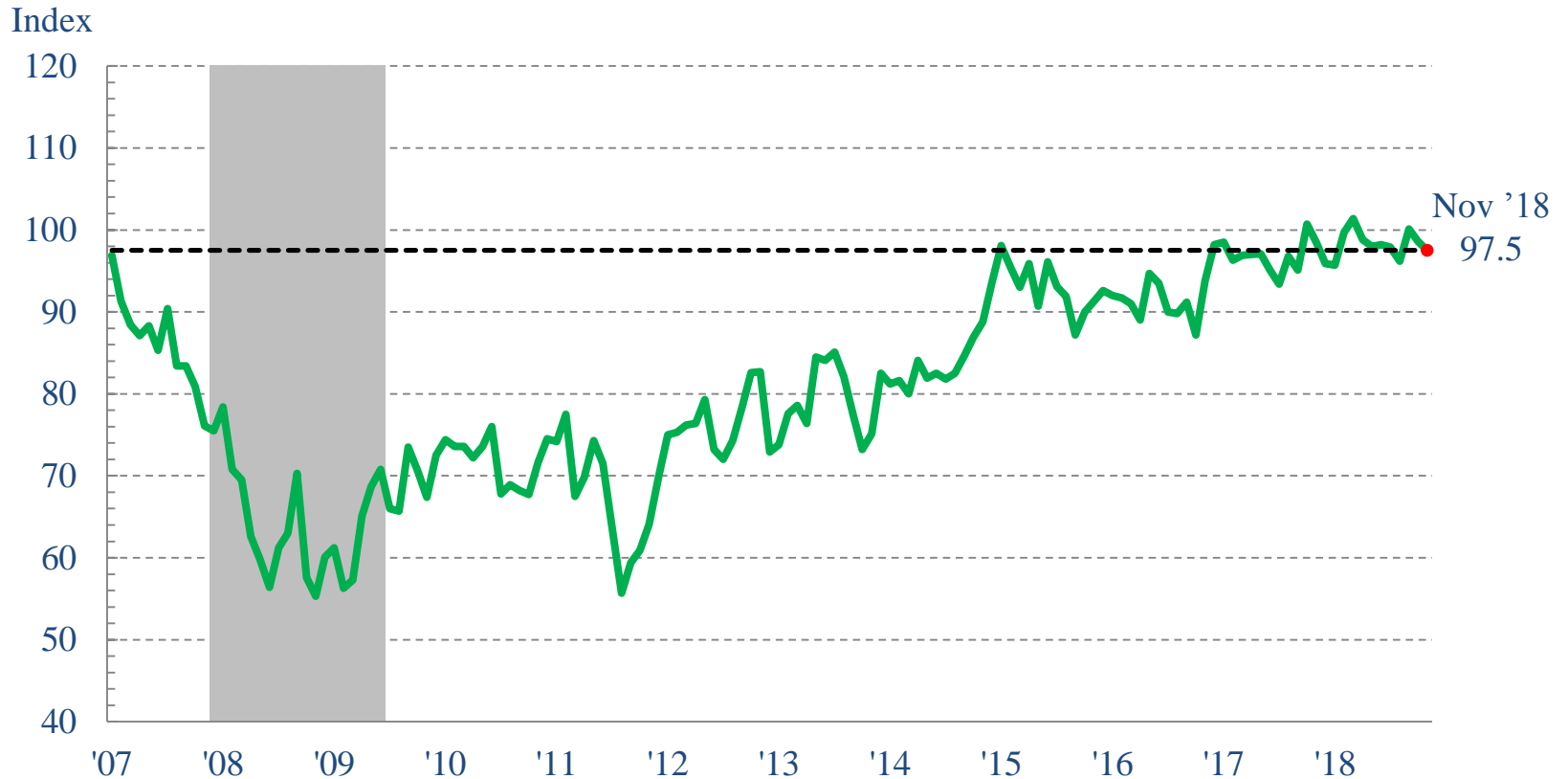
New York Stock Exchange, Index – January 2018 = 100



Source: Wall Street Journal and Haver Analytics.

Consumer Sentiment

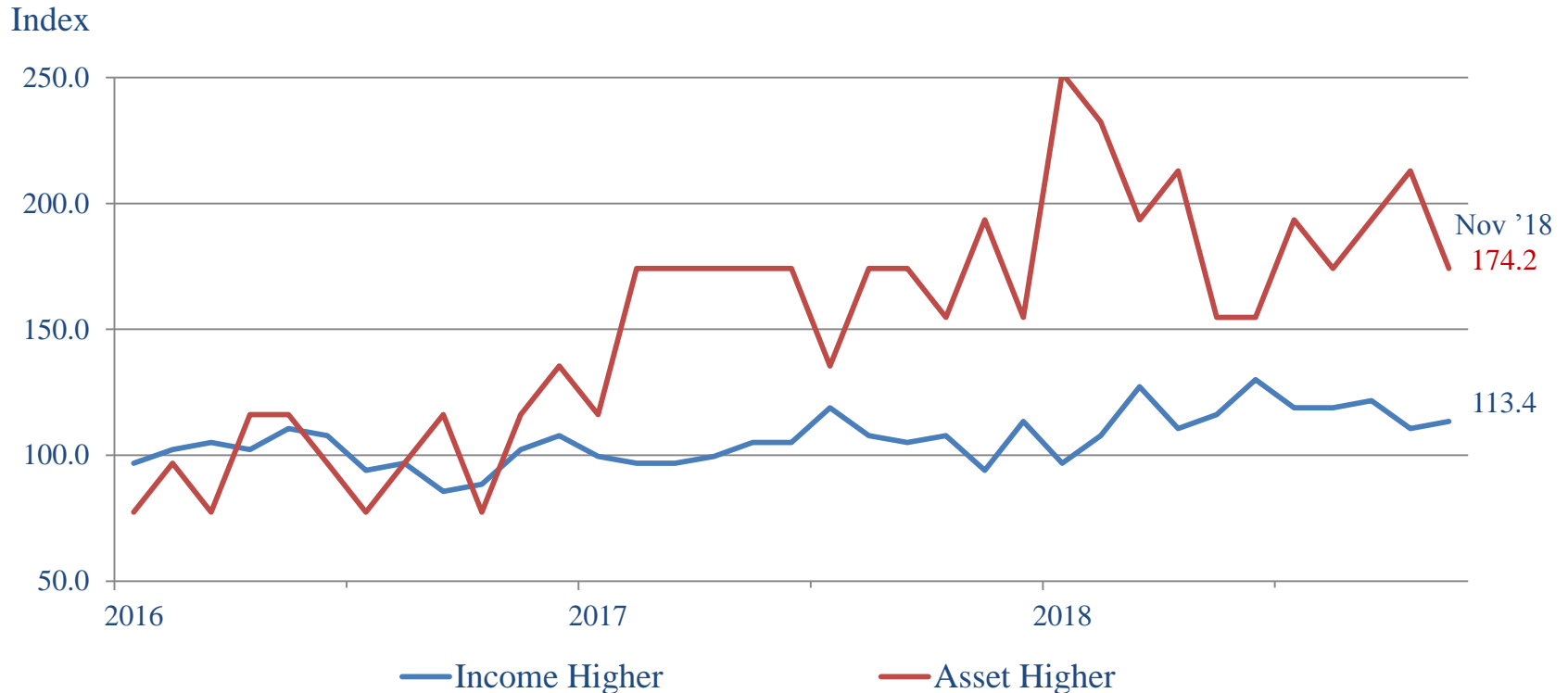
University of Michigan



Source: Thomson Reuters / University of Michigan

Current Household Financial Situation

Compared to a Year Ago – Index 2016 = 100

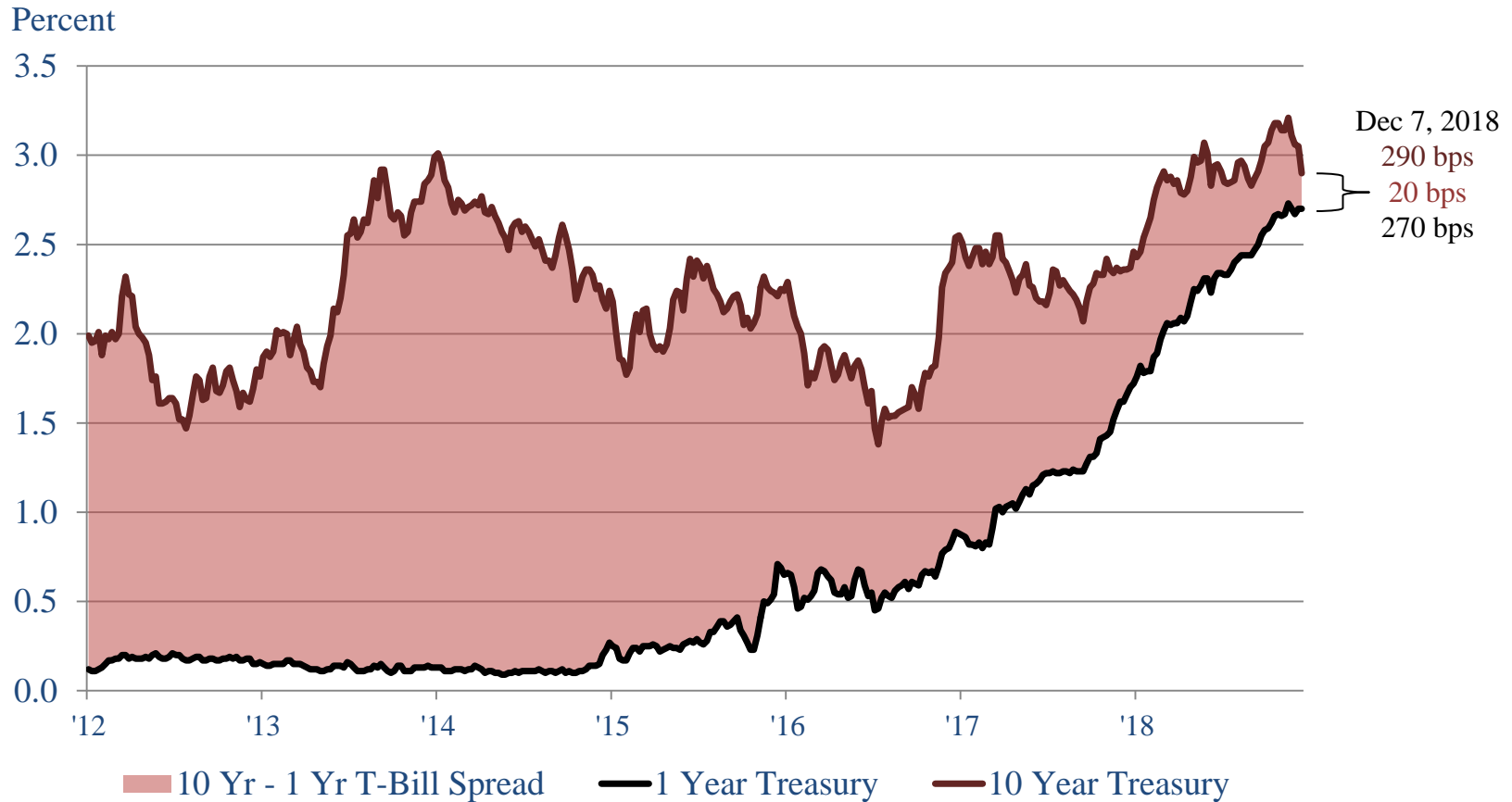


Note: Relative situation is calculated as the number of respondents answering that their income and asset to debt ratio is better than a year ago minus those responding that it is worse than a year ago.

Source: University of Michigan Consumer Sentiment

Yield Curve

10 Year – 1 Year Treasuries in Basis Points

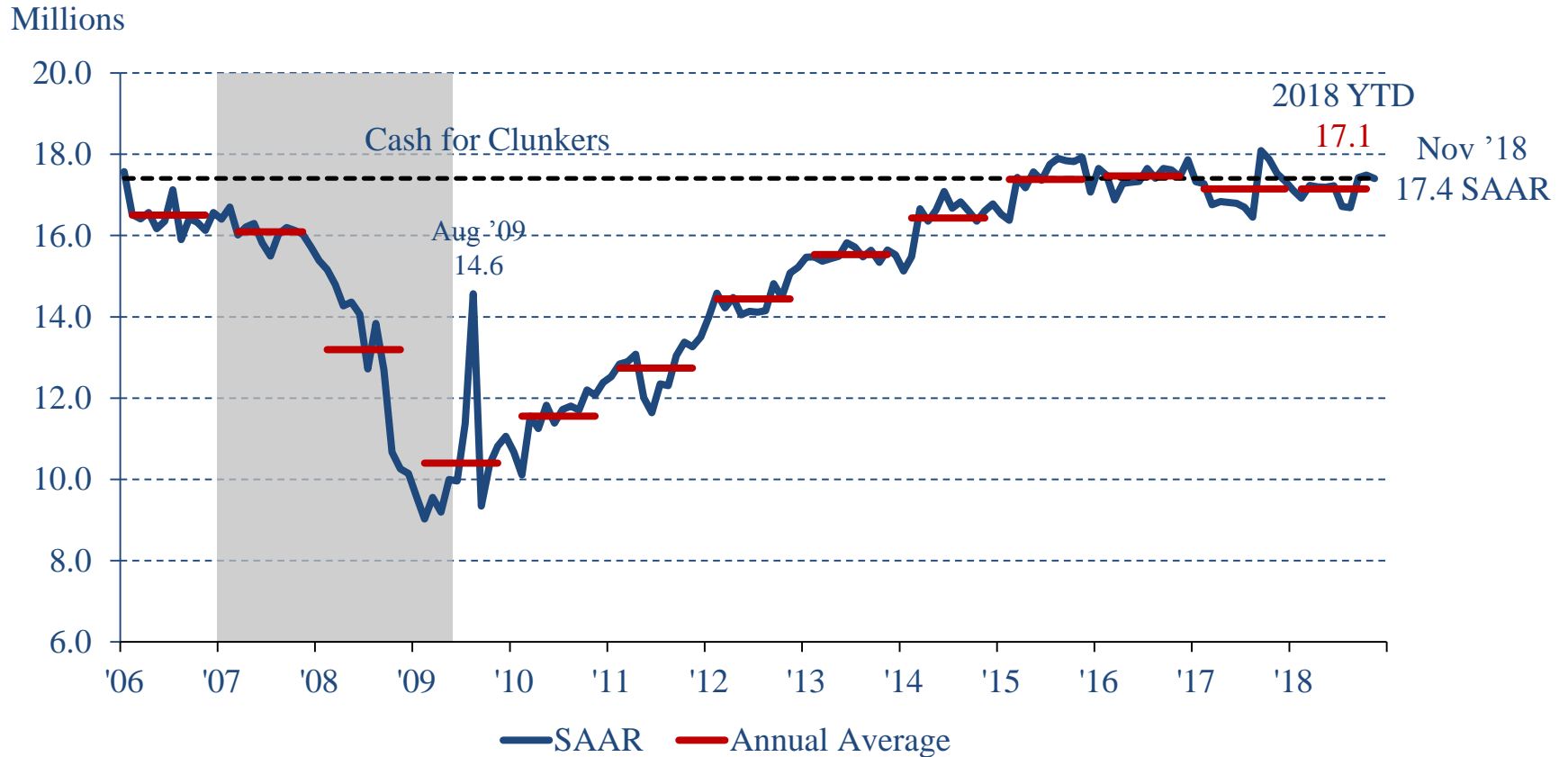


Source: Board of Governors – Federal Reserve System

Automotive Industry

U.S. Light Vehicle Sales

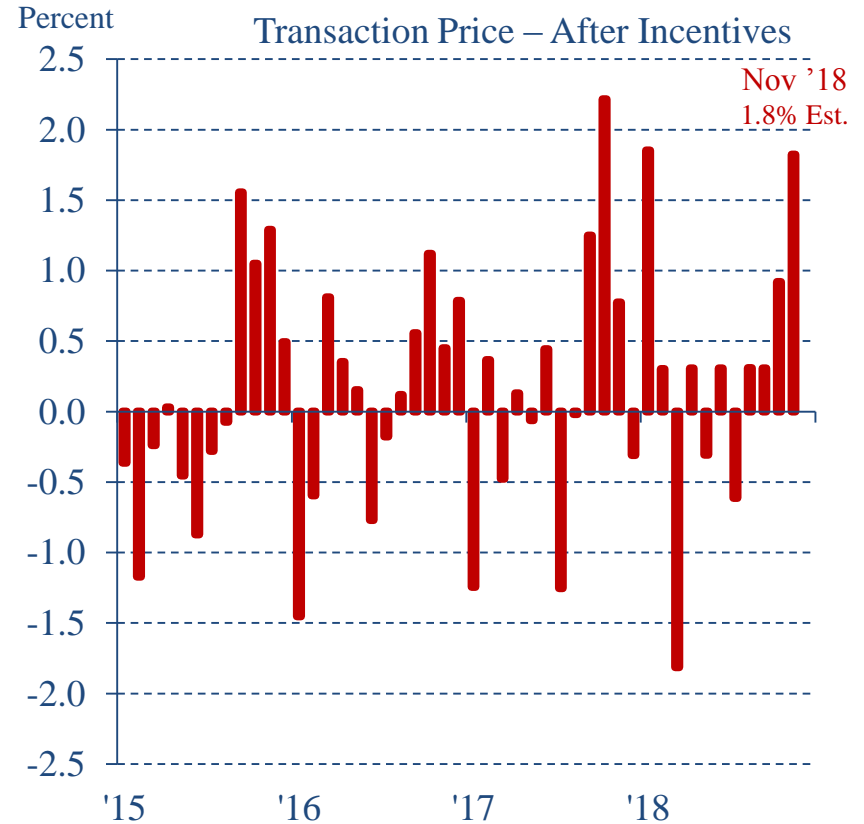
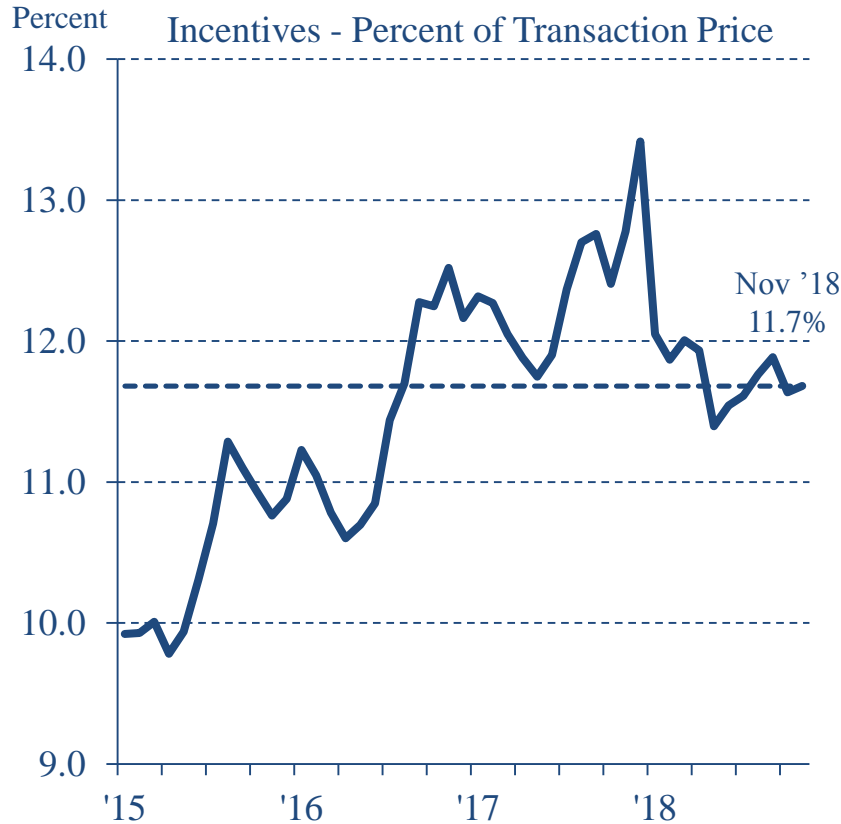
S.A.A.R – Millions of Units



Source: Ward's Automotive and BEA

Light Vehicle Incentives & Transaction Price

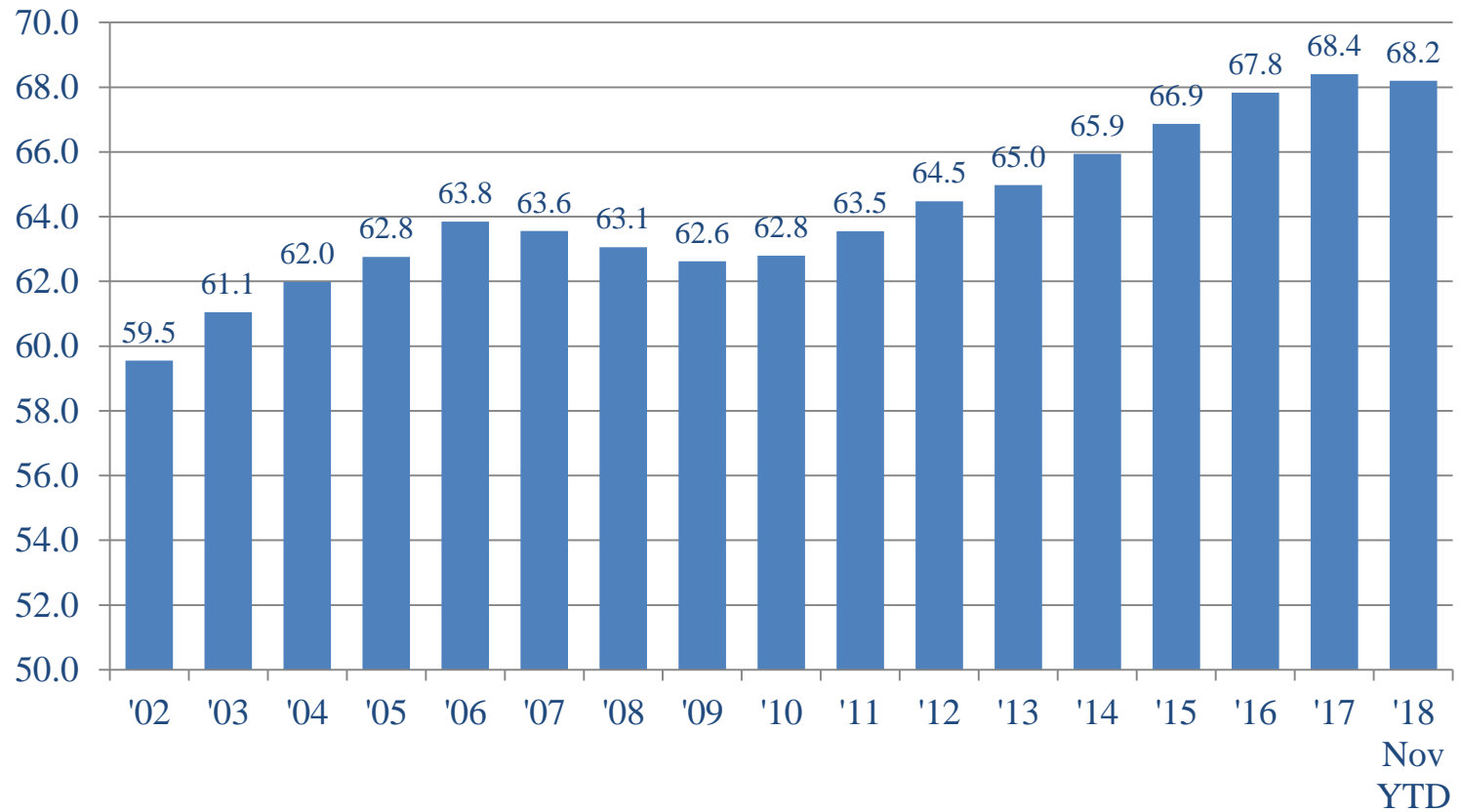
Percent of Transaction Price & Percent Change Mo./Mo. - SA



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

Finance Term

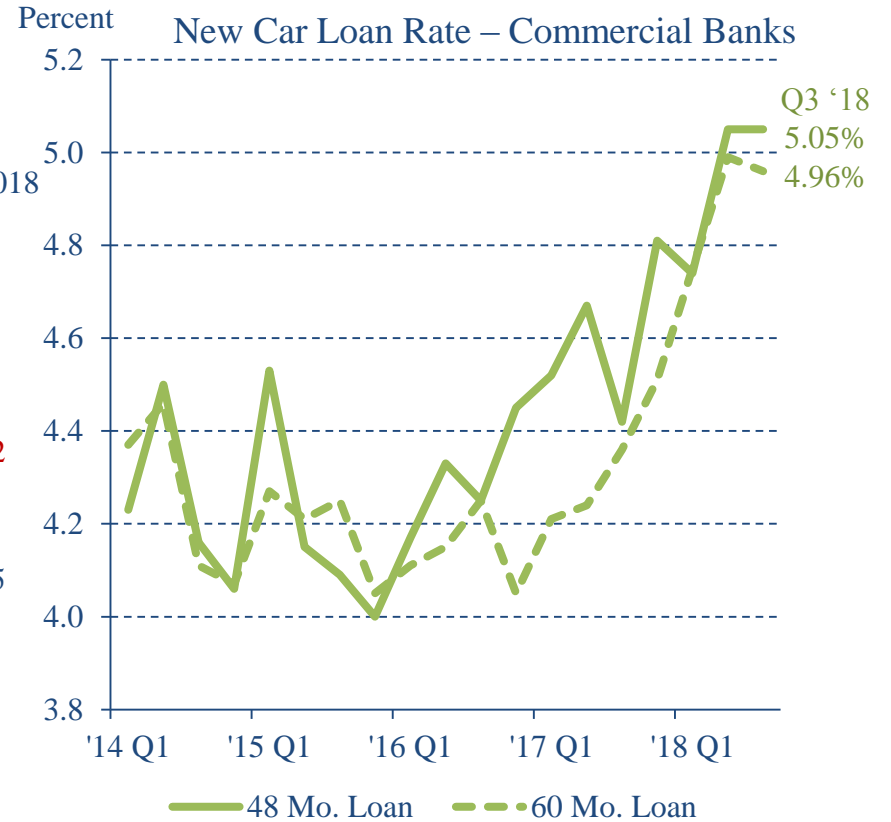
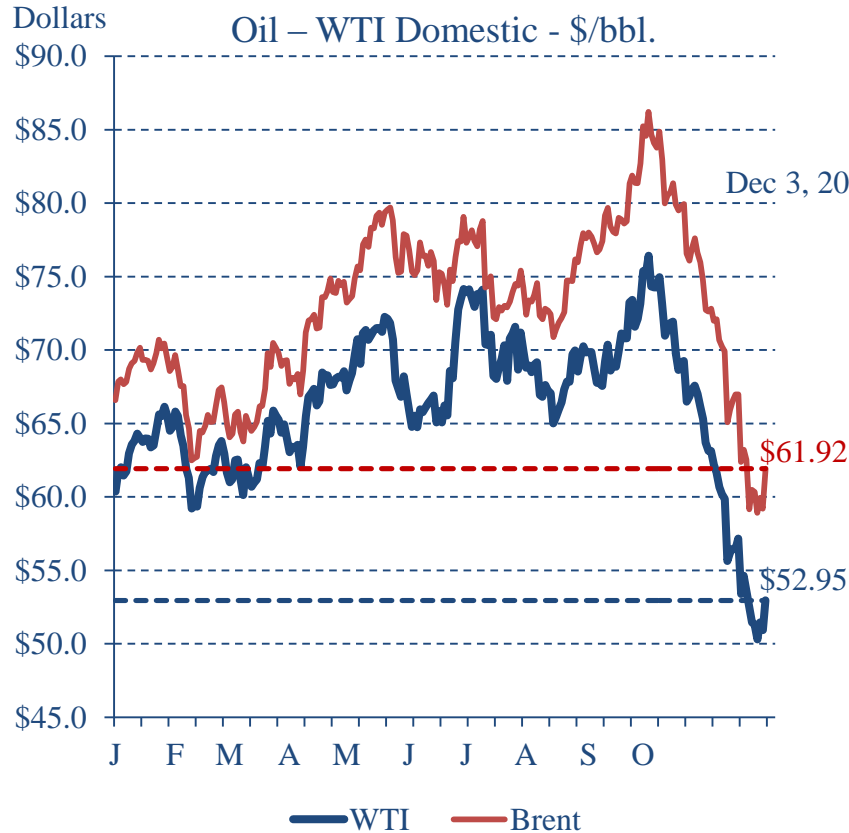
Length of Loan in Months



Source: J.D Power data.

Oil and New Car Loan Rate

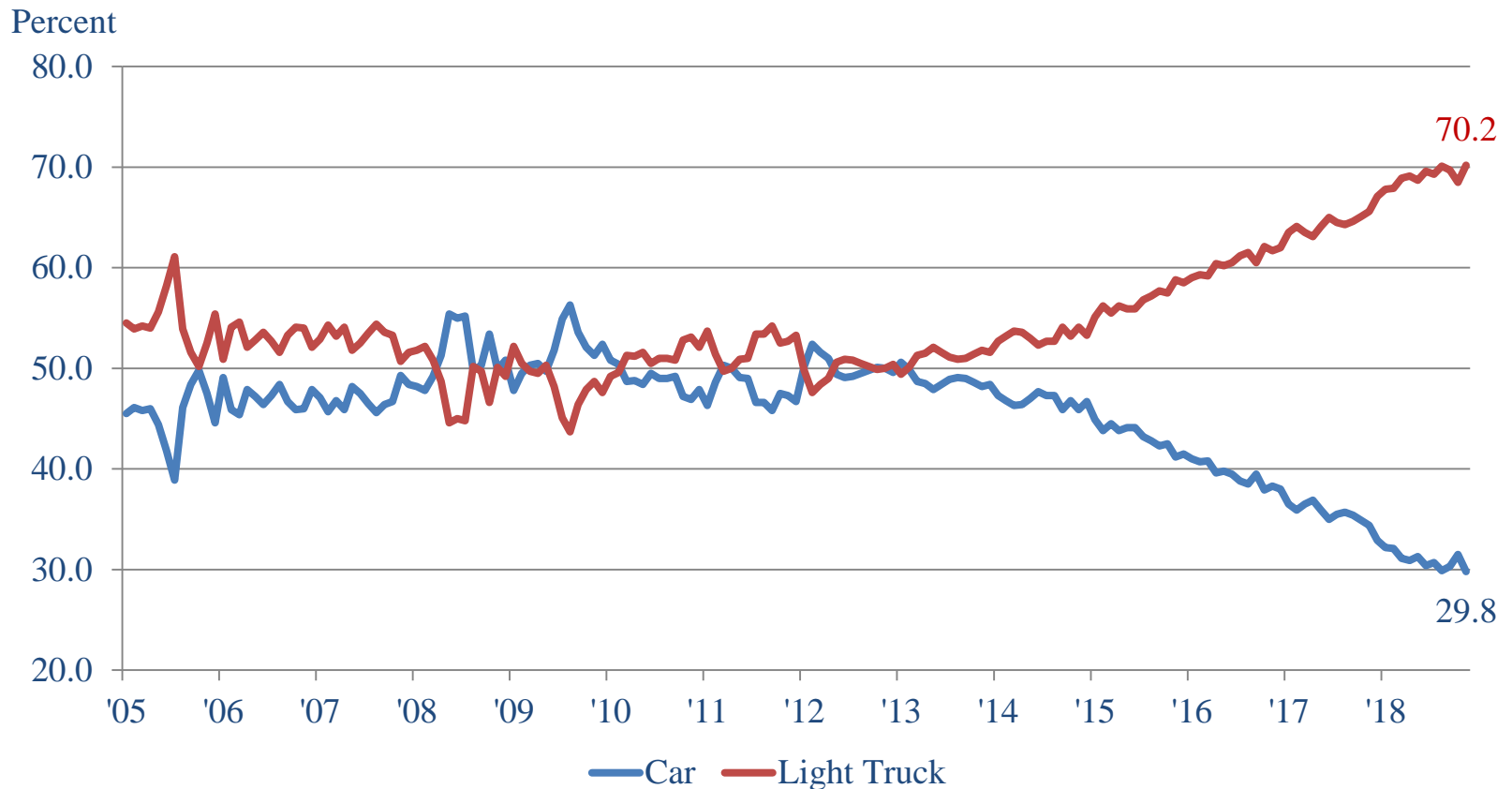
Current Dollars / bbl. and Percent



Source: EIA and Federal Reserve Board of Governors.

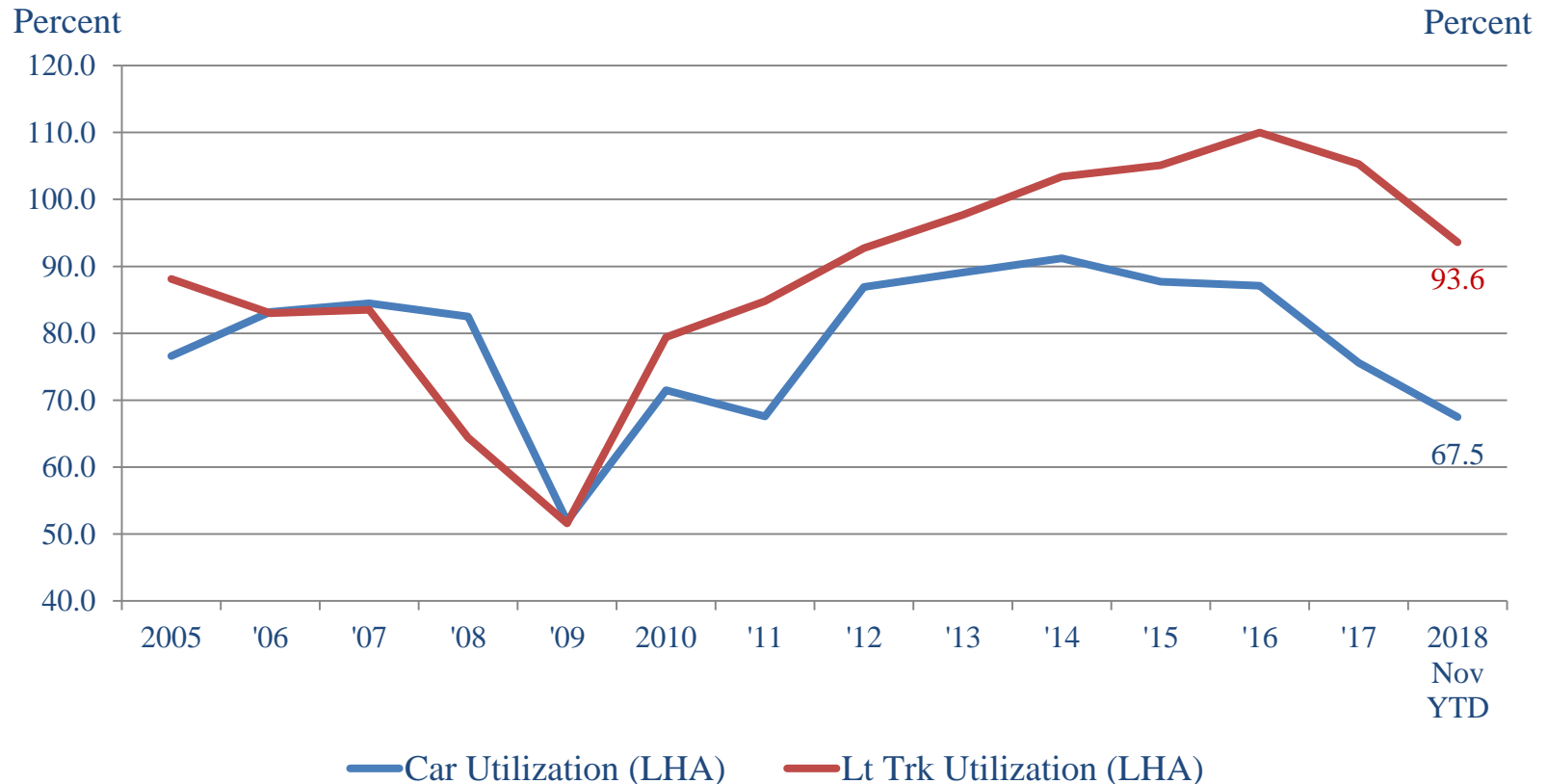
Light Vehicle – Car / Truck Mix

Percent of Total Light Vehicle - SA



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.

Automotive Restructuring Plans

General Motors

- G.M. announced a restructuring plan to save \$6 billion by the end of 2020.
- The plan calls for the closing of five North American Plants and the release of 14,000 workers.
- Plan included buyout offers for 7,000 G.M. employees

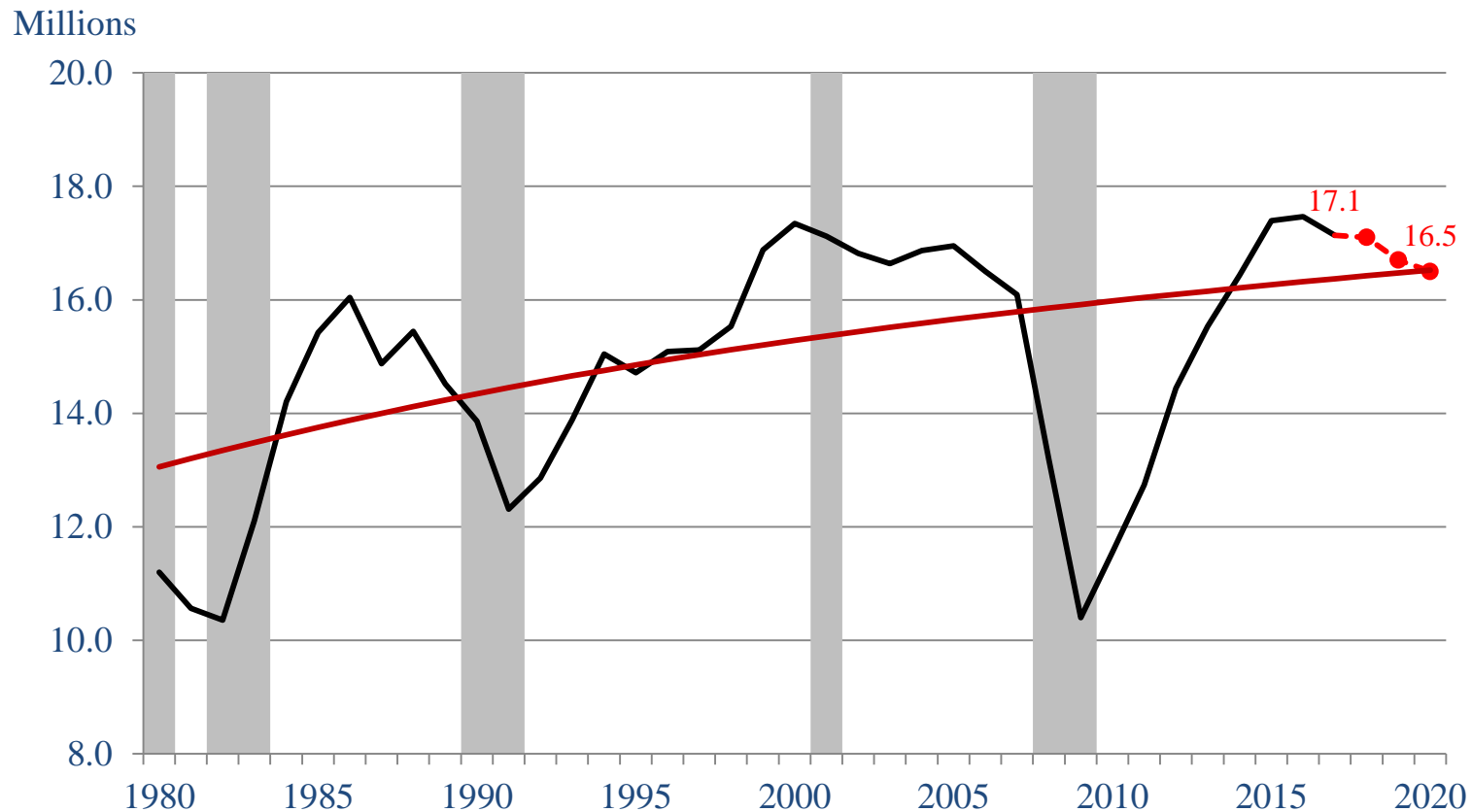
Ford Motor Company

- Company working on \$11 billion restructuring plan.
 - Ford moved 500 workers from Louisville Assembly Plant to Kentucky Truck Plant.
 - Ford in Talks with Volkswagen to use excess capacity.
 - CEO Jim Hackett indicated that there could be news soon about personal changes “at the top of the company”.¹

¹ David A. Mann – Louisville Business First

U.S. Light Vehicle Industry Trend

Millions of Units – Calendar year

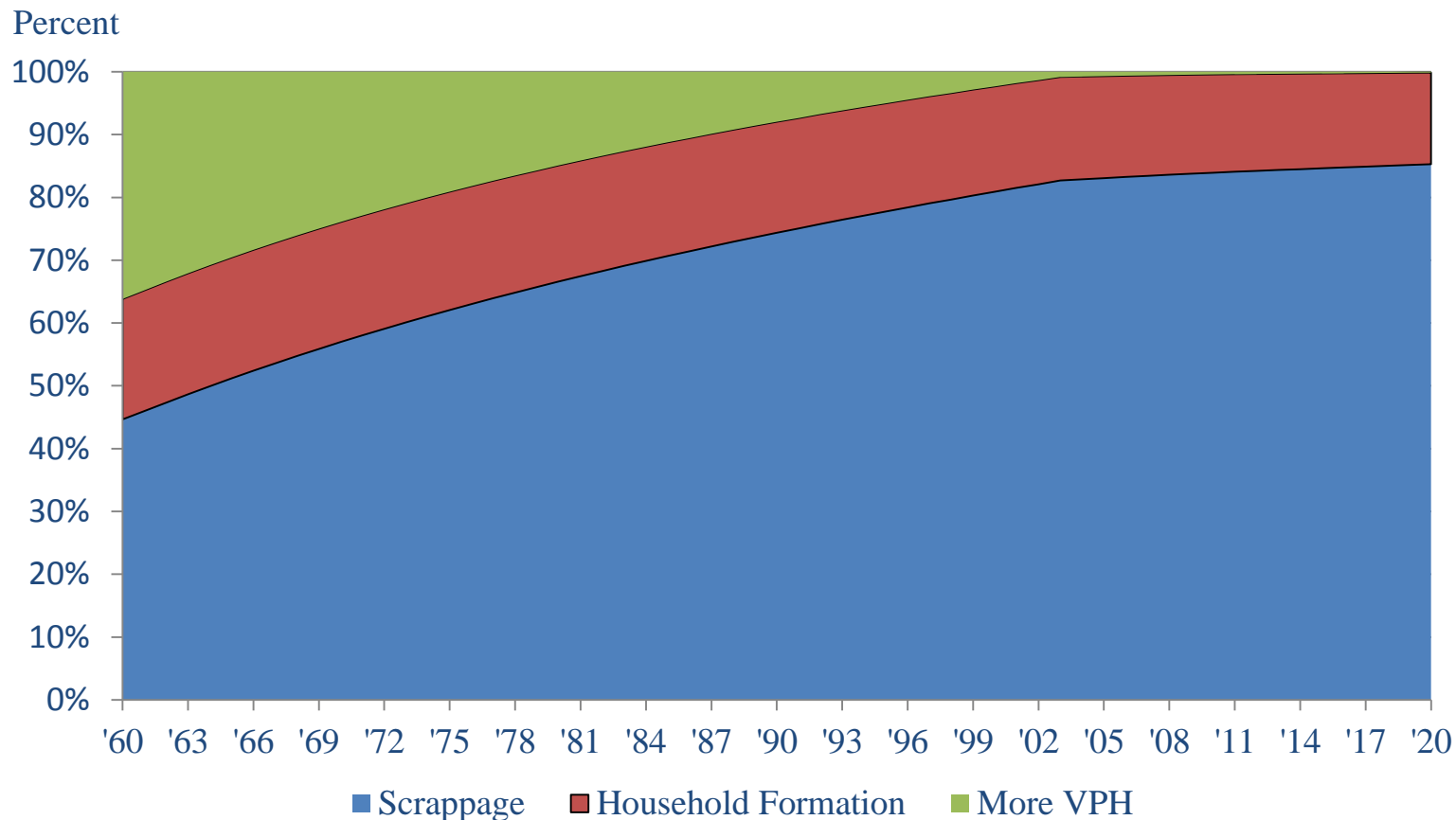


Note: Trend calculated using a stock adjustment model based on household formation, vehicles per household and scrappage.

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

Origin of New Vehicle Sales

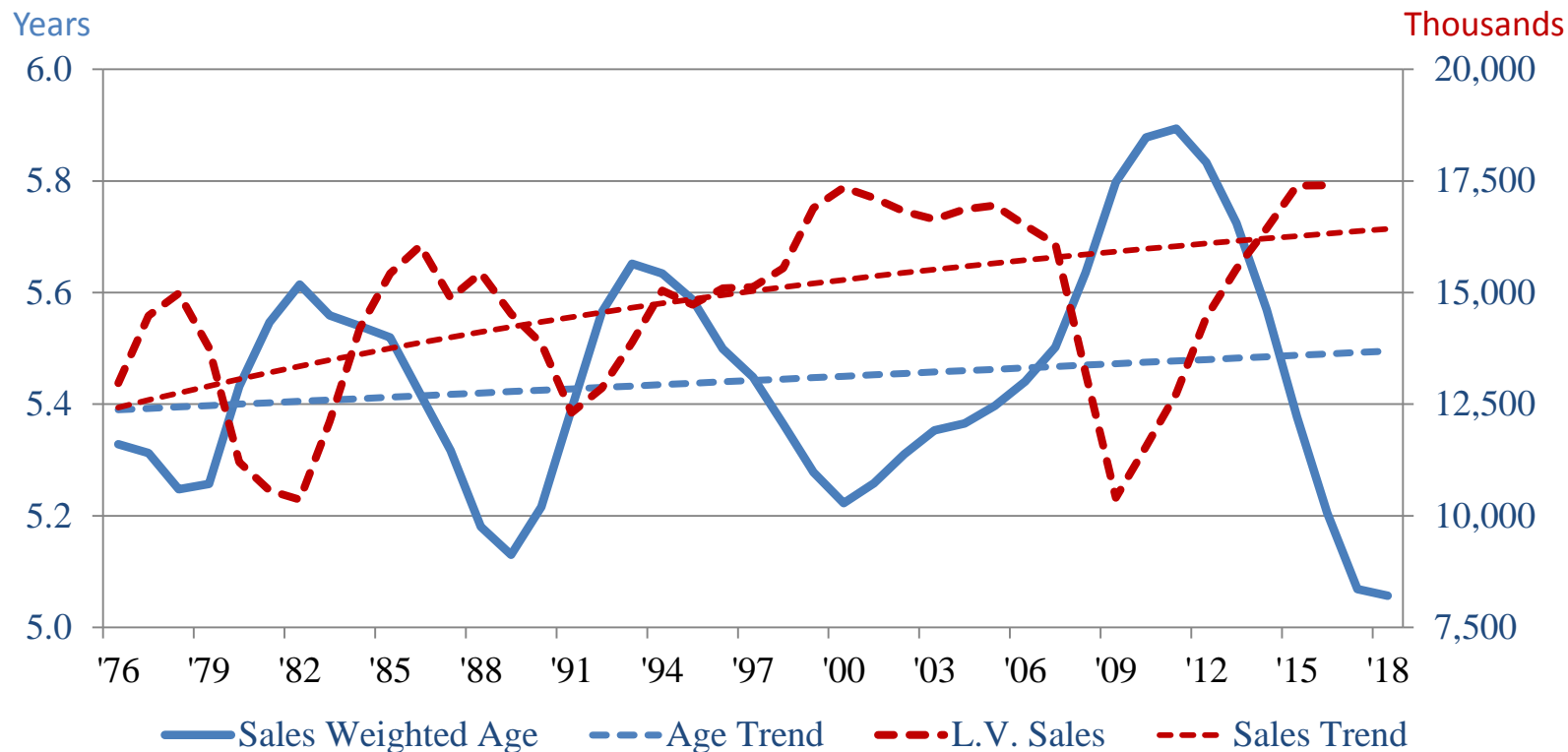
Percent Contributions of Determinates of Long-Run Vehicle Sales Trend



Source: Author's calculations

Sales Weighted Vehicle Age & L.V. Sales

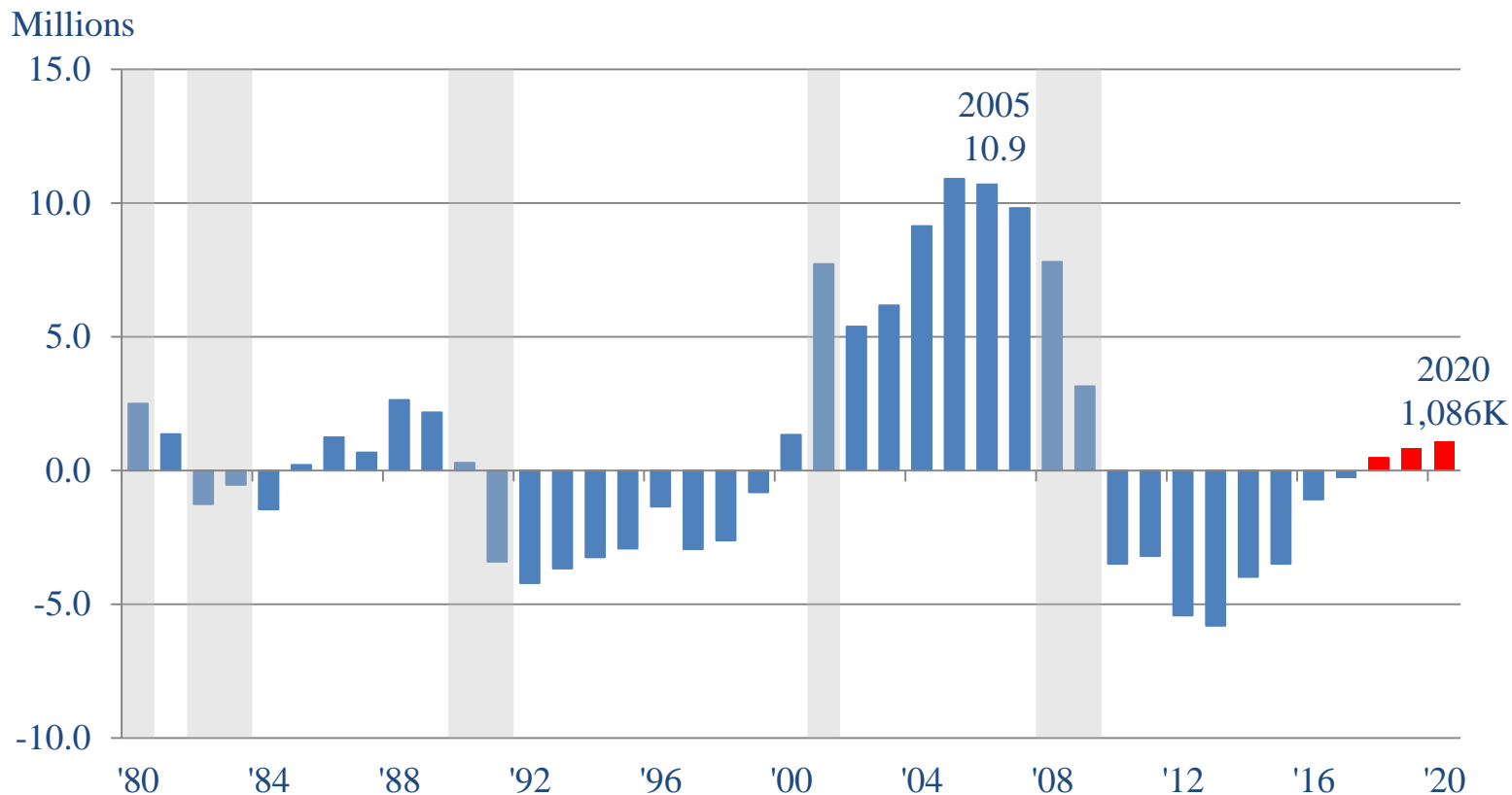
10 Year Sales Weighting and Thousands of Units



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

U.S. Light Vehicle Pent-Up Demand

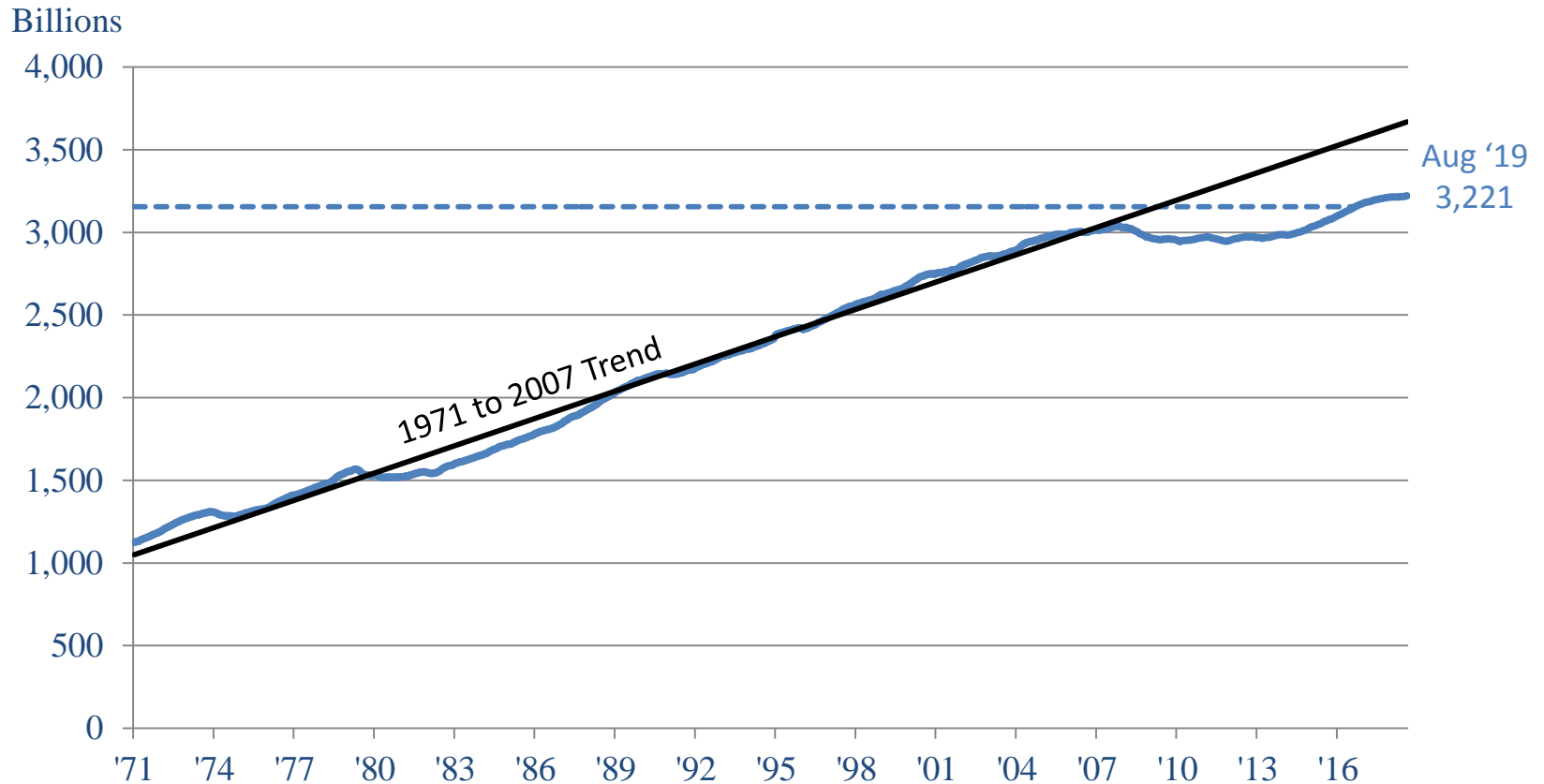
Millions of Units



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

Vehicle Miles Traveled

12 Month Total Miles Traveled in Billions



Source: U.S. Department of Transportation, Federal Highway Administration and Federal Reserve Bank of St. Louis.

Summary

- Economic activity has been rising at a strong rate and labor markets continue to strengthen helping to push up wages.
- Household spending has continued to grow strongly and purchasing managers remain optimistic about growth in business activity.
- Higher mortgage rates and low inventories are showing early signs of slowing home buying activity.
- On a 12-month basis both overall and core inflation remain near 2 percent.
- The U.S. consumer continues to experience improved financial conditions supported by a strong labor market, improving real personal income and rebounding household net worth.

Summary (continued)

- In the short-run, a younger vehicle fleet, mature sales cycle, and rising interest rates will begin to bring light vehicle sales volumes back to trend.
- In the long run demand for light vehicles is being driven by slower growth rates in household formation, vehicles per household, and fewer vehicle miles traveled.
- The impacts on long-term demand of electric and self-driving vehicles remains uncertain.
- Current economic risks to light vehicle sales include slowing global growth, trade uncertainties, rising commodity costs, and a flattening yield curve.

Thank You!