



EDWARD B. GRIMBALL, Chairman
HOWELL CLYBORNE, JR.
EMERSON F. GOWER, JR.

SOUTH CAROLINA REVENUE AND FISCAL AFFAIRS OFFICE

FRANK A. RAINWATER
Executive Director

BOARD OF ECONOMIC ADVISORS WORKING GROUP/REGIONAL ADVISORY COMMITTEE MEETING AGENDA October 17, 2019, 10:45am Room 112 - Solomon Blatt Building

1. Welcome
2. Adoption of Meeting Minutes for September 16, 2019
3. A. Overview of First Quarter Results - (Frank Rainwater)
B. Economic Outlook - (Robert Martin)
4. Recess for Lunch (*Please note that lunch is by invitation only*)

Regional Advisory Committee Meeting will begin at 12:45 P.M.

5. Presentations on Personal Income and Employment Growth in South Carolina for FY 2019-20 and FY 2020-21
 - A. Introduction - (Frank Rainwater)
 - B. Regional Advisory Committee Members

Summary of presentation received from **Dr. Matthew Martin** - Senior Vice President - Federal Reserve, Charlotte Regional Office

Dr. Joseph Von Nessen - Research Economist, University of South Carolina, Darla Moore School of Business

Mr. Mark Vitner - Managing Director and Senior Economist - Wells Fargo Securities

Dr. Raymond Sauer - Professor of Economics - Clemson University, John E. Walker Department of Economics

Dr. Frank Hefner - Professor of Economics, Director of Office of Economic Analysis - College of Charleston

Dr. Russell S. Sobel - Professor of Economics and Entrepreneurship - The Citadel, Baker School of Business
 - C. BEA Staff - **Robert Martin** - Chief Economist

6. Discussion of Forecast Assumptions
 - A. Identification of major factors affecting the economy
 - B. Discussion of risks to the forecast
 - C. Developing range of Personal Income and Employment Growth Rates for FY 2018-19 and FY 2019-20

7. Reports from Working Group Members
 - A. Governor's Office
 - B. Senate Finance Office
 - C. Ways & Means Office
 - D. Treasurer's Office
 - E. Comptroller General's Office
 - F. Executive Budget Office

8. Future Meeting Schedule:
 - A. November 8, 2019, 1:30pm - Preliminary Estimate
 - B. December 12, 2019, 1:30pm - **If necessary**, *GoToMeeting* for Members
 - C. 2019 Calendar at <http://rfa.sc.gov/meetings>

9. Adjournment



South Carolina Revenue and Fiscal Affairs Office

OVERVIEW

OVERVIEW – First Quarter FY 2019-20

July – September 2019

- Through the first quarter of FY 2019-20, General Fund Revenues grew \$159.0 million or 7.3 percent.
- Of the total growth, \$145.8 million or 91.7 percent is from Sales and Individual Income tax.
- As a reminder, final revenues for last fiscal year, FY 2018-19 exceeded the estimate for the current year, FY 2019-20, by \$71.4 million.
- As a result, revenue collections would need to decline by 3.8 percent to trigger a budget reduction required (§11-9-1140).
- Therefore, revenue growth for FY 2019-20 is well above expectations.
- New estimates will be made on November 8th.



Table 2

July - September

General Fund Revenue	FY 2018-19	FY 2019-20	\$ Change	% Change
Sales and Use Tax	\$525,643,730	\$578,158,470	\$52,514,740	10.0
Individual Income Tax	1,355,380,778	1,448,690,785	93,310,007	6.9
Corporation Income Tax	124,805,900	125,387,251	581,351	0.5
Insurance Taxes	78,199,881	60,992,225	(17,207,656)	(22.0)
Admissions Tax	(708,271)	(777,924)	(69,653)	(9.8)
Aircraft Tax	1,193	0	(1,193)	(100.0)
Alcoholic Liquor Tax	12,837,706	12,596,454	(241,252)	(1.9)
Bank Tax	14,884,259	15,458,078	573,819	3.9
Beer and Wine Tax	20,639,030	20,801,702	162,672	0.8
Bingo Tax	(210,854)	(5,851)	205,003	97.2
Business Filing Fees	1,304,379	1,408,325	103,946	8.0
Circuit/Family Court Fines	1,568,461	1,472,458	(96,003)	(6.1)
Corporation License Tax	7,666,670	10,632,623	2,965,953	38.7
Documentary Tax	15,336,258	15,154,942	(181,316)	(1.2)
Earned on Investments	14,788,367	32,214,026	17,425,659	117.8
Indirect Cost Recoveries	540,143	884,965	344,822	63.8
Motor Vehicle Licenses	1,870,248	1,752,785	(117,463)	(6.3)
Nursing Home Fees	0	0	0	---
Parole and Probation Fees	848,202	848,202	0	---
Private Car Lines Tax	31,415	(5,145)	(36,560)	(116.4)
Public Service Authority	0	0	0	---
Purchasing Card Rebates	0	0	0	---
Record Search Fees	0	0	0	---
Savings and Loan Assoc. Tax	94,167	4,188,565	4,094,398	4,348.0
Security Dealer Fees	506,112	806,225	300,113	59.3
Surcharge on Vehicle Rentals	(258,427)	9,959	268,386	103.9
Tobacco Tax	4,876,519	4,280,476	(596,043)	(12.2)
Uncashed Checks	(422,382)	3,736,989	4,159,371	984.7
Unclaimed Property Fund	3,750,000	3,750,000	0	---
Workers' Comp. Insurance Tax	1,919,370	873,482	(1,045,888)	(54.5)
Other Source Revenues	3,116,963	4,701,559	1,584,596	50.8
Gross General Fund Revenue	\$2,189,009,817	\$2,348,011,626	\$159,001,809	7.3

Note: Gross General Fund Revenue includes Individual Income and Corporate Income tax revenue that is transferred for Property Tax Relief Trust Fund pursuant to §11-11-150.



September 2019

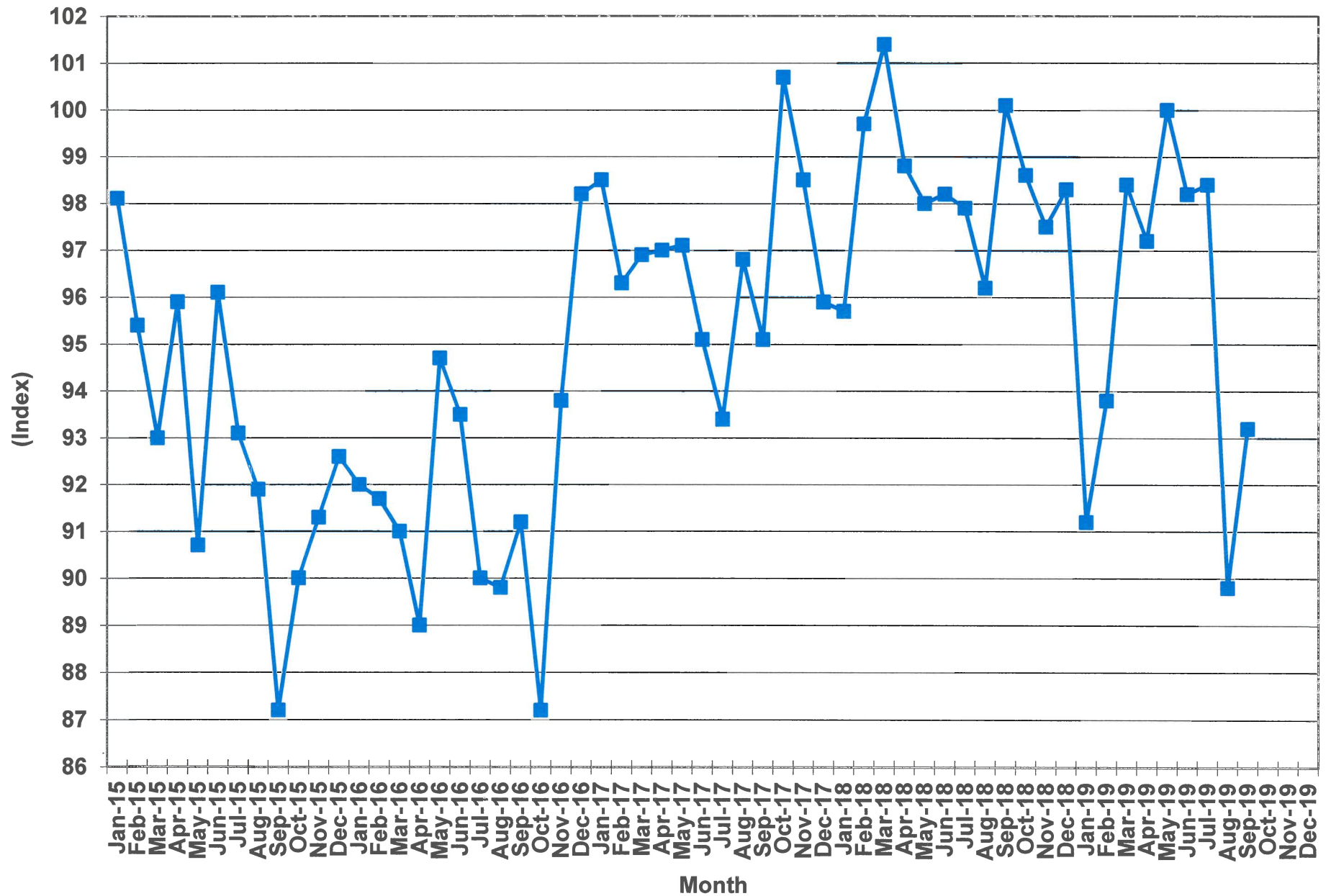
Presentation Agenda

- **Measures of Confidence**
- **Personal Income**
- **Employment**
- **Domestic Economy**
- **International Economy**
- **Base Economic Assumptions**

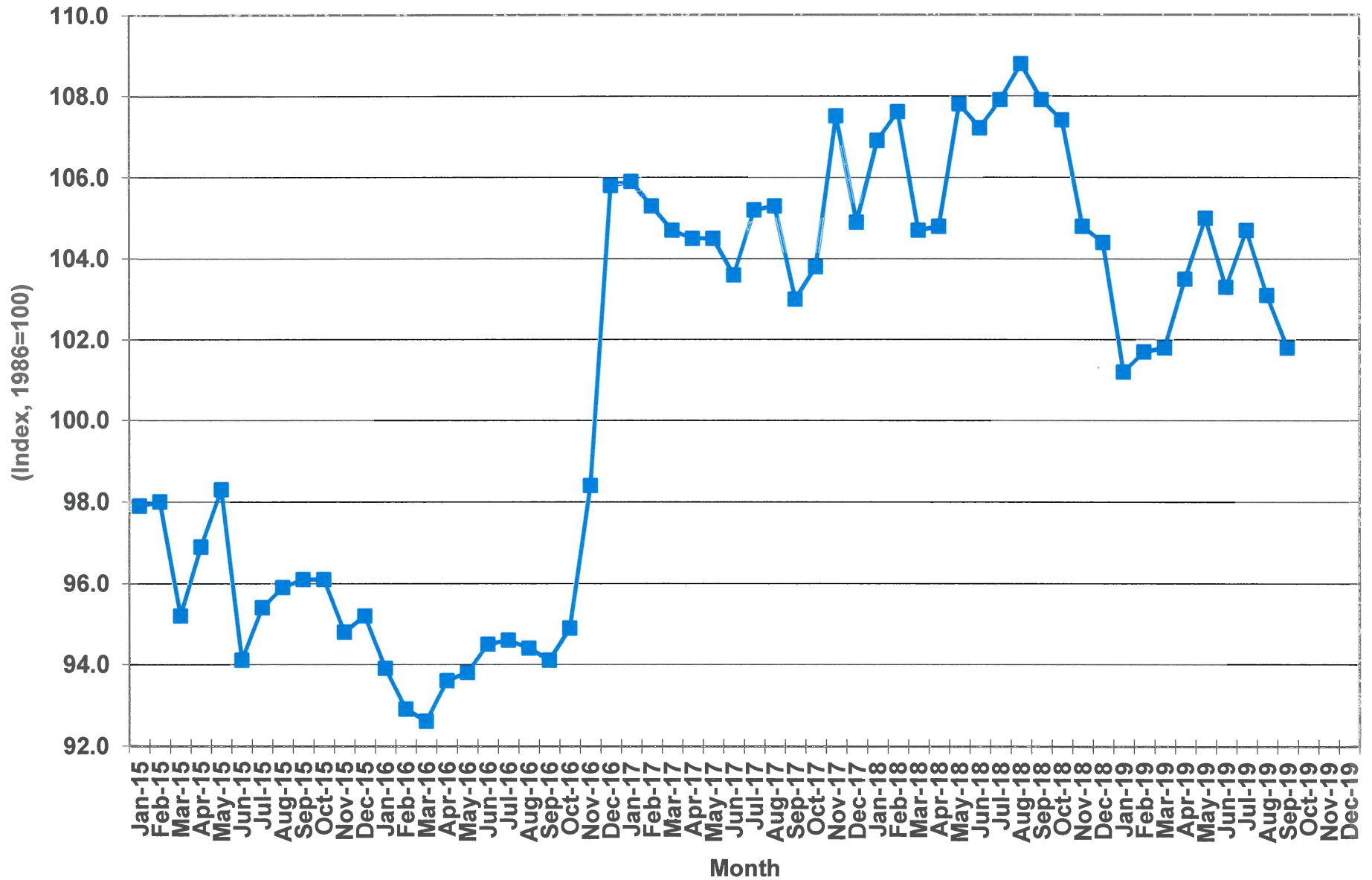


MEASURES OF CONFIDENCE

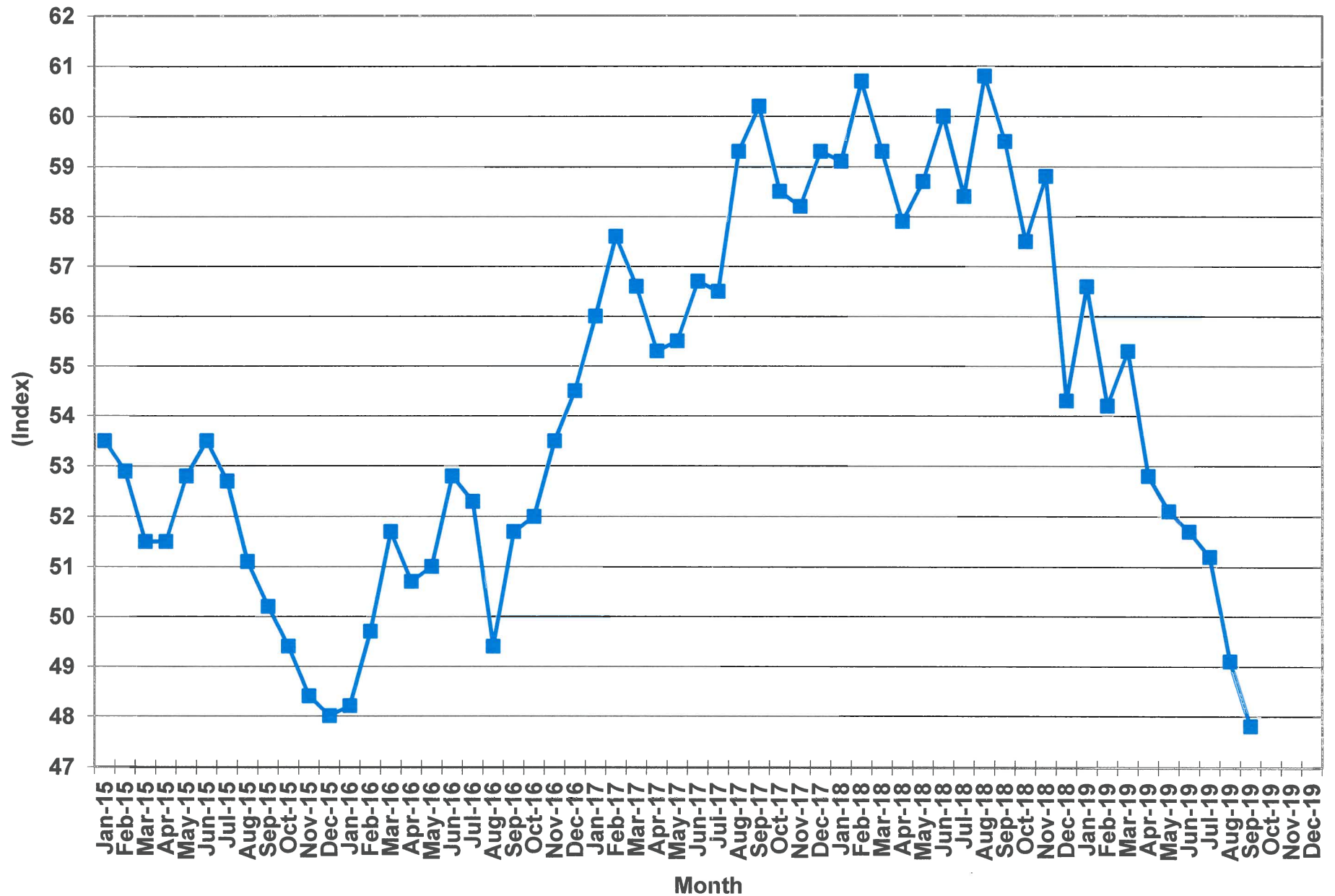
Consumer Sentiment Index



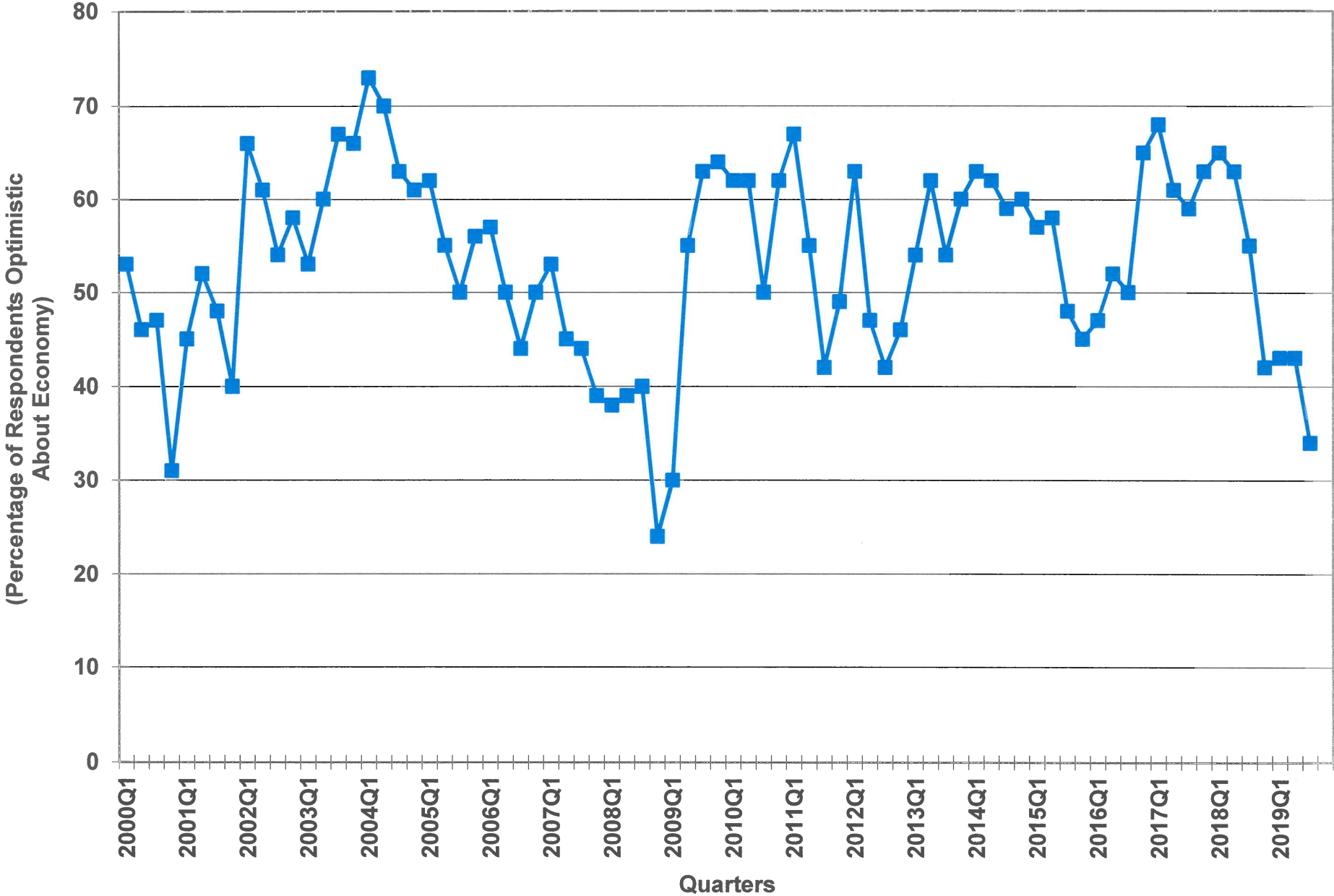
National Federation of Independent Business (NFIB) Small Business Optimism Index



National Association of Purchasing Manager's Index

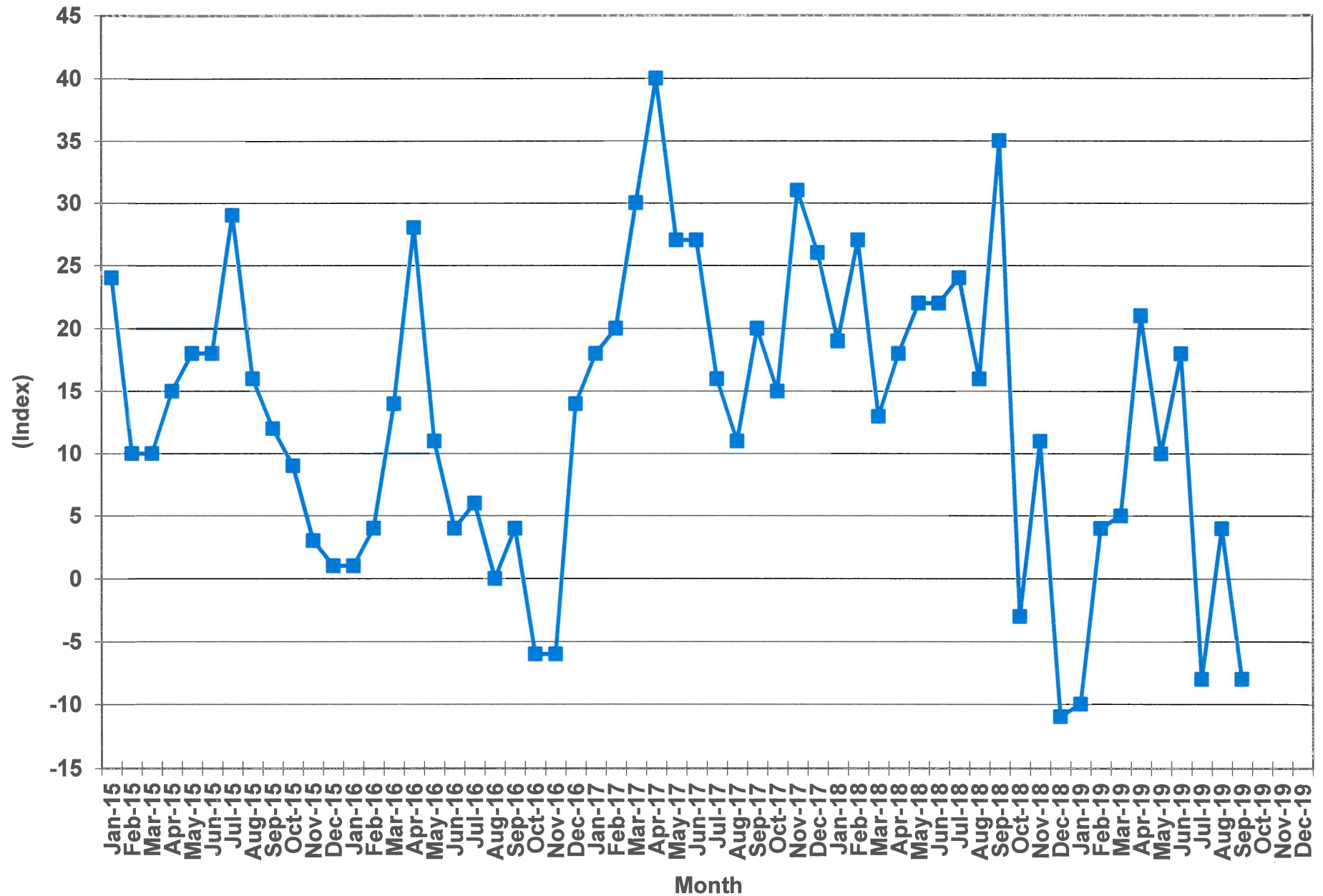


Survey of CEO Confidence



Source: The Conference Board

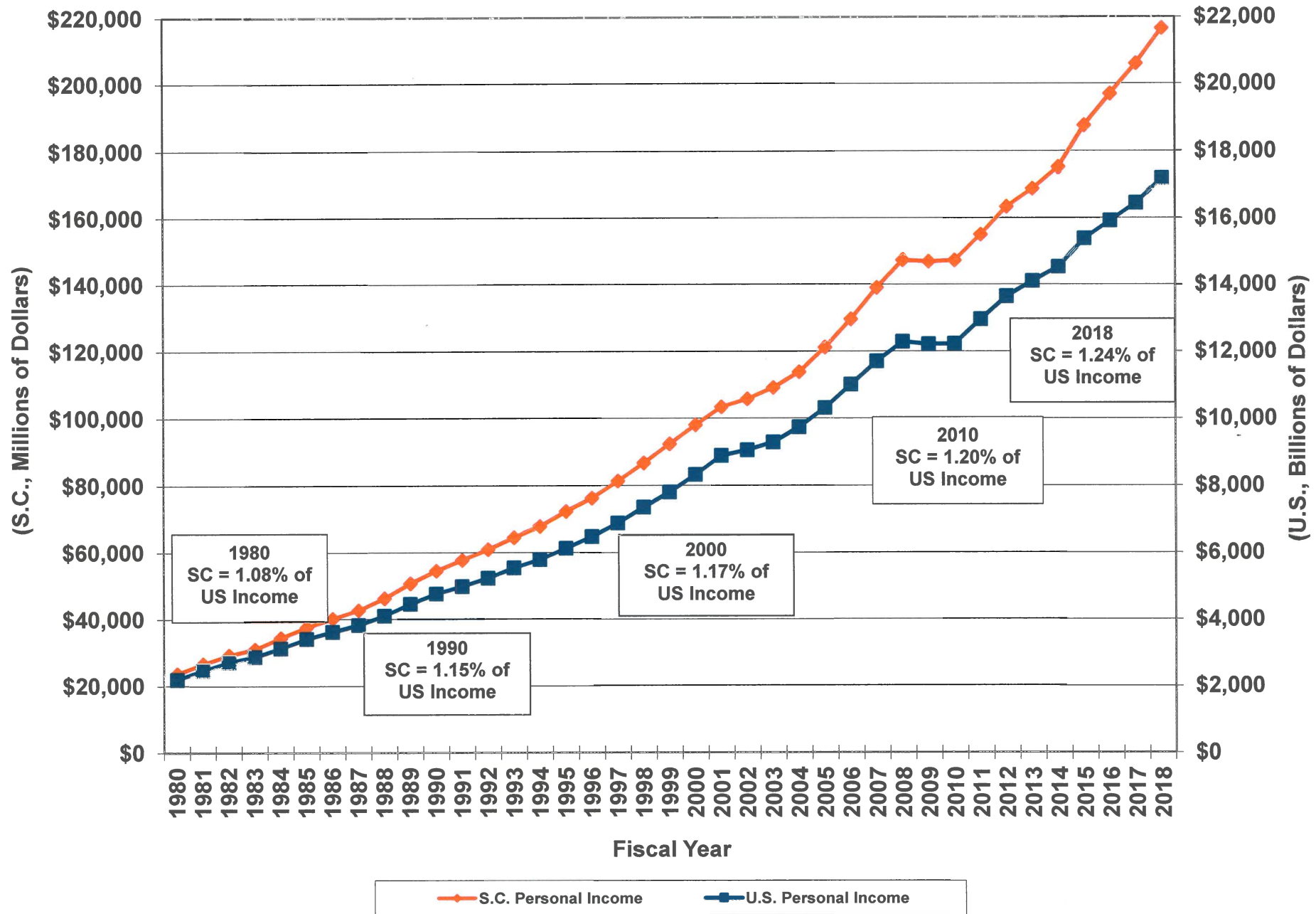
General Business Conditions in the Carolinas



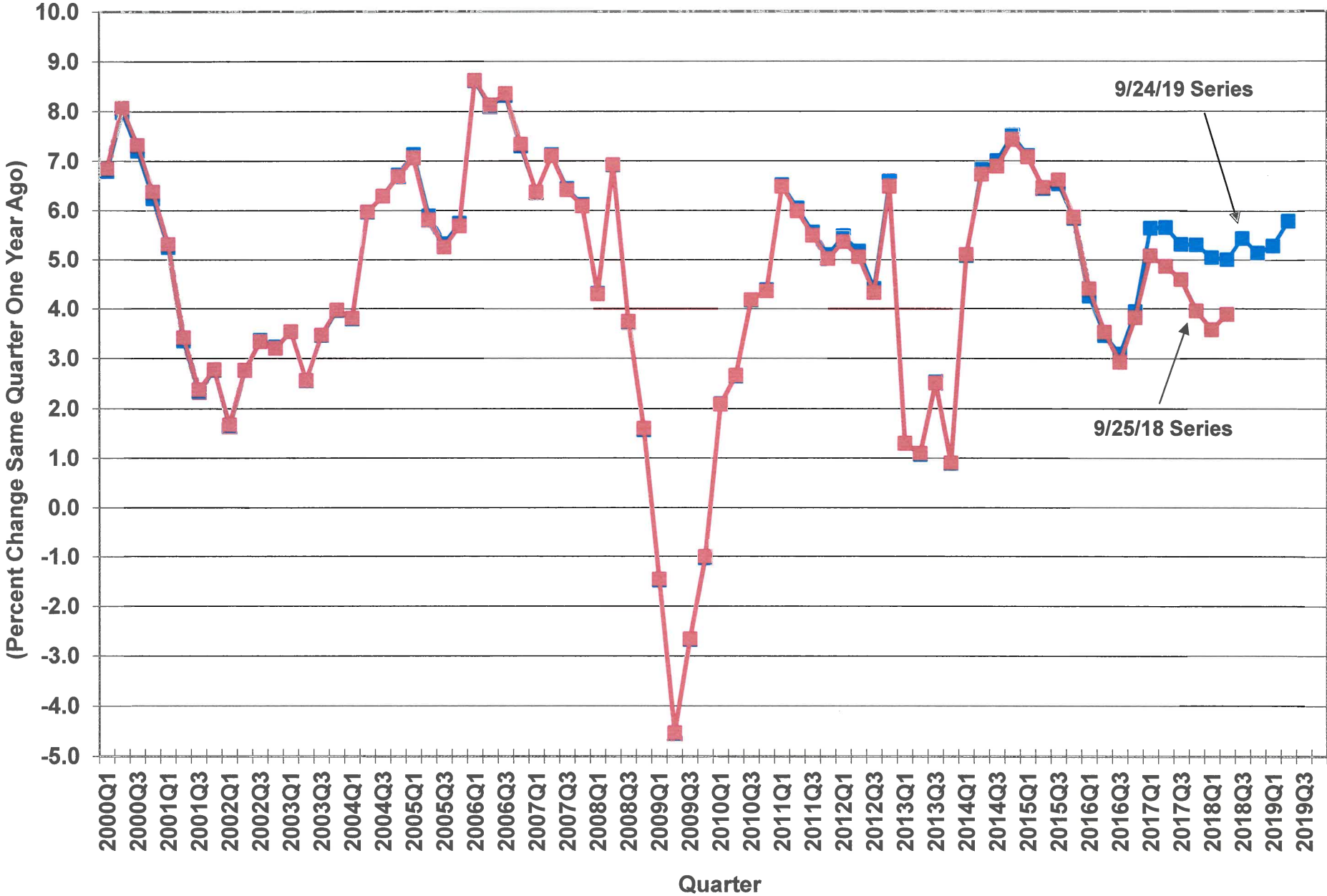


PERSONAL INCOME

Personal Income in the United States and South Carolina

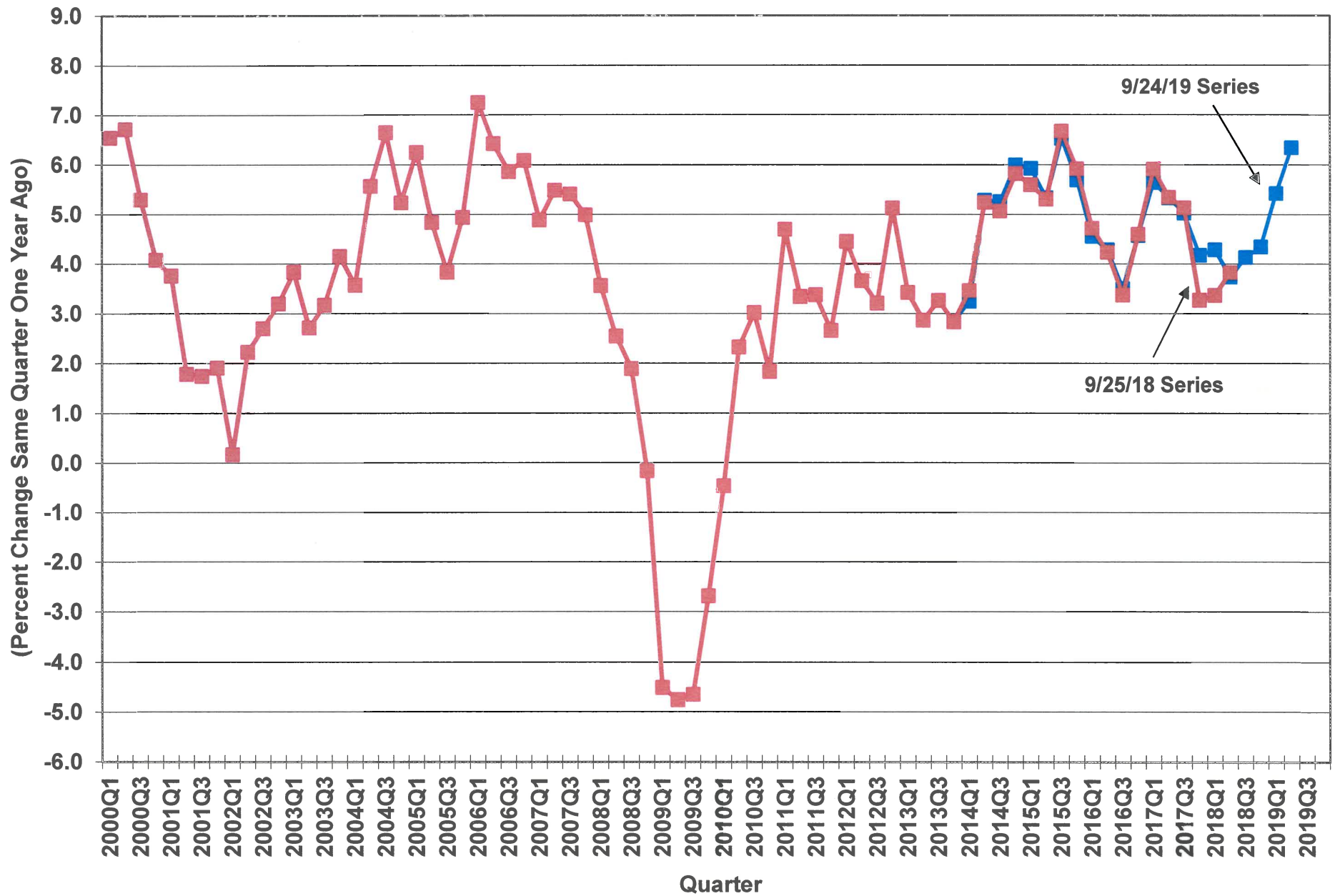


Growth in Personal Income in South Carolina



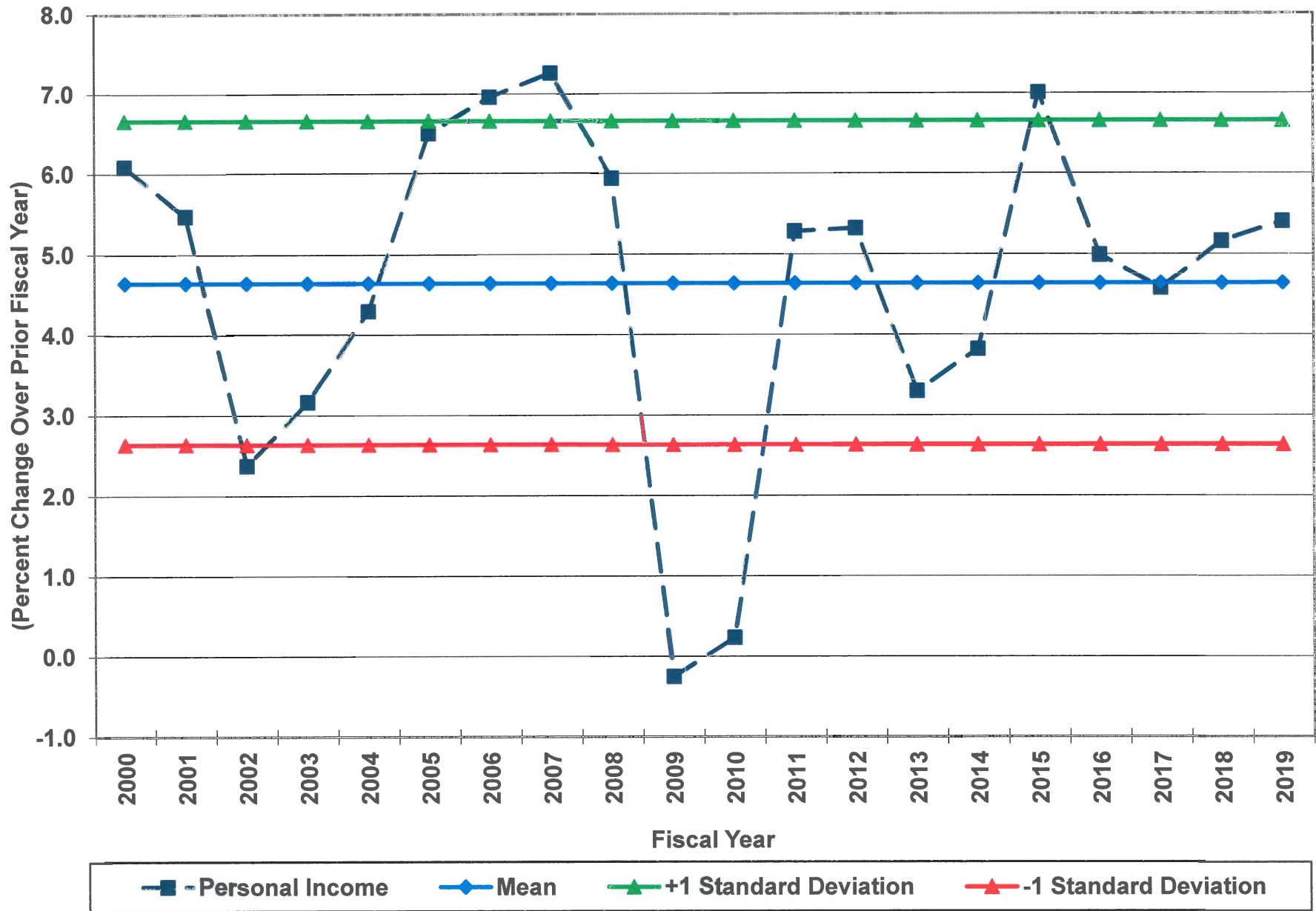
Source: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.

Growth in Wages and Salaries in South Carolina



Source: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.

Growth in Personal Income in South Carolina

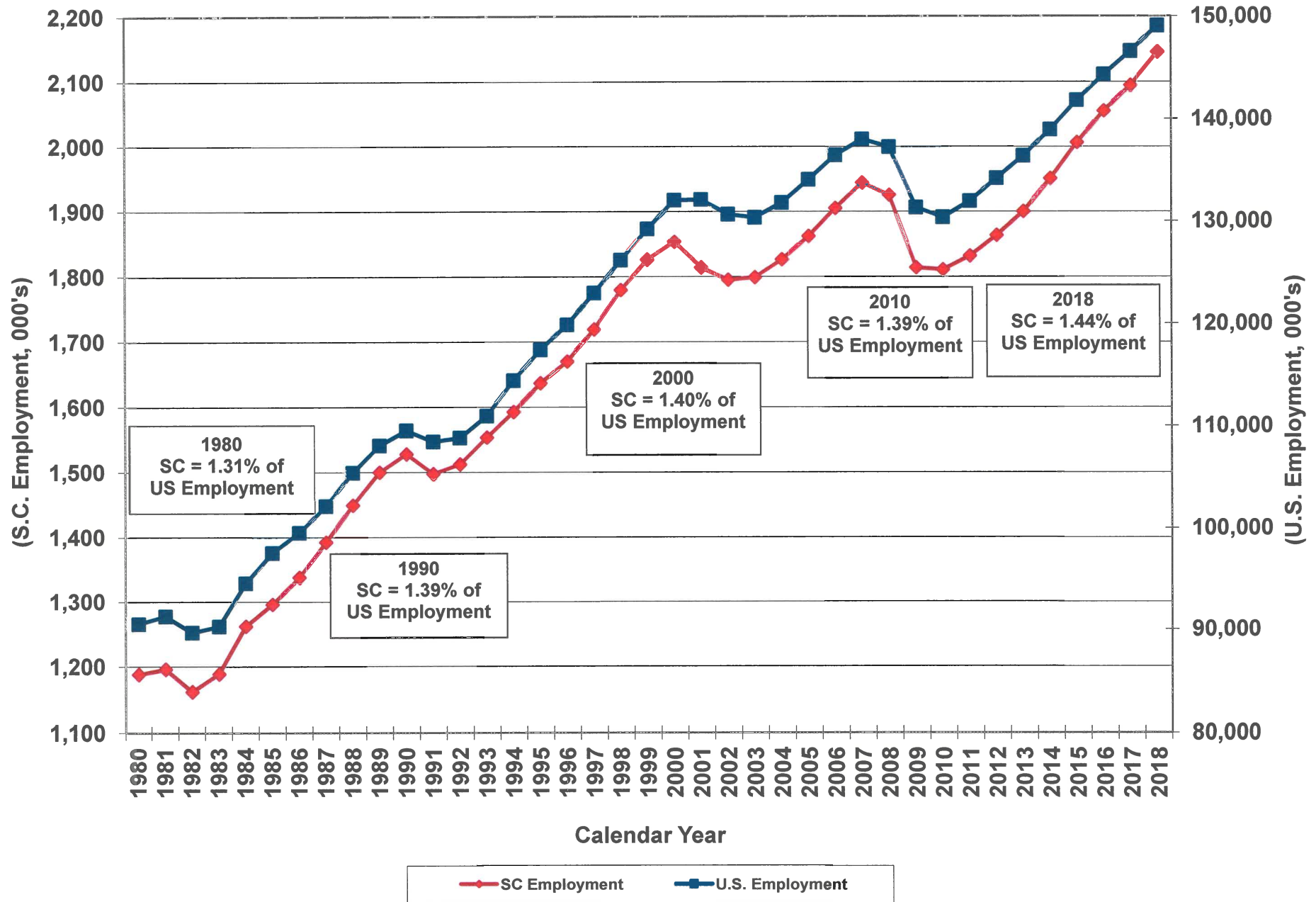


Source: Board of Economic Advisors
BEA/RWM/10/06/19

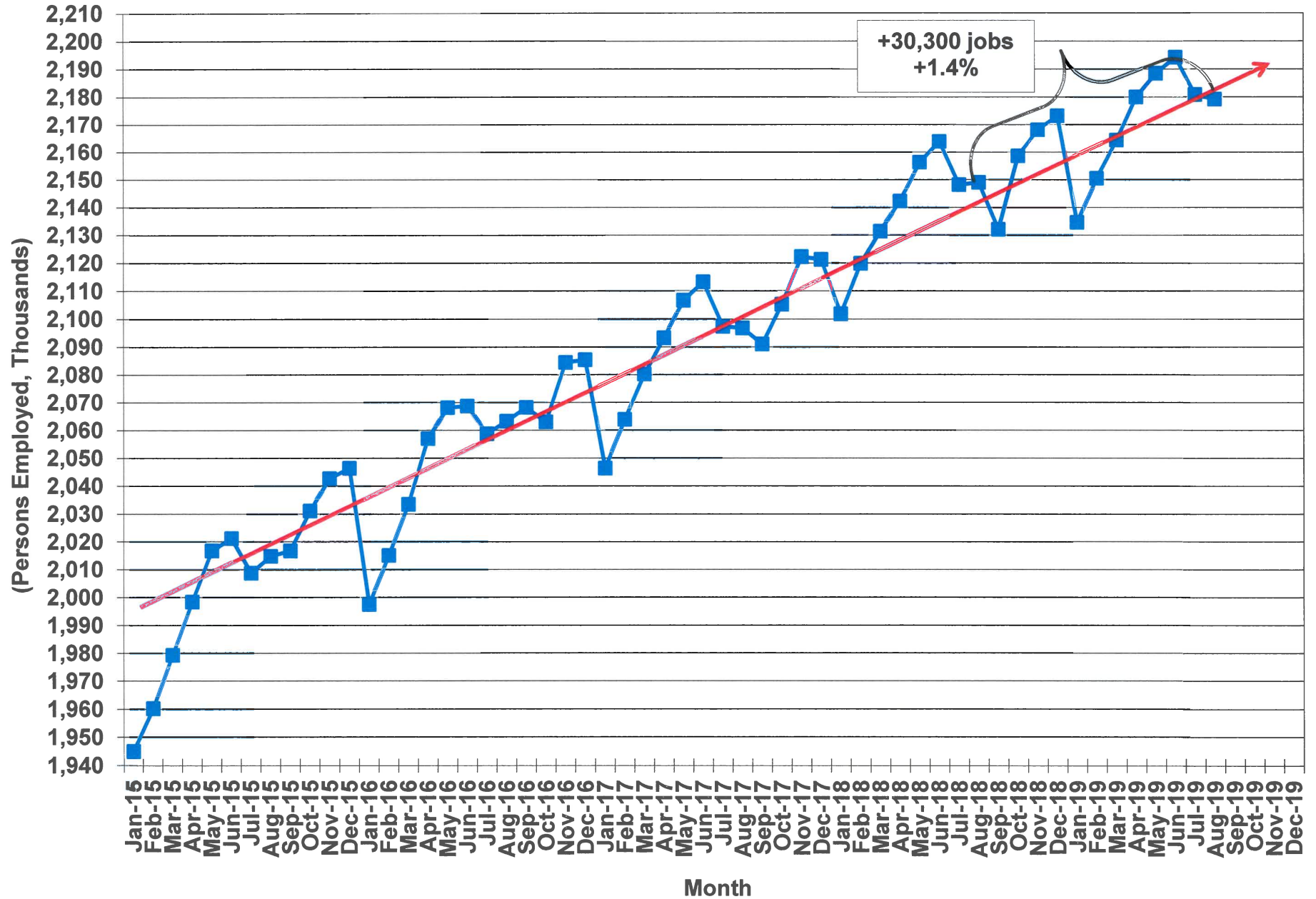


EMPLOYMENT

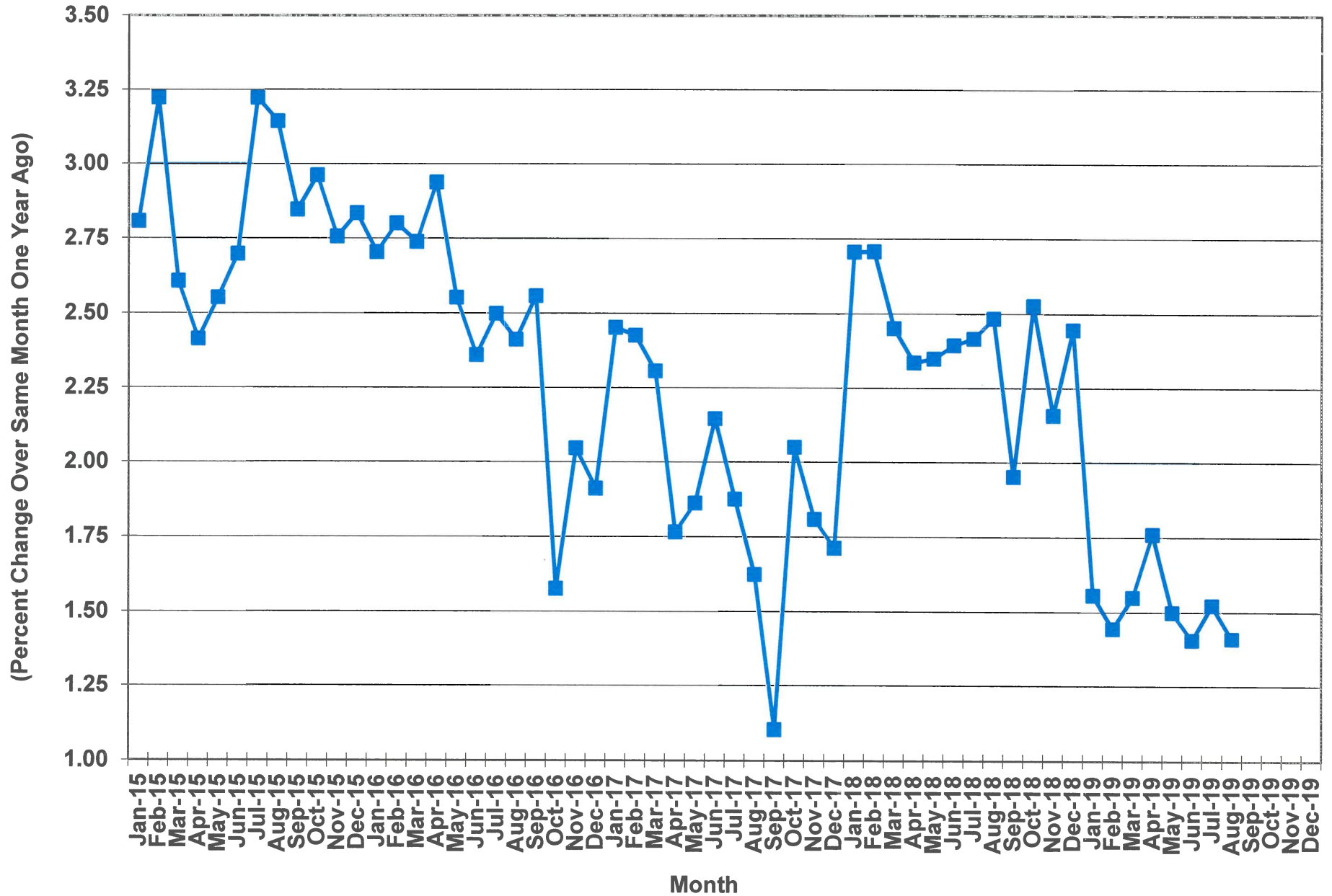
Total Nonfarm Employment in the United States & South Carolina



Total Nonfarm Employment in South Carolina

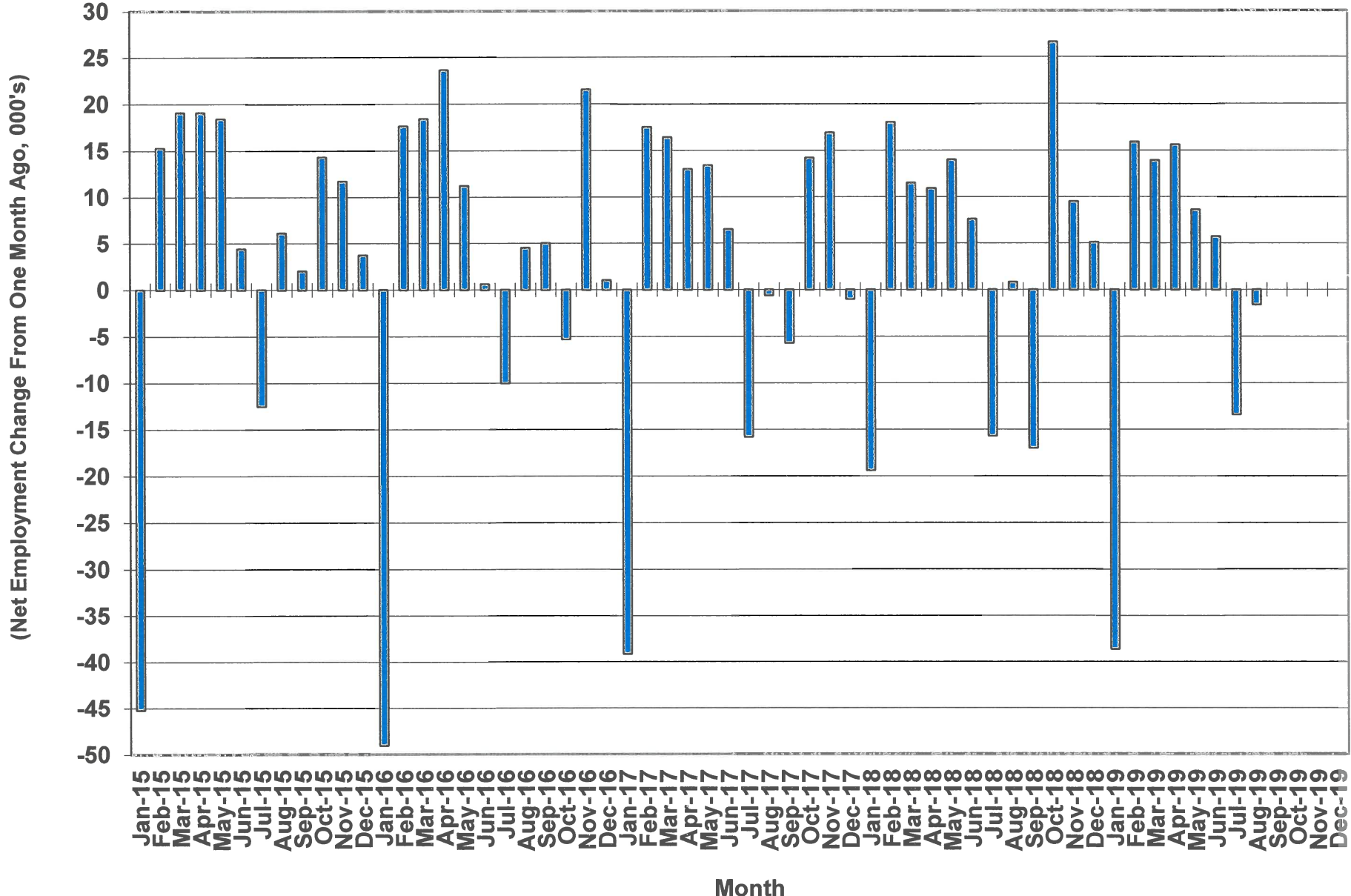


Total Nonfarm Employment Growth in South Carolina



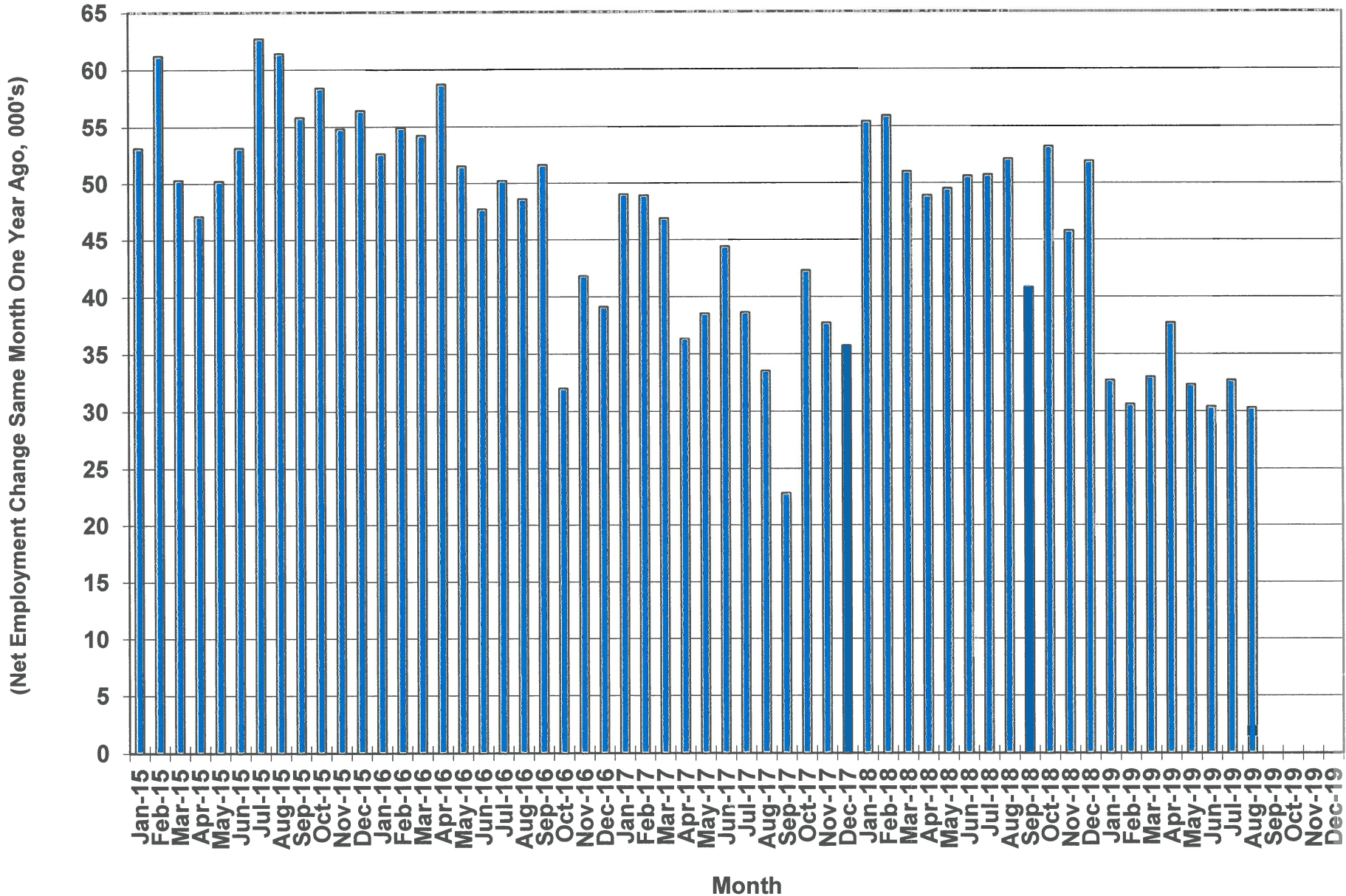
Source: U.S. Department of Labor, Bureau of Labor Statistics

Net Nonfarm Employment Increase in South Carolina



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

Net Nonfarm Employment Increase in South Carolina

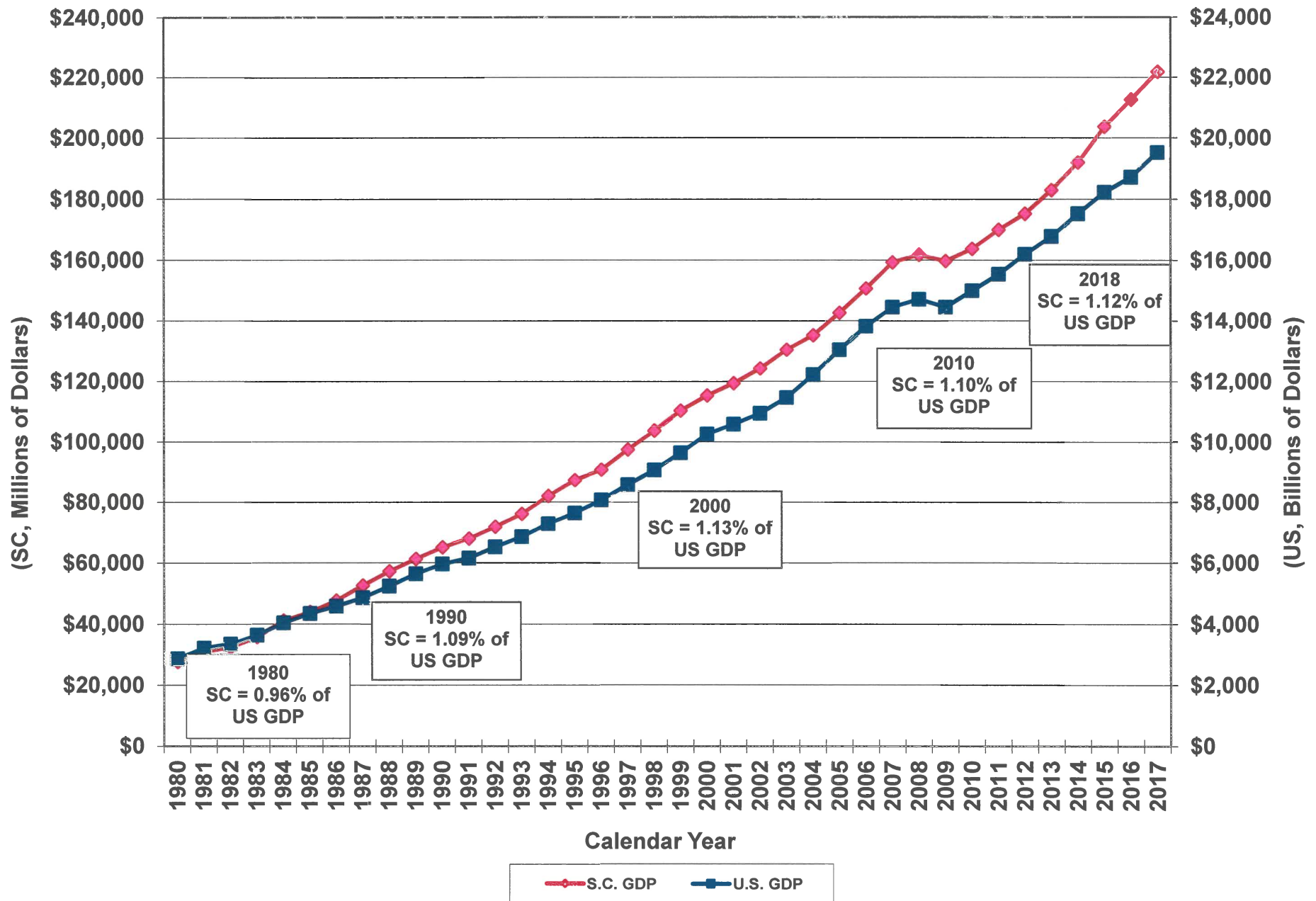


Source: U.S. Department of Labor, Bureau of Labor Statistics

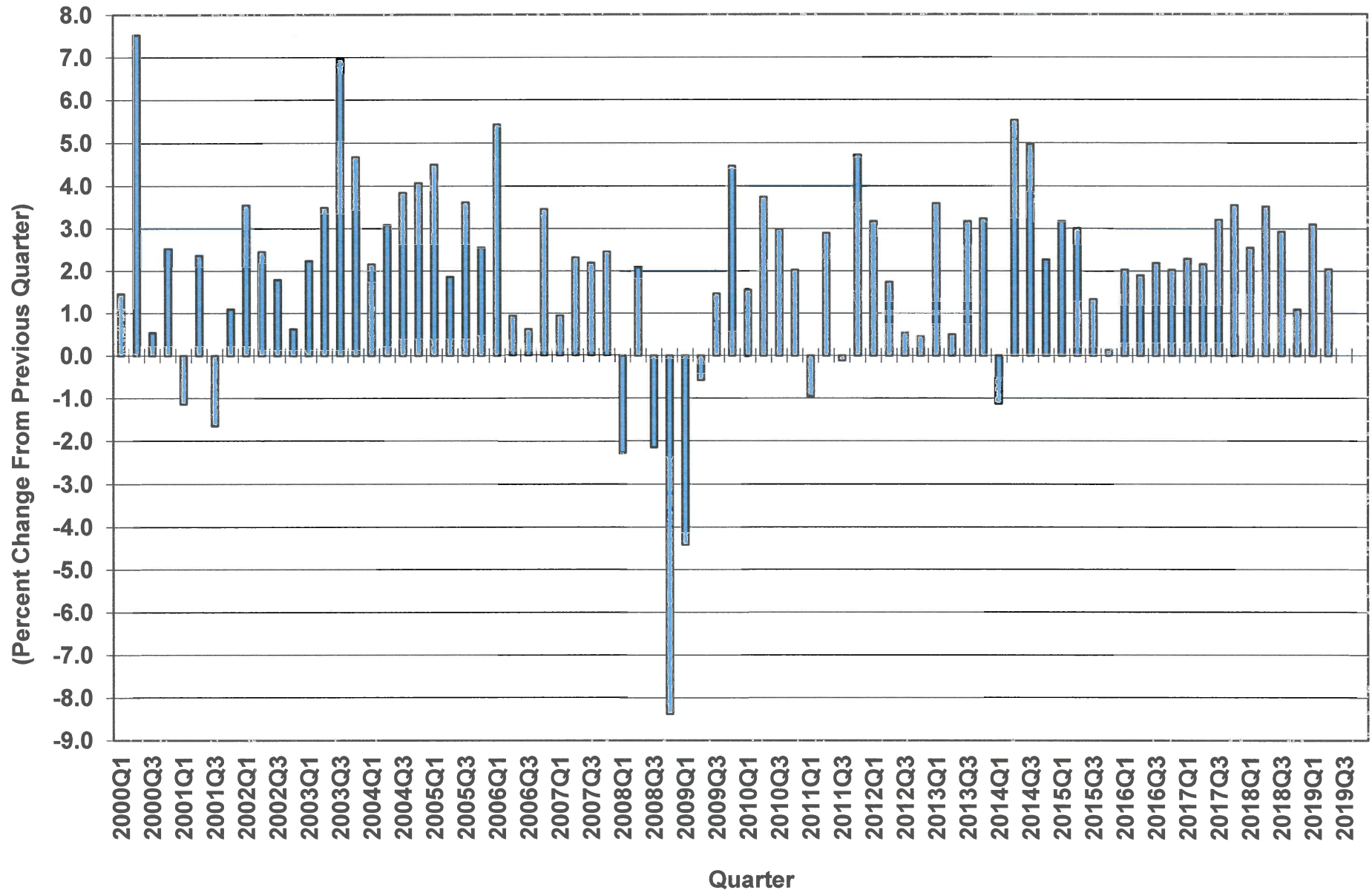


DOMESTIC ECONOMY

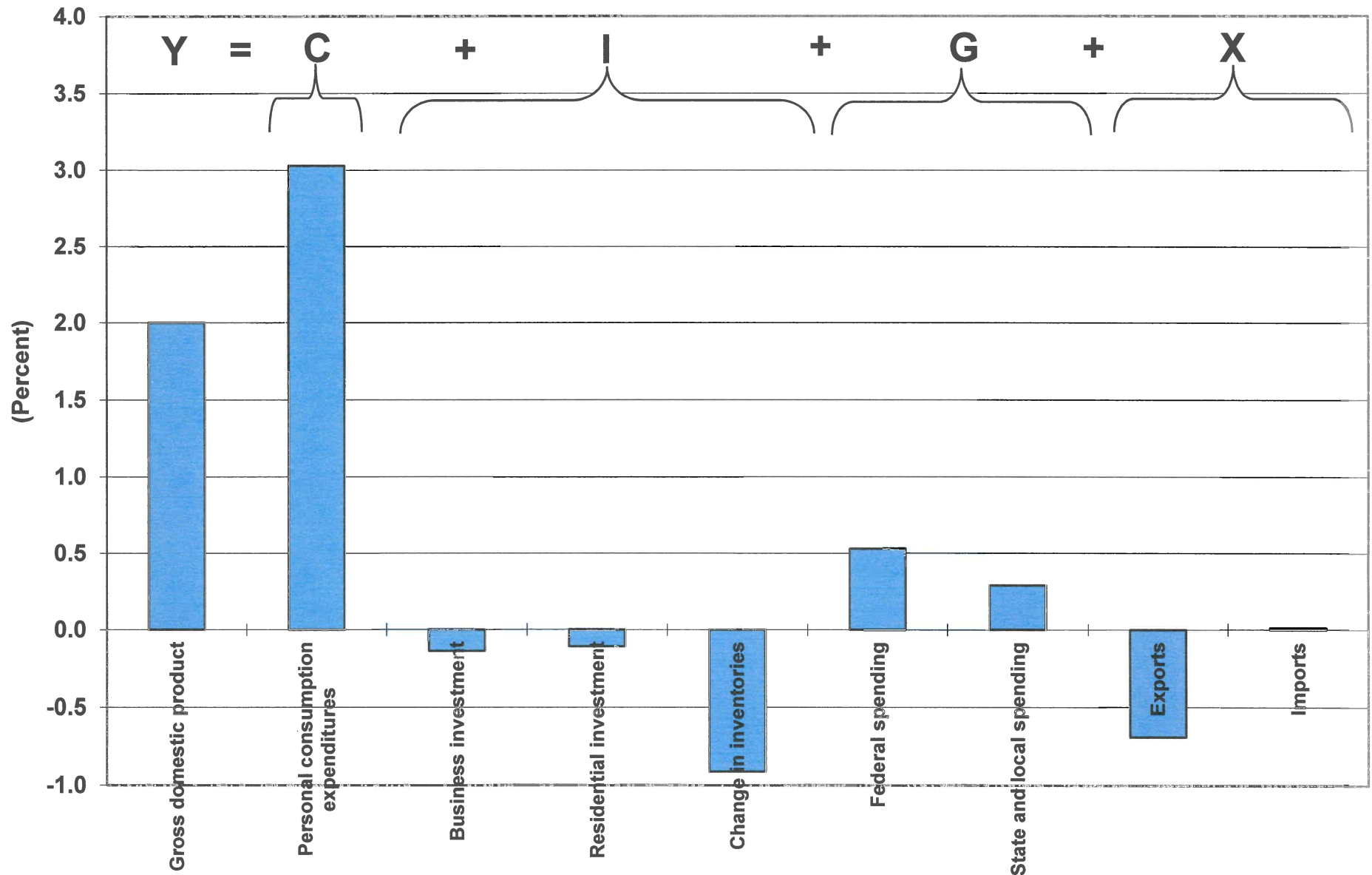
Gross Domestic Product in the United States and South Carolina



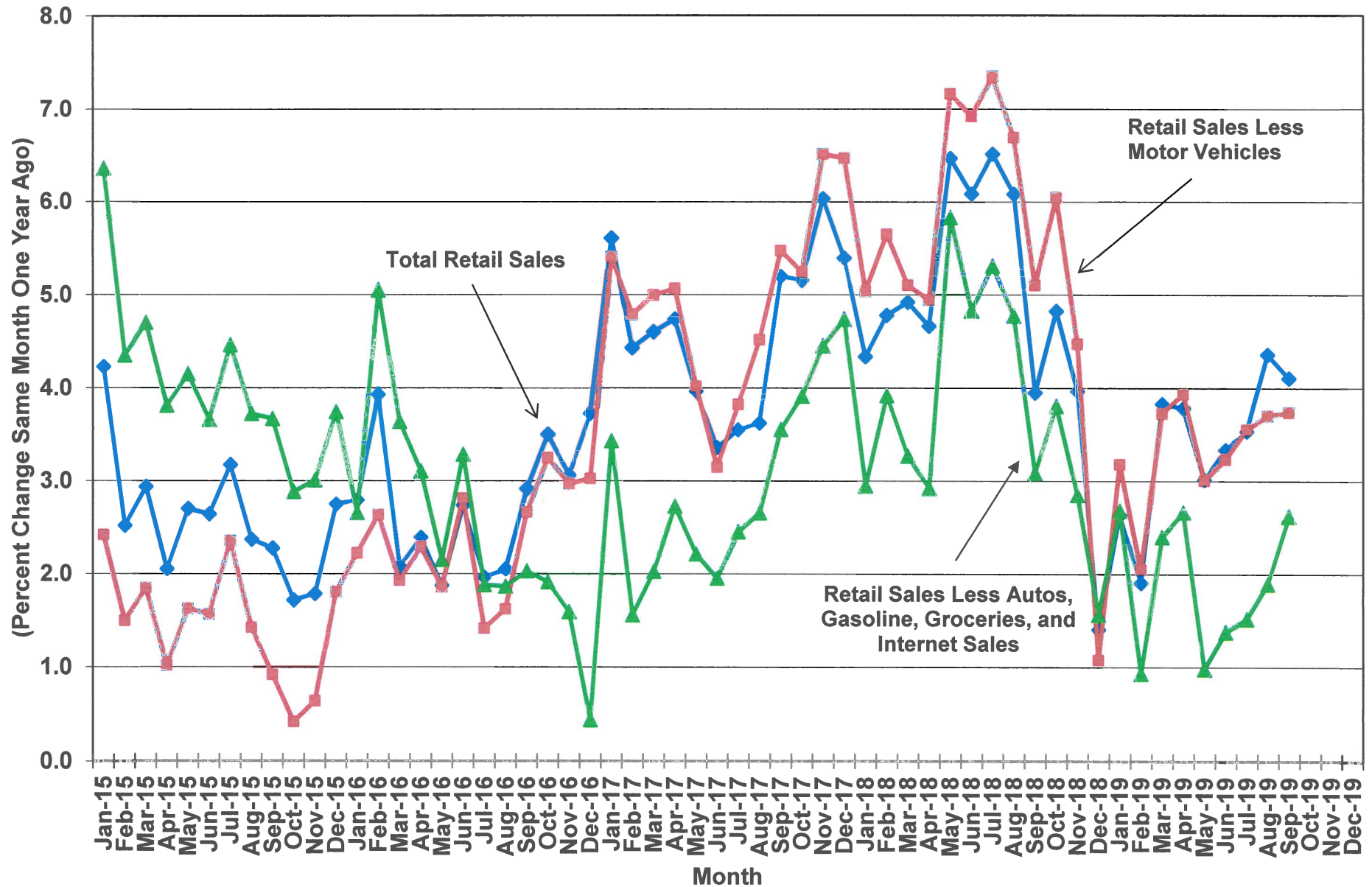
Real Gross Domestic Product in the U.S. (2012 = 100.0)



Contributions to Real Gross Domestic Product in the U.S. 2019, Second Quarter, (Final Estimate)

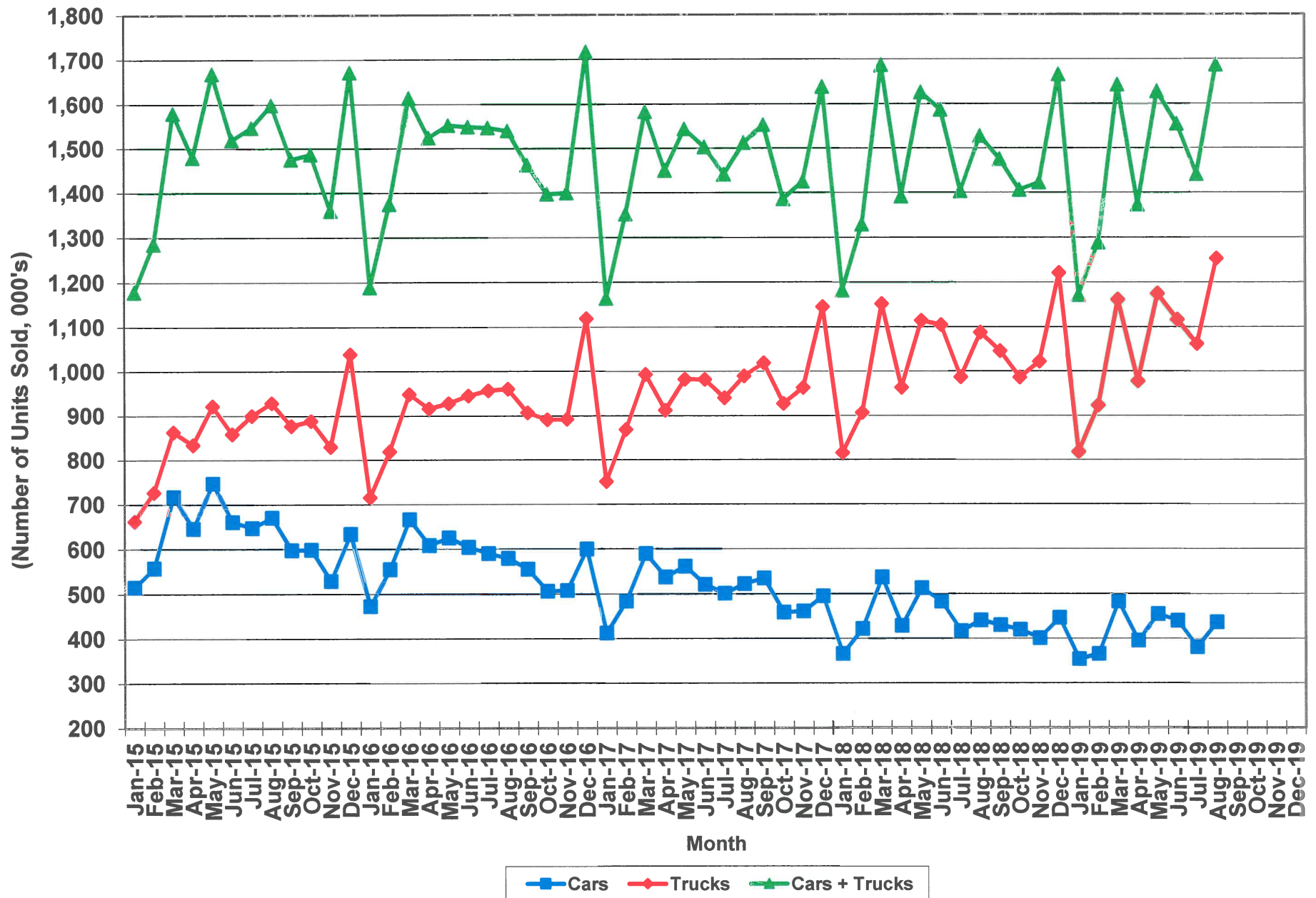


U.S. Retail & Food Service Sales

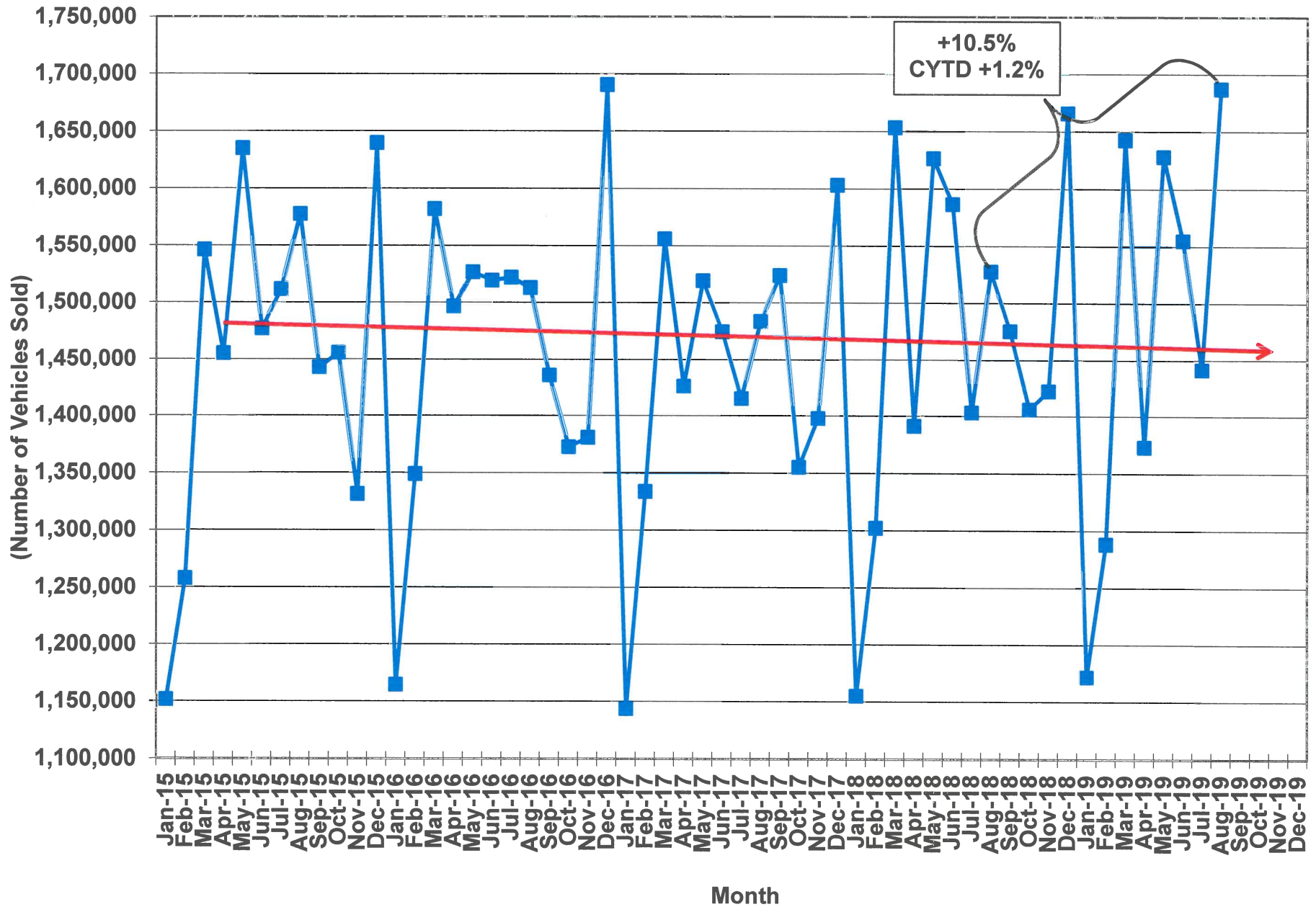


Source: U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

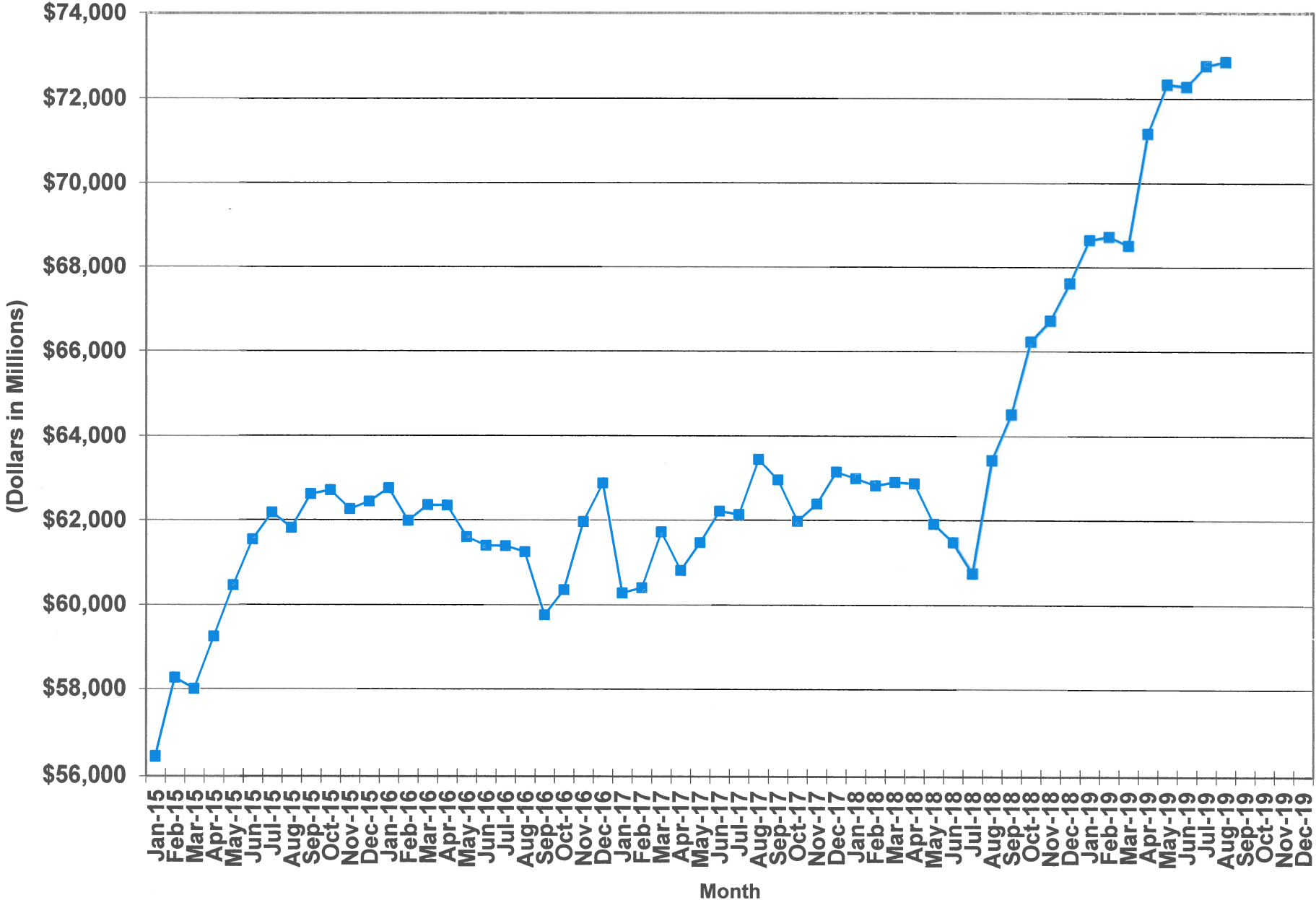
Total New Car and Light Truck Sales in the U.S.



Total Light Vehicle Sales in the United States

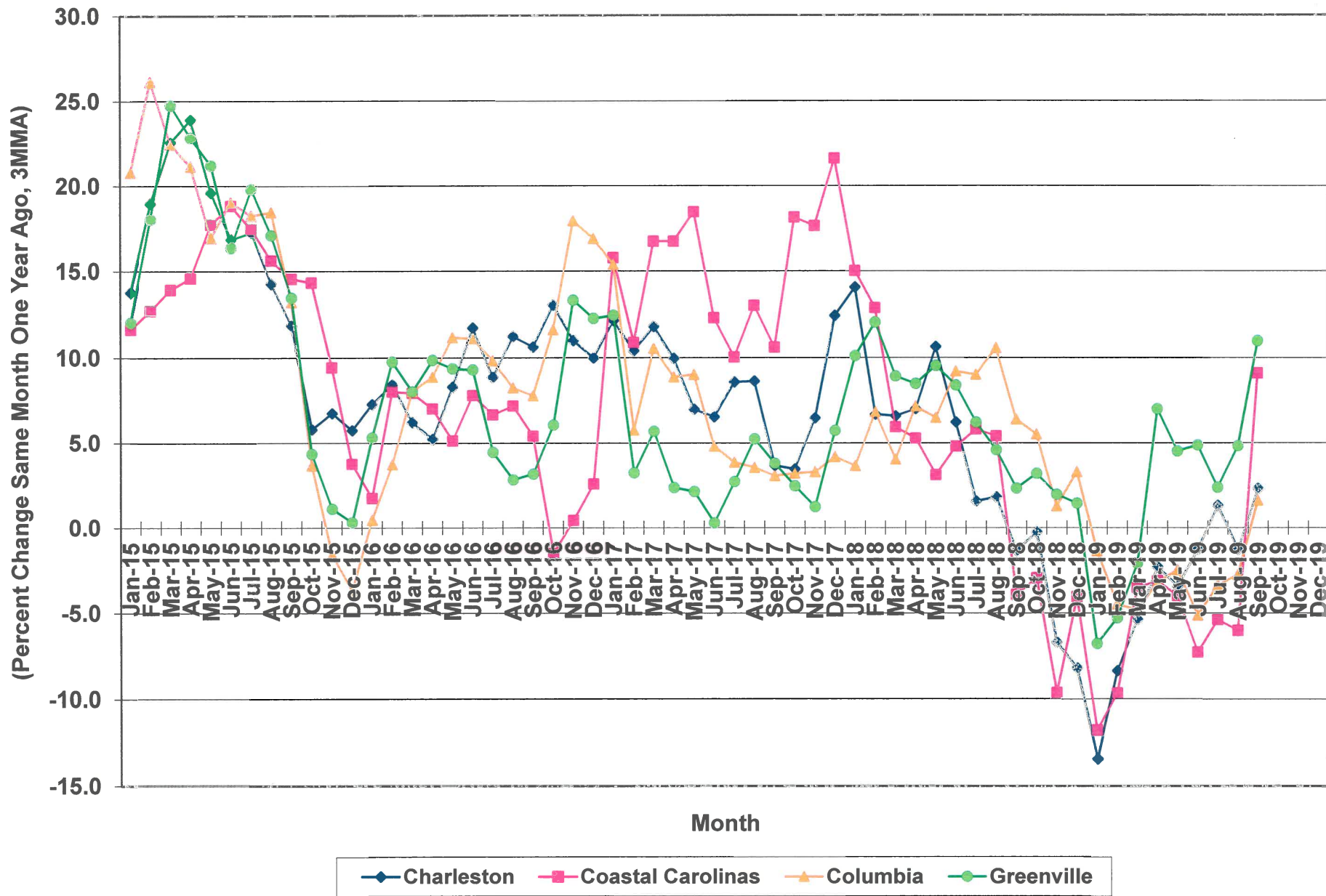


Automotive Inventories in the United States

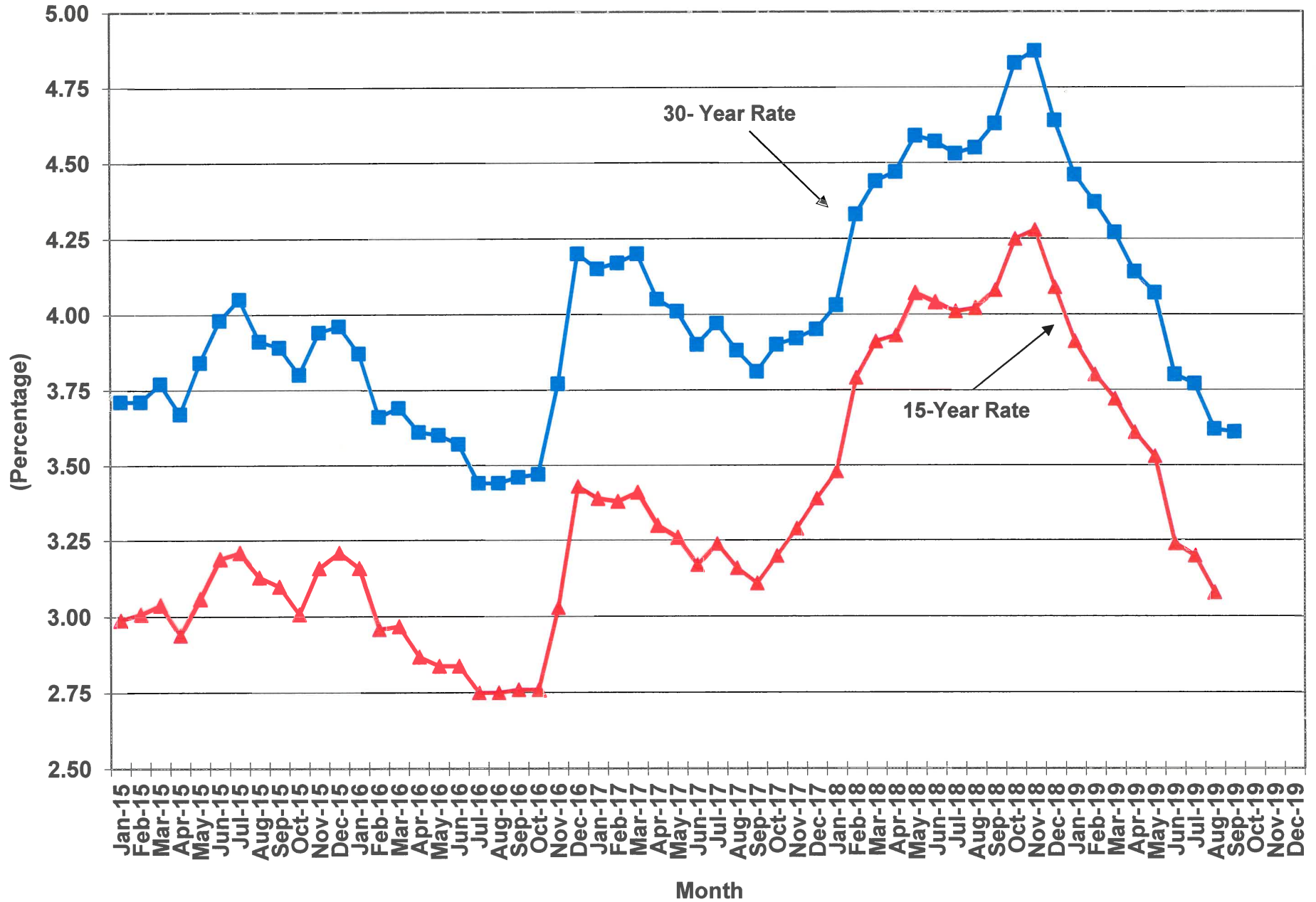


Source: U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

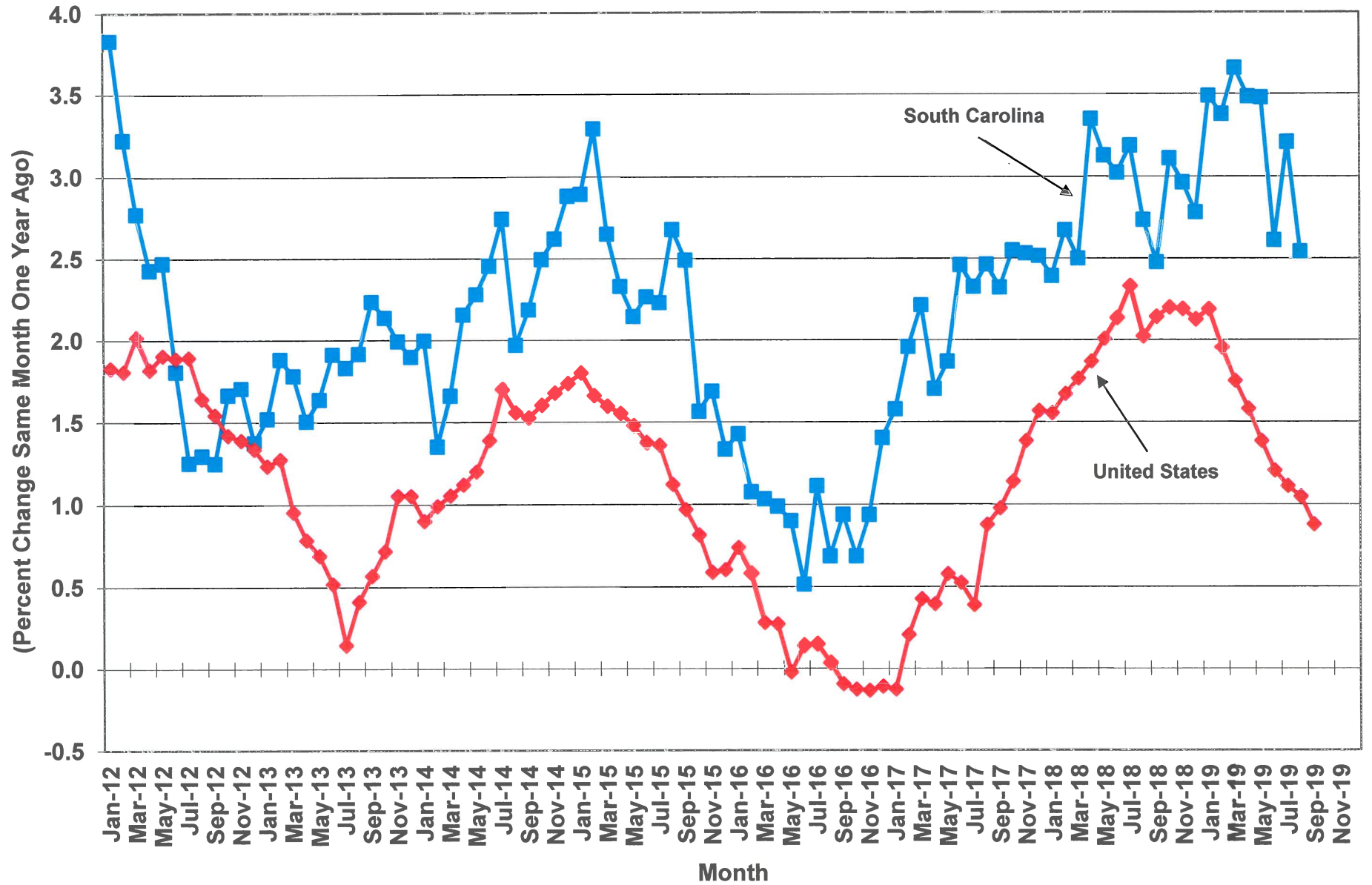
Growth in Homes Sold in Selected Housing Markets in South Carolina



Mortgage Rates



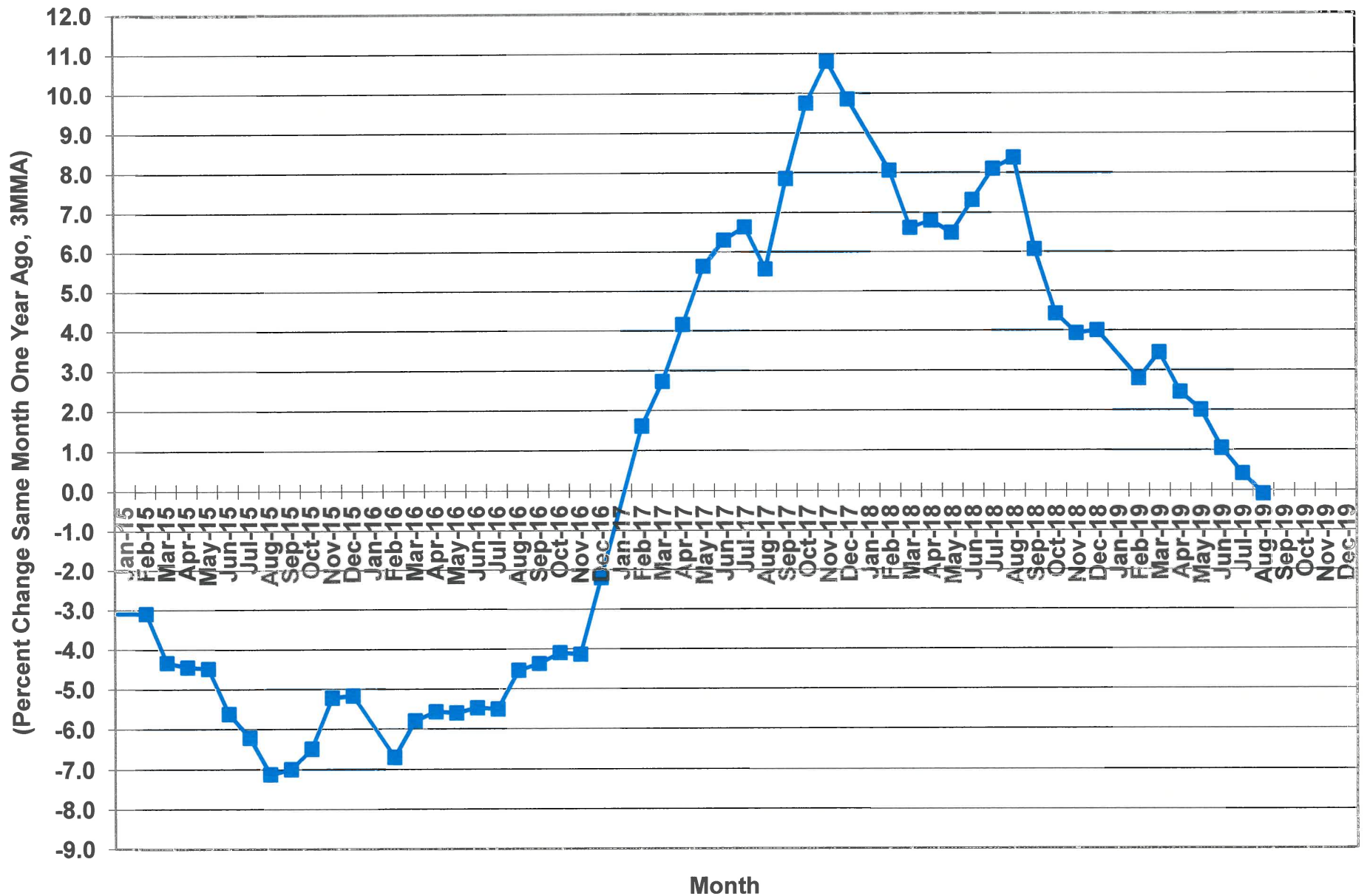
Growth in Manufacturing Employment in SC and US



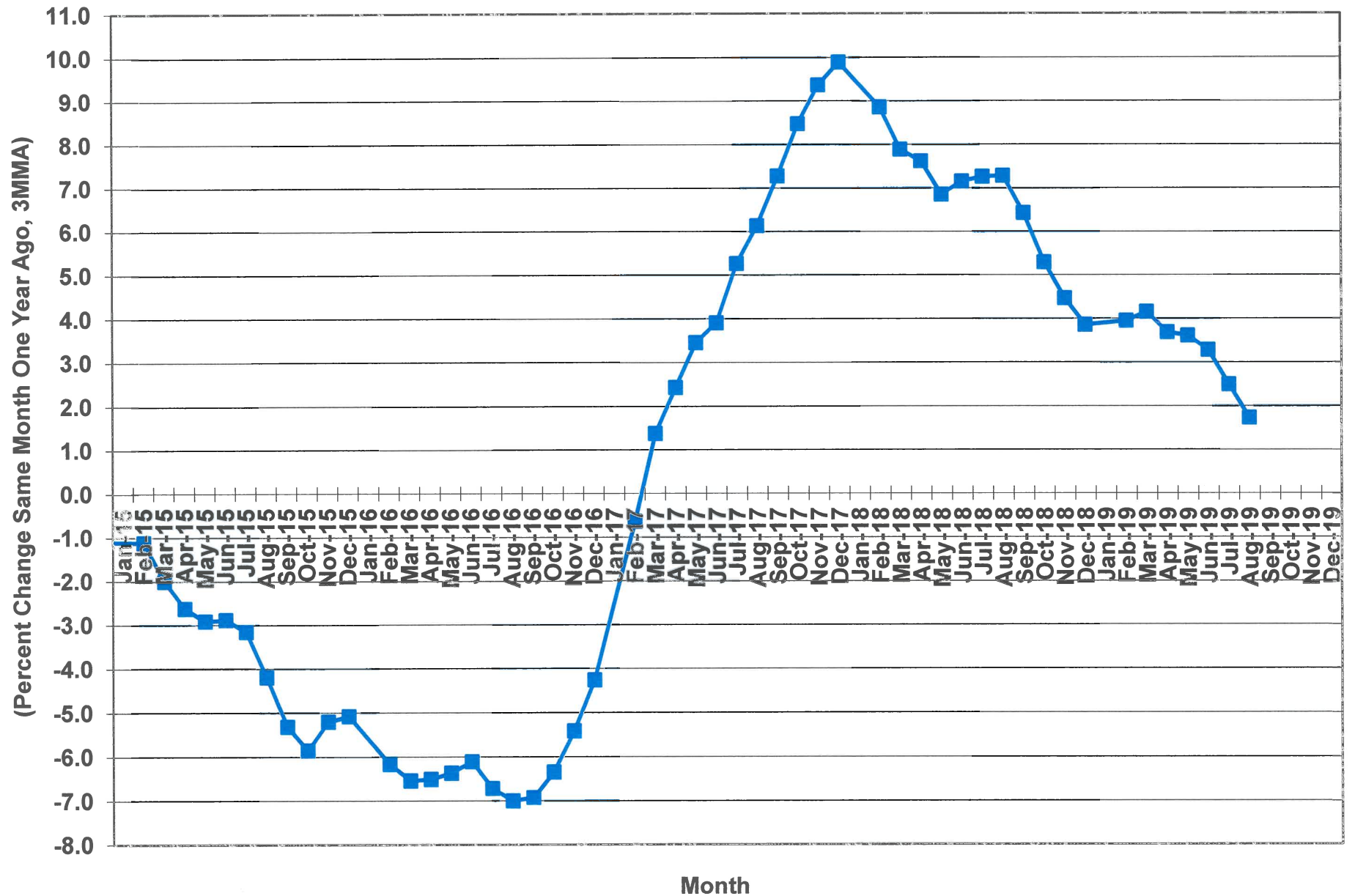
Source: U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.
BEA/RWM/10/04/19

Source: Board of Economic Advisors

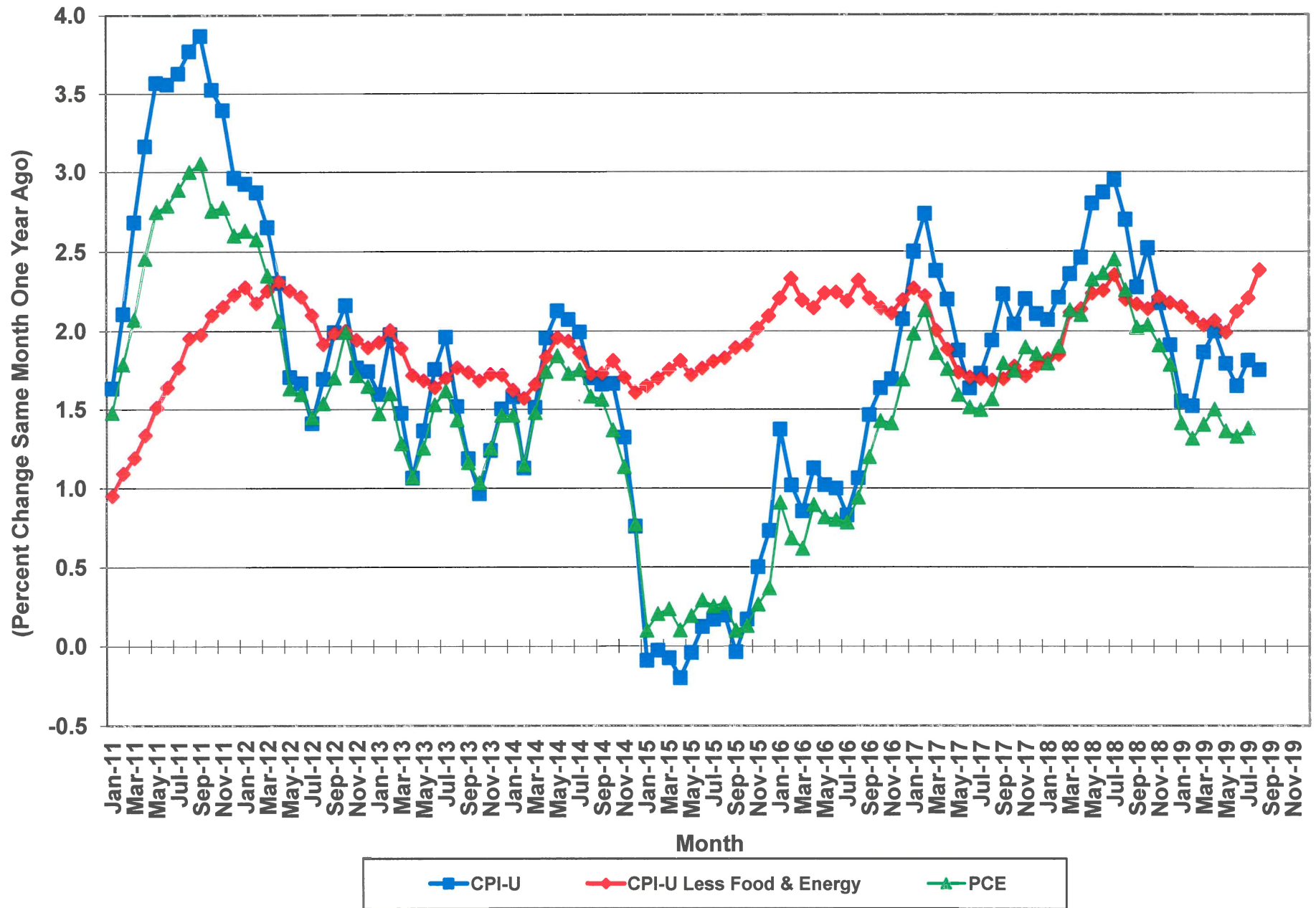
Growth in Total Manufacturer's New Orders of Nondefense Capital Goods Excluding Aircraft in the U.S.



Growth in Total Manufacturer's Shipments of Nondefense Capital Goods Excluding Aircraft in the U.S.

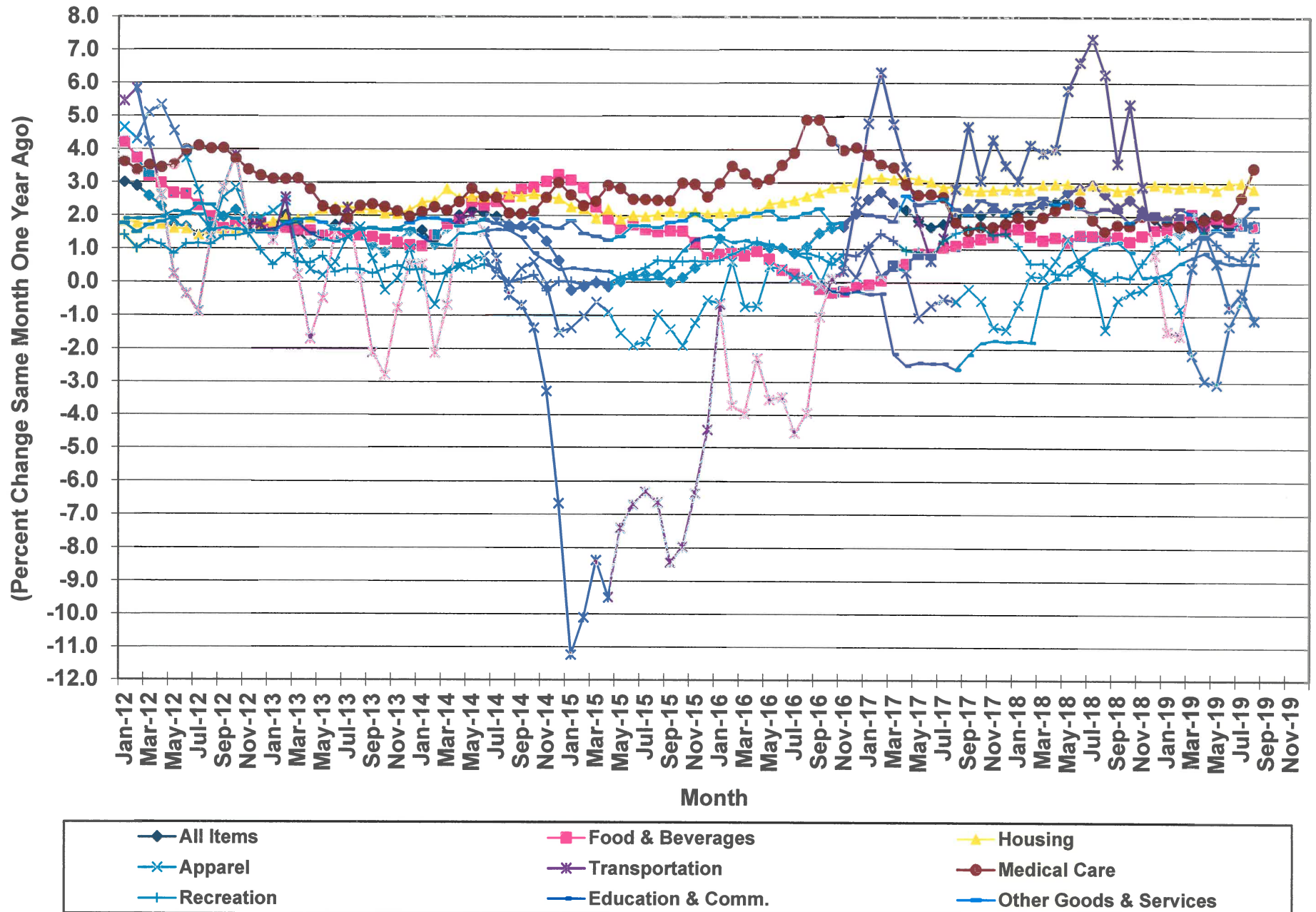


Inflation in the United States



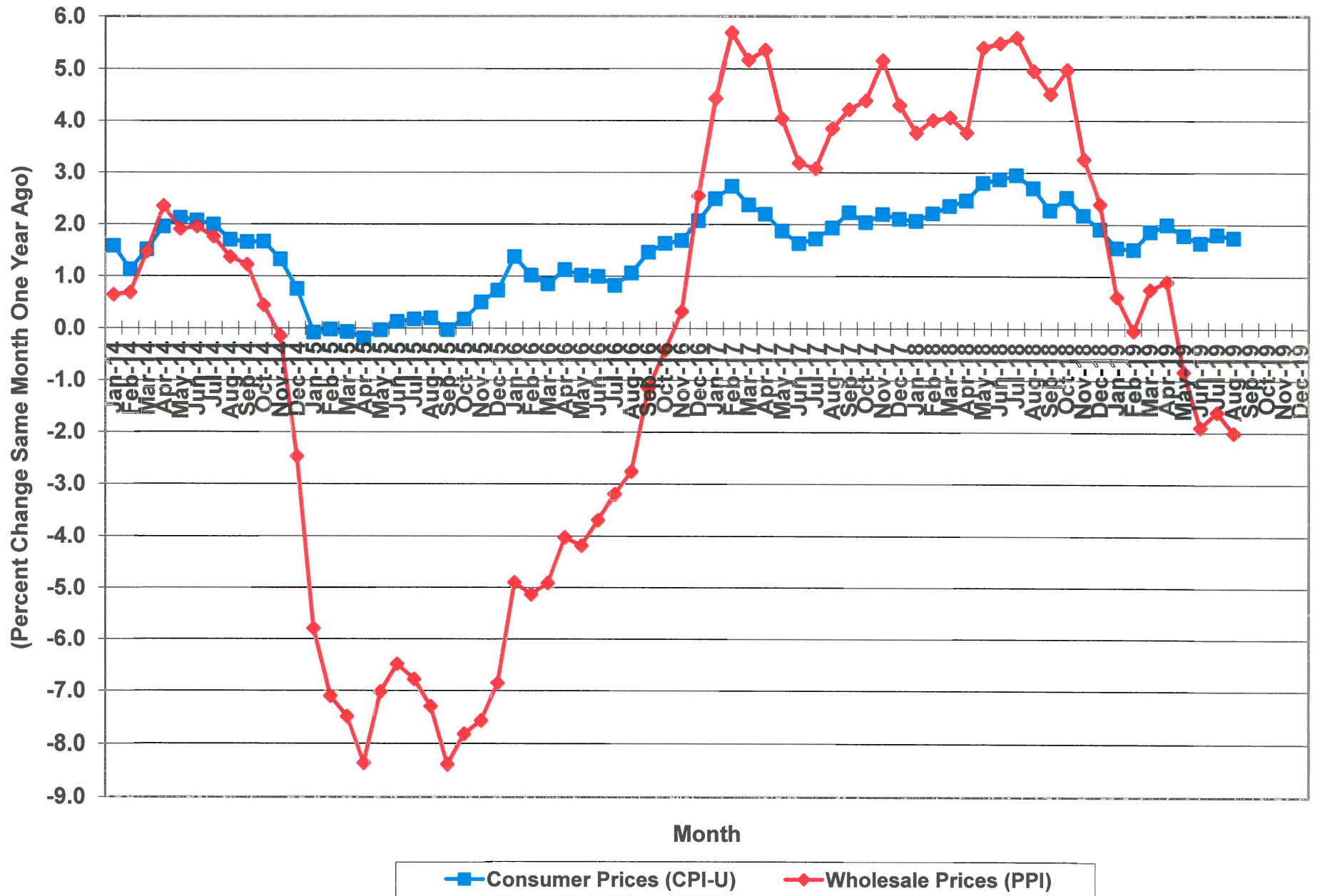
Source: U.S. Department of Labor, Bureau of Labor Statistics

Growth in the Components of Inflation in the U.S.



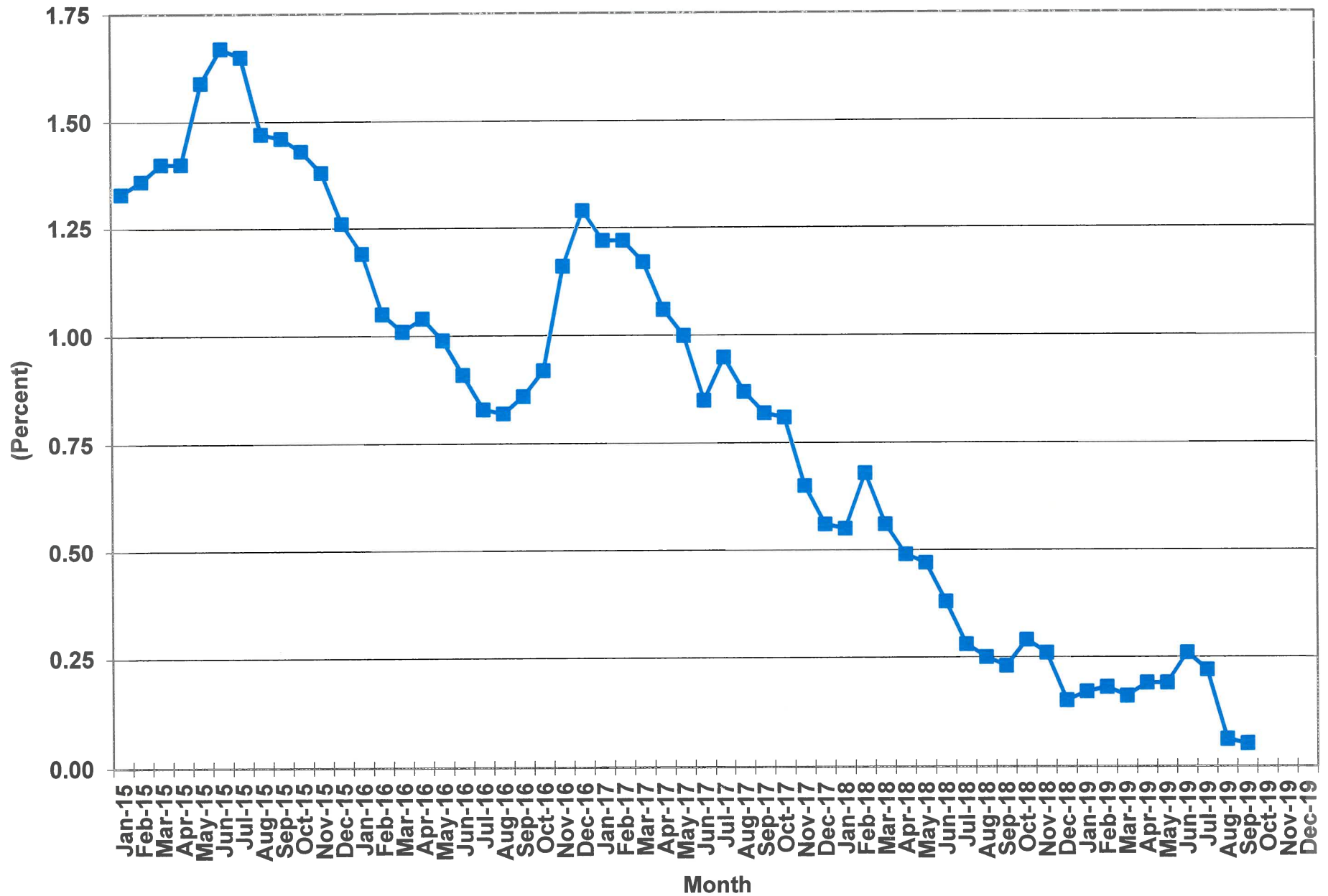
Source: U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

Growth in Consumer Prices and Wholesale Prices in the U.S.

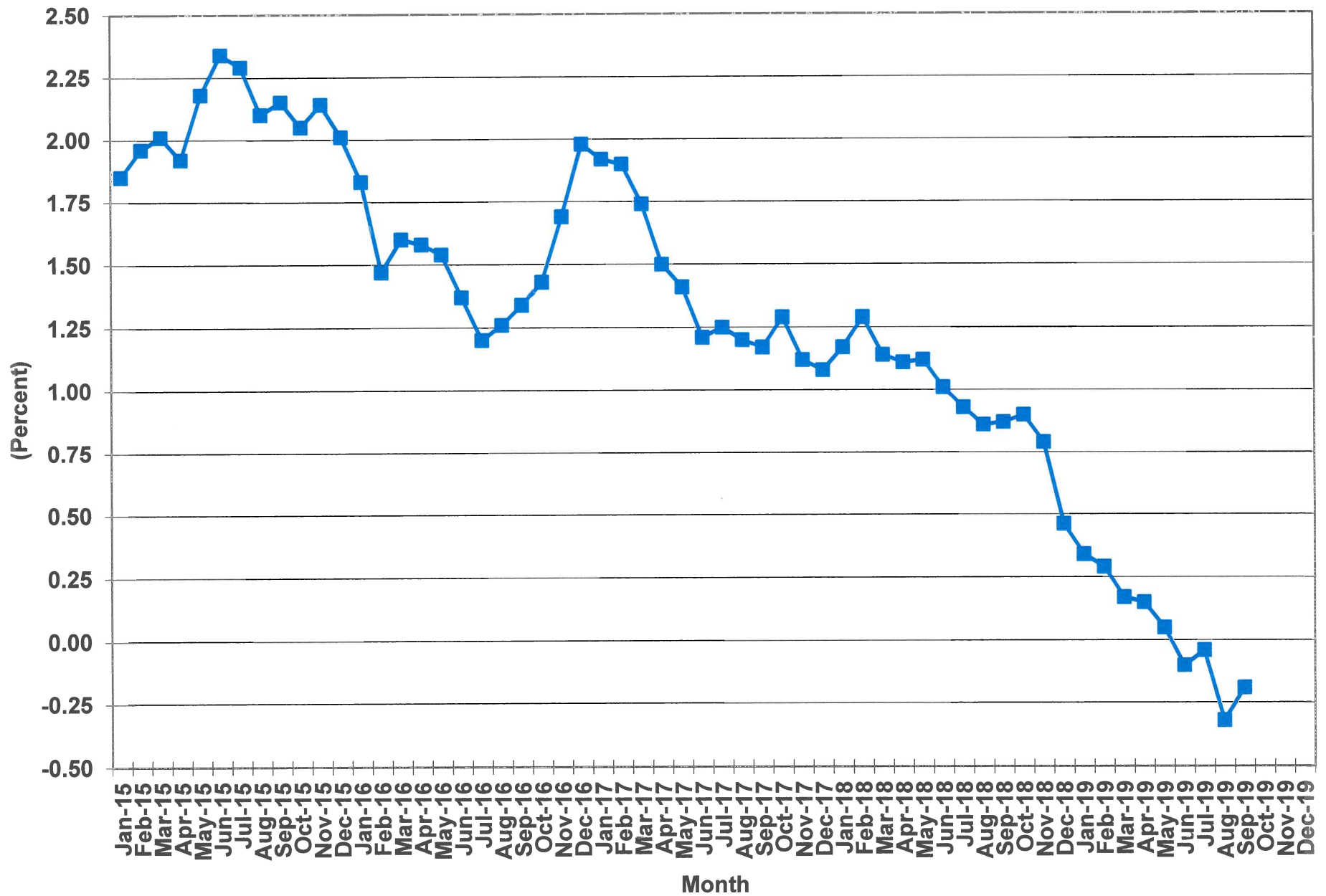


Source: U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.

Interest Rate Spread Between 10-Year Bond & 2-Year Bond



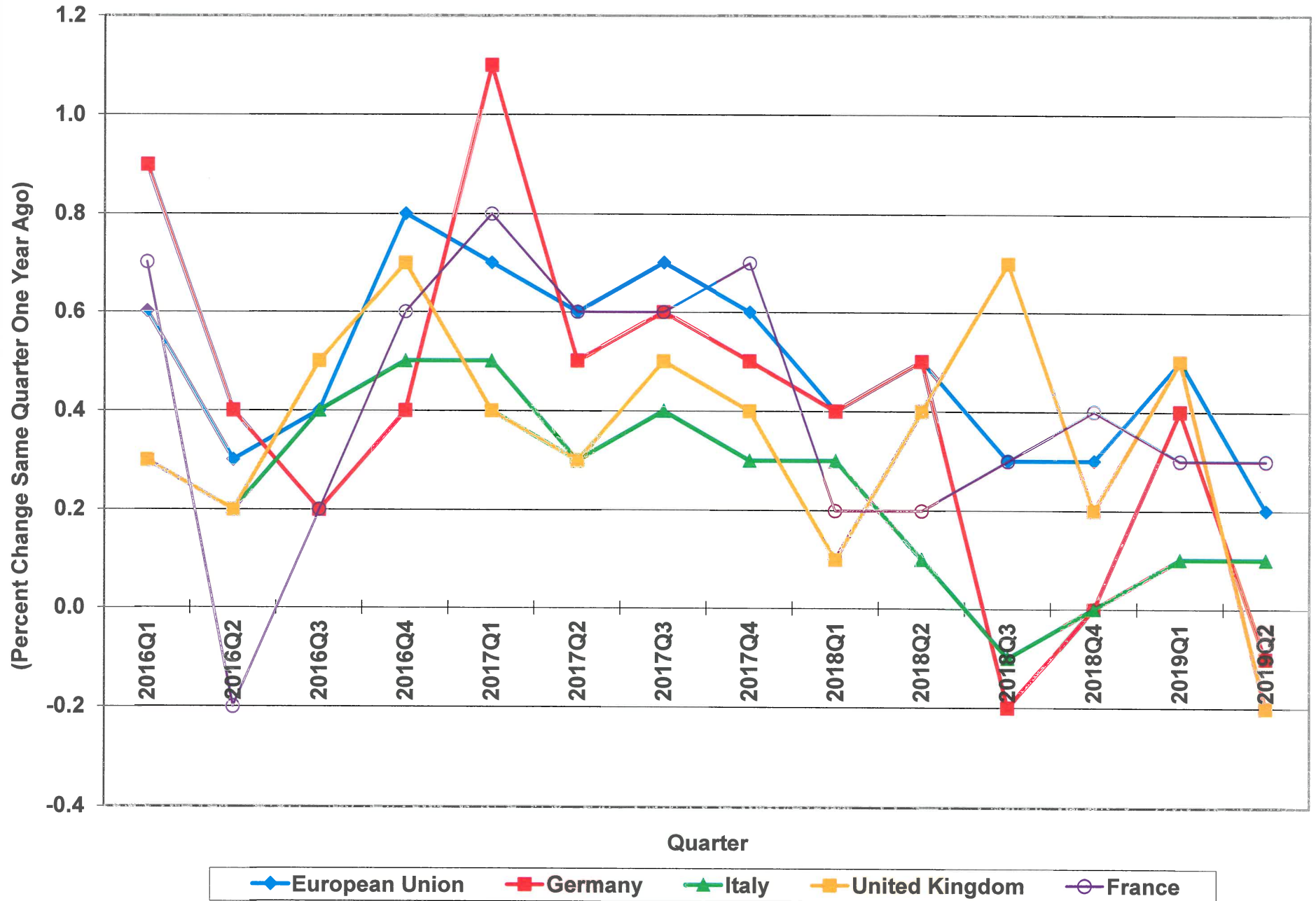
Interest Rate Spread Between 10-Year Bond & 3-Month Bill



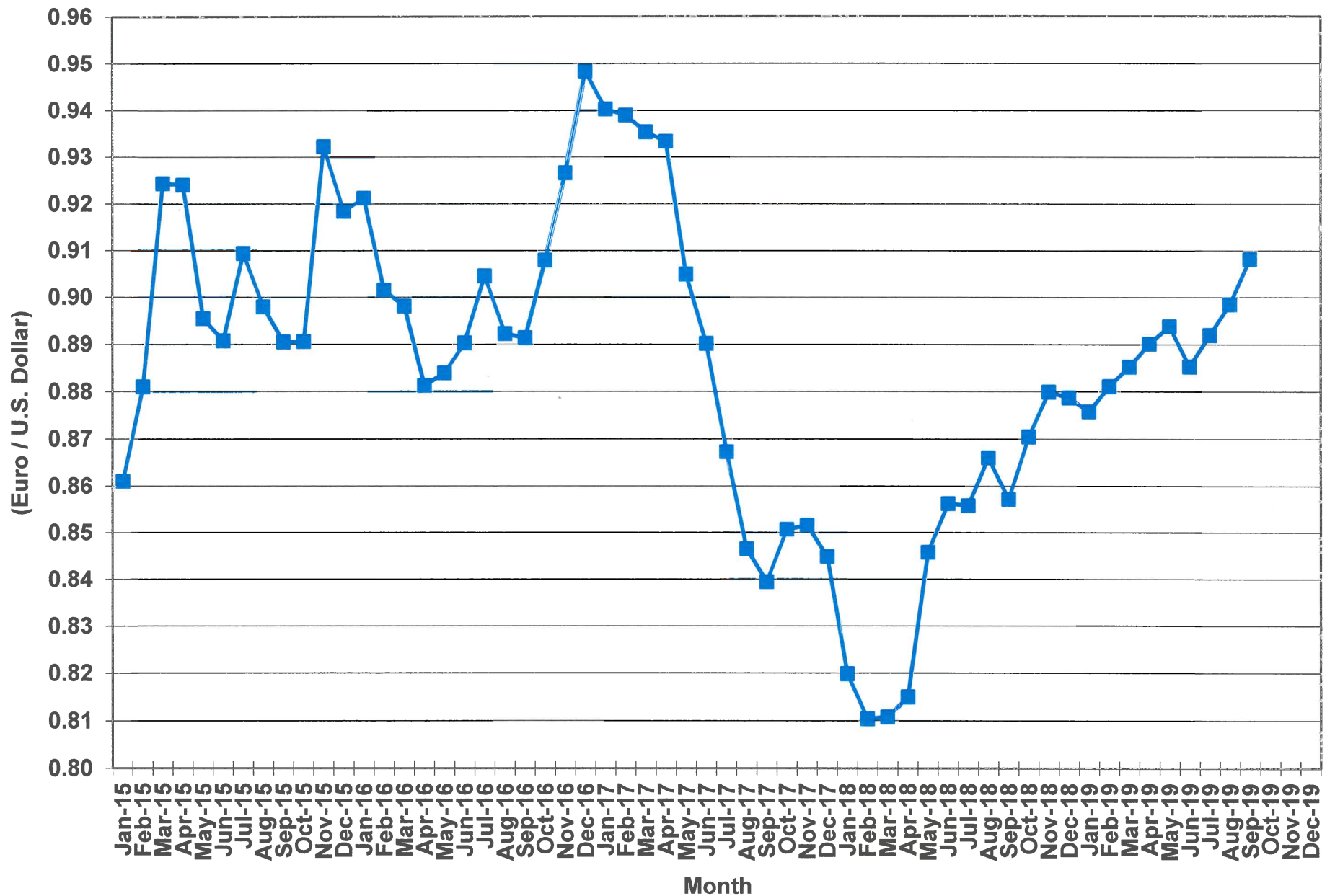


INTERNATIONAL ECONOMY

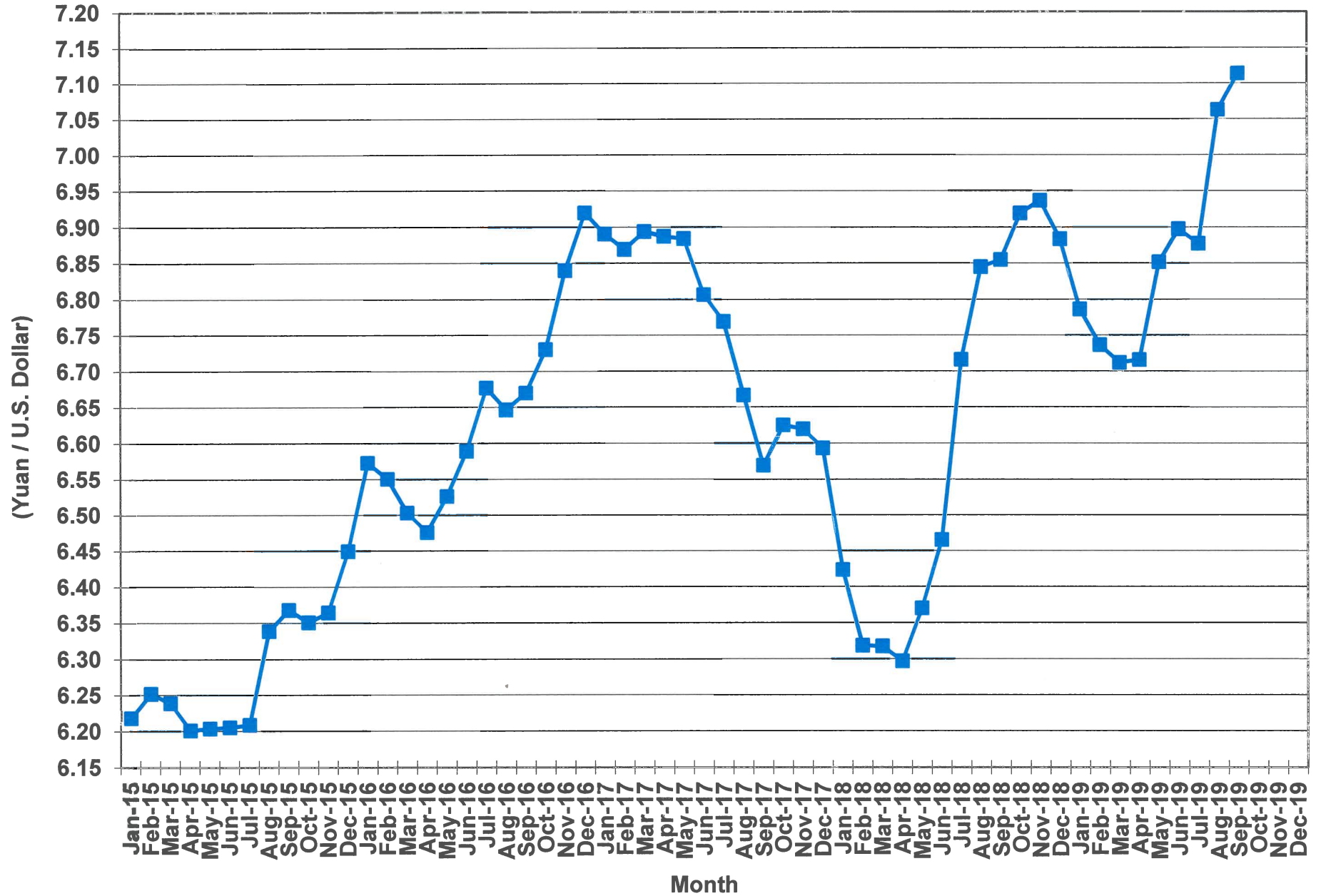
Growth in Real Gross Domestic Product in Europe



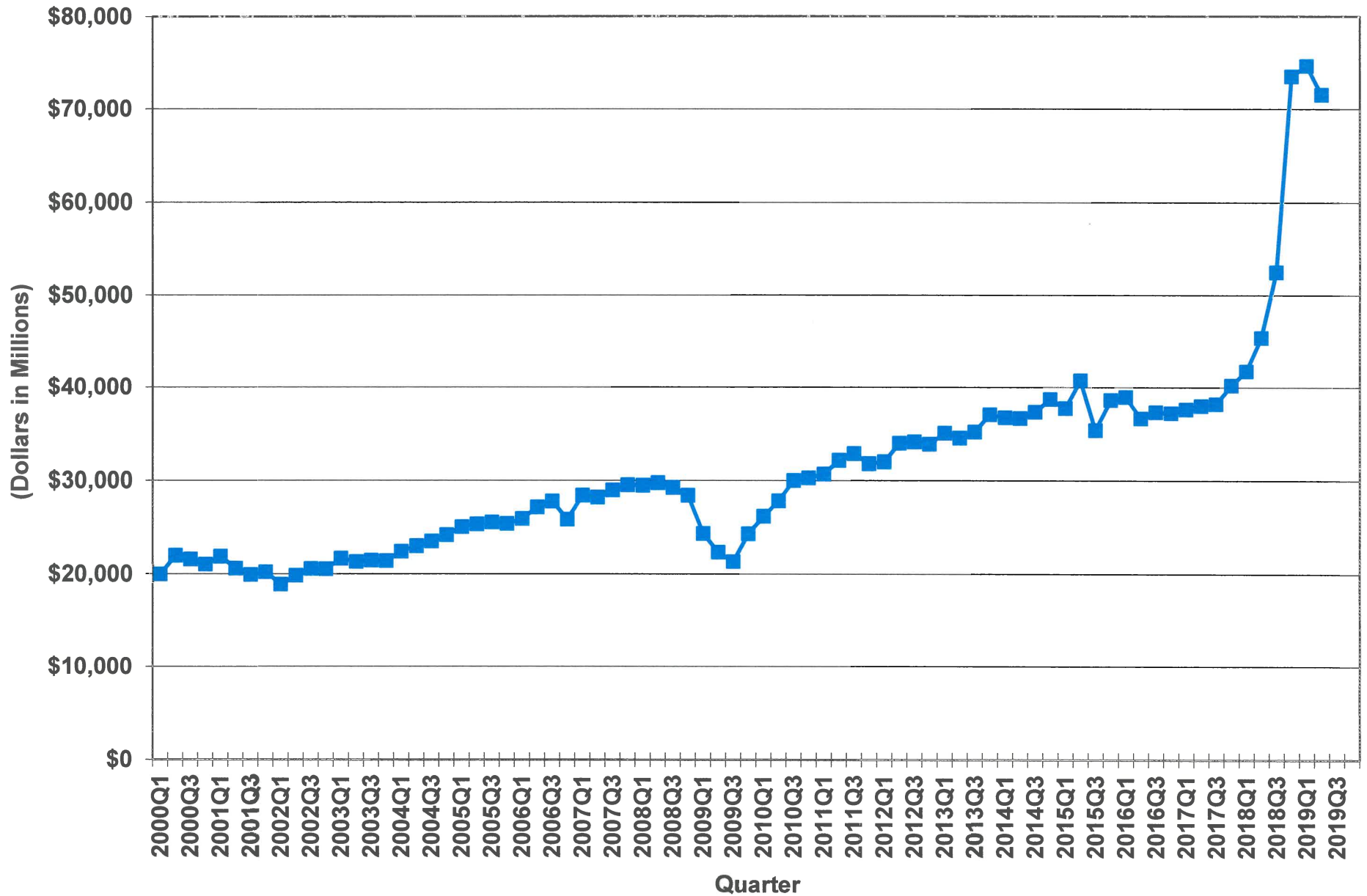
Value of the Euro vs. the U.S. Dollar



Value of the Chinese Yuan vs. the U.S. Dollar

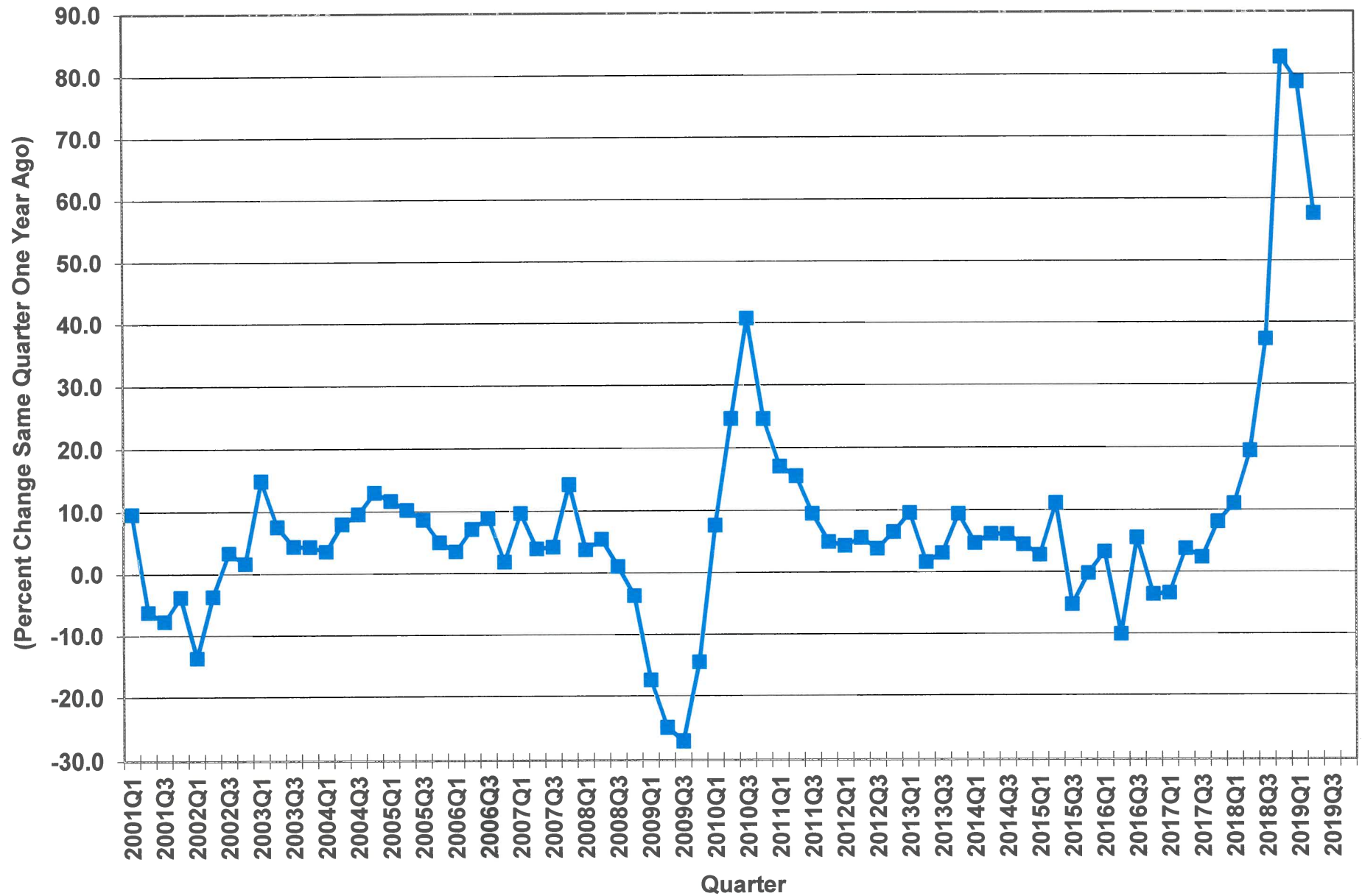


Customs Duties / Tariffs Revenue in the United States

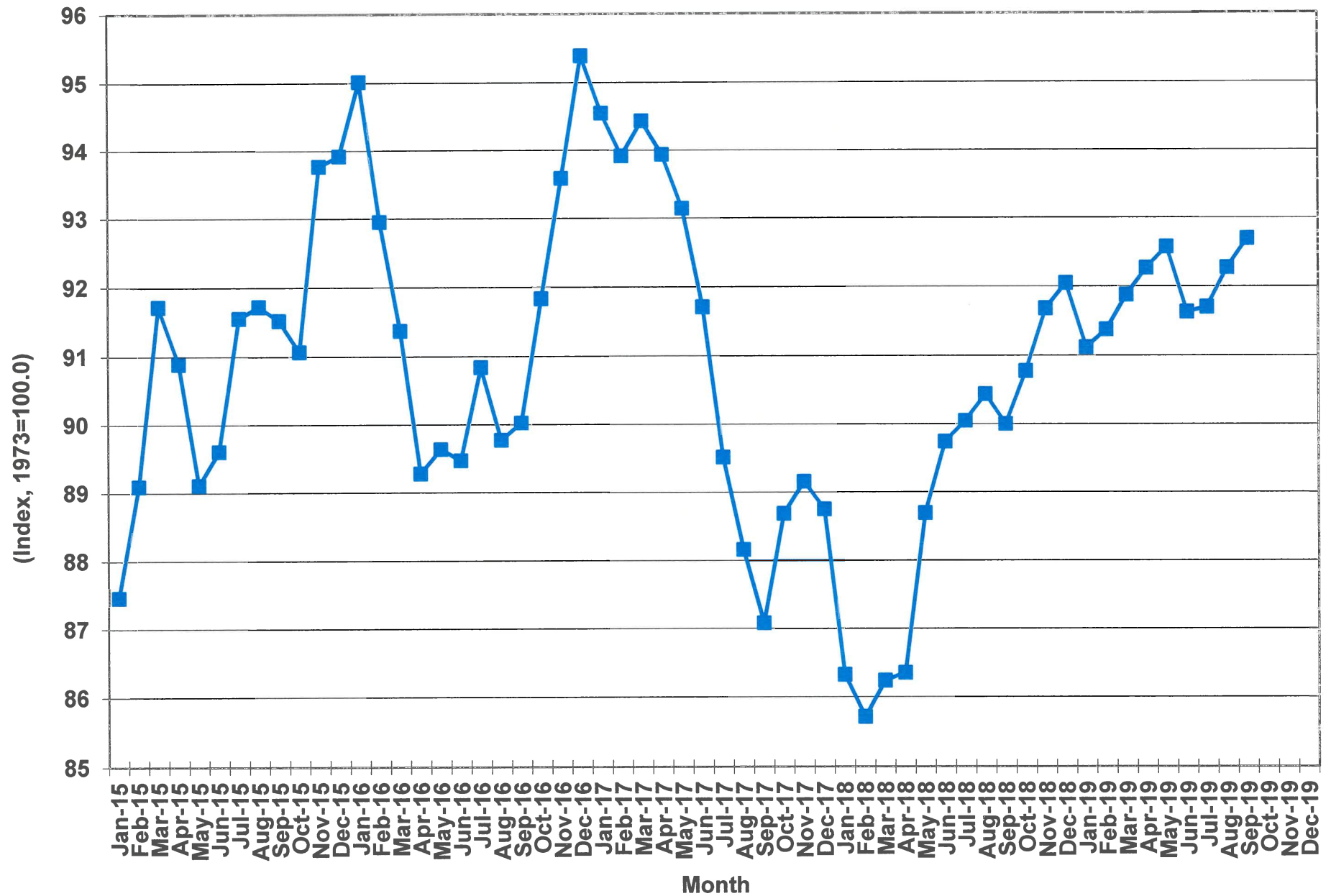


Source: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.

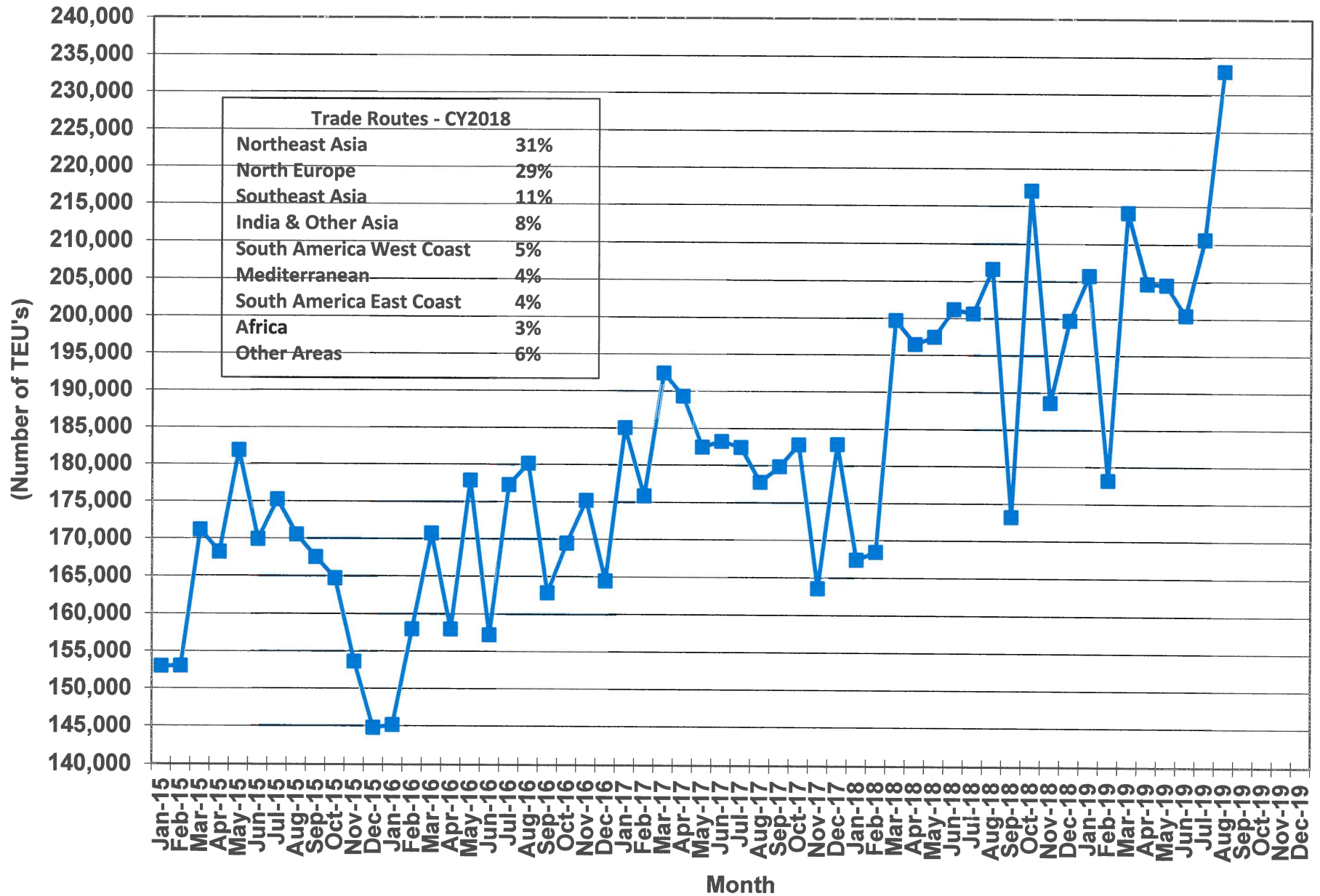
Growth in U.S. Customs Duties / Tariffs Revenue



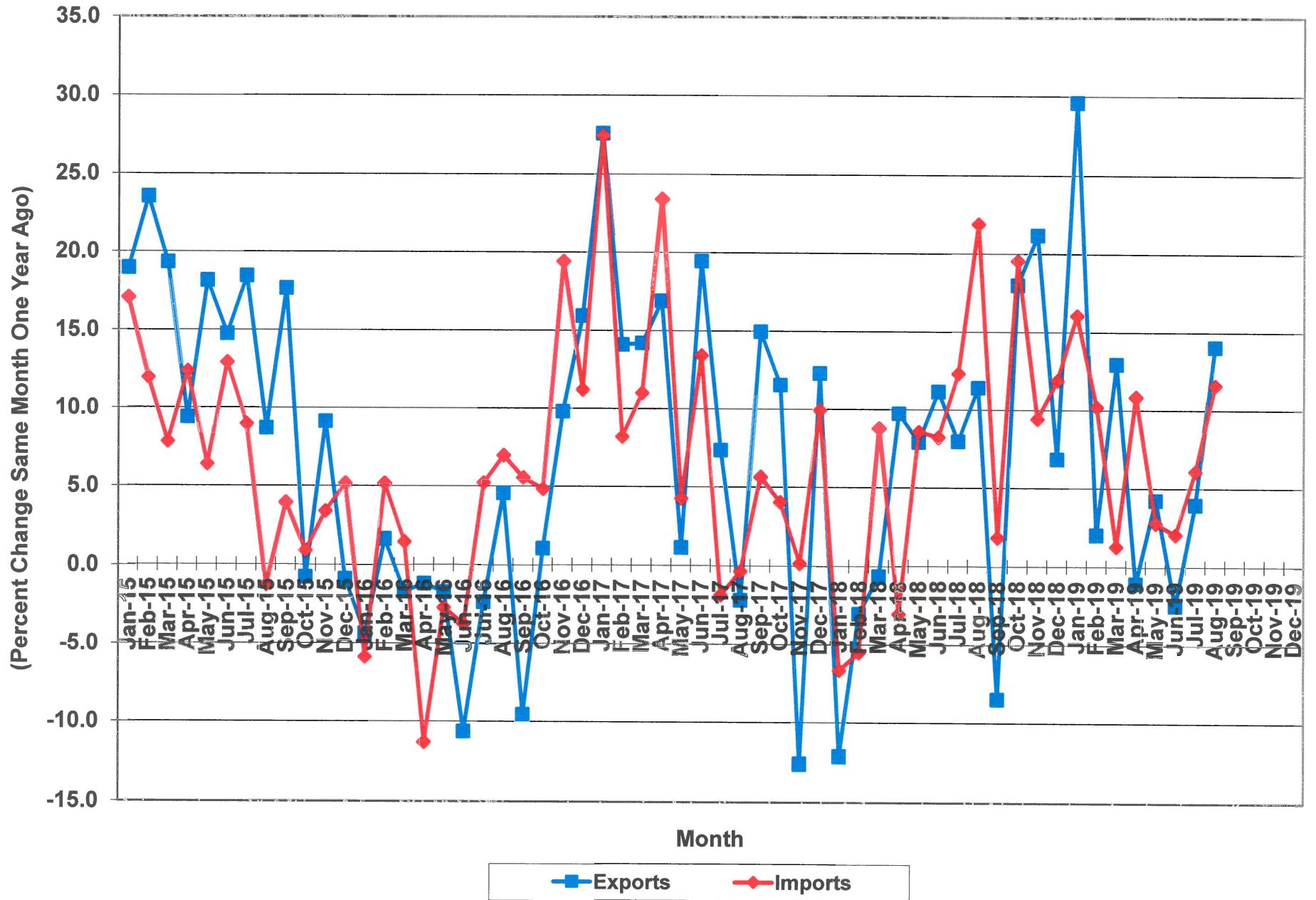
U.S. Trade-Weighted Exchange Rate Index of U.S. Dollar



Total State Port Activity in South Carolina



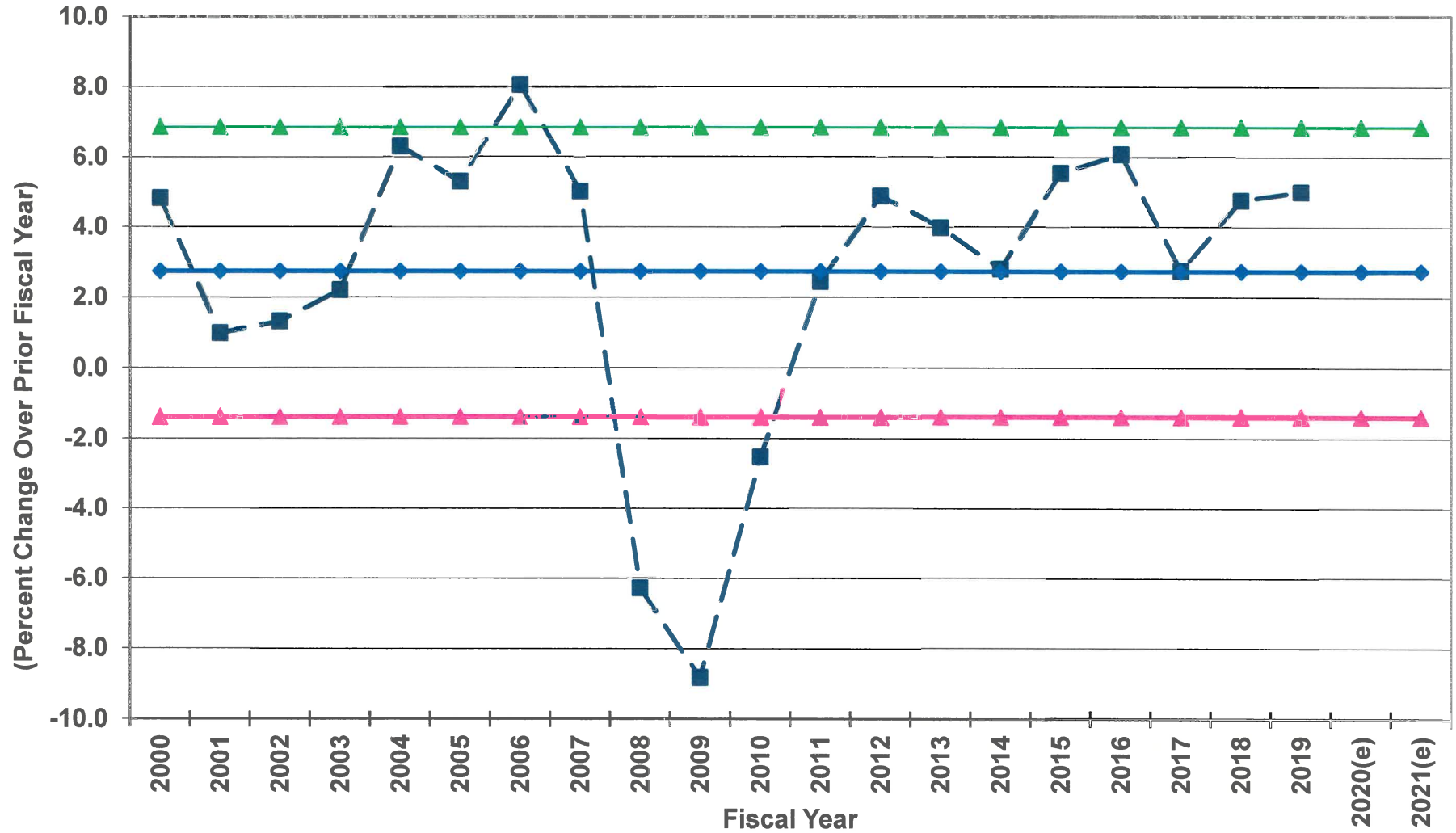
Growth in Port Activity in South Carolina





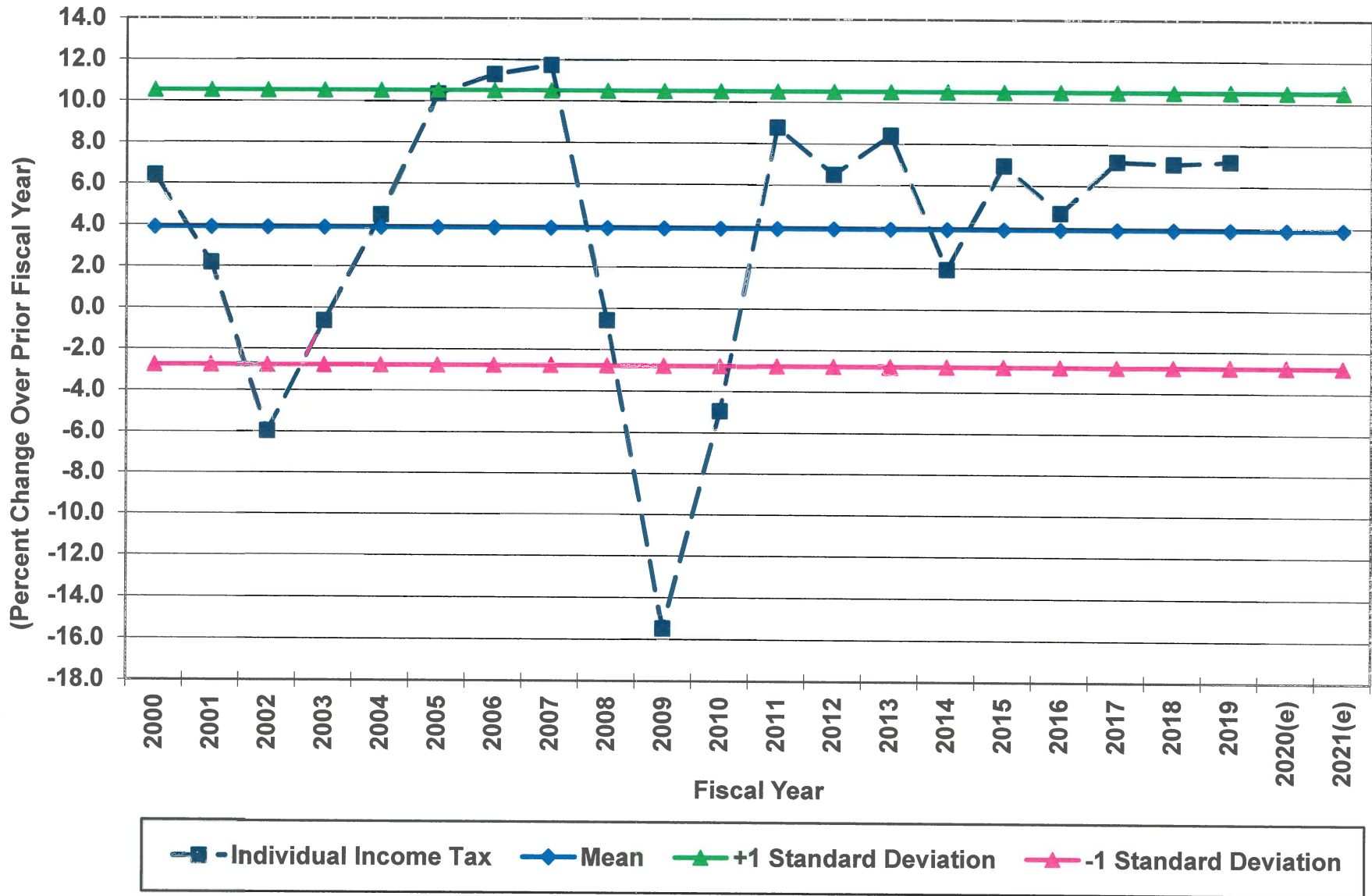
BASE ECONOMIC ASSUMPTIONS

General Fund Sales Tax Revenue Growth in South Carolina



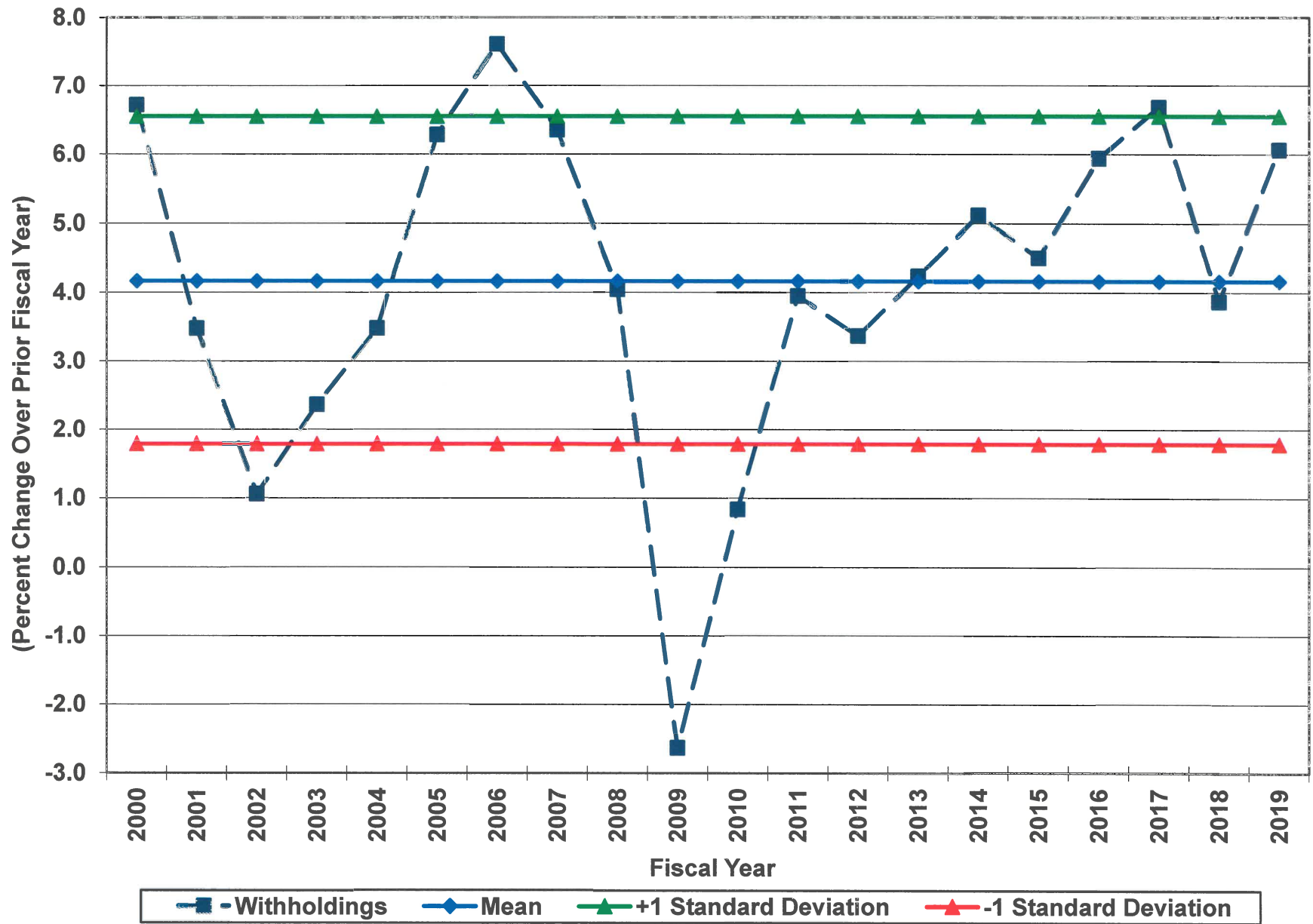
Source: Board of Economic Advisors
BEA/RWM/09/06/19

General Fund Individual Income Tax Revenue Growth in South Carolina



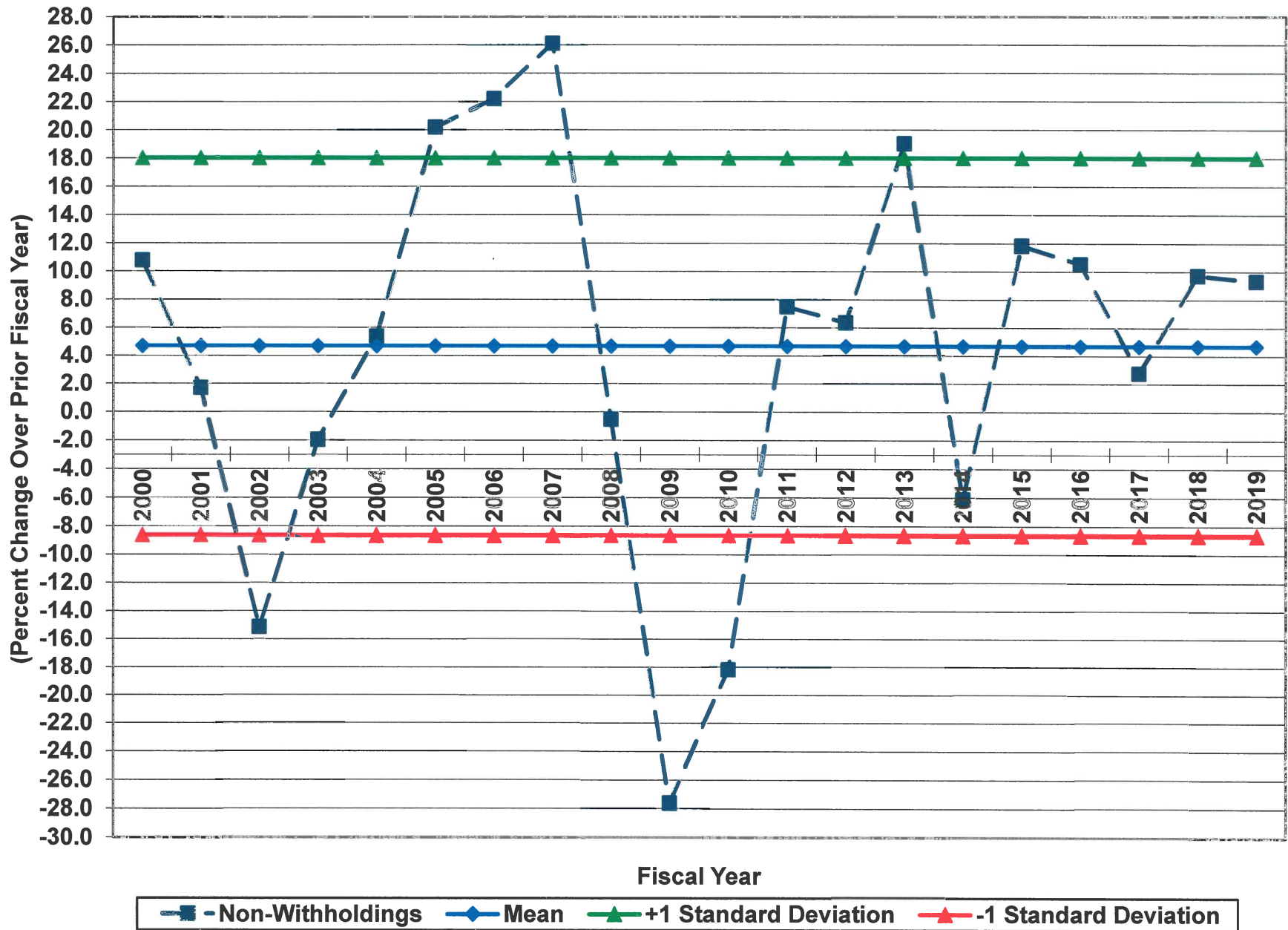
Source: Board of Economic Advisors
BEA/RWM/09/06/19

Individual Income Tax Withholdings in South Carolina

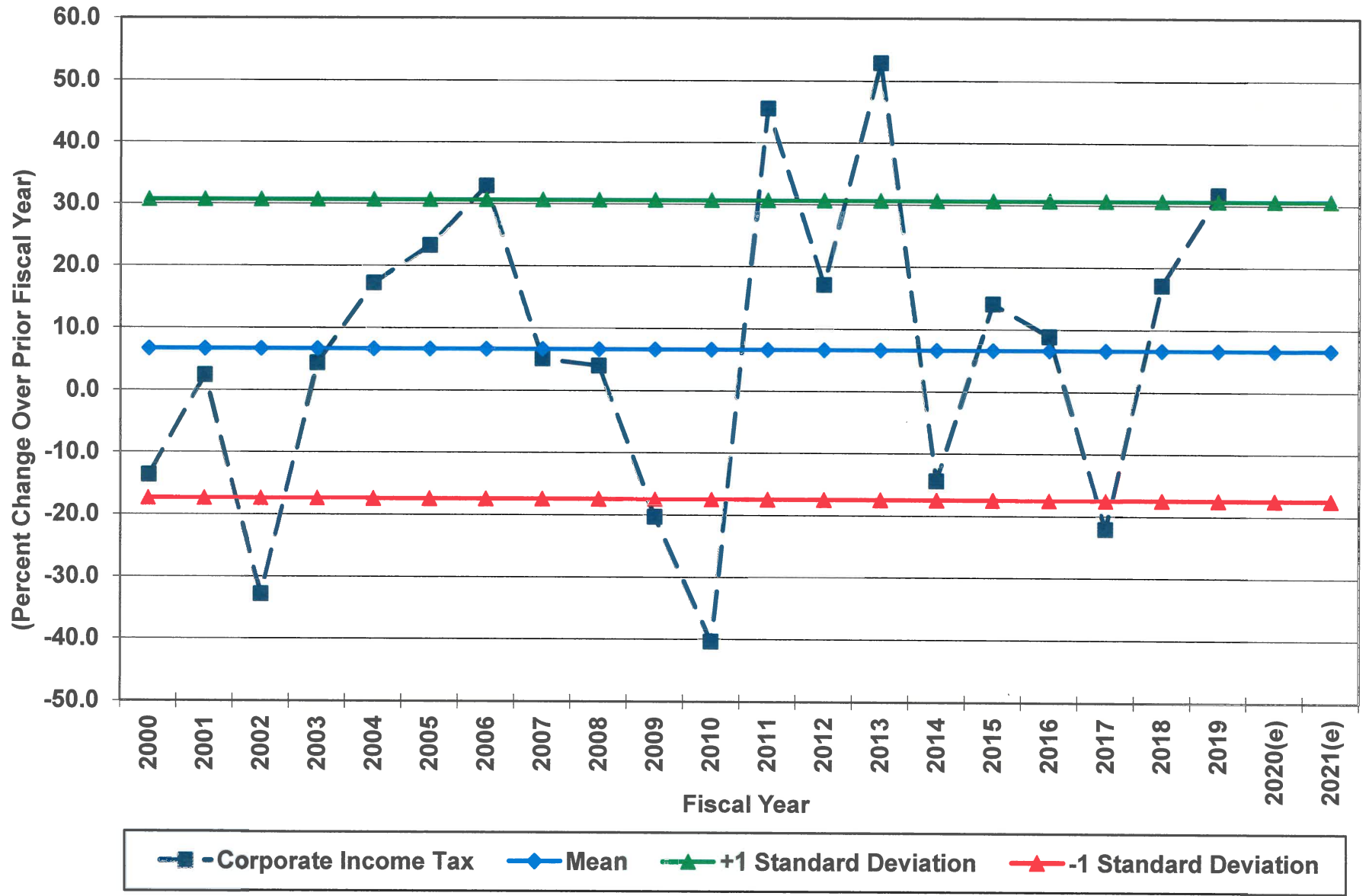


Source: Board of Economic Advisors
BEA/RWM/10/06/19

Individual Income Tax Non-Withholdings in South Carolina

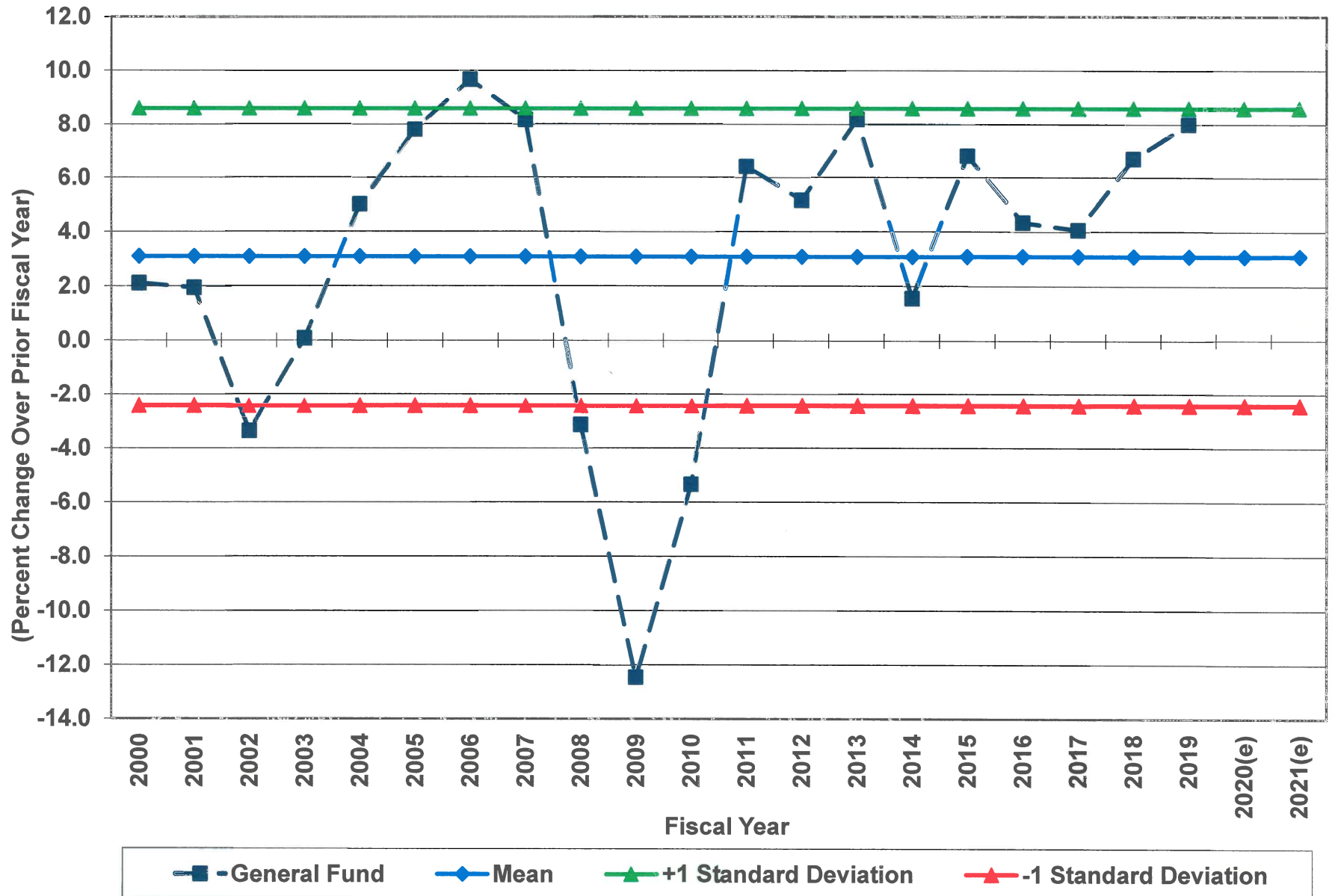


General Fund Corporate Income Tax Revenue Growth in South Carolina



Source: Board of Economic Advisors
BEA/RWM/09/06/19

Growth in General Fund Revenue in South Carolina



Source: Board of Economic Advisors
BEA/RWM/09/06/19

OTHER BUSINESS

REPORTS FROM WORKING GROUP

October 17, 2019

 South Carolina Revenue and Fiscal Affairs Office

FUTURE MEETING SCHEDULE

- A. November 8, 2019, 1:30 – Preliminary Forecast
- B. December 12, 2019, 1:30 – **If necessary, GoToMeeting** for Members
- C. 2019 Calendar at <http://rfa.sc.gov/meetings?y=2019>

WELCOME

to the

ANNUAL REGIONAL ECONOMIC ADVISORS

MEETING

October 17, 2019



REGIONAL ADVISORY COMMITTEE

Dr. Frank Hefner

Dr. Russell S. Sobel

Dr. Matthew Martin

(Unable to attend - submitted
Forecast and Analysis)

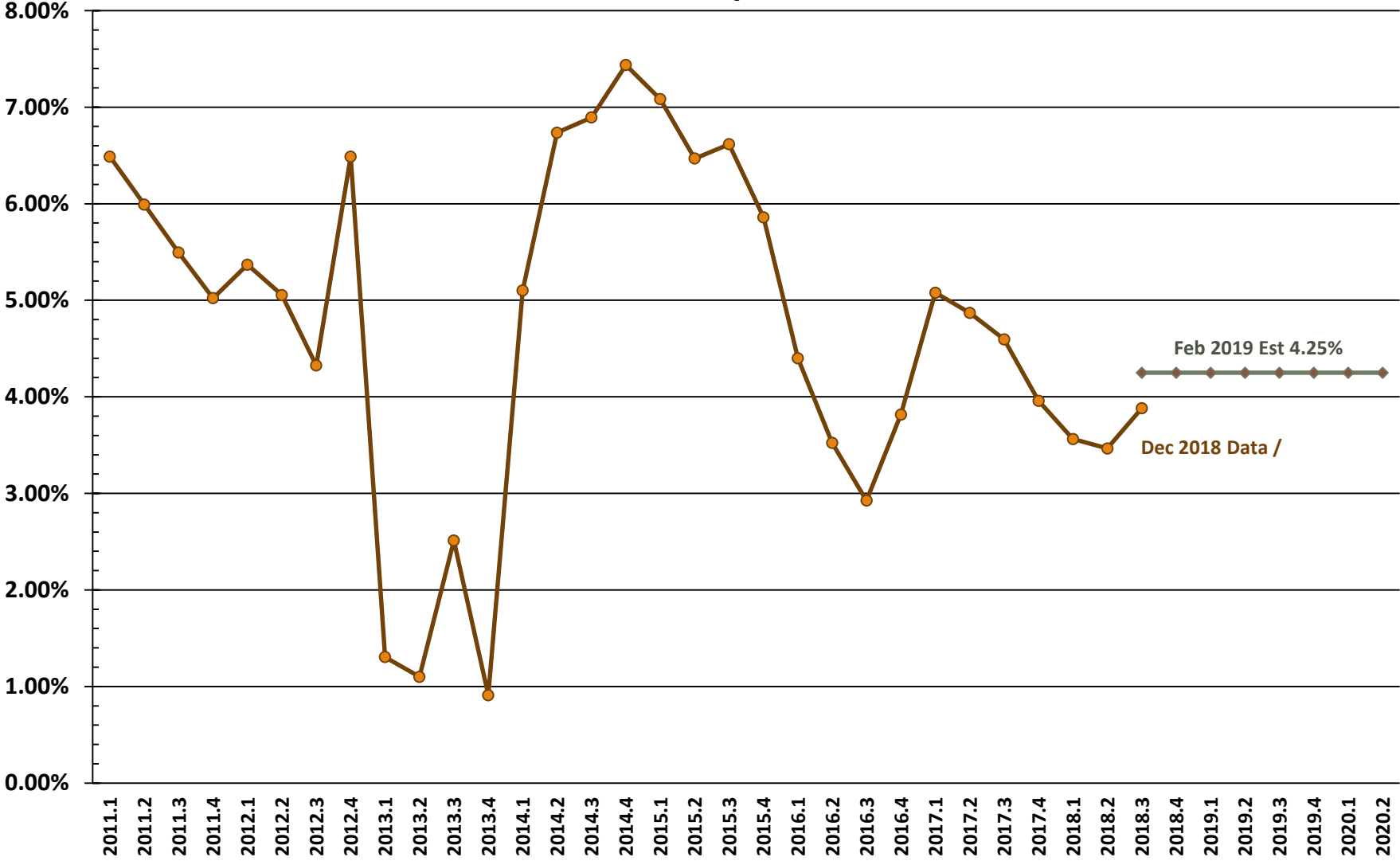
Mr. Mark Vitner

Dr. Raymond Sauer

Dr. Joseph Von Nessen

SC Personal Income Annual Percent Growth

Dec 2018 Series v. Sep 2019 Revision



Source: Revenue and Fiscal Affairs/FAR/260/10-11-19



The call by the Bureau of Economic Analysis is under review.

SC Personal Income Annual Percent Growth

Dec 2018 Series v. Sep 2019 Revision



Source: Revenue and Fiscal Affairs/FAR/261/10-11-19

SIR ISAAC NEWTON

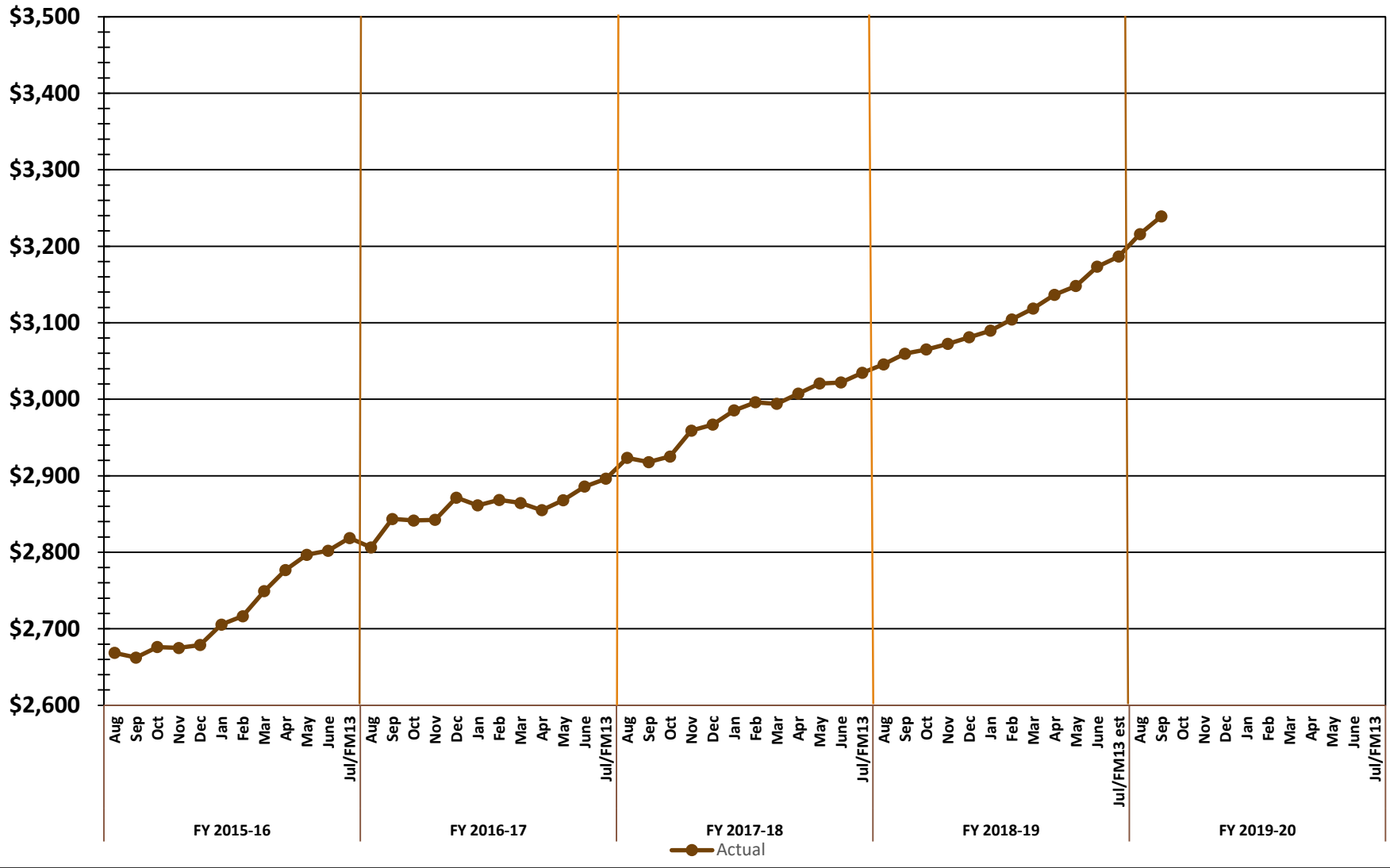
FIRST LAW OF MOTION

“EVERY OBJECT PERSISTS ... IN ITS UNIFORM MOTION IN A STRAIGHT LINE UNLESS IT IS COMPELLED TO CHANGE THAT STATE BY FORCES ACTED UPON IT”



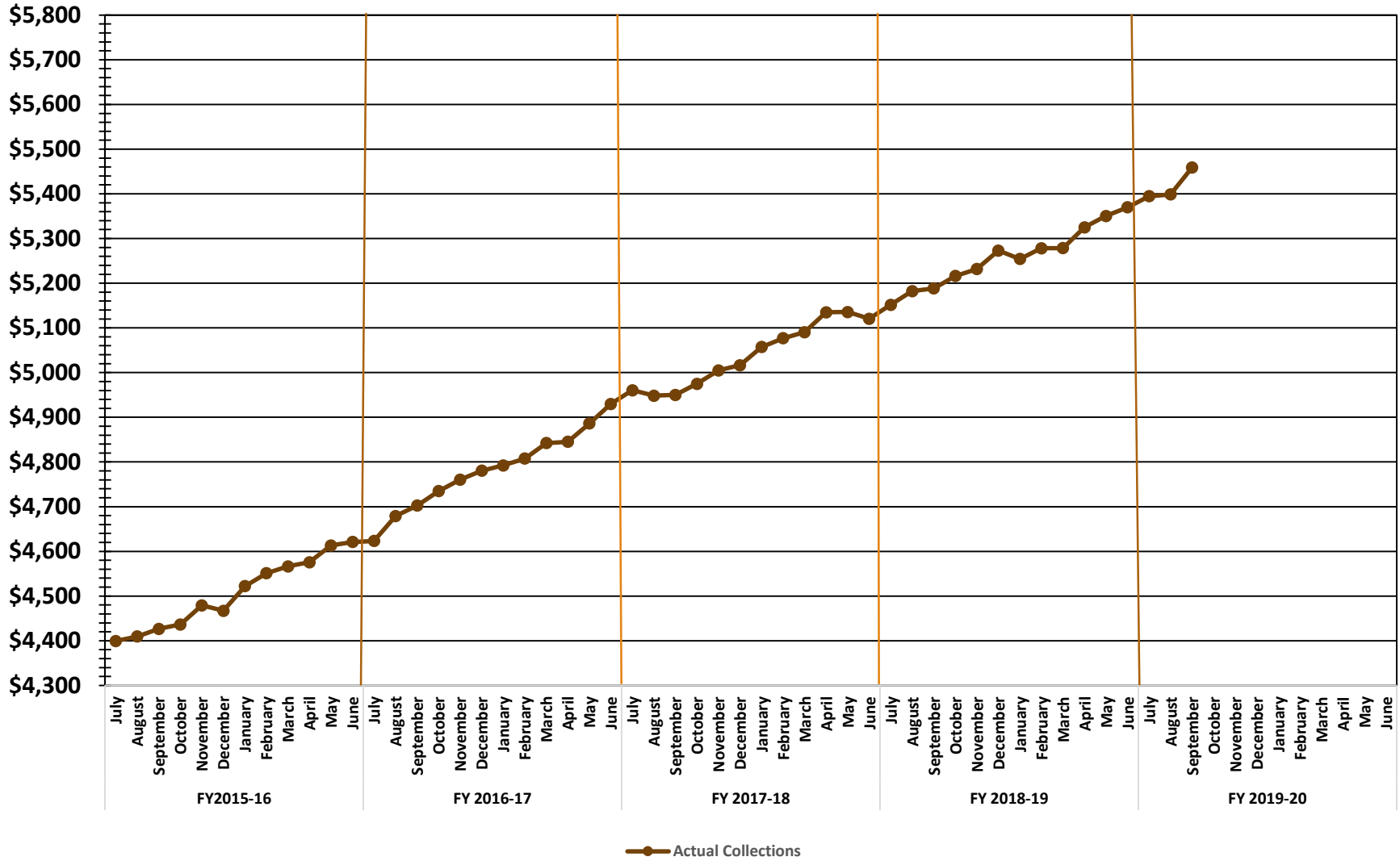
TOTAL SALES & USE TAX

Rolling Fiscal Year Totals FY 2015-16 to FY 2019-20



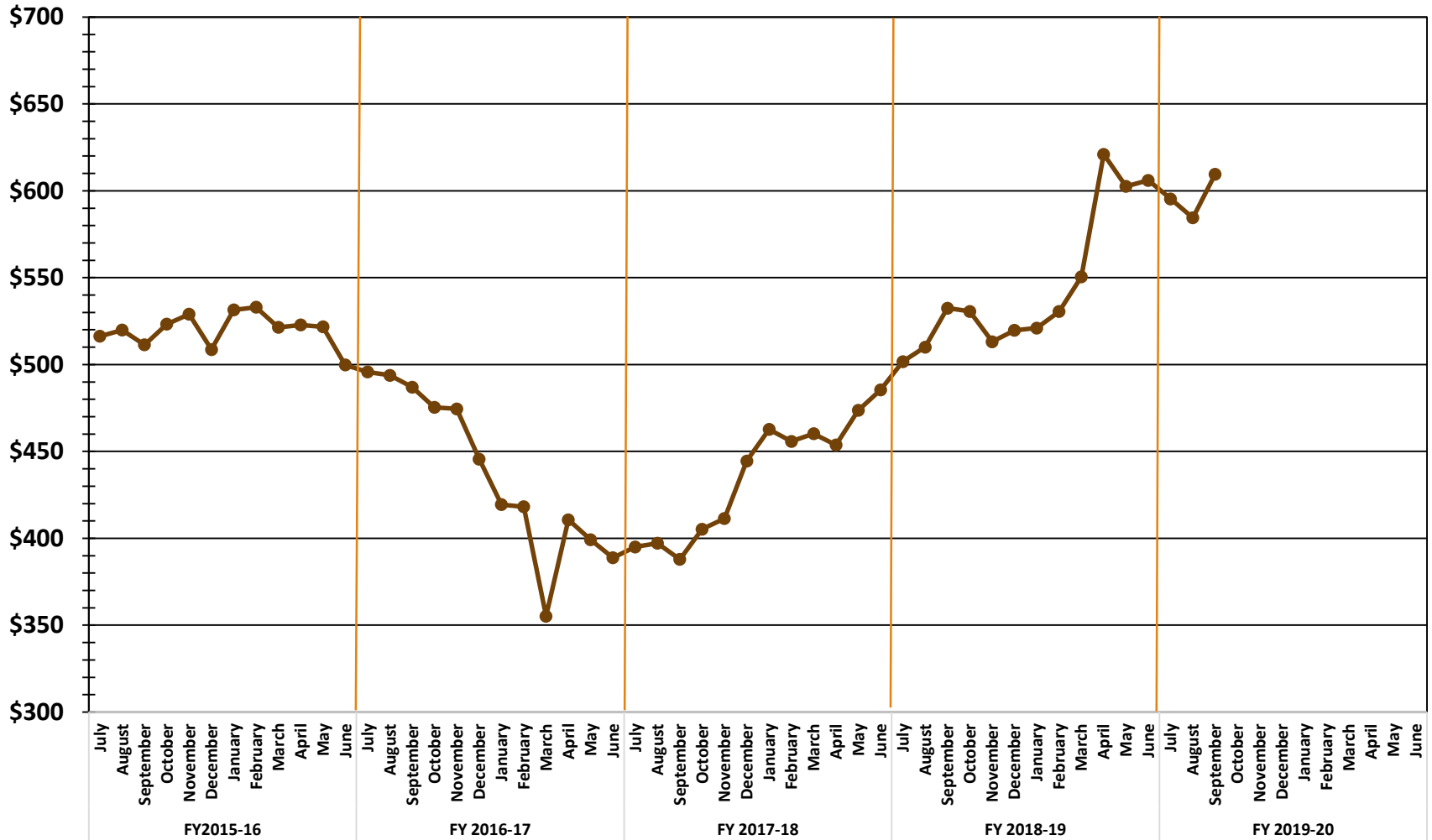
INDIVIDUAL INCOME - WITHHOLDINGS TAX

Rolling Fiscal Year Totals - FY 2015-16 to FY 2019-2020 (Ex. Lottery)



TOTAL COMBINED CORPORATE INCOME & LICENSE TAXES

Rolling Fiscal Year Totals - FY 2015-16 to FY 2019-20



DISCUSSION TOPICS

- ❖ **What forces do you see impacting current trends in economic growth in the nation or South Carolina over the next 18 months and to what degree?**
- ❖ **What are the key risks affecting your outlook?**

South Carolina in 2020

A Market Overview



UNIVERSITY OF
SOUTH CAROLINA

Darla Moore School of Business

Joseph Von Nessen, Ph.D.

Research Economist

October 17, 2019

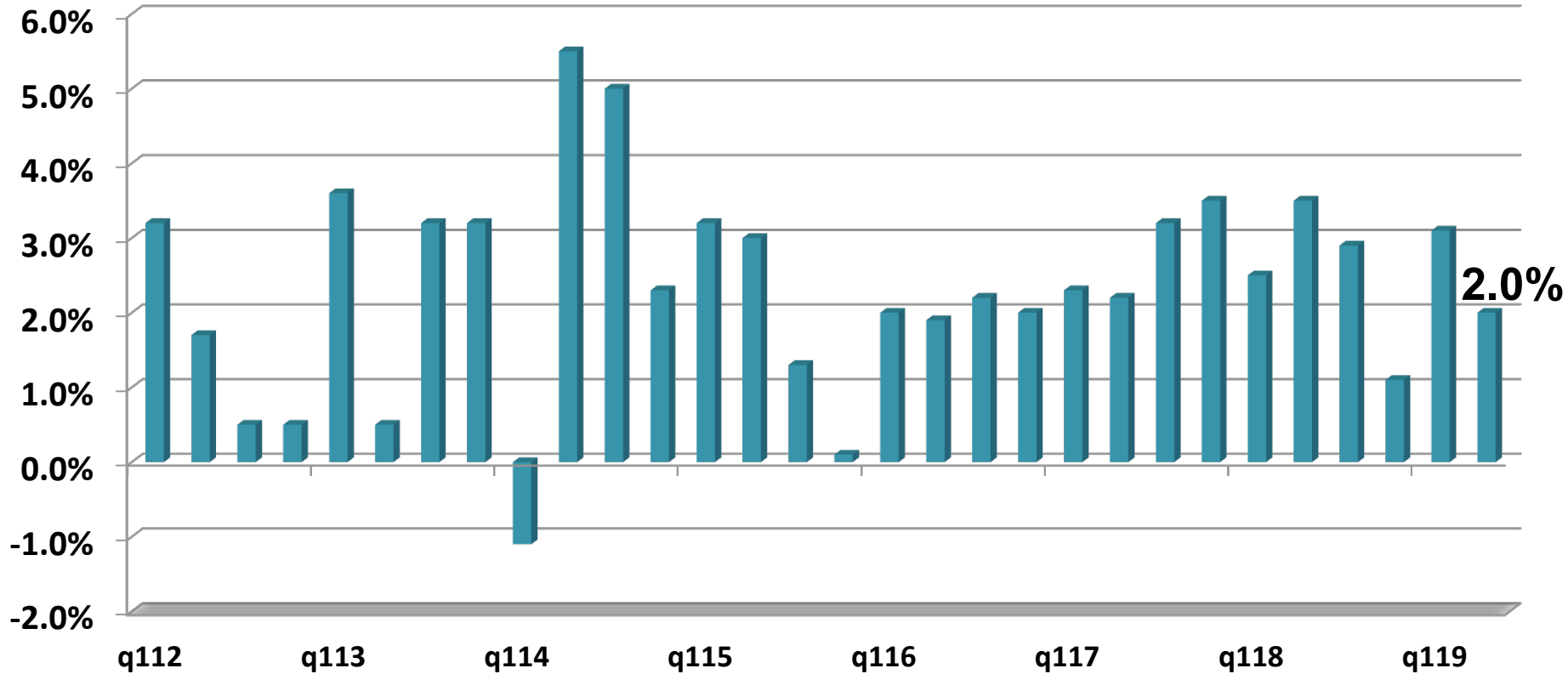
joey.vonnessen@moore.sc.edu



Economic Roller Coaster!



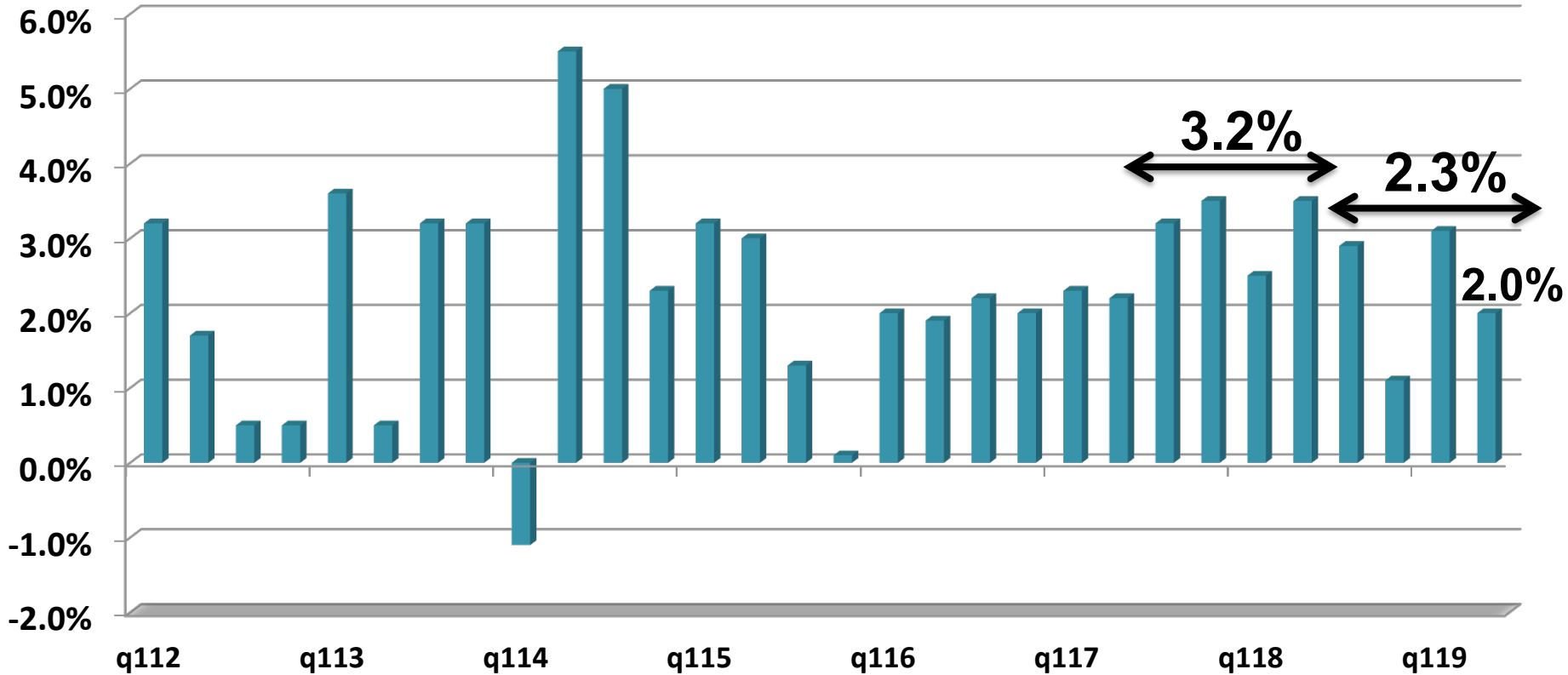
U.S. GDP Growth (Annualized)



Source: U.S. Bureau of Economic Analysis



U.S. GDP Growth (Annualized)



Source: U.S. Bureau of Economic Analysis



Why is there So Much Uncertainty?

- Tariffs and trade disputes
- Global markets have slowed
- Interest rates in flux
- Expiration of the “Trump Bump”



Where Are We Headed Next?

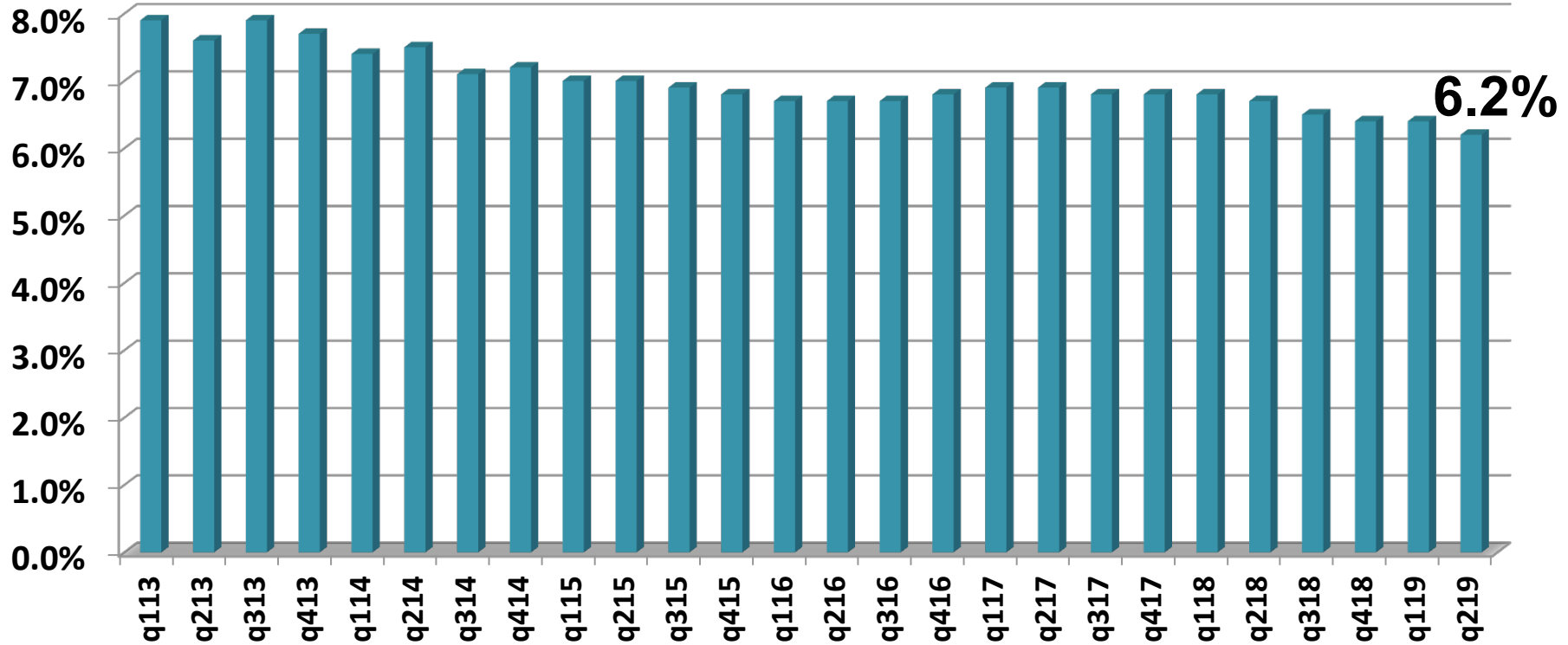


The Trade Talks Persist...

- 2018 U.S. tariffs
 - 10 percent tariffs on \$250 billion of Chinese goods implemented
- 2018 China retaliates
 - Duties on \$110 billion of U.S. goods
 - 40 percent tariff on U.S. autos
- 2019 Ongoing Negotiations...
 - January: Chinese auto tariffs reduced to 15 percent
 - May: U.S. tariffs increased from 10 percent to 25 percent
 - October: Further increases in U.S. tariffs delayed due to progress in trade talks
 - *December: China to implement 25% tariff on autos???*



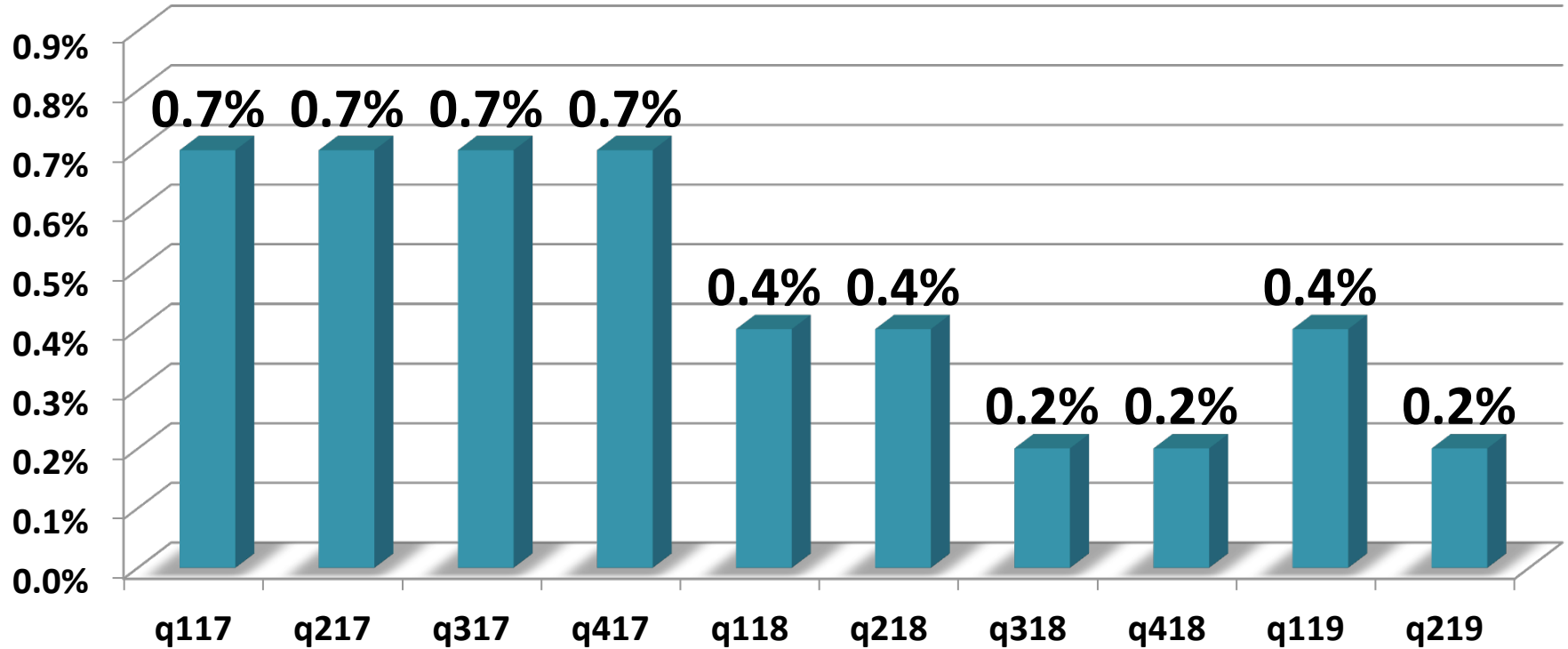
China's GDP Growth (Annualized)



Source: Wind Economic Database, October 2019



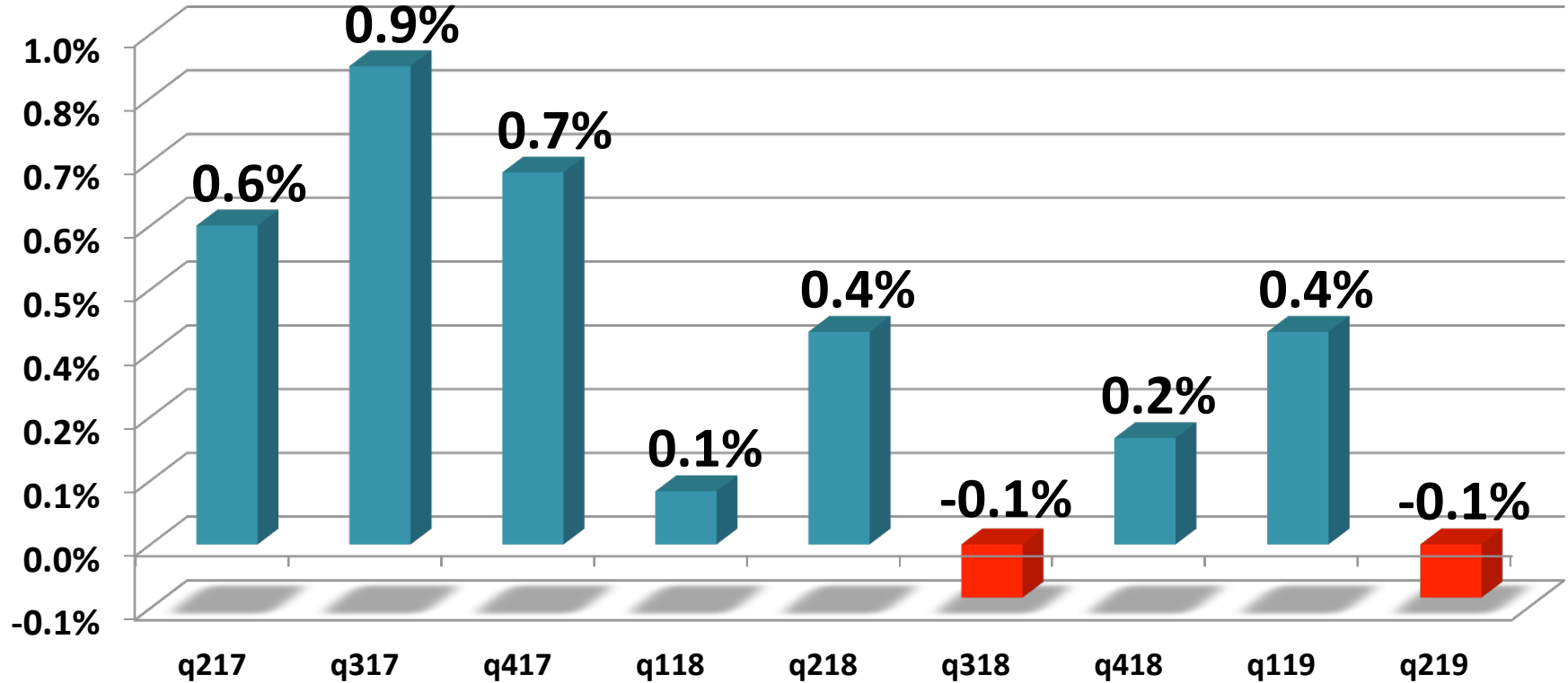
Eurozone GDP Growth (Annualized)



Source: Trading Economics, October 2019



Germany's GDP Growth (Annualized)



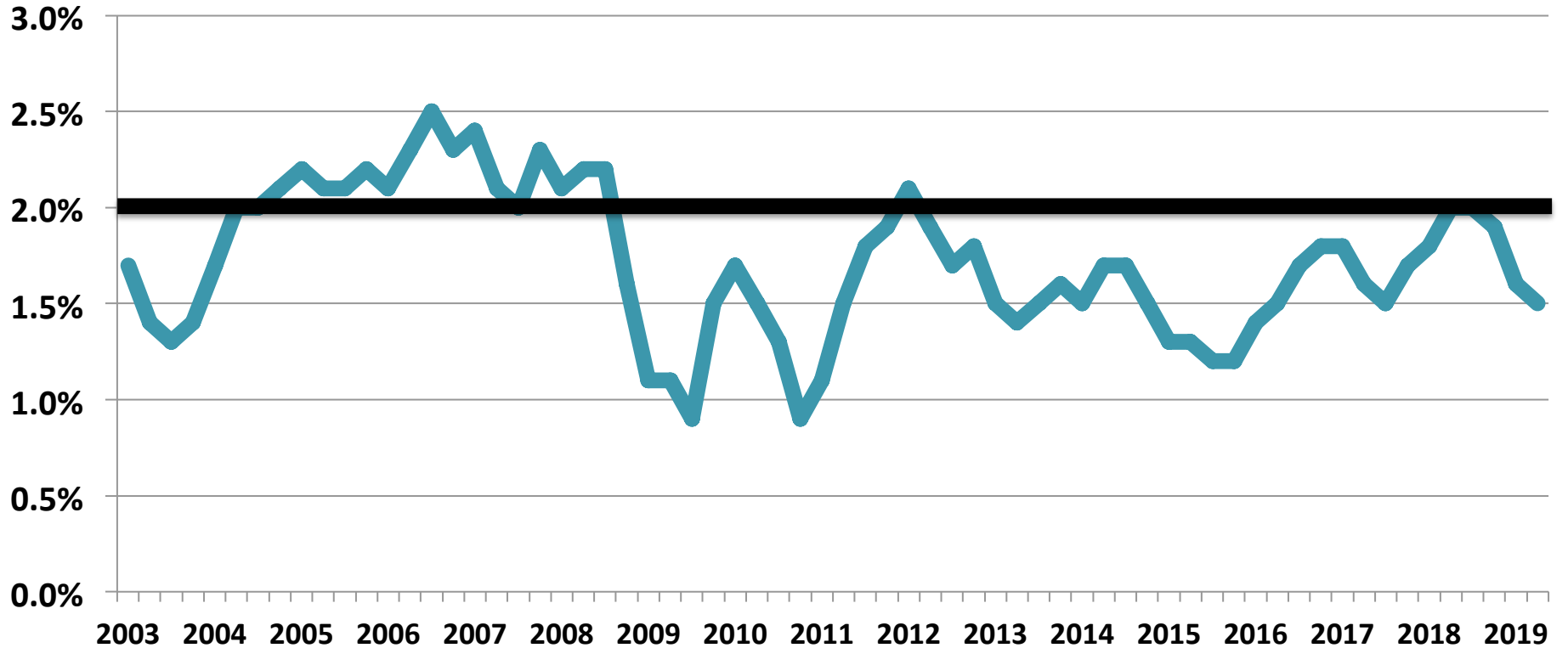
Source: Trading Economics, October 2019



Why is lowering interest rates so controversial?



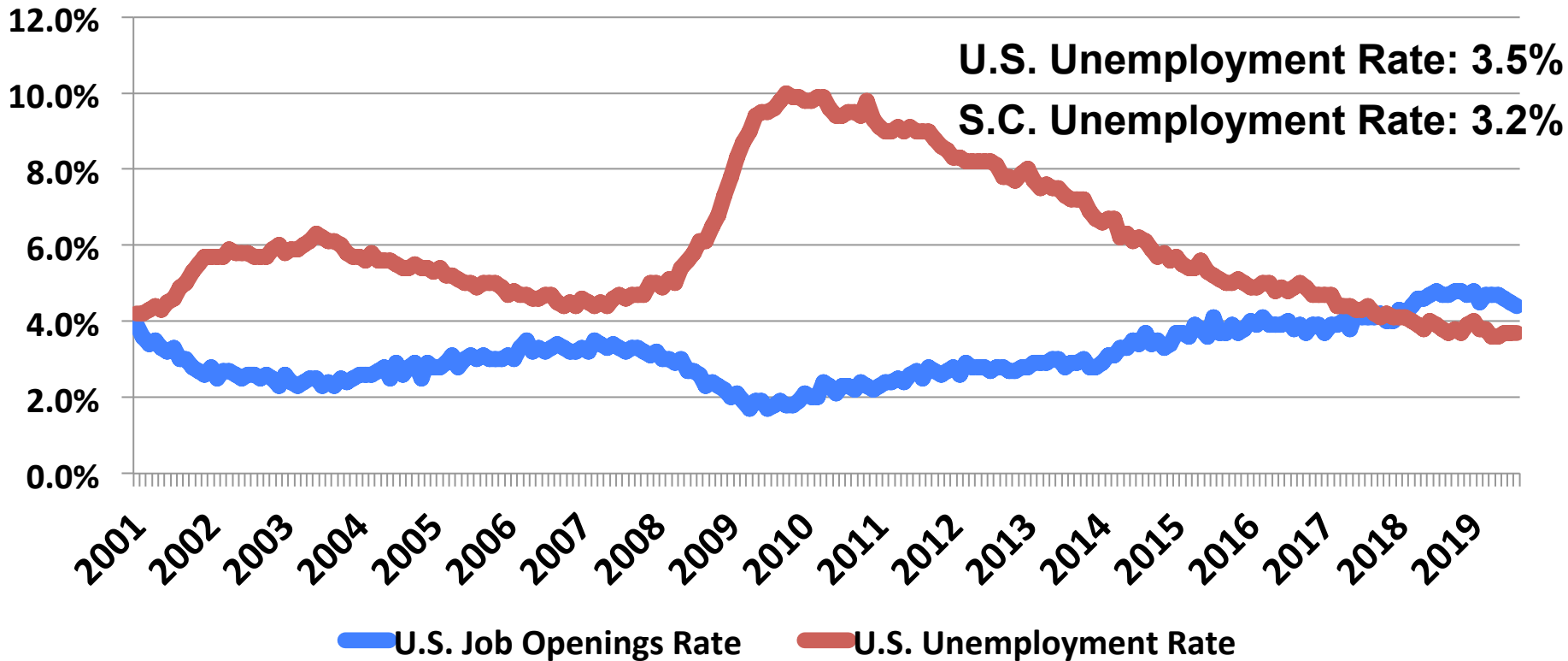
PCE Price Index (Core)



Source: U.S. Bureau of Economic Analysis

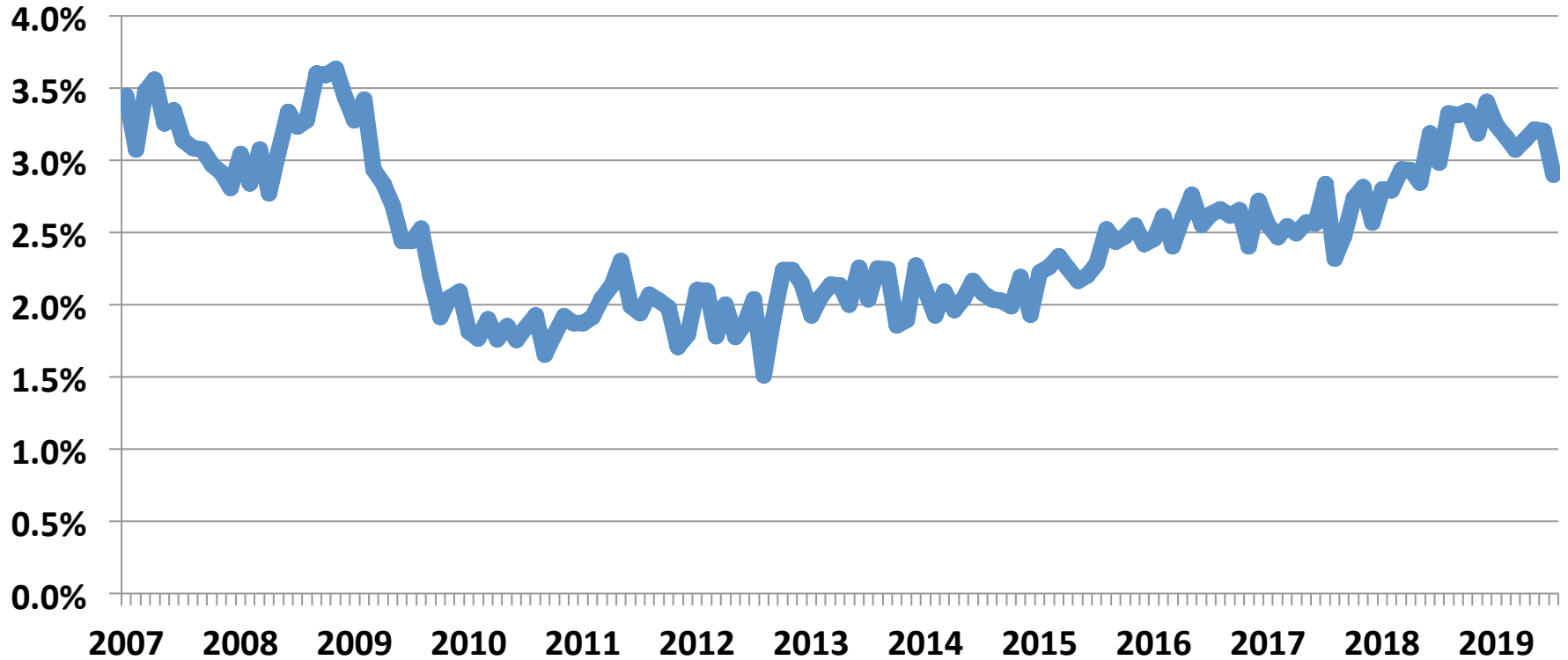


U.S. Job Openings Rate vs. Unemployment Rate



Source: U.S. Bureau of Labor Statistics, JOLTS SA; CES SA

Average Hourly Earnings of all U.S. Employees



Source: U.S. Bureau of Economic Analysis



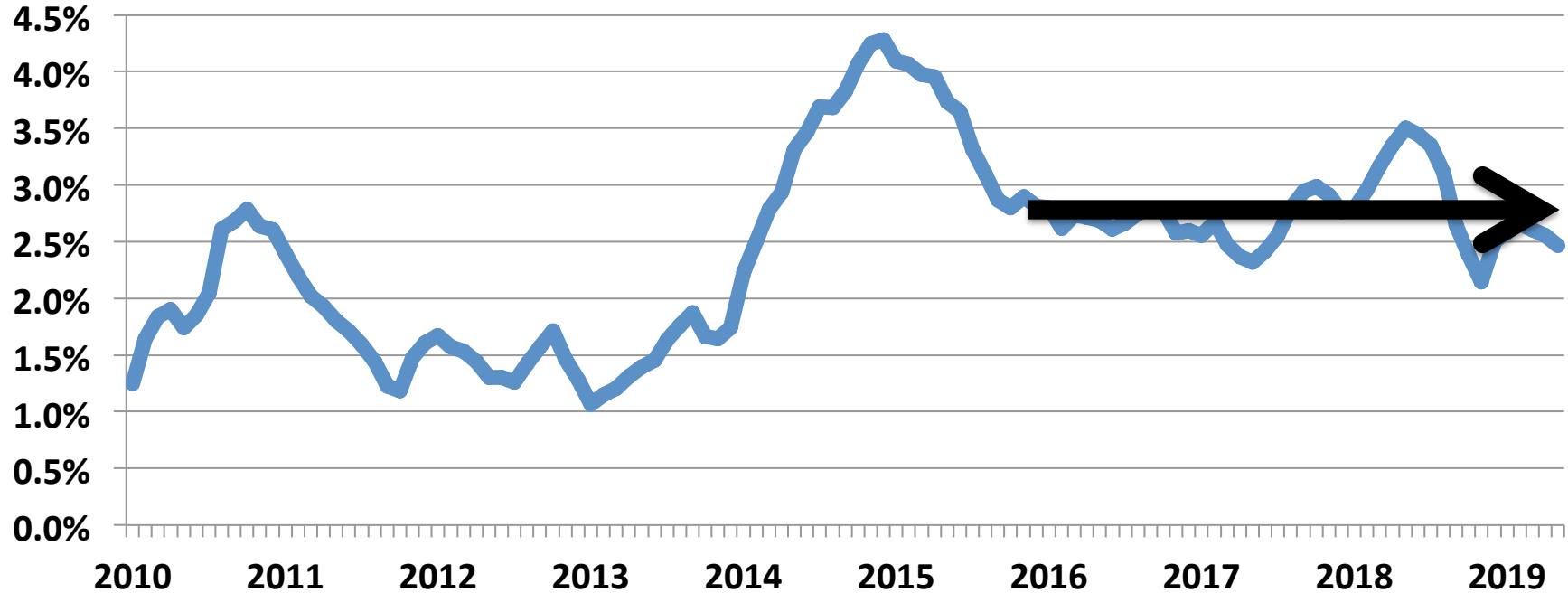


**HELP
WANTED**



Real Personal Consumption Expenditures

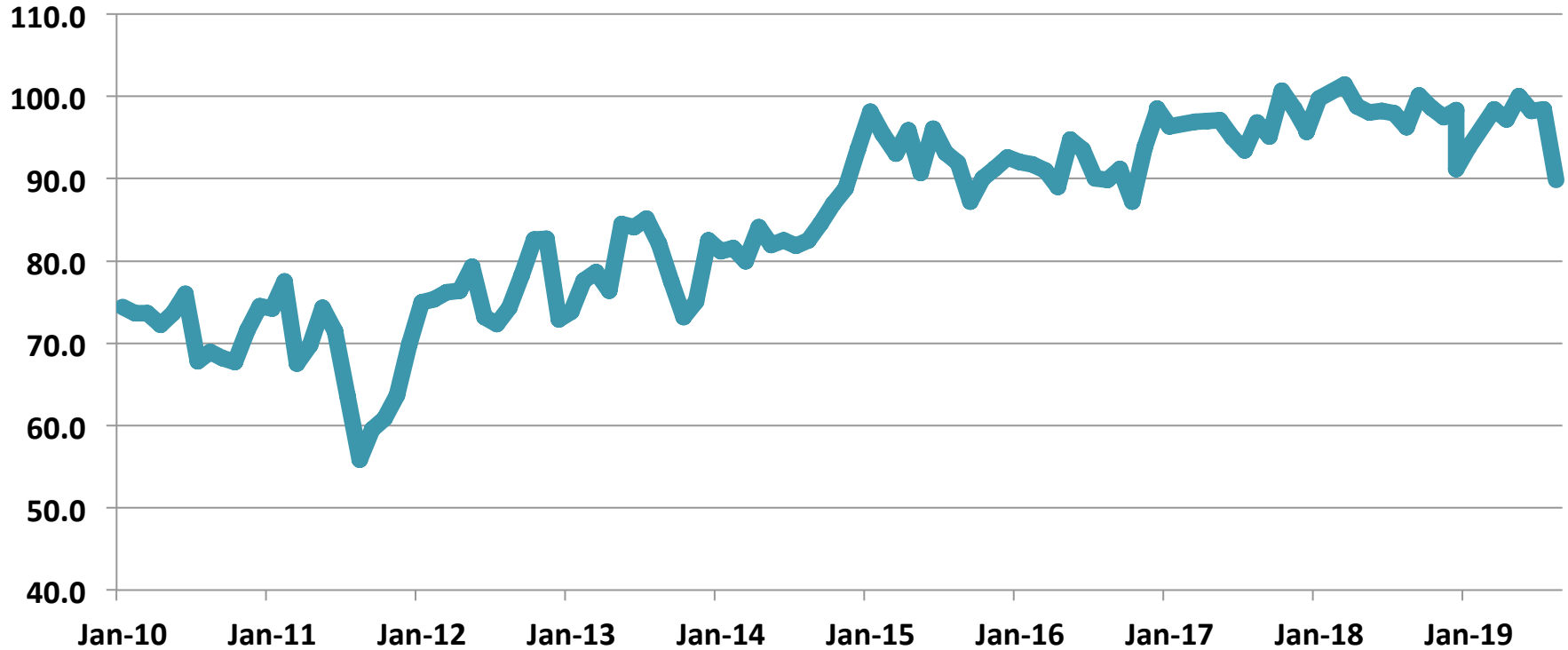
Year/Year Pct. Change, Rolling 3-Month Avg.



Source: U.S. Bureau of Economic Analysis



U.S. Consumer Sentiment



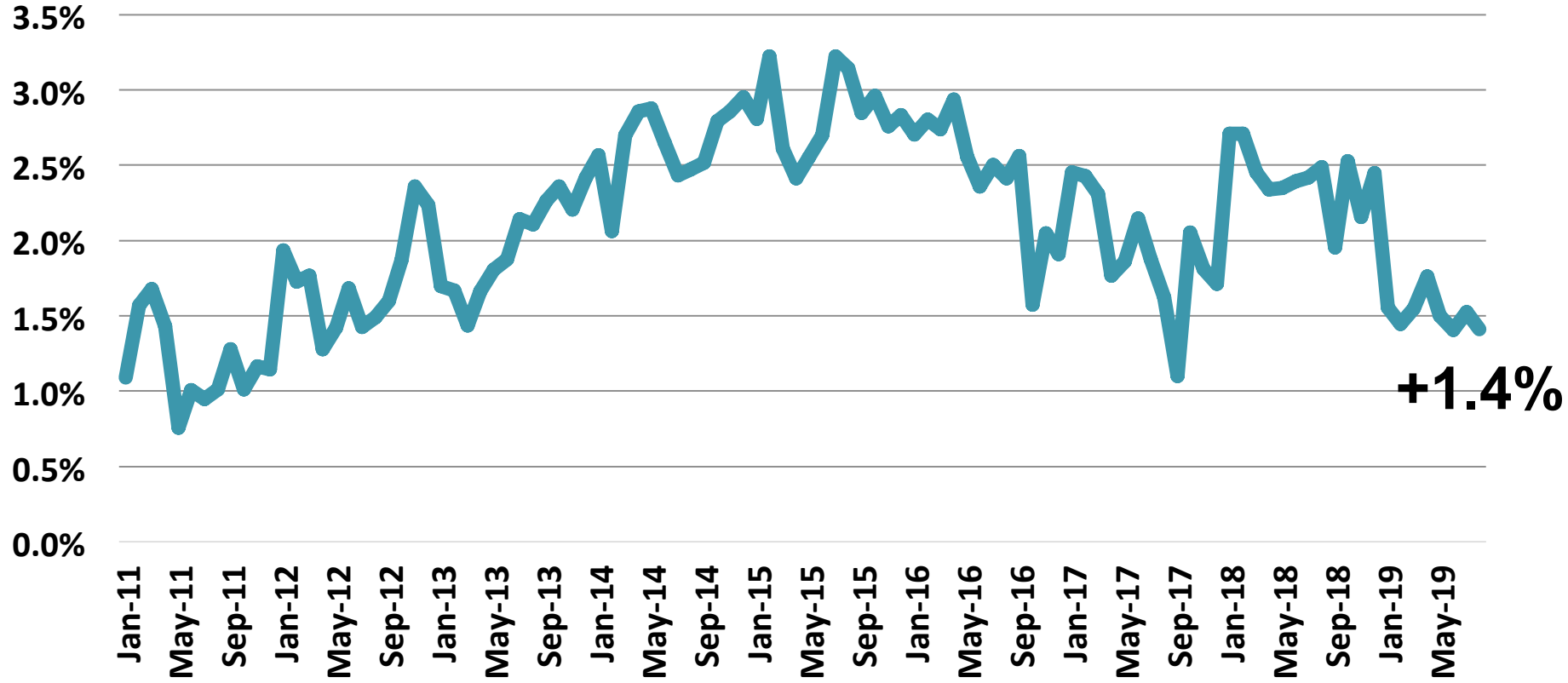
Source: University of Michigan



What about South Carolina?



South Carolina Employment Growth

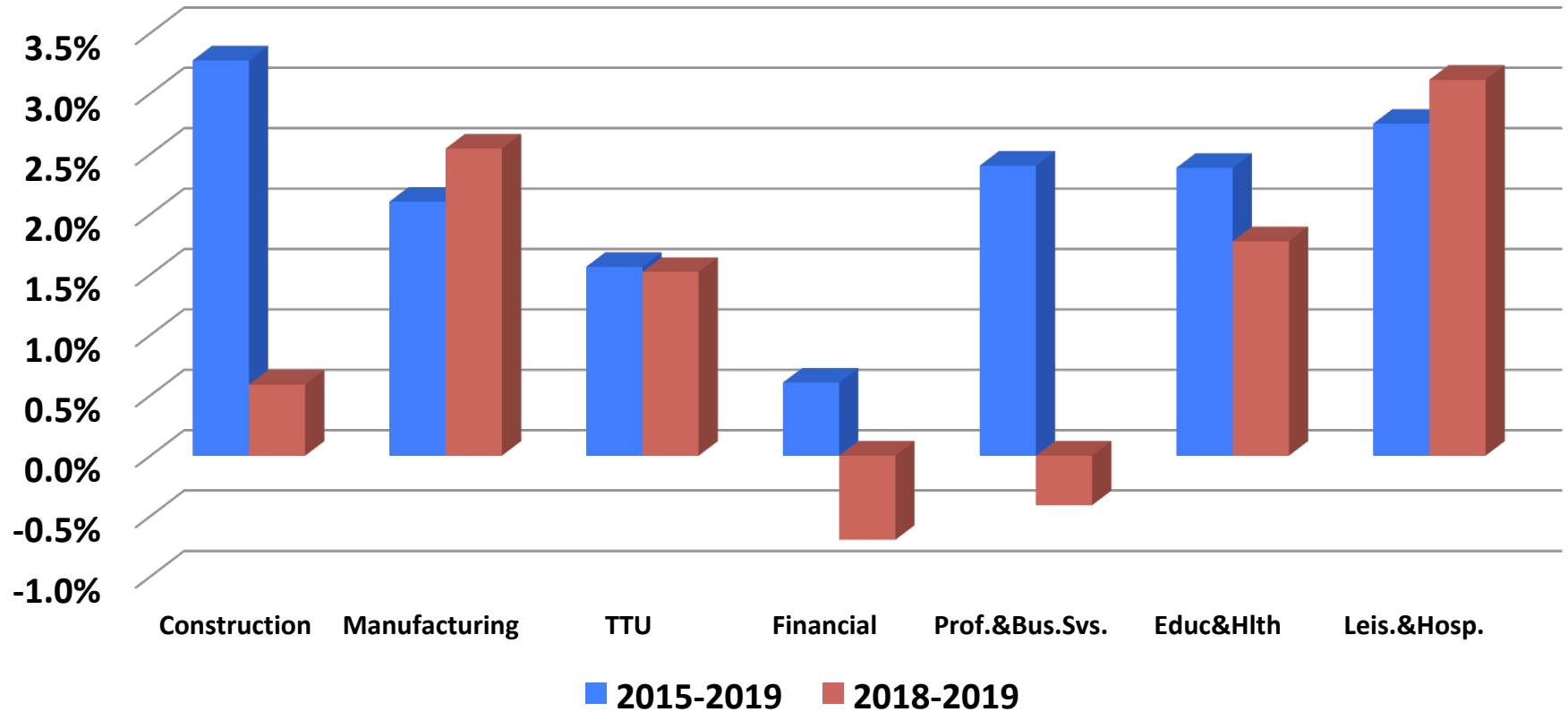


+1.4%

Source: U.S. Bureau of Labor Statistics, CES, NSA



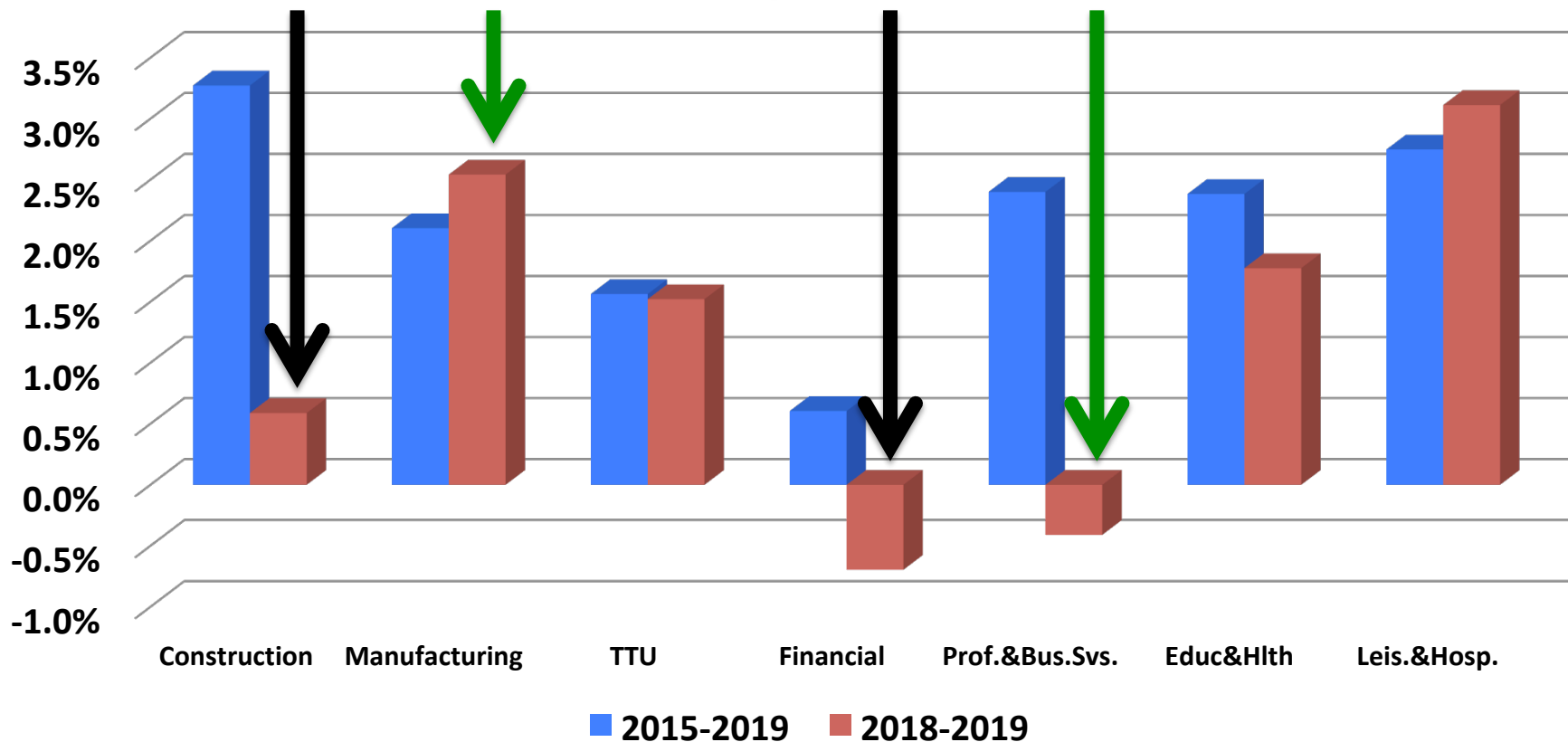
S.C. Employment Growth



Source: U.S. Bureau of Labor Statistics, CES, NSA



S.C. Employment Growth



Source: U.S. Bureau of Labor Statistics, CES, NSA



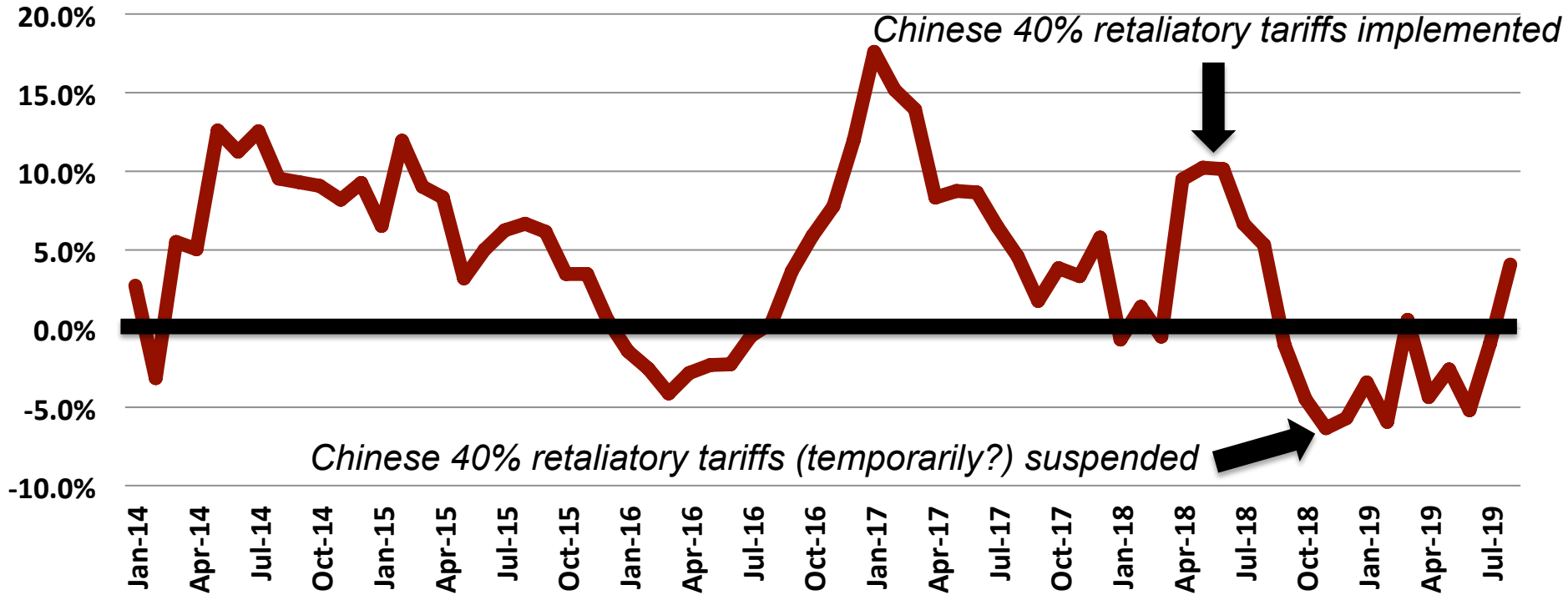
How are auto tariffs affecting manufacturing in South Carolina?

- *Short-run effects: Increased Costs*
- *Long-run effects: Potential Changes in Global Production Strategies*



South Carolina Export Volume (TEUs)

Annual Growth Rate: Rolling 3-month Average

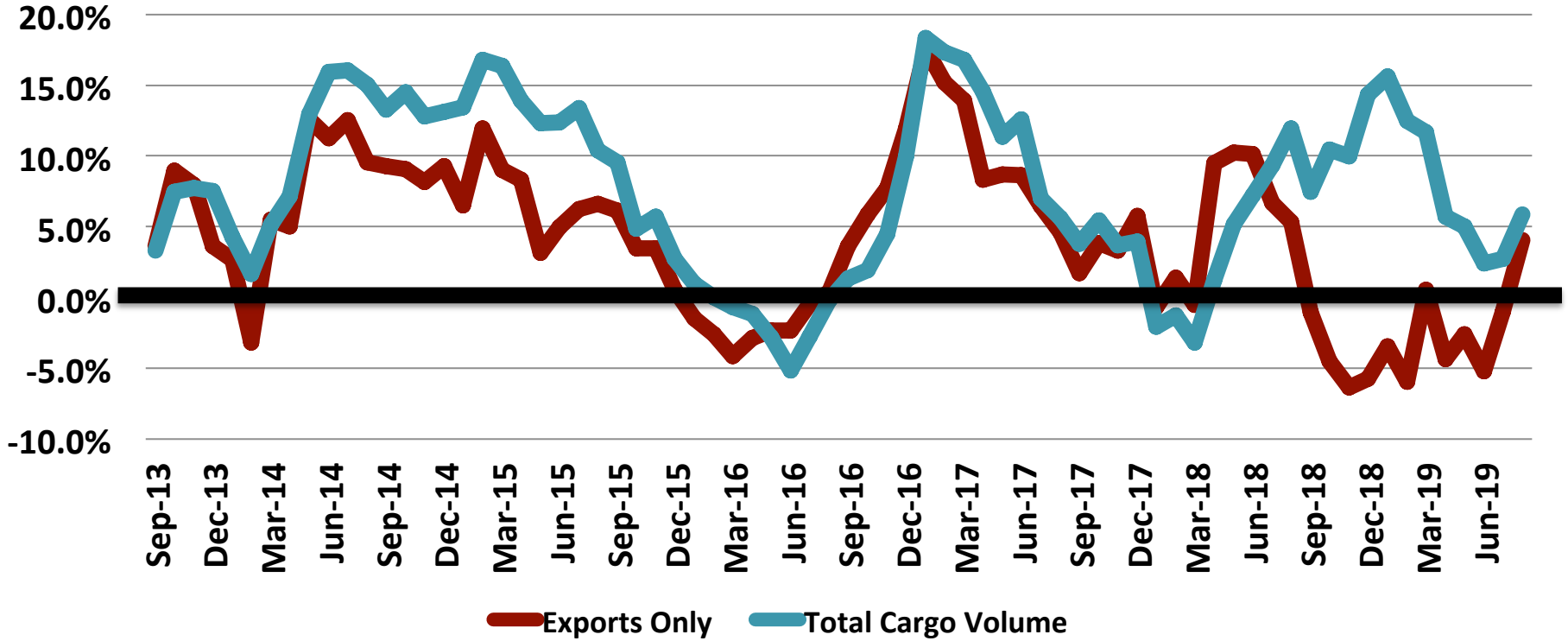


Source: South Carolina Ports Authority; August 2019



South Carolina Cargo Volume (TEUs)

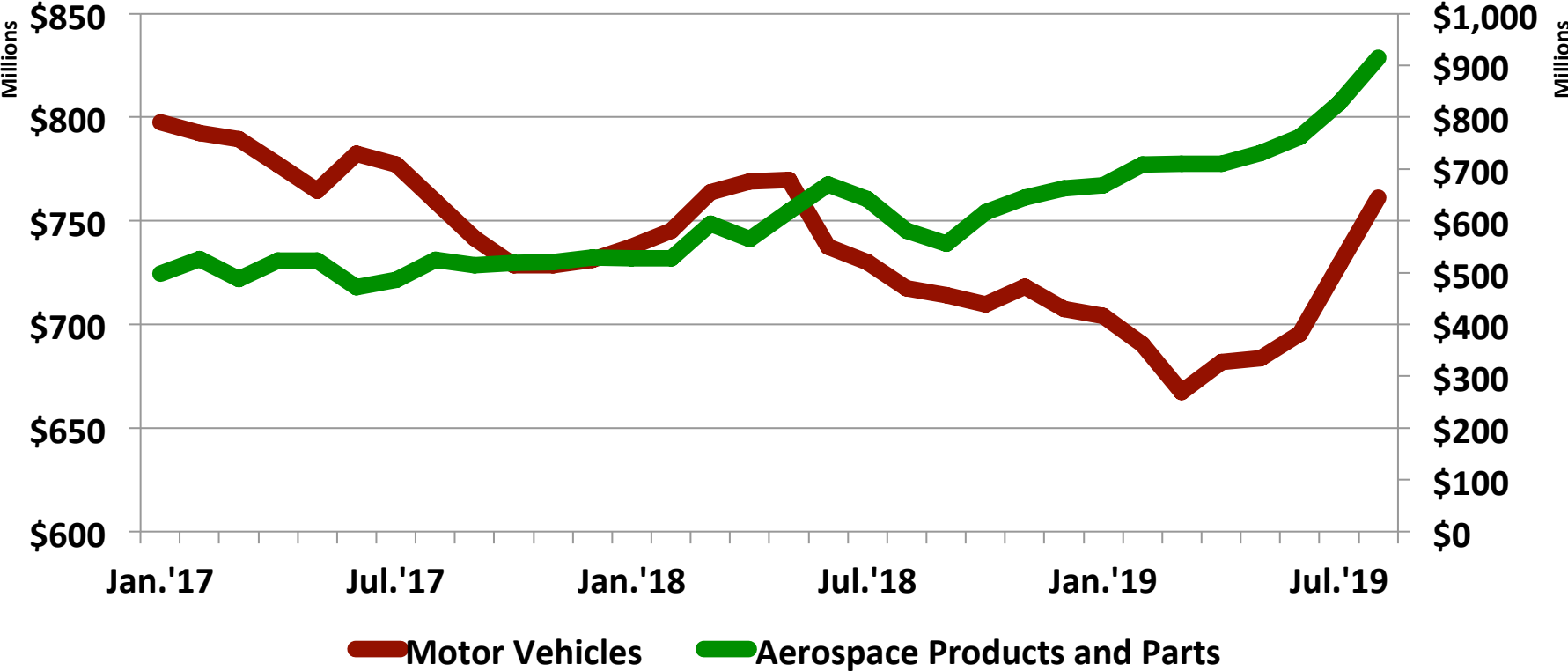
Annual Growth Rate: Rolling 3-month Average



Source: South Carolina Ports Authority; August 2019

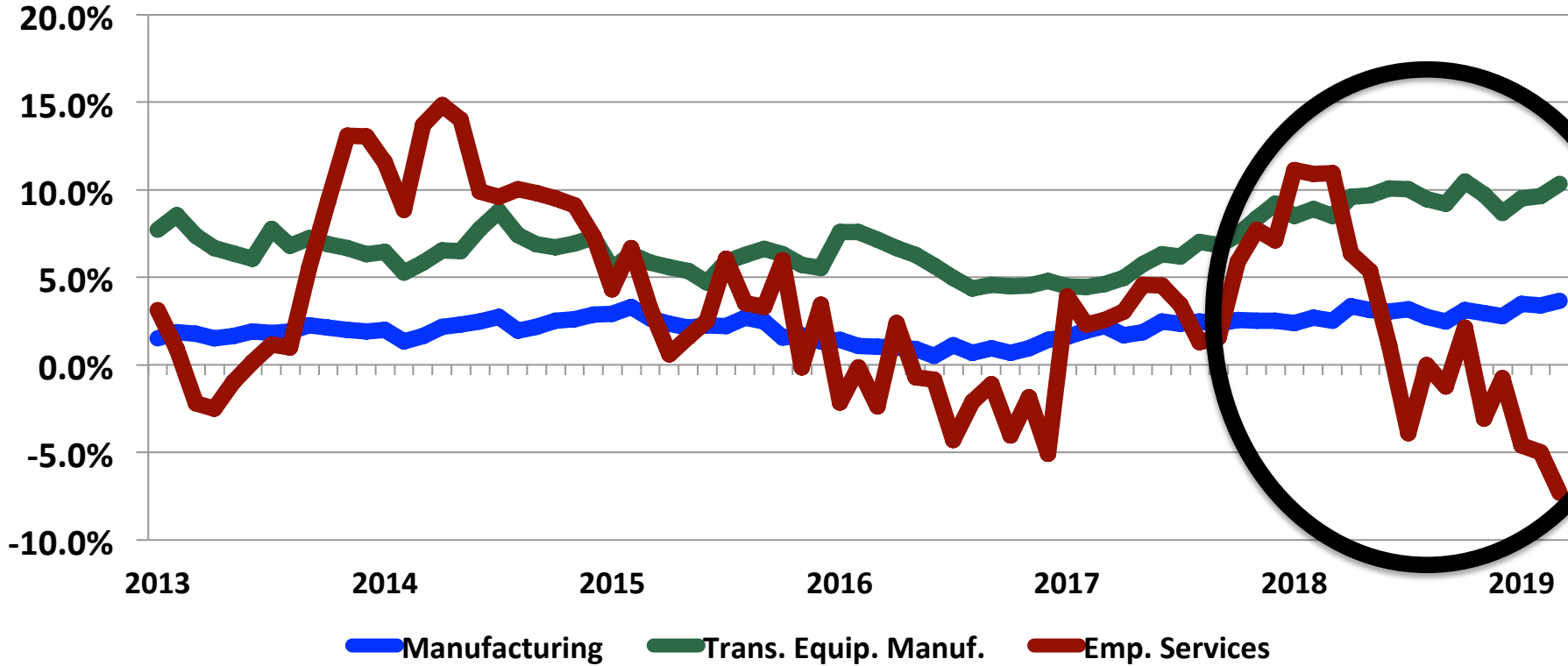


S.C. Advanced Manufacturing Exports



Source: US Census Bureau

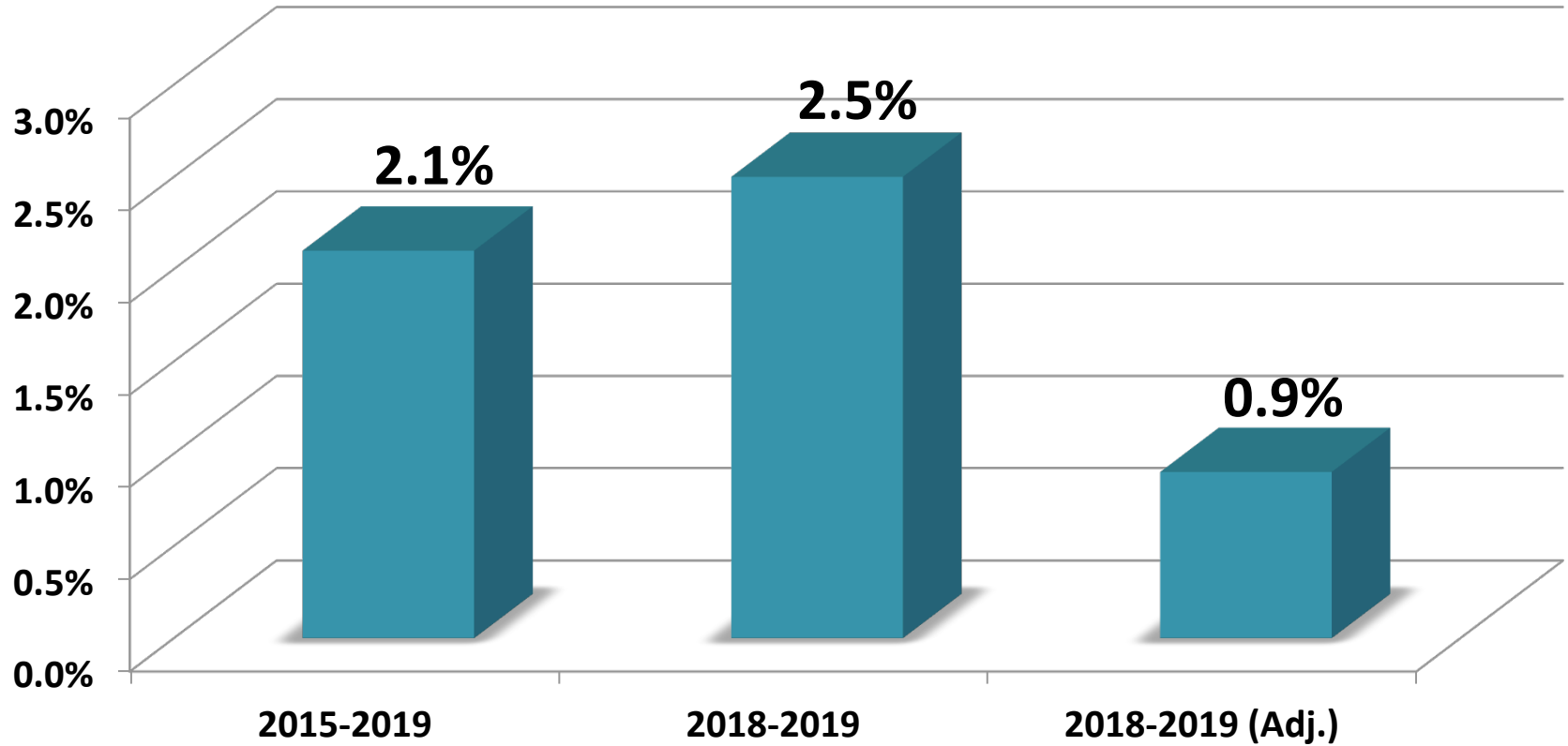
Changes in S.C. Manufacturing Trends



Source: U.S. Bureau of Labor Statistics



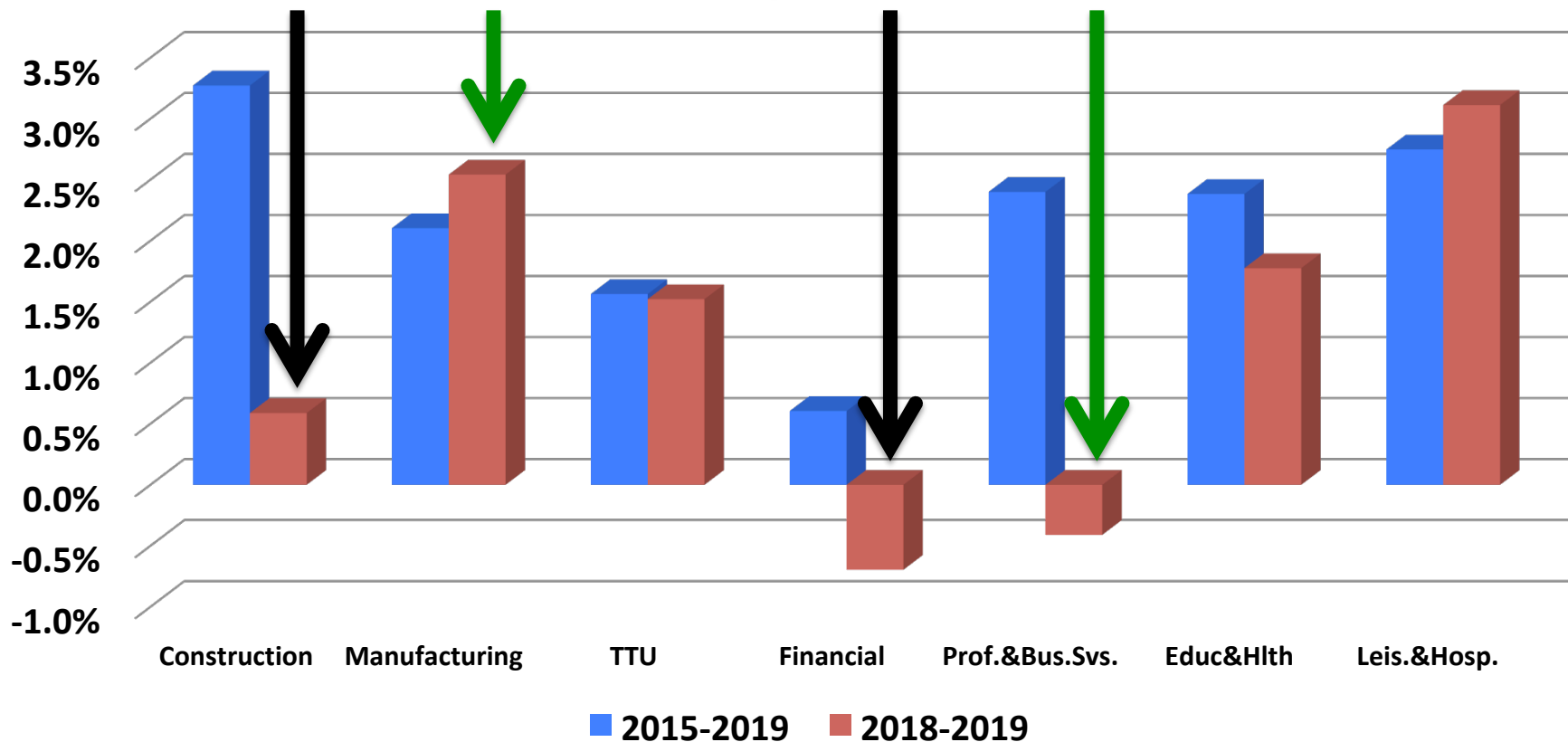
S.C. Annual Manufacturing Employment Growth



Source: U.S. Bureau of Labor Statistics, CES, NSA



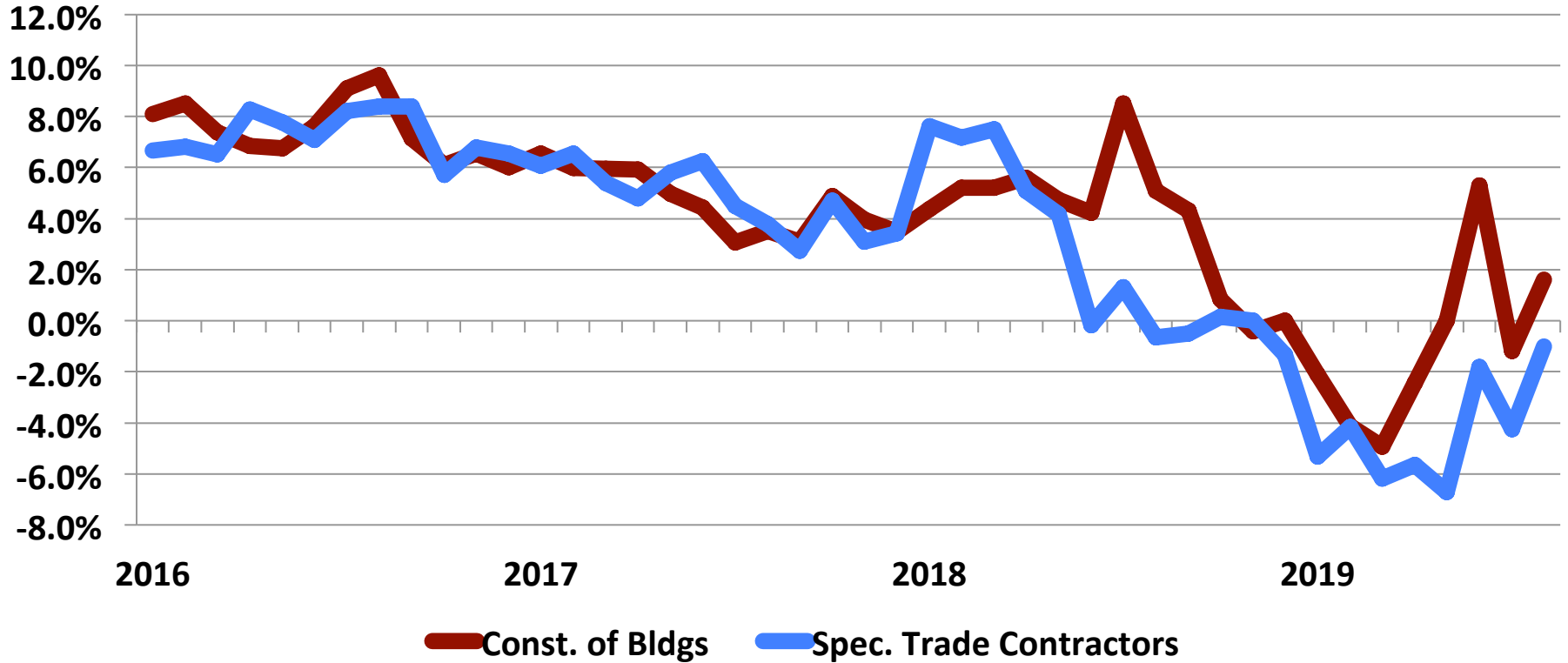
S.C. Employment Growth



Source: U.S. Bureau of Labor Statistics, CES, NSA



S.C. Construction Employment Growth: 2016-2019



Source: U.S. Bureau of Labor Statistics, CES, NSA





Labor costs



Lumber costs



Interest rates





Labor costs



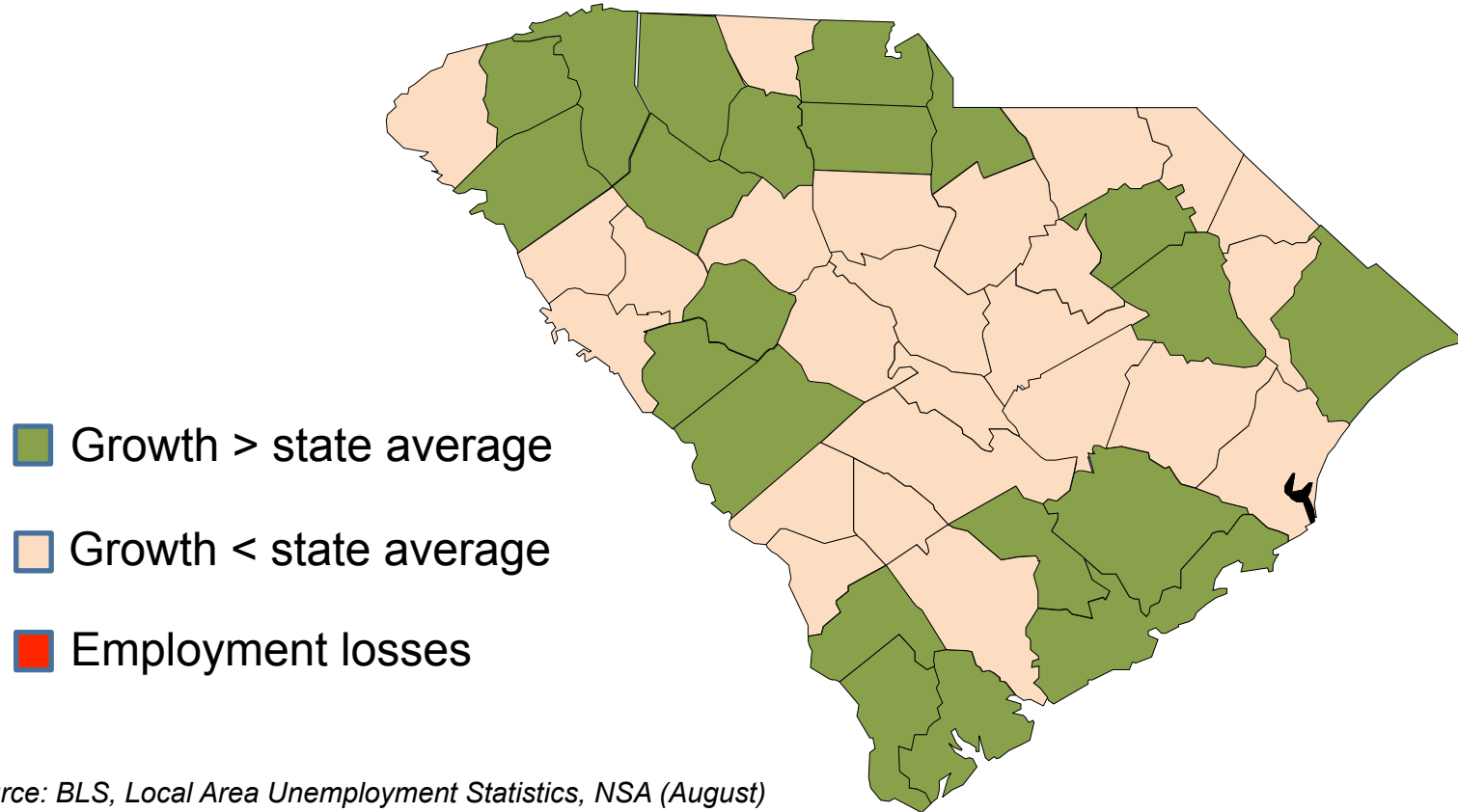
~~*Lumber costs*~~



~~*Interest rates*~~



S.C. Avg. Employment Growth: 2018 vs. 2019



Source: BLS, Local Area Unemployment Statistics, NSA (August)



The Bottom Line

A “Decaf” Economy



Higher Uncertainty



Slower Growth



Baseline Economic Forecast

	FY19	Q219	SCRFA-FY20	<i>FY20</i>
Personal Income Growth	5.4%	5.8%	4.3%	<i>3.9%</i>
Employment Growth	1.9%	1.4%	1.8%	<i>1.5%</i>
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	<i>1.9%</i>



Thank You!



WELLS
FARGO

SECURITIES

Economic Outlook

Mark Vitner, Managing Director & Senior Economist

October 17, 2019

Together we'll go far



Economic Outlook

- **Real GDP growth has decelerated from a 3% pace last year to around 2% and looks set to slow even further. Most of the slowdown is tied to weakening global growth and its impact on exports and capital spending.**

Fiscal Policy

- **The short-term boost from tax reform is fading, which is taking some of the oomph out of consumer spending. Government spending has ramped up, however, and should grow solidly through the 2020 election.**

Monetary Policy

- **The Fed appears to be set on reducing short-term interest rates at least a couple more times and may soon look to grow its balance sheet. The resistance by some regional Fed presidents is well within historic norms.**

Trade Policy

- **Views about the prospects for a trade deal with China appear to be too pessimistic. While a deal will take time, the framework to a deal might be revealed much sooner. Without a deal, the global economy will languish.**

South Carolina

- **South Carolina's significant ties to the global economy have contributed to a greater slowdown. Employment and output are rising solidly, however, and the state continues to attract growing numbers of retirees.**

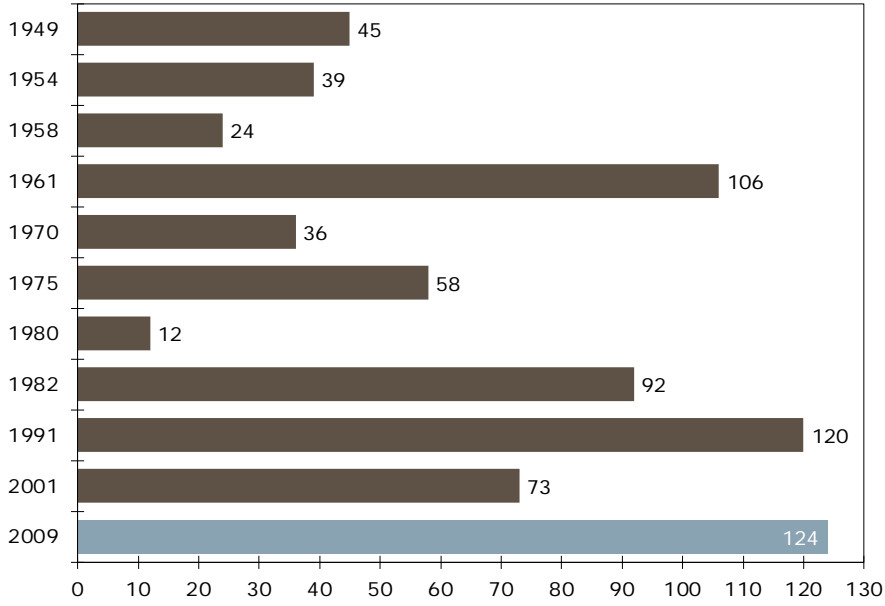
The current expansion is now the longest on record, but has also been the weakest of the post-WWII era.

The Longest Expansion

...but the Weakest

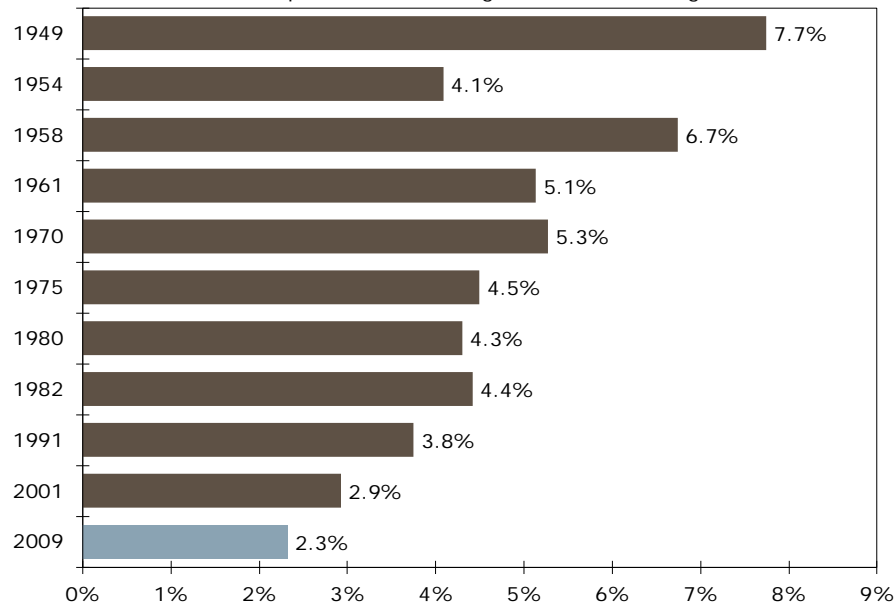
Length of U.S. Expansion

Y-axis=End of Recession, X-axis=Months as of October 2019



Strength of U.S. Expansion

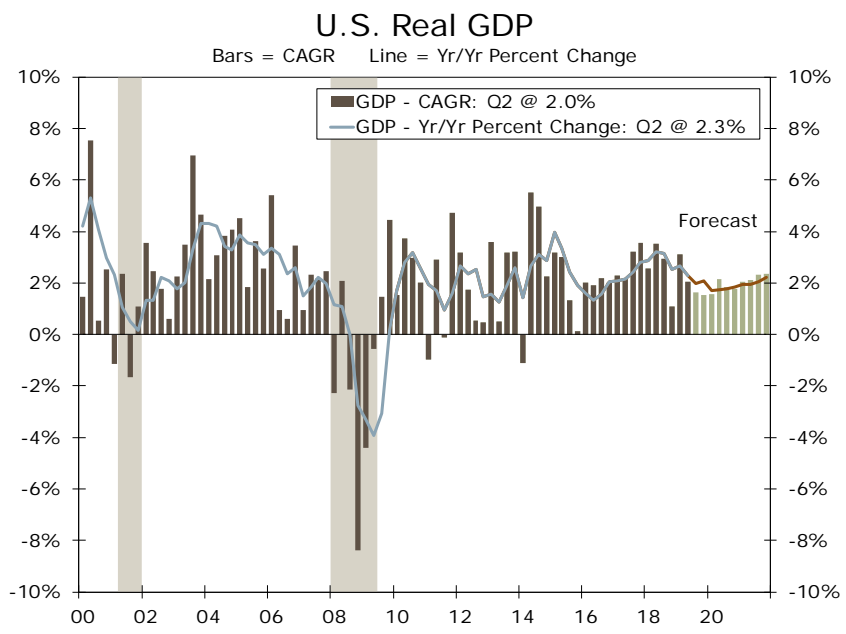
Y-axis=Start of Expansion, X-axis=Avg GDP Growth through Q2-2019



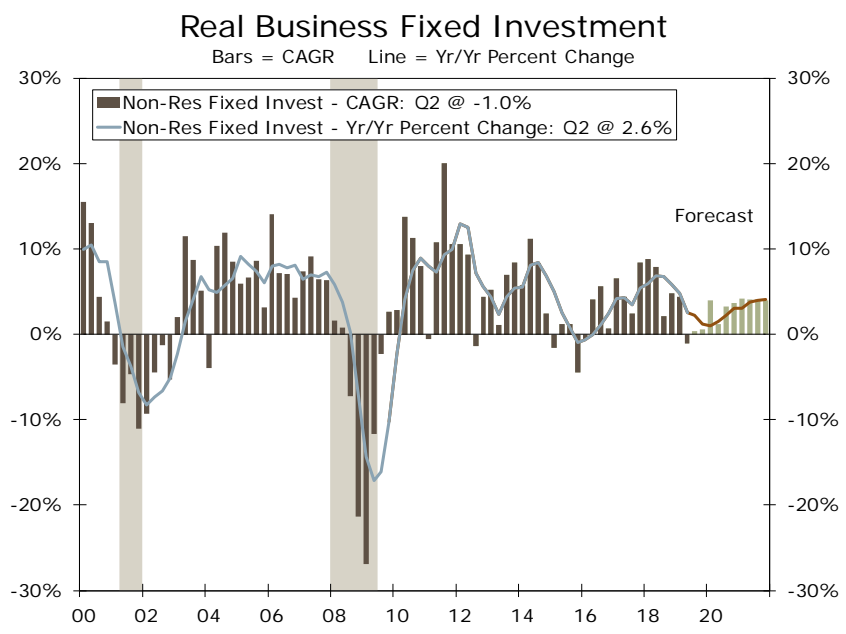
Source: U.S. Department of Commerce, National Bureau of Economic Research and Wells Fargo Securities

Our forecast calls for real GDP growth to slow to less than a 2% pace in 5 of the next 6 quarters. Much of the slowdown is due to a widening in the trade deficit and a further deceleration in business fixed investment. Inventory swings tied to Boeing's 737 MAX shipments will also influence the quarterly data. Consumer spending and homebuilding should prove resilient.

Real GDP

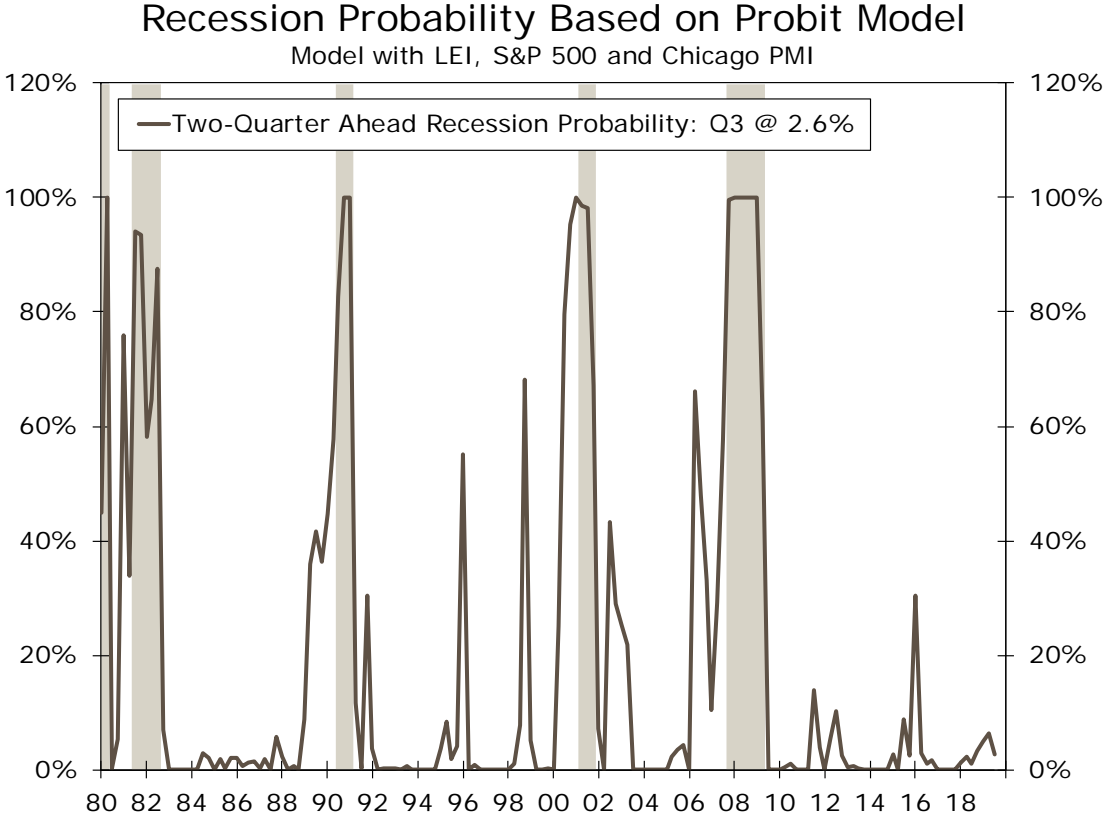


Business Investment



Source: U.S. Department of Commerce and Wells Fargo Securities

The probability of a recession over the next six months remains low according to our econometric models.



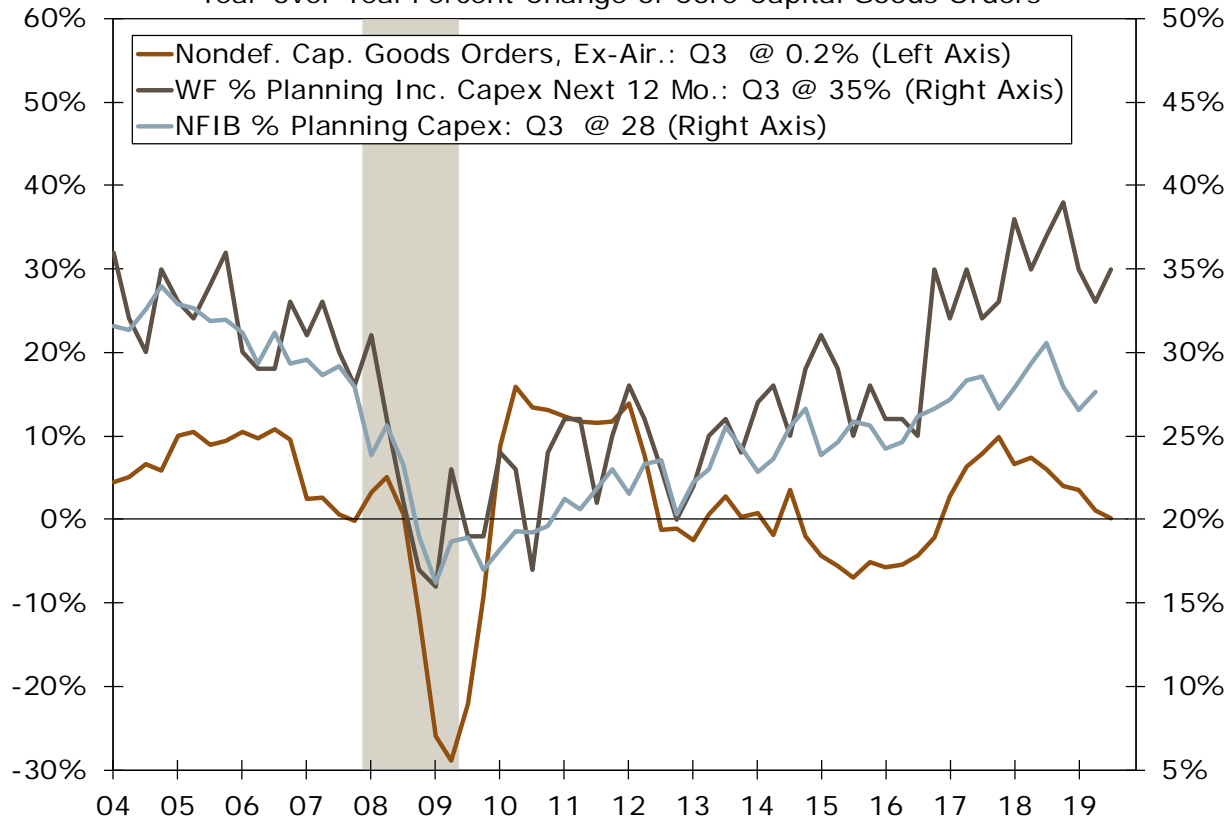
Source: Wells Fargo Securities

Small business capital spending plans have help up better than overall capex.

About the same share of businesses plan to increase capex spending in the coming year that increased spending this past year.

Capital Spending Plans vs. Investment

WF Small Business & NFIB Spending Plans vs. Year-over-Year Percent Change of Core Capital Goods Orders

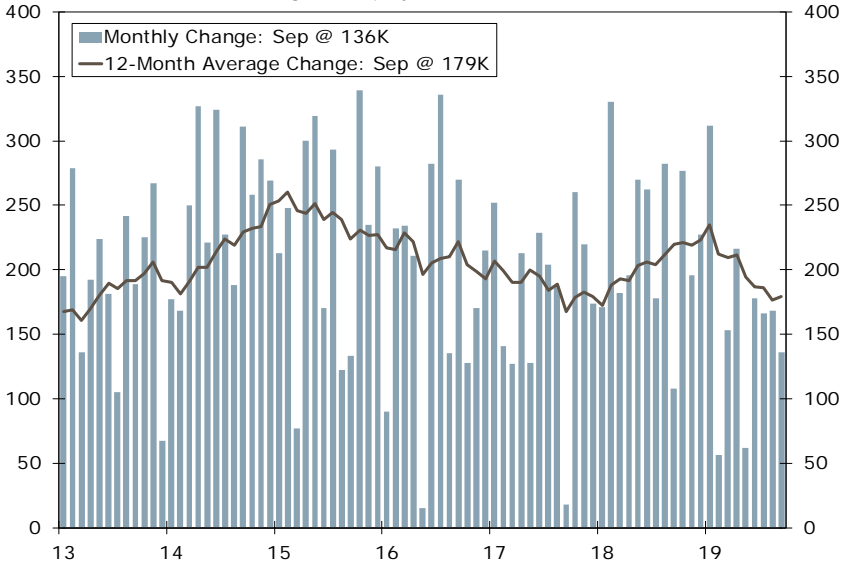


Source: Wells Fargo Bank, Gallup, NFIB, U.S. Department of Commerce and Wells Fargo Securities

Hiring has moderated over the past few months. Wage gains have rebounded but remain modest relative to prior periods when the labor market was this tight.

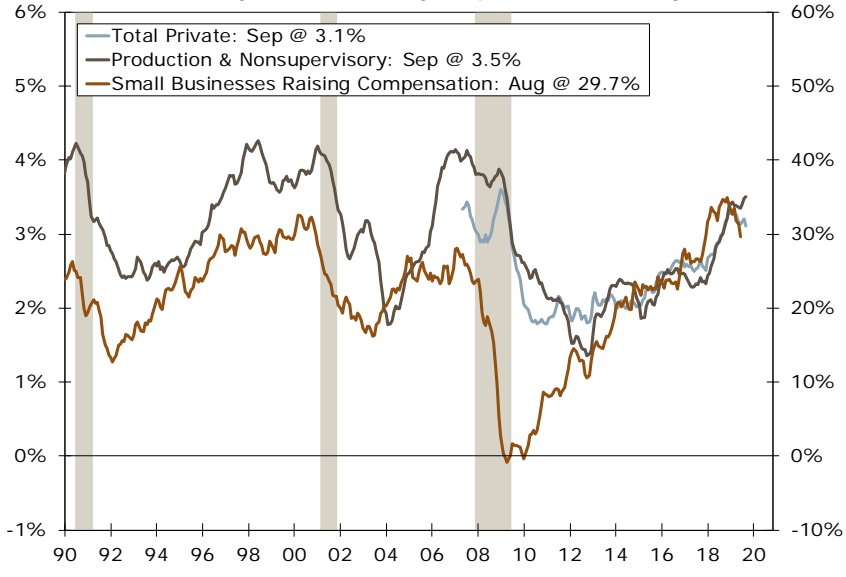
Nonfarm Employment

U.S. Nonfarm Employment Change
Change in Employment, In Thousands



Wages

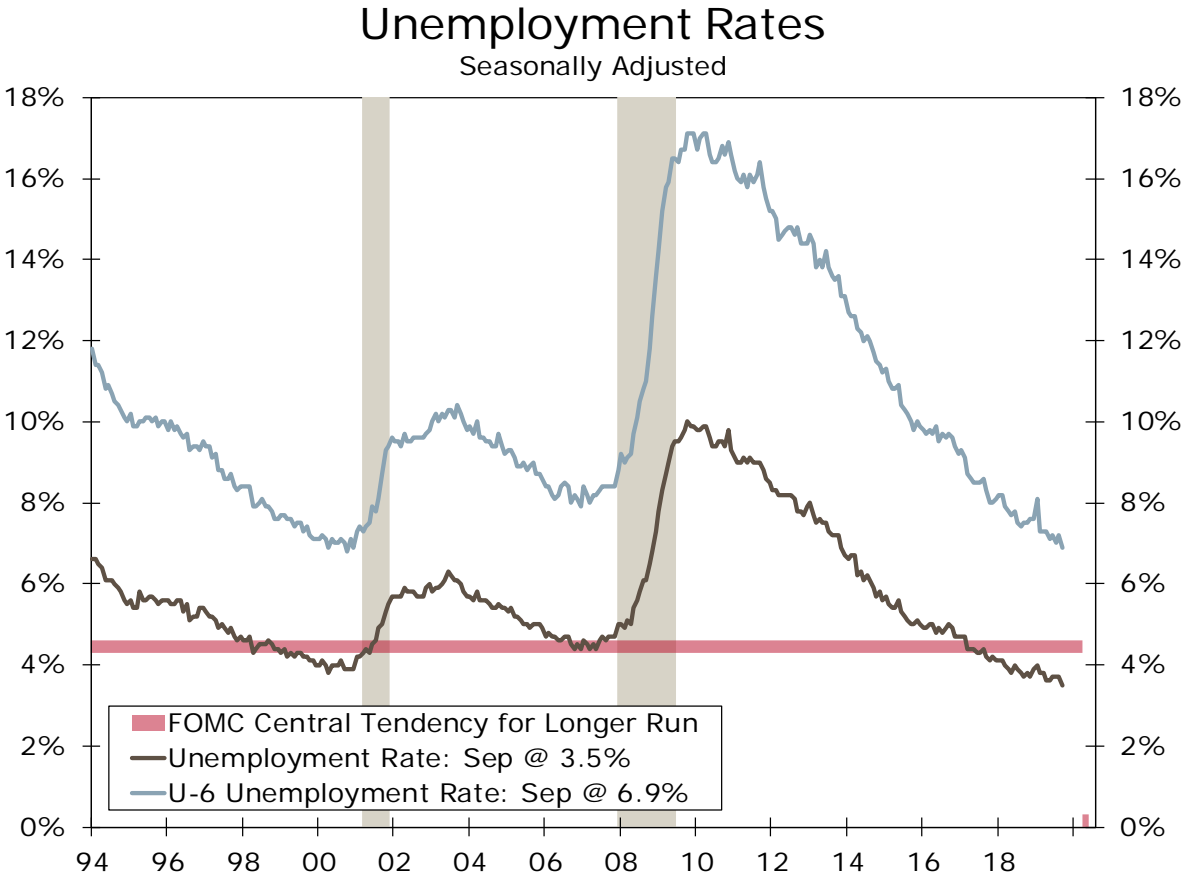
AHE vs. Raising Compensation
YoY% Chg. & Percent Raising Compensation; 3-Mo. Avgs.



Source: U.S. Department of Labor, National Federation of Independent Business and Wells Fargo Securities

The labor market has tightened substantially, with the unemployment rate at 3.7%.

While the criteria for determining the unemployment rate have not changed, growth in the Gig economy, particularly ride sharing and the proliferation of online job search platforms, like Indeed and LinkedIn, have likely changed the way workers engage in the labor market. As a result, the economy can maintain relatively low inflation even with historically low unemployment.



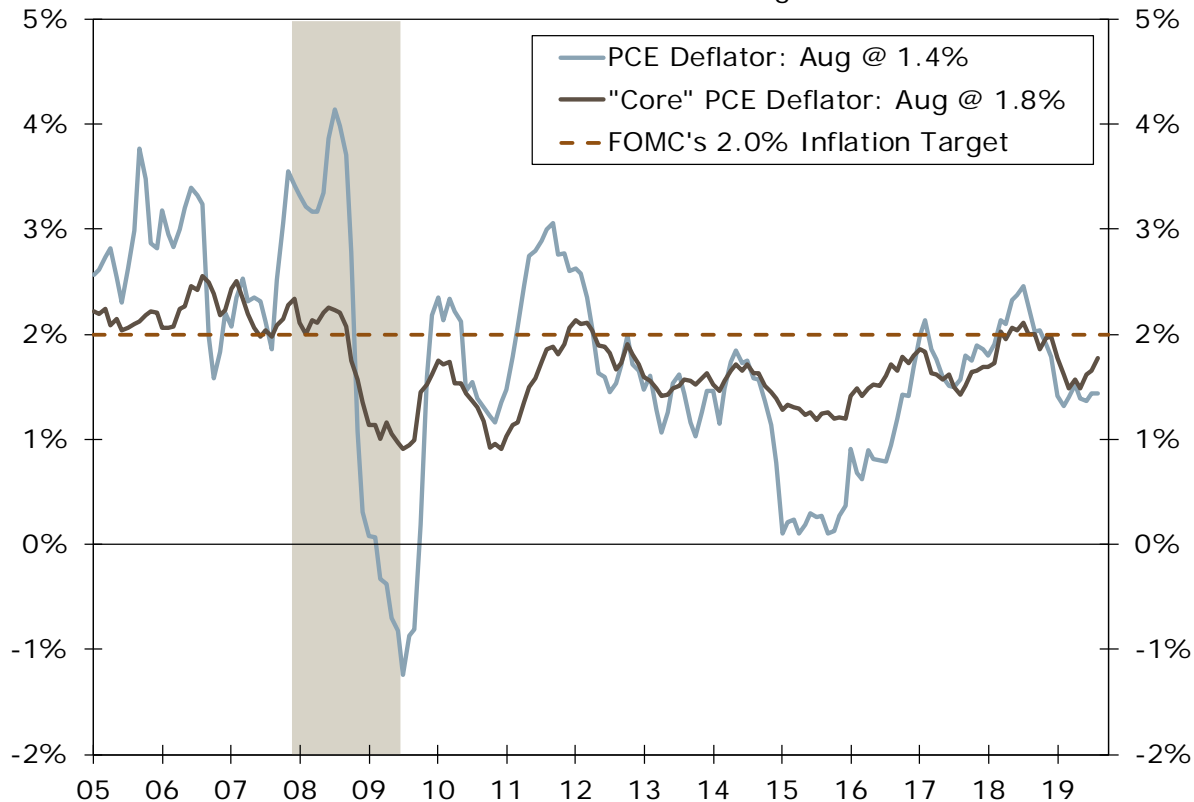
Source: U.S. Department of Labor and Wells Fargo Securities

After briefly rising above the Fed's 2% target, core inflation appears to have decelerated once again, amid weakening final demand. Inflation expectations have also fallen over the past few months.

The deceleration in inflation and inflation expectations was cited by the Fed as one of the primary reasons the Fed has adopted a more accommodative stance.

PCE Deflator vs. Core PCE Deflator

Year-over-Year Percent Change

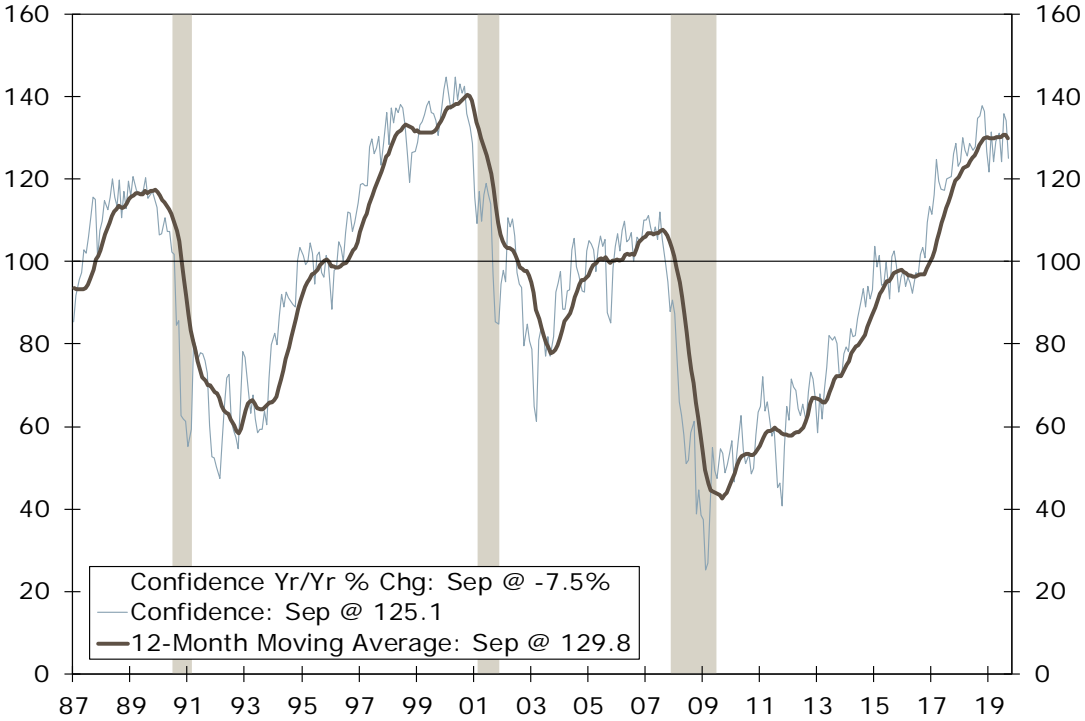


Source: U.S. Department of Commerce and Wells Fargo Securities

The Conference Board's survey closely tracks labor market conditions, which are the strongest they have been in decades.

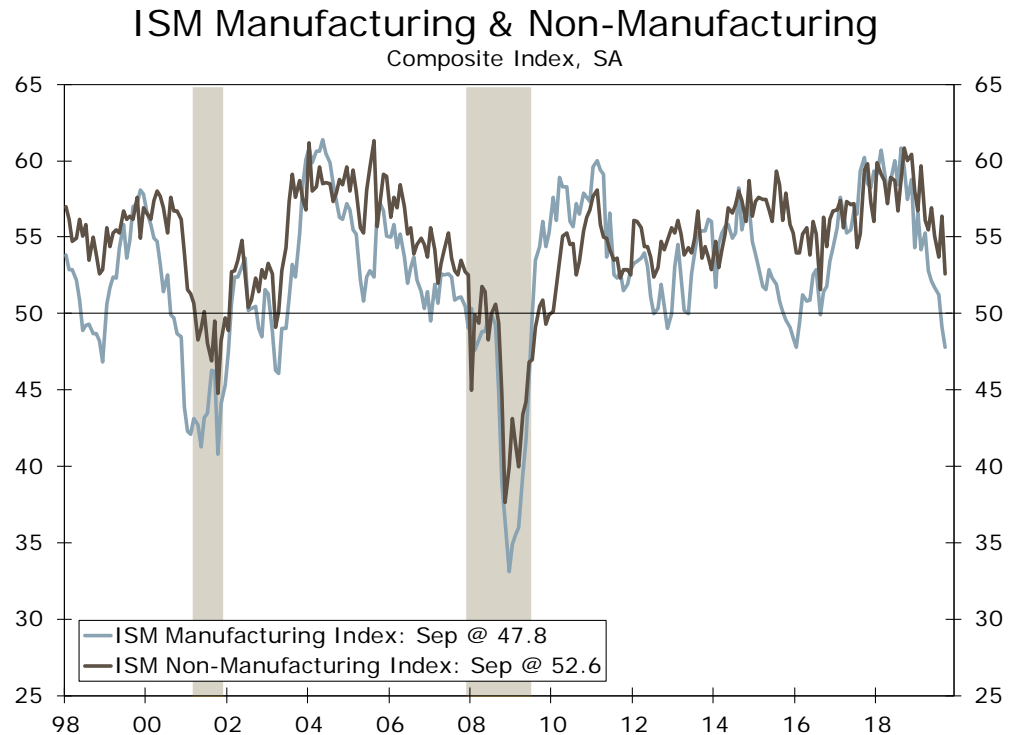
Consumer Confidence Index

Conference Board



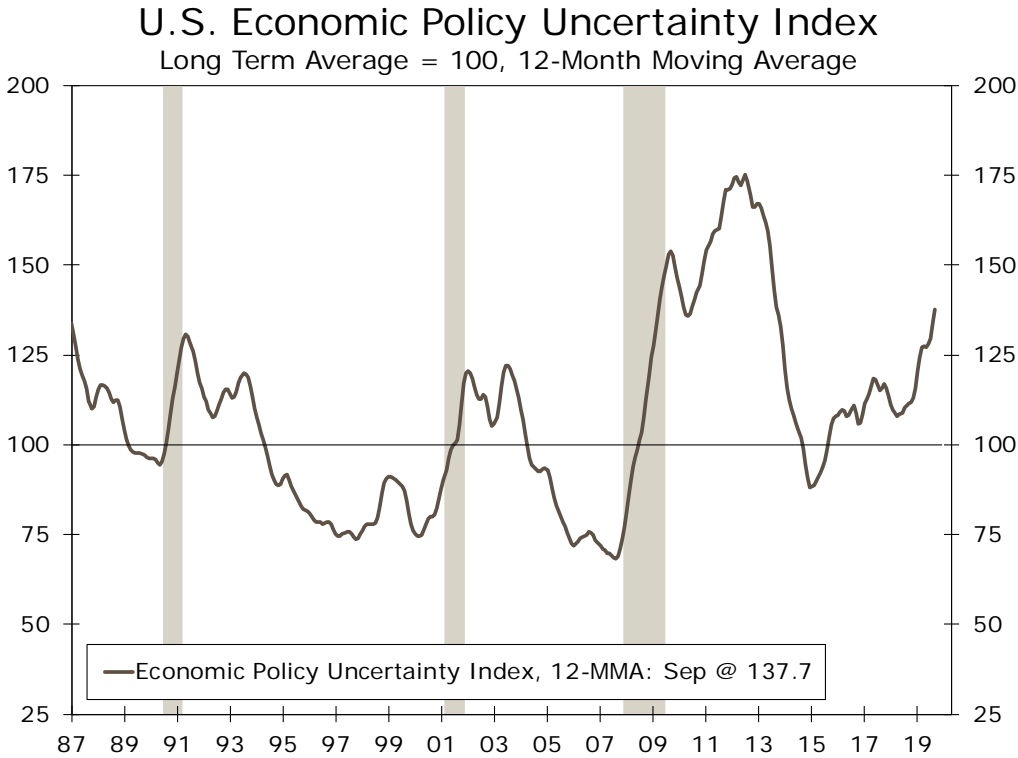
Source: Conference Board and Wells Fargo Securities

Manufacturing activity as measured by the ISM survey has weakened to the lowest level since 2009, and is near levels that have prompted the Fed to become much more accommodative in the past.



Source: Institute for Supply Management and Wells Fargo Securities

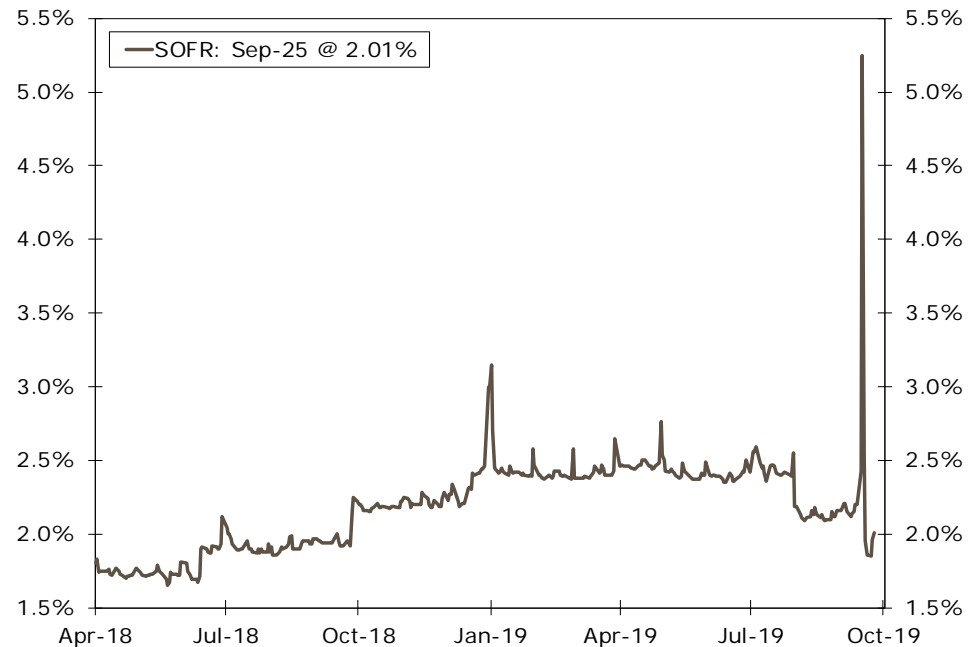
The impeachment inquiry is almost certain to dominate the headlines, but Trump's strong support within the Republican Party means he is unlikely to be removed from office.



Source: Baker, Bloom and Davis and Wells Fargo Securities

The biggest driver of recent repo market disruptions has been the fundamental change in the mix of Treasury collateral and bank reserves in the financial system, and not systemic weakness in the banking sector.

Secured Overnight Financing Rate

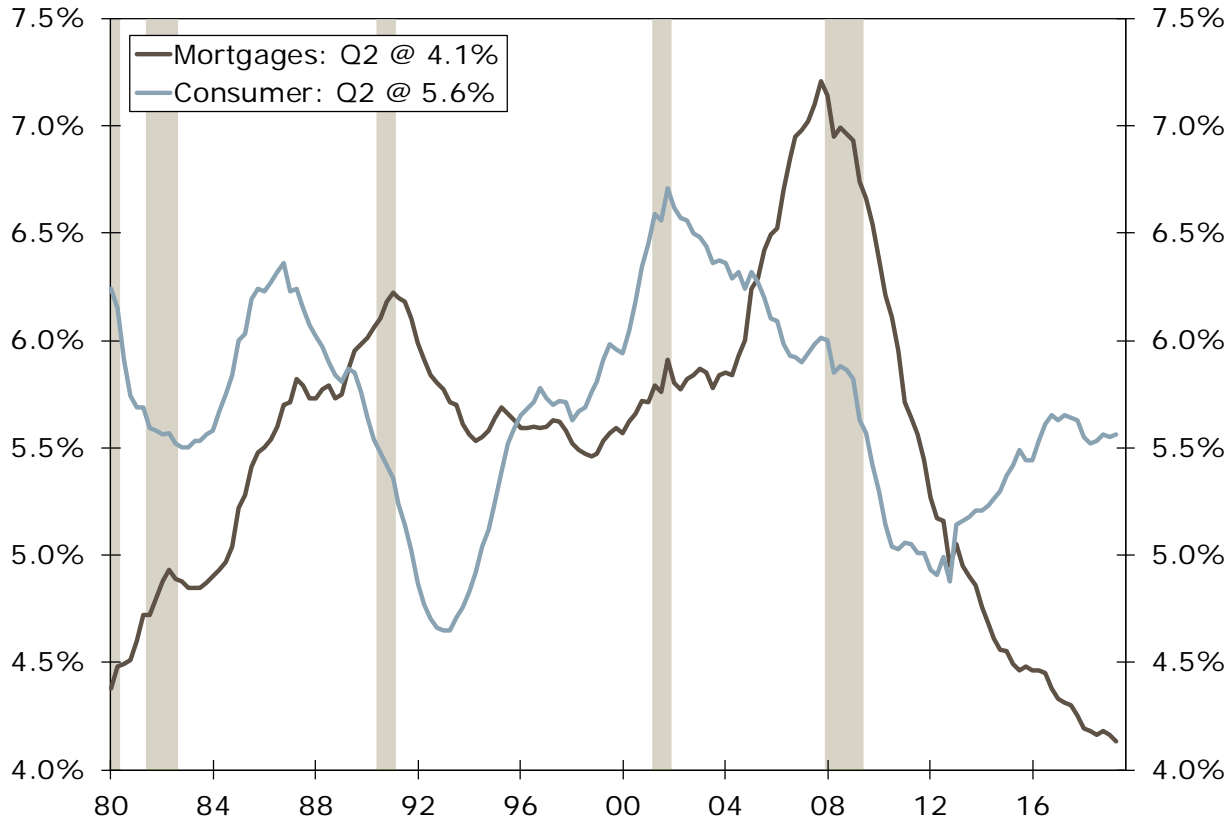


Source: Federal Reserve System and Wells Fargo Securities

Monthly debt service remains fairly low, but has increased for non-mortgage debt. The rise in non-mortgage debt has almost entirely been driven by student and auto loans.

Debt Service Ratios: Mortgages vs. Consumer

As a Percent of Disposable Personal Income

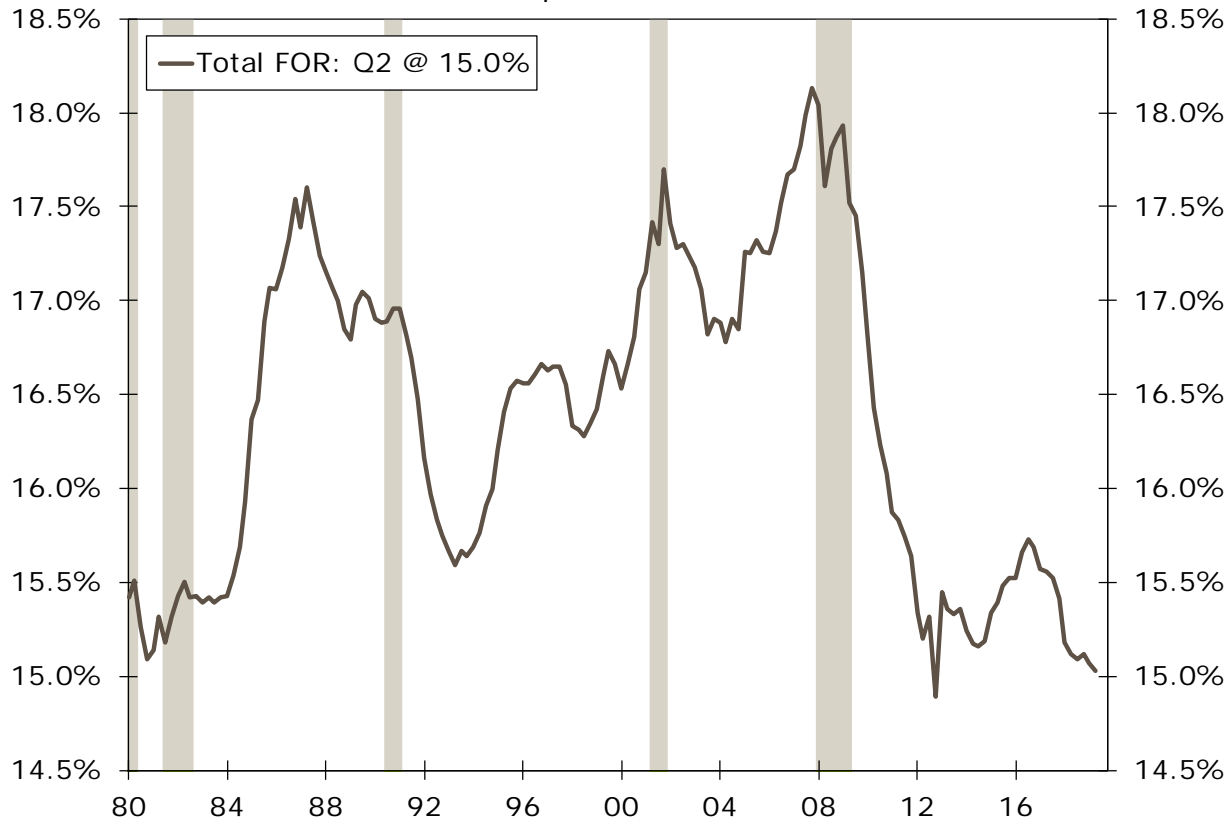


Source: Federal Reserve Board and Wells Fargo Securities

Household balance sheets remain strong, and the financial obligations ratio is low.

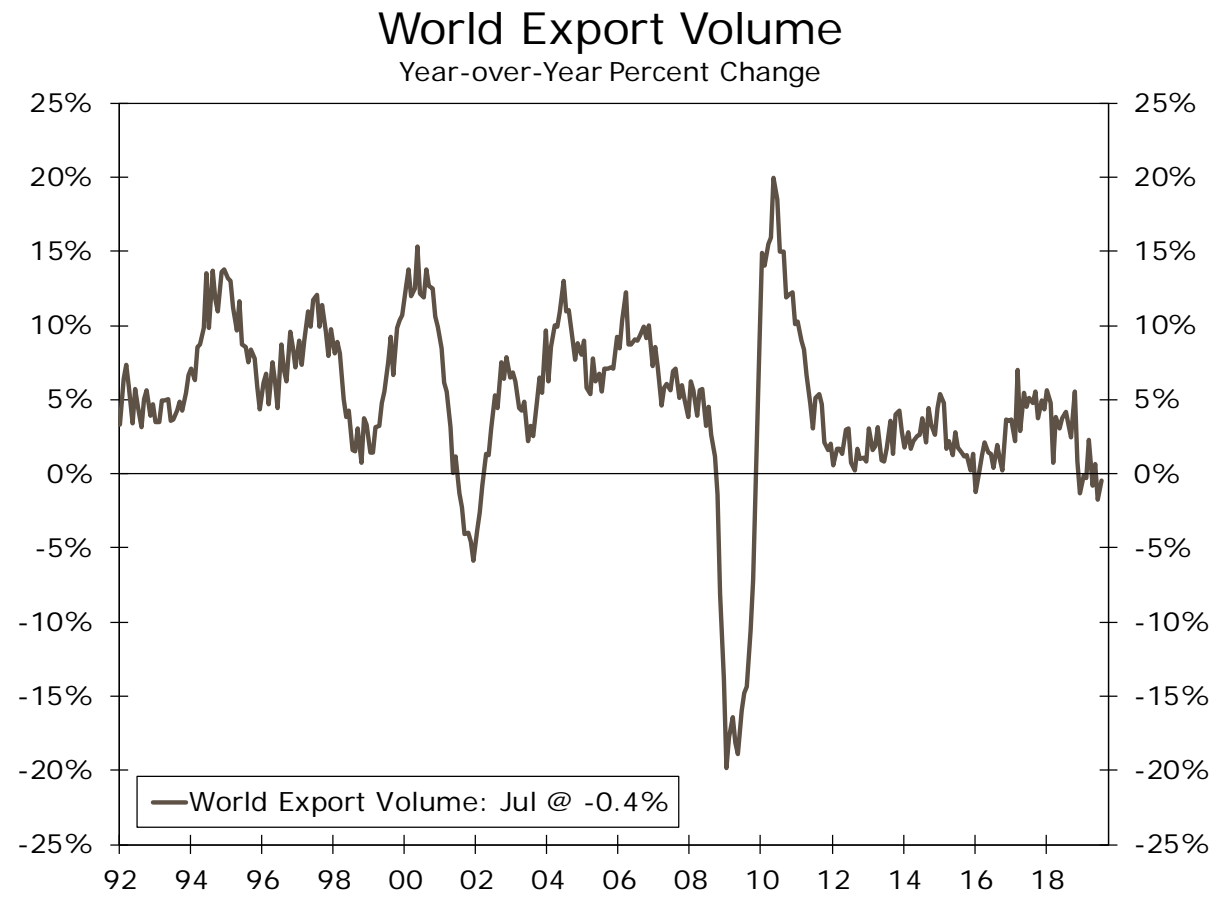
Household Financial Obligations Ratio

Percent of Disposable Personal Income



Source: Federal Reserve Board and Wells Fargo Securities

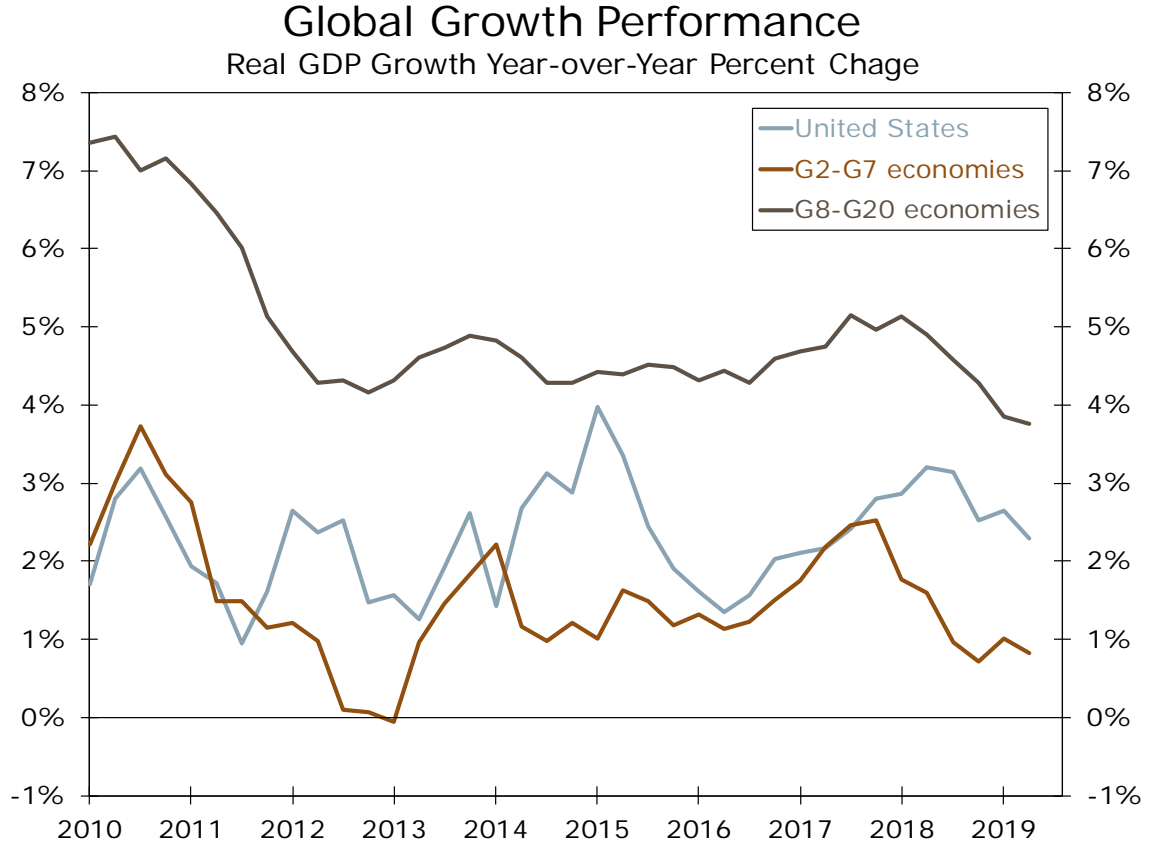
Trade tensions have escalated, and uncertainties have increased, weighing on economies—manufacturing in particular.



Source: IHS Markit and Wells Fargo Securities

The energy boom and fiscal stimulus have propelled U.S. growth ahead of most other developed economies.

The Federal Reserve and Congress also reacted more quickly to the Global Financial Crisis, resulting in a much healthier U.S. banking sector.

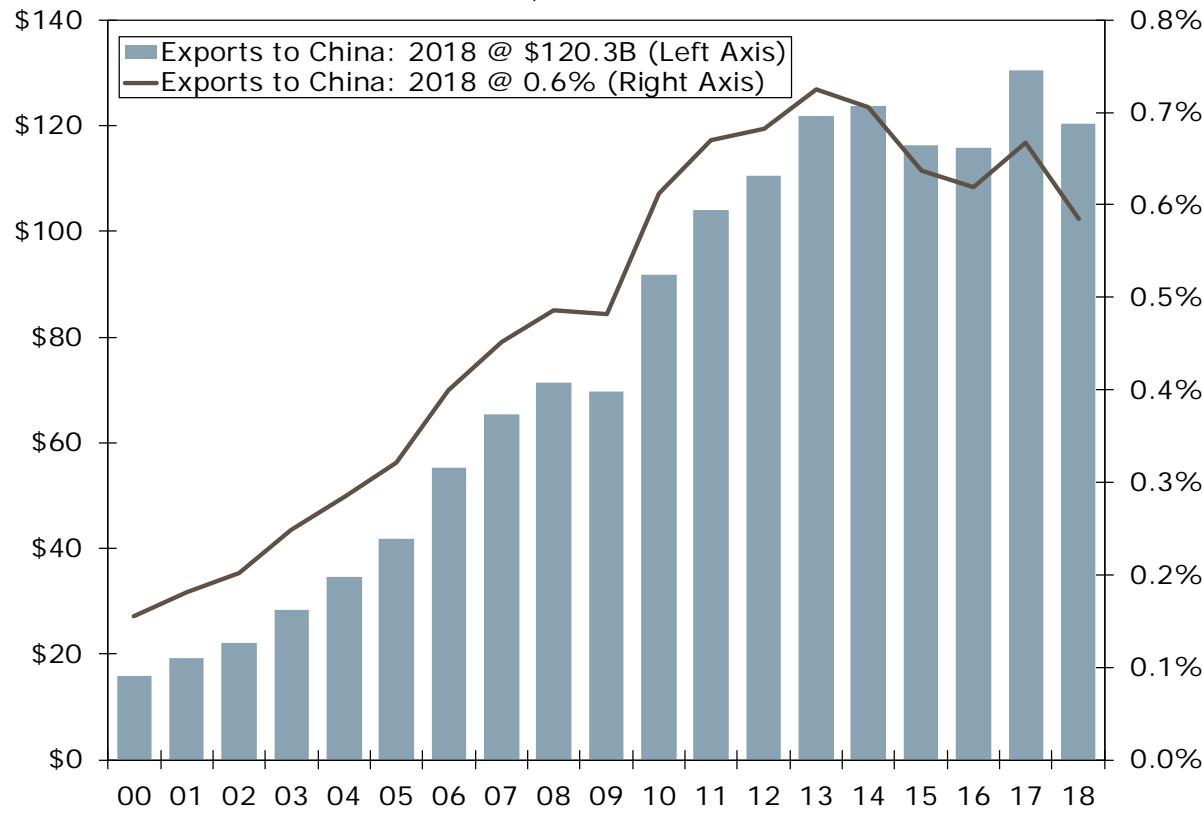


Source: OECD and Wells Fargo Securities

American exports to China are equivalent to roughly 1/2 percent of U.S. GDP.

U.S. Goods Exports to China

Billions of USD, Percent of Nominal GDP



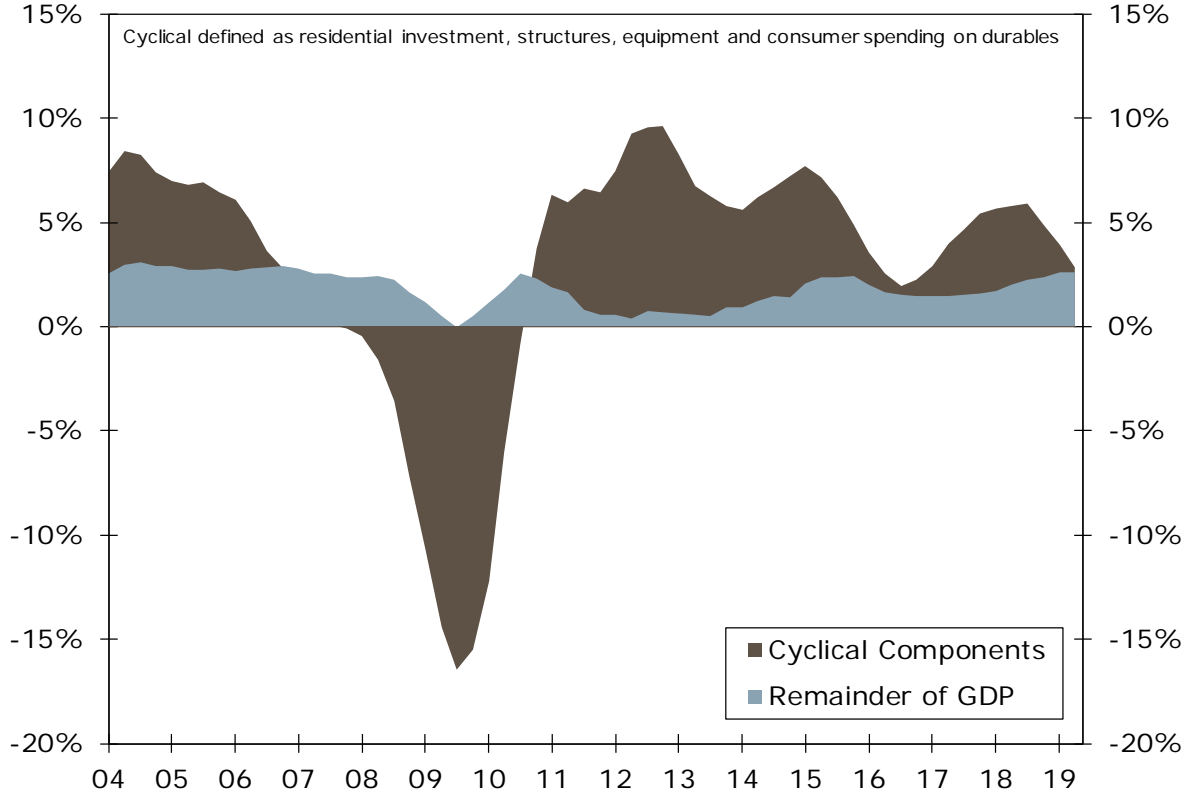
Source: International Monetary Fund, U.S. Department of Commerce and Wells Fargo Securities

Consumer spending on durable goods, housing, capital spending and nonresidential structures collectively account for 20% of GDP but over 100% of the decline in GDP during recessions.

We have seen less of a boom in the most cyclical parts of the economy during this cycle, which may push a correction further out and ultimately make that correction less severe.

Cyclical Components vs. Rest of GDP

Year-over-Year Change of 4-Qtr Moving Average of Real GDP



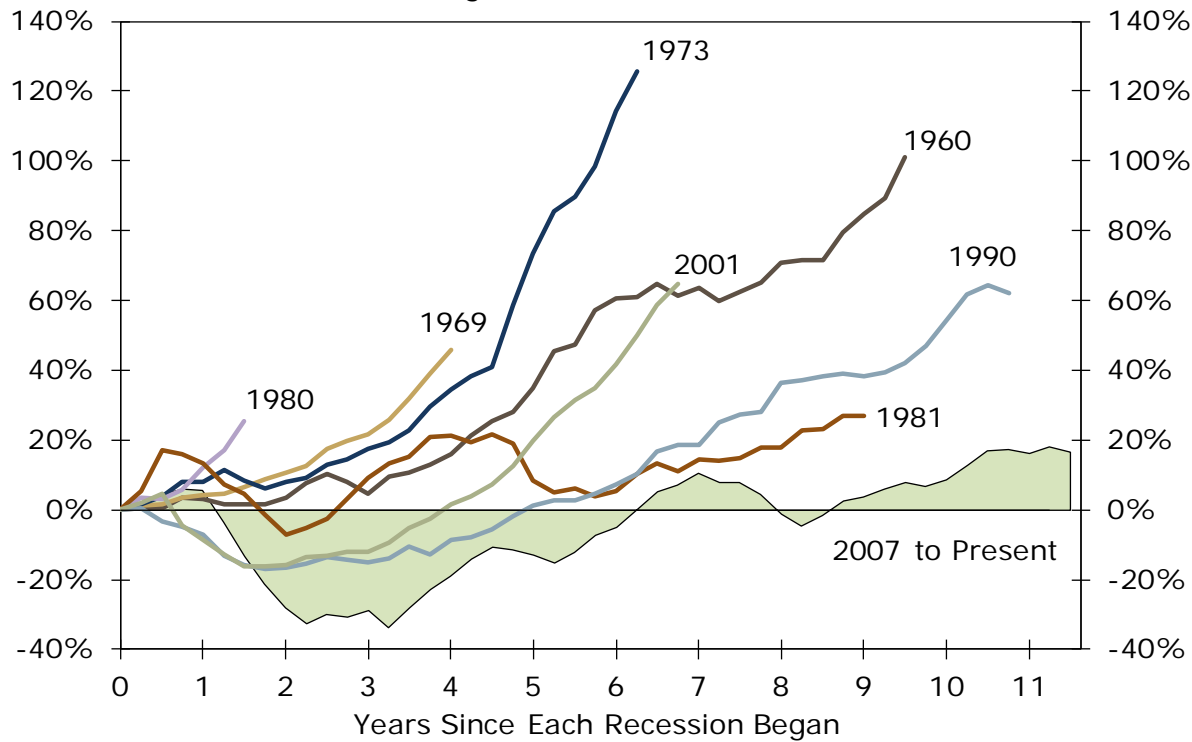
Source: U.S. Department of Commerce and Wells Fargo Securities

Overall building has remained relatively subdued this cycle.

Much of the activity has been concentrated in several large markets, which may present some risks to a sharp or prolonged pullback in the tech and energy sectors.

Nonresidential Structures Investment

Percent Change Since Start of Each Recession



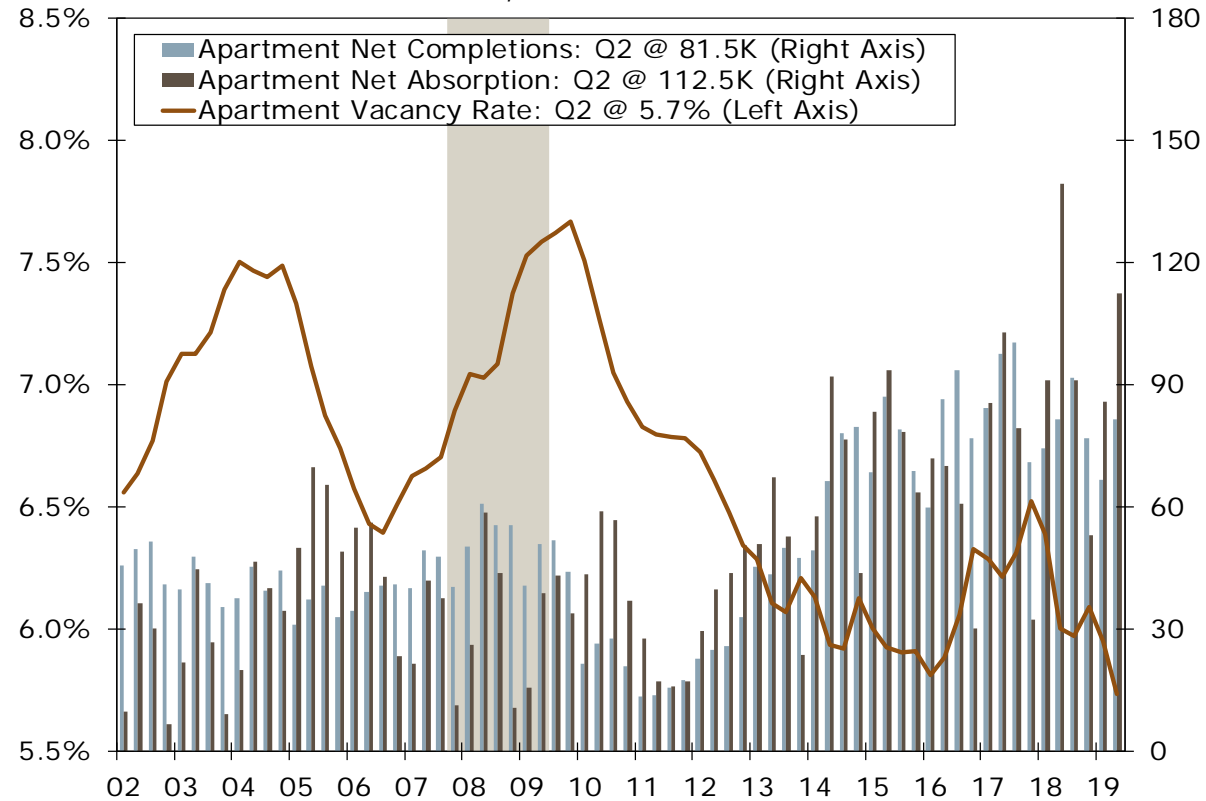
Source: U.S. Department of Commerce and Wells Fargo Securities

Apartment development has been fairly strong the past few years, with a disproportionate share of activity devoted to luxury and lifestyle units in a handful of rapidly growing metropolitan areas.

Development is now shifting to more affordable projects in suburban areas and in lower costs parts of the country.

Apartment Supply & Demand

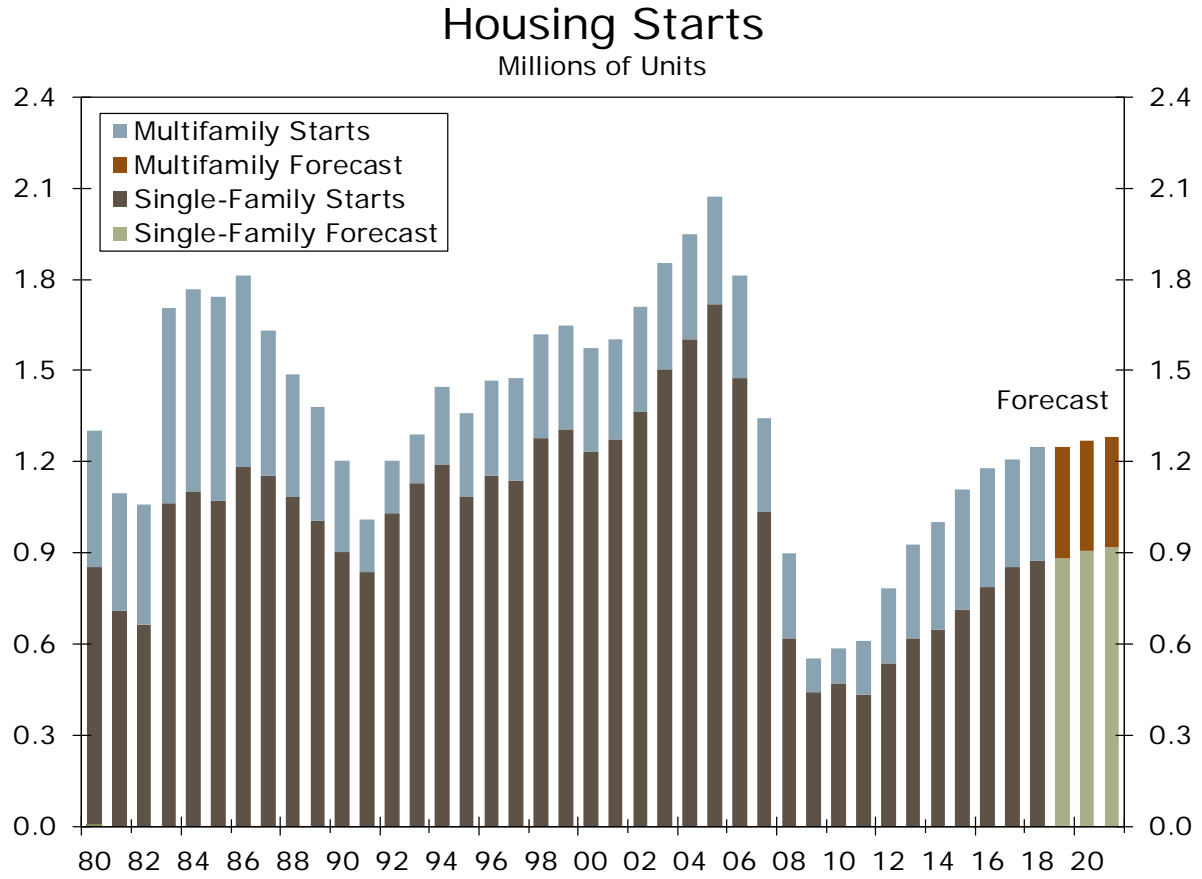
Percent, Thousands of Units



Source: CoStar, Inc. and Wells Fargo Securities

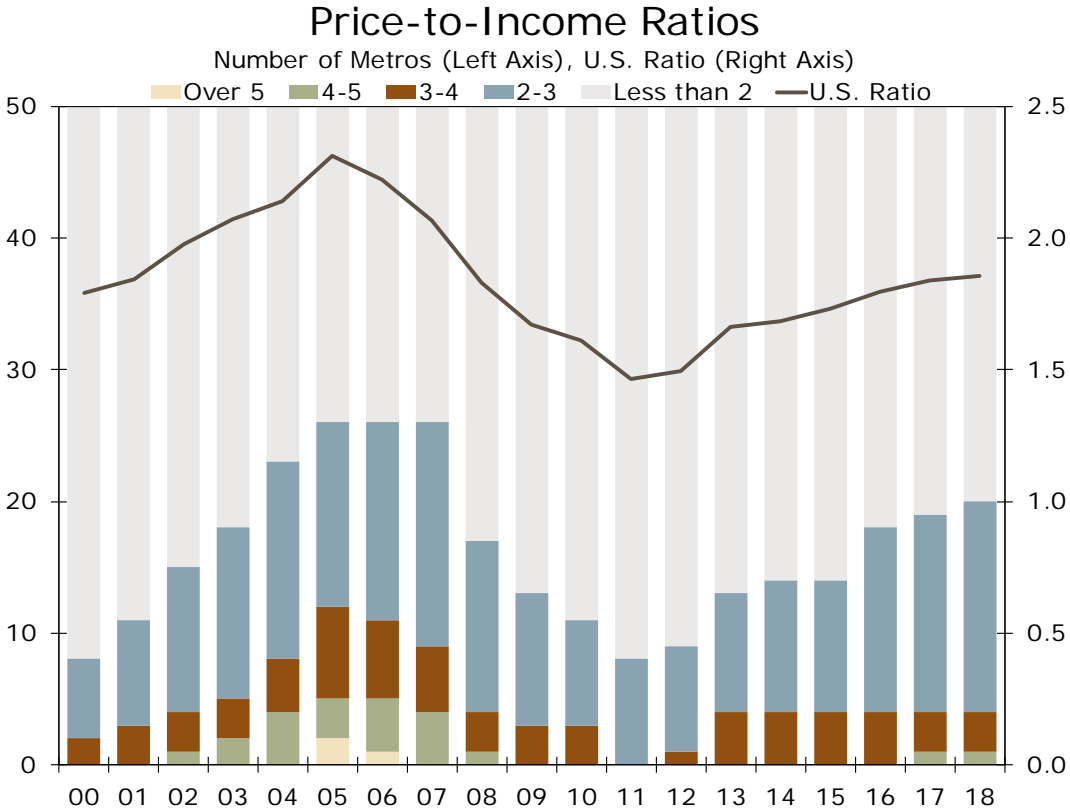
Affordability constraints will continue to keep a low ceiling on home sales and new home construction.

Overall homebuilding is still lagging household formation and there are too few homes available in markets where population and employment are growing rapidly. Apartment construction is pivoting toward more affordable units.



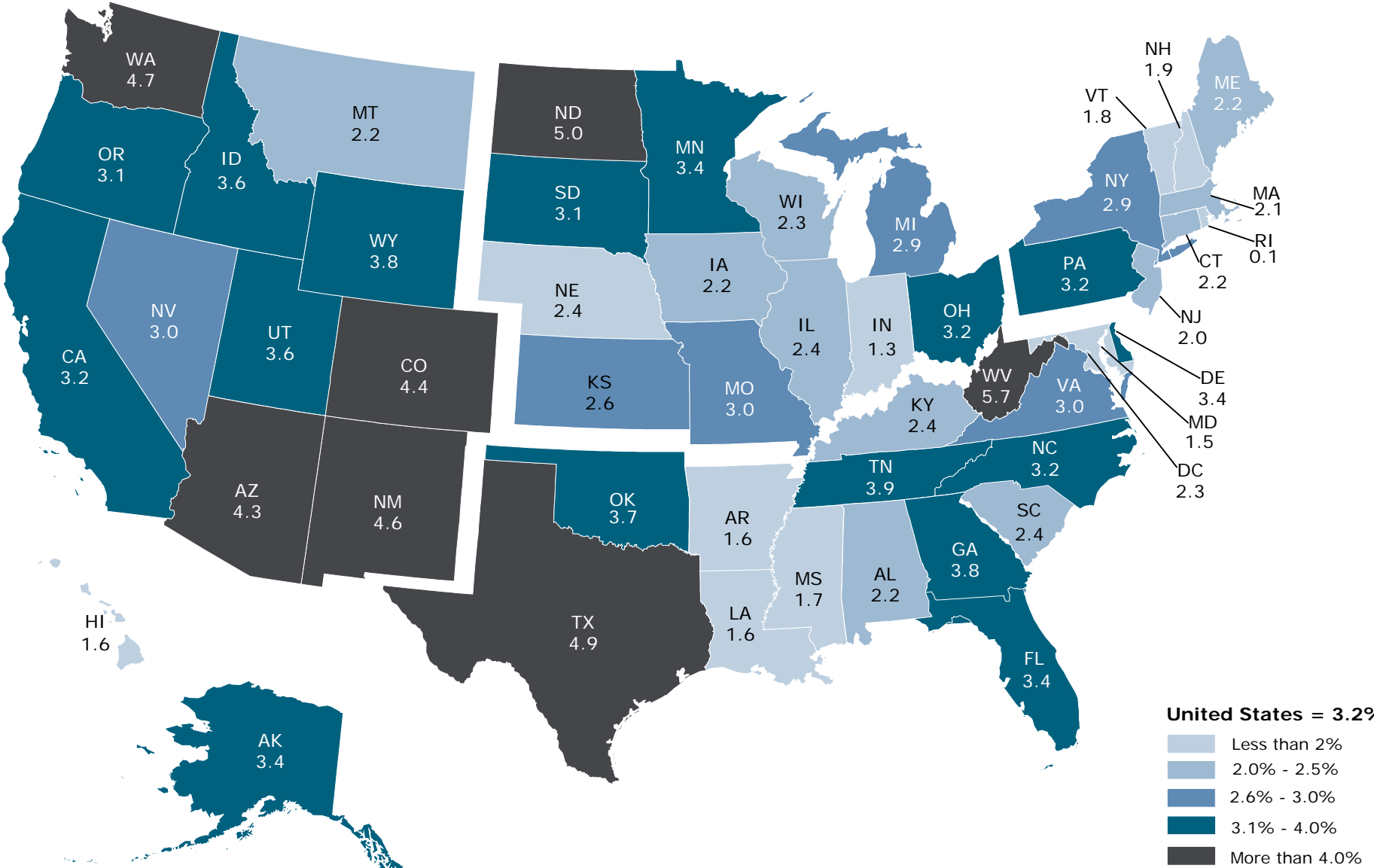
Source: U.S. Department of Commerce and Wells Fargo Securities

Home price-to-income ratios, particularly in large metros, are rising towards mid-2000 levels.



Source: NAR, U.S. Department of Commerce and Wells Fargo Securities

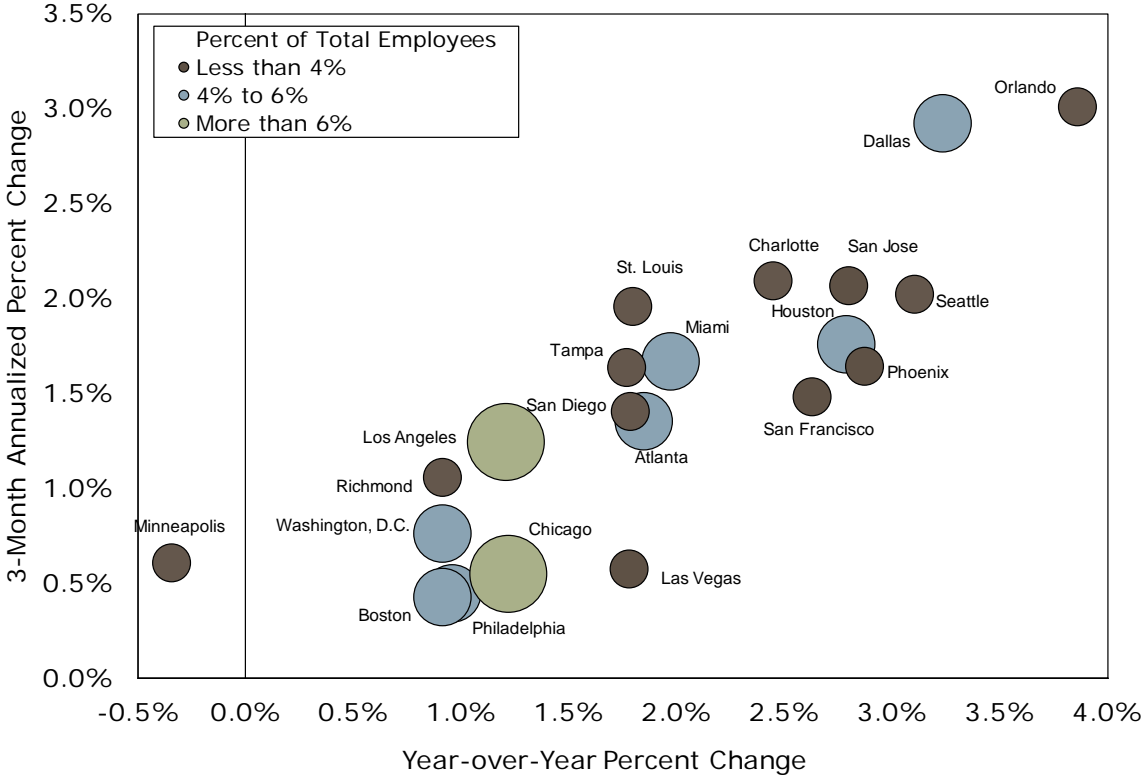
Year-over-Year Percent Change in Real GDP by State (Q1-2019)



Source: U.S. Department of Commerce and Wells Fargo Securities

Employment growth is strongest in the South and West.

U.S. Employment Growth by MSA
3-Month Moving Averages, August 2019



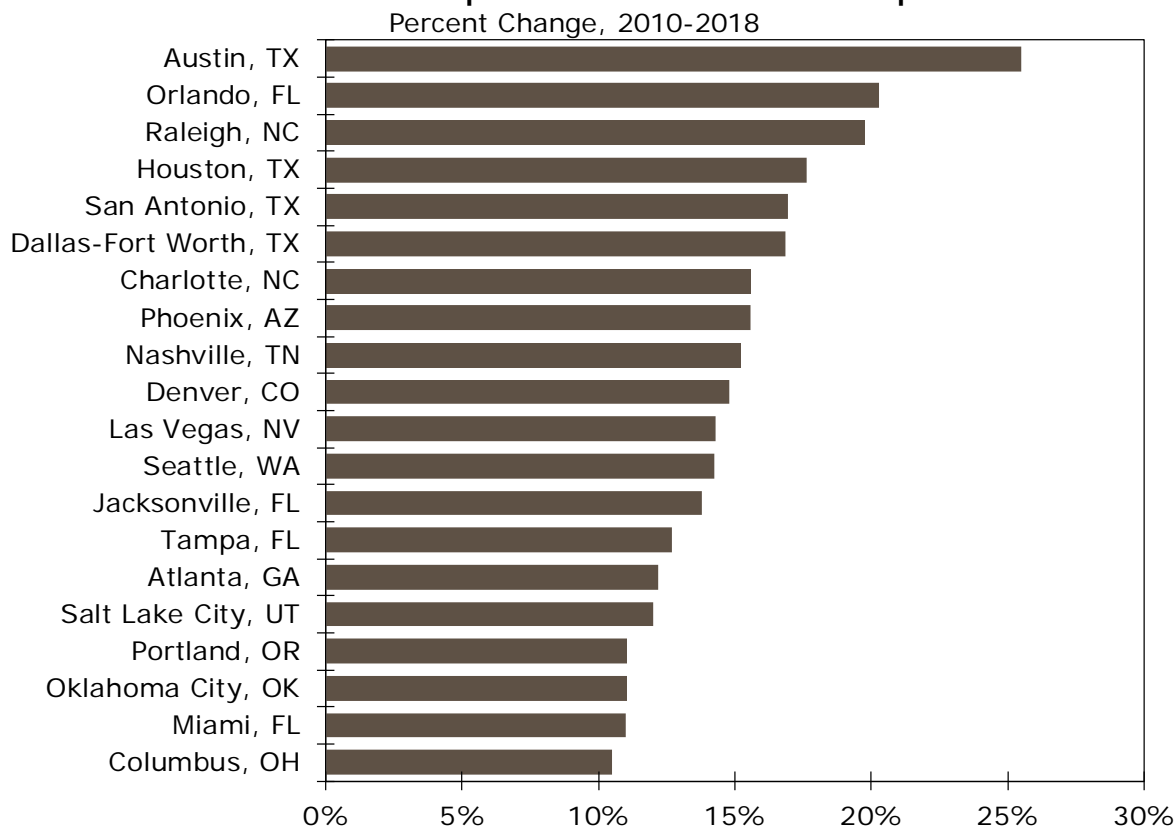
Source: U.S. Department of Labor and Wells Fargo Securities

Raleigh and Charlotte both rank among the top 10 fastest growing large metropolitan areas since 2010.

North Carolina is the only state other than Texas and Florida to have more than one large metro area rank in the top 20.

Charleston, SC would have clearly made the cut if the criteria was reduced to areas between 500,000 to 999,000.

Metro Area Population Growth: Top 20

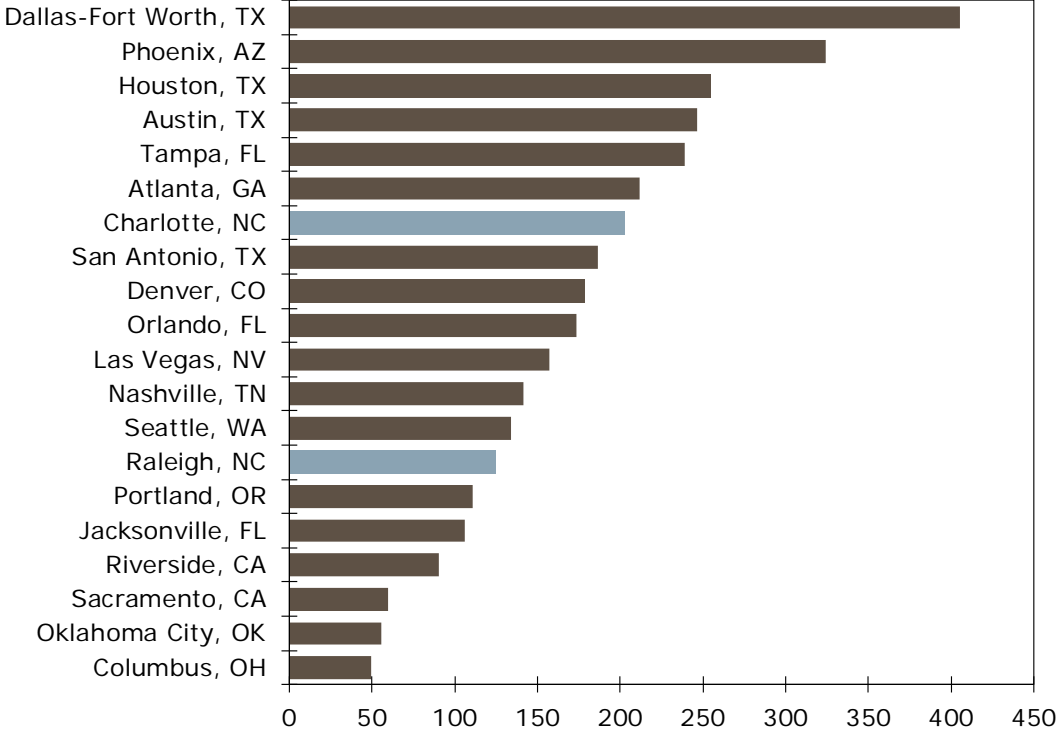


Source: U.S. Department of Commerce and Wells Fargo Securities

Domestic migration is a good proxy for the relative attractiveness of a region to job seekers.

Metro Area Net Domestic Migration: Top 20

Thousands, 2010-2018



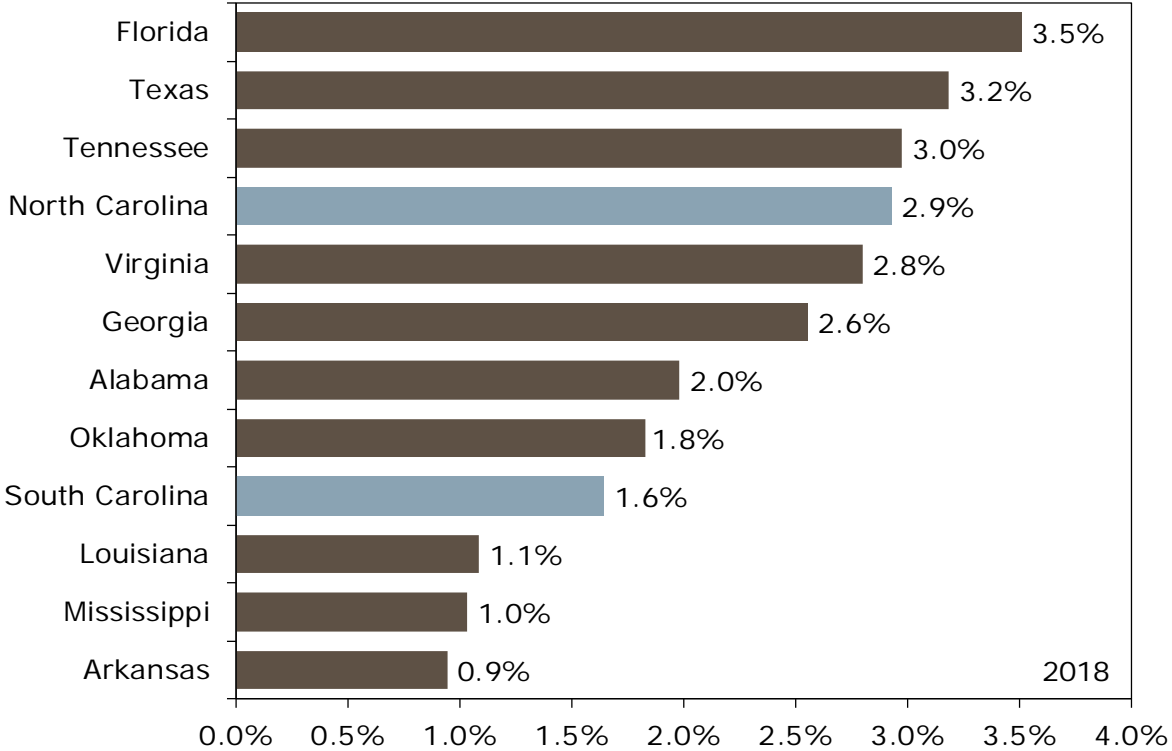
Source: U.S. Department of Commerce and Wells Fargo Securities

Florida, Texas and Tennessee are big economic standouts in the Southeast.

GDP growth has moderated in the parts of the South with the greatest exposure to global trade.

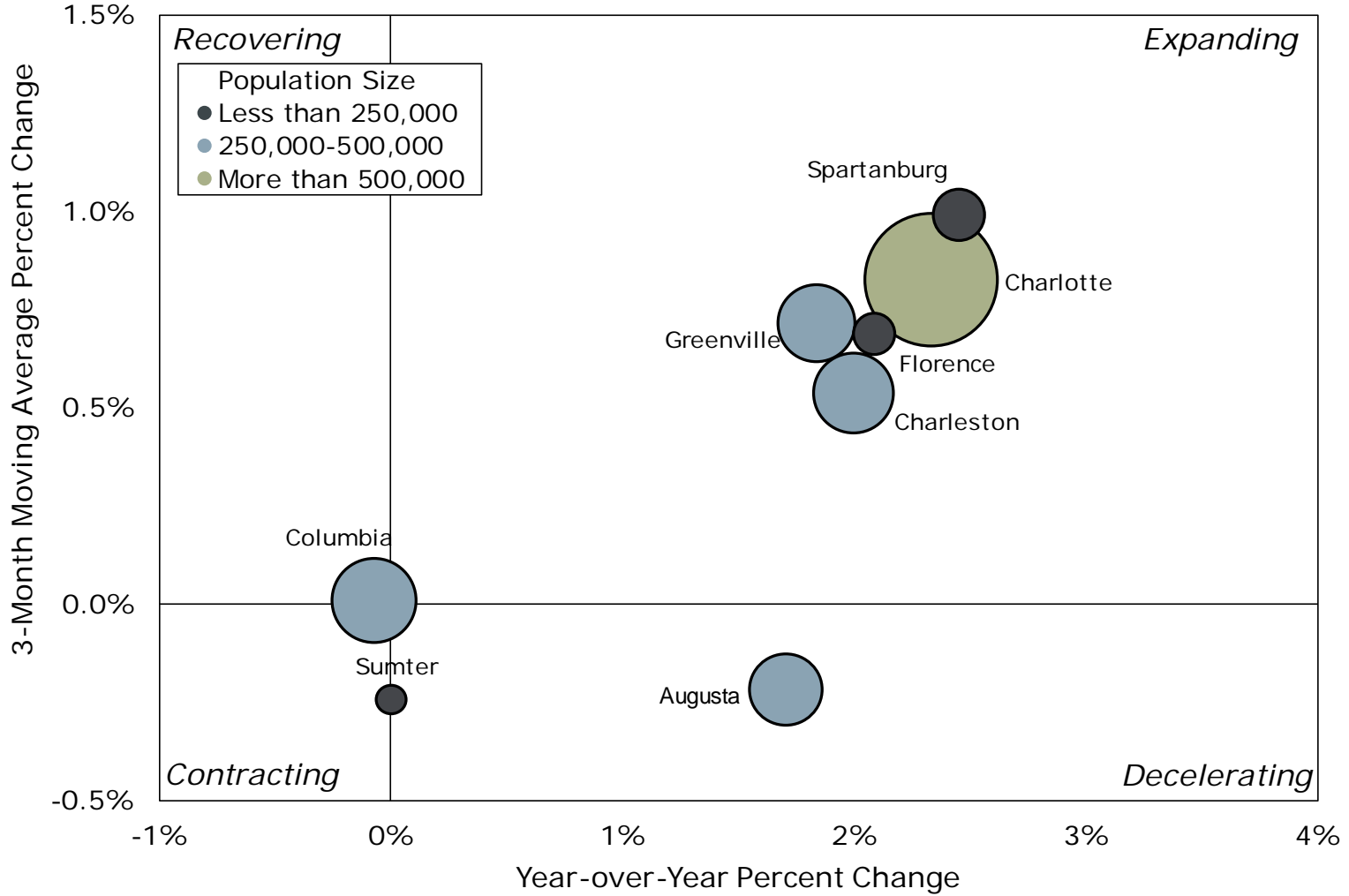
Southern U.S. GDP Growth

Year-over-Year Percent Change



Source: U.S. Department of Commerce and Wells Fargo Securities

South Carolina Employment Growth: August 2019 Year-over-Year Percent Change, 3-Month Moving Average

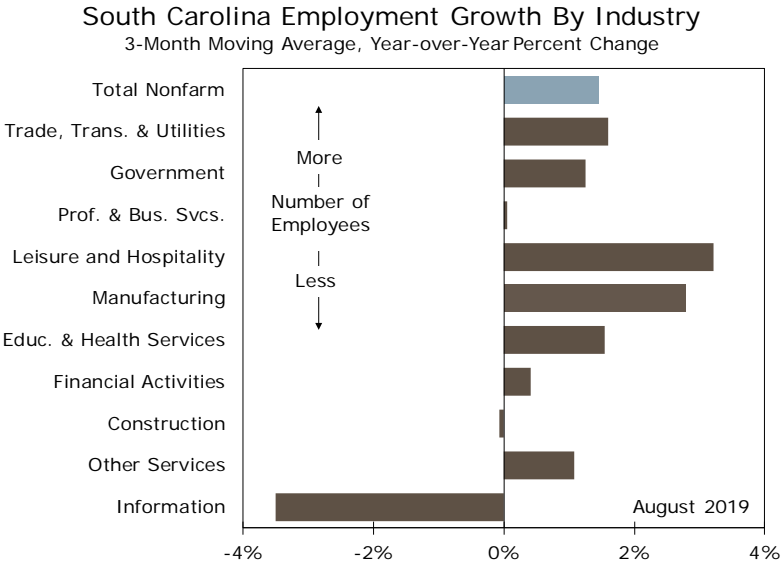
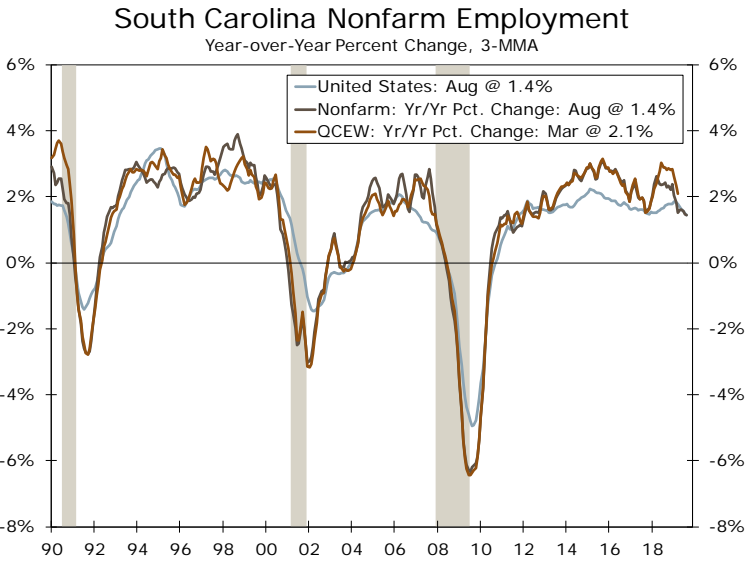


Source: U.S. Department of Labor and Wells Fargo Securities

Employment growth in South Carolina has volatile and subject to revision.

Nonfarm Employment

Employment by Industry



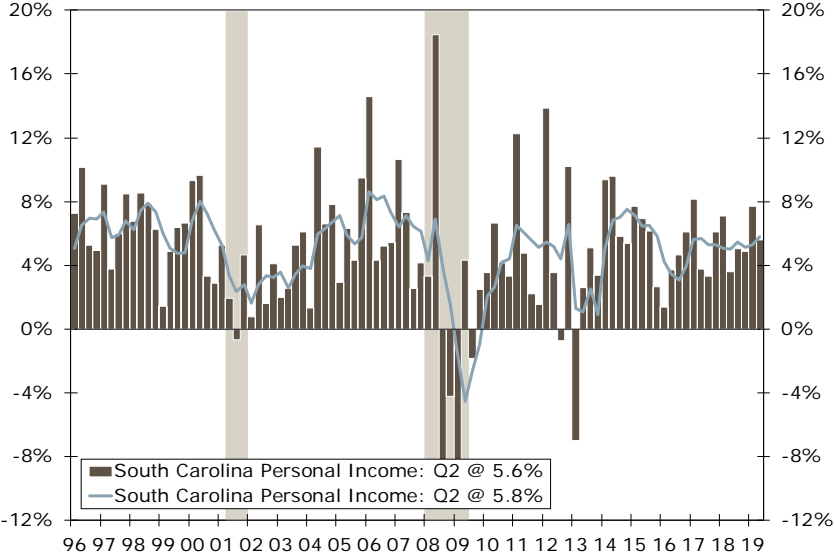
Source: U.S. Department of Labor and Wells Fargo Securities

A lot of the gains in personal income have come from transfer payments.

Personal Income

South Carolina State Personal Income

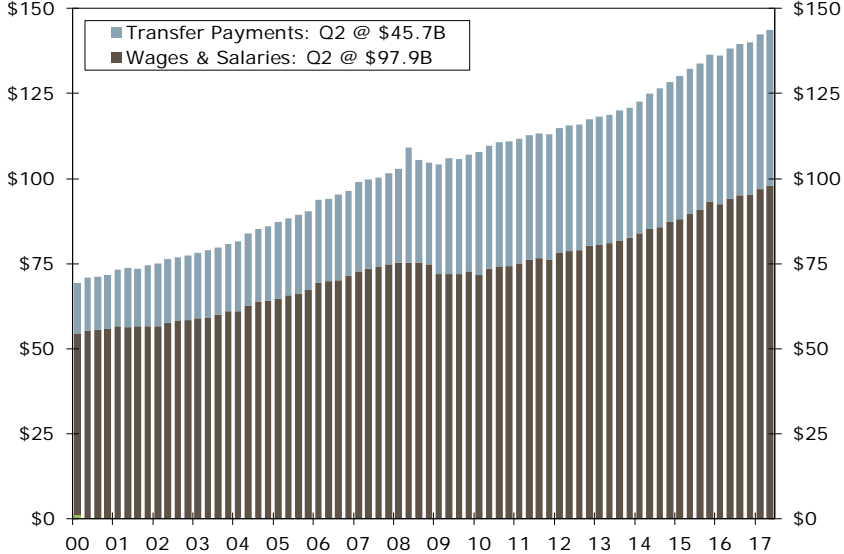
Bars = Compound Annual Rate Line = Yr/Yr % Change



Composition of Income Growth

South Carolina: Wages & Salaries vs. Transfers

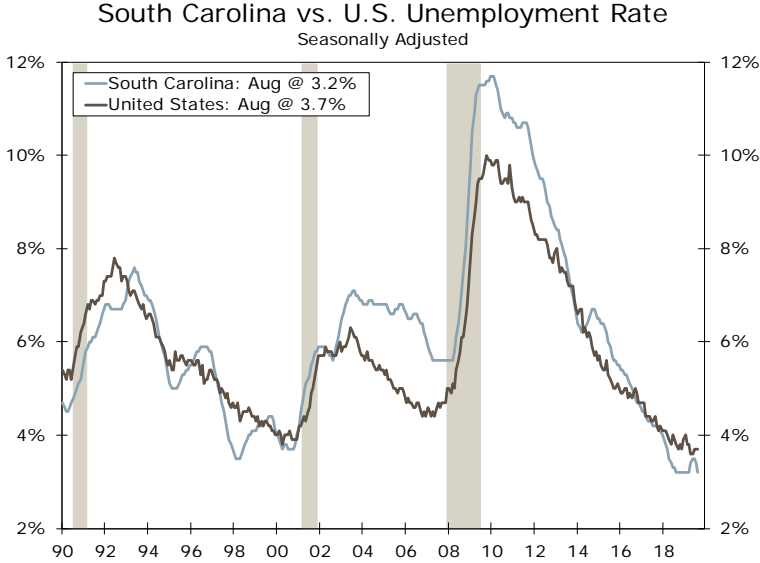
In Billions, Seasonally Adjusted Annual Rate



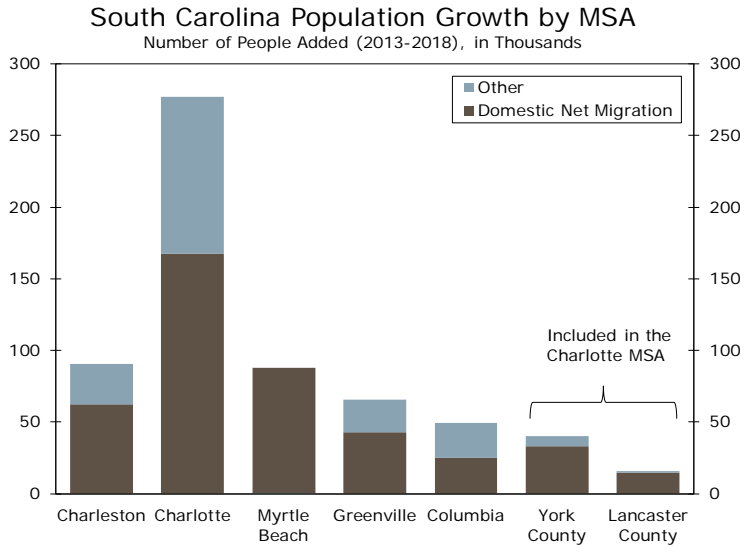
Source: U.S. Department of Commerce and Wells Fargo Securities

The South Carolina labor market is tight, with unemployment below 4% in the biggest metros. Charlotte's population has been booming.

Unemployment Rate



Population Growth



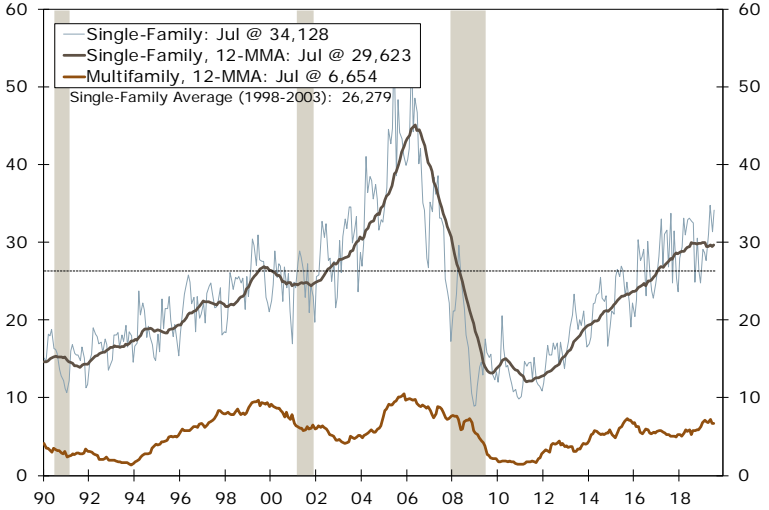
Source: U.S. Department of Labor, U.S. Department of Commerce and Wells Fargo Securities

South Carolina is one of only a handful of states in the nation where the pace of single-family home building has surpassed its long term average. Housing remains affordable. Price appreciation slightly trails the nation, even though prices are rising off a lower base.

Housing Permits

South Carolina Housing Permits

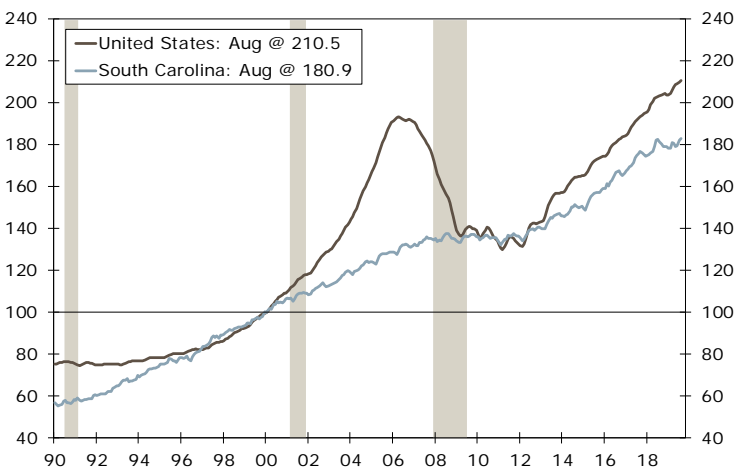
Thousands of Permits, Annual Rate



Home Prices

CoreLogic HPI: SC vs. U.S.

Index, 2000=100, Not Seasonally Adjusted



Source: U.S. Department of Commerce, CoreLogic, Inc. and Wells Fargo Securities

South Carolina's significant ties to the global economy have contributed to a greater slowdown.

SC Top Export Countries

<u>Country</u>	<u>Export Value in 2018 (\$B)</u>	<u>% of Total</u>
All Exports	34.63	100.0%
Exports: Total to China	5.64	16.3%
Exports: Total to Canada	3.98	11.5%
Exports: Total to Germany	3.77	10.9%
Exports: Total to Mexico	2.77	8.0%
Exports: Total to United Kingdom	2.42	7.0%
Exports: Total to Singapore	1.87	5.4%
Exports: Total to Japan	1.64	4.7%
Exports: Total to United Arab Emirates	1.18	3.4%
Exports: Total to Australia	0.84	2.4%
Exports: Total to Taiwan	0.79	2.3%
Exports: Total to Belgium	0.76	2.2%
Exports: Total to South Korea	0.67	1.9%
Exports: Total to Brazil	0.58	1.7%
Exports: Total to France	0.50	1.4%
Exports: Total to Saudi Arabia	0.48	1.4%
Exports: Total to India	0.44	1.3%
Exports: Total to Spain	0.44	1.3%

Source: U.S. Department of Commerce and Wells Fargo Securities

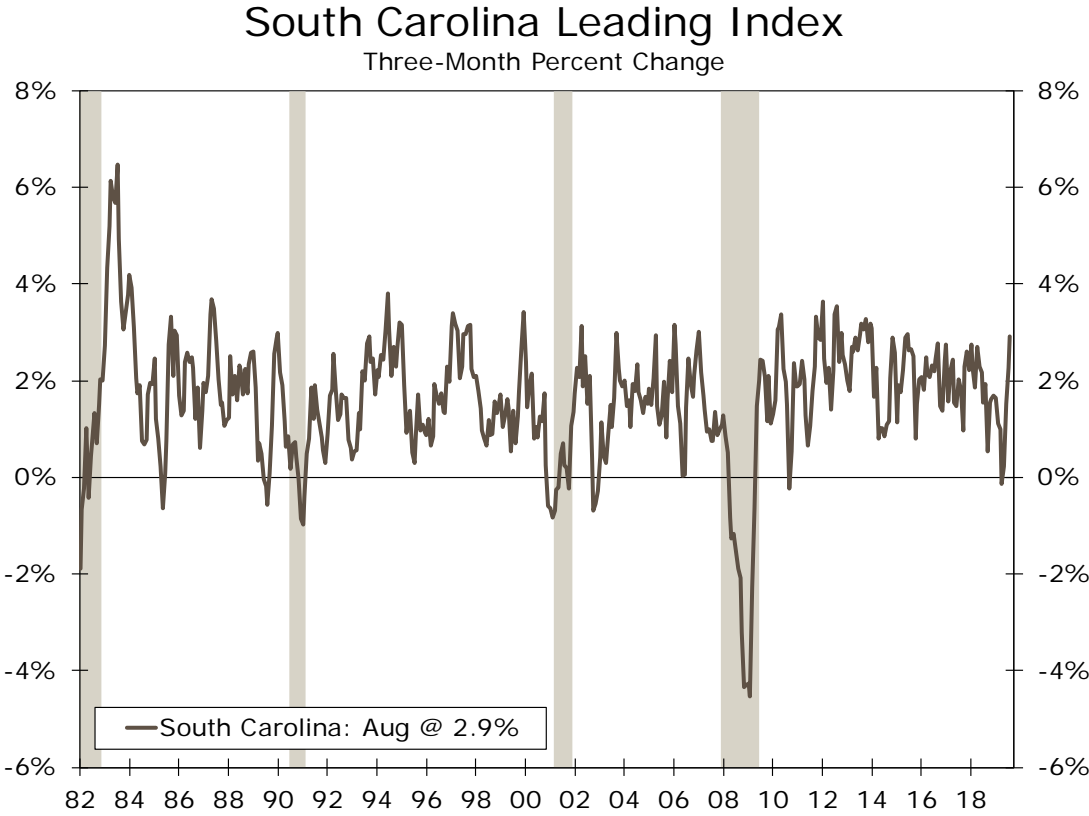
SC Top Export Industries

<u>Export</u>	<u>Export Value in 2018 (\$Bil)</u>	<u>% of Total</u>
All Exports	34.63	100.0%
Transportation Equipment Manufacturing	18.80	54.3%
Chemical Manufacturing	2.92	8.4%
Plastics and Rubber Products Manufacturing	2.37	6.8%
Machinery Manufacturing	2.14	6.2%
Computer and Electronic Product Manufacturing	1.39	4.0%
Electrical Equipment; Appliance; and Component Manuf:	1.32	3.8%
Paper Manufacturing	1.21	3.5%
Fabricated Metal Product Manufacturing	1.09	3.1%
Food Manufacturing	0.92	2.7%
Textile Mills	0.68	2.0%
Primary Metal Manufacturing	0.36	1.0%
Waste and Scrap	0.34	1.0%
Agriculture Forestry Fishing and Hunting	0.27	0.8%
Nonmetallic Mineral Product Manufacturing	0.21	0.6%

Source: U.S. Department of Commerce and Wells Fargo Securities

Source: U.S. Department of Commerce and Wells Fargo Securities

The leading economic index has rebounded after dipping into negative territory.



Source: Federal Reserve Bank of Philadelphia and Wells Fargo Securities

Wells Fargo U.S. Economic Forecast

	Actual																Forecast									
	2018				2019				2020				2021				2018	2019			2020			2021		
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
Real Gross Domestic Product ¹	2.6	3.5	2.9	1.1	3.1	2.0	1.4	1.4	1.7	1.8	2.2	1.8	2.0	2.1	2.3	2.3	2.9	2.2	1.7	2.1	2.1	2.1	2.1	2.1		
Personal Consumption	1.7	4.0	3.5	1.4	1.1	4.6	2.4	1.9	2.0	2.0	1.9	1.9	1.8	2.1	2.2	2.2	3.0	2.5	2.2	1.9	1.9	1.9	1.9	1.9		
Business Fixed Investment	8.8	7.9	2.1	4.8	4.4	-1.0	-0.4	0.6	3.1	2.0	3.3	3.7	4.2	4.1	4.1	4.0	6.4	2.5	1.8	3.8	3.8	3.8	3.8	3.8		
Equipment	6.6	3.4	2.9	7.4	-0.1	0.8	-3.9	-2.8	1.6	-0.5	1.3	2.0	3.4	3.4	3.2	3.0	6.8	1.4	-0.4	2.6	2.6	2.6	2.6	2.6		
Intellectual Property Products	9.7	11.9	4.1	11.7	10.8	3.6	6.3	5.0	5.4	4.7	6.2	6.5	6.4	6.2	6.1	6.2	7.4	7.9	5.4	6.2	6.2	6.2	6.2	6.2		
Structures	12.1	11.0	-2.1	-9.0	4.0	-11.1	-7.5	0.5	2.5	3.0	2.5	2.2	1.8	1.9	2.0	2.1	4.1	-3.5	0.0	2.1	2.1	2.1	2.1	2.1		
Residential Construction	-5.3	-3.7	-4.0	-4.7	-1.0	-3.0	3.5	2.0	2.0	1.5	1.5	1.5	1.0	1.0	1.0	1.0	-1.5	-1.9	1.7	1.2	1.2	1.2	1.2	1.2		
Government Purchases	1.9	2.6	2.1	-0.4	2.9	4.8	1.2	0.9	1.2	1.0	0.9	0.8	0.8	0.8	0.7	0.7	1.7	2.2	1.3	0.9	0.9	0.9	0.9	0.9		
Net Exports ²	0.0	0.7	-2.1	-0.4	0.7	-0.7	-0.3	-0.1	0.3	-0.2	-0.2	-0.4	-0.2	-0.1	0.0	0.0	-0.4	-0.3	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2		
Inventories ²	0.1	-1.2	2.1	0.1	0.5	-0.9	-0.1	-0.1	-0.7	0.0	0.4	0.1	0.2	0.0	0.0	0.0	0.1	0.2	-0.2	0.1	0.1	0.1	0.1	0.1		
Nonfarm Payroll Change ³	228	243	189	233	174	152	157	130	170	395	-115	0	100	105	110	110	223	153	113	106	106	106	106	106		
Unemployment Rate	4.1	3.9	3.8	3.8	3.9	3.6	3.6	3.6	3.6	3.5	3.6	3.7	3.7	3.7	3.7	3.7	3.9	3.7	3.6	3.7	3.7	3.7	3.7	3.7		
Consumer Price Index ⁴	2.2	2.7	2.6	2.2	1.6	1.8	1.8	1.8	2.3	2.1	2.2	2.3	2.2	2.2	2.2	2.1	2.4	1.8	2.2	2.2	2.2	2.2	2.2	2.2		
Quarter-End Interest Rates ⁵																										
Federal Funds Target Rate	1.75	2.00	2.25	2.50	2.50	2.50	2.00	1.75	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.96	2.19	1.50	1.50	1.50	1.50	1.50	1.50		
Conventional Mortgage Rate	4.44	4.57	4.63	4.64	4.28	3.80	3.61	3.35	3.40	3.50	3.60	3.70	3.75	3.85	3.90	3.95	4.54	3.76	3.55	3.86	3.86	3.86	3.86	3.86		
2 Year Note	2.27	2.52	2.81	2.48	2.27	1.75	1.63	1.60	1.60	1.65	1.65	1.70	1.75	1.75	1.80	1.80	2.53	1.81	1.65	1.78	1.78	1.78	1.78	1.78		
10 Year Note	2.74	2.85	3.05	2.69	2.41	2.00	1.68	1.70	1.75	1.85	1.95	2.05	2.10	2.20	2.25	2.30	2.91	1.95	1.90	2.21	2.21	2.21	2.21	2.21		

Forecast as of: October 09, 2019

¹ Compound Annual Growth Rate Quarter-over-Quarter

² Percentage Point Contribution to GDP

³ Average Monthly Change

⁴ Year-over-Year Percentage Change

⁵ Annual Numbers Represent Averages

Source: IHS Global Insight and Wells Fargo Securities

A Sampling of Our Recent Special, Regional & Industry Commentary

Recent Special Commentary		
Date	Title	Authors
U.S. Macro		
October-10	Estimating Elections' Effect on the Economy	Iqbal & Mathews
October-08	The Animal Spirits Index Remains Volatile in Q3	Iqbal
October-08	Gimme Shelter or Inflation Gonna Fade Away	House & Seery
September-27	Impeachment Drama Stirs the Pot in Washington, D.C.	Bryson & Pugliese
September-18	Fed Cuts Rates 25 bps. Is Further Easing on the Way?	Bryson
U.S. Regional		
October-11	Tuskegee vs. Morehouse in a Classic	Vitner, Dougherty & Honnold
October-10	Washington and Arizona Face Off	Vitner, Dougherty & Honnold
October-03	Iowa vs. Michigan	Vitner, Dougherty & Honnold
September-26	Prairie View A&M vs. Gambling State	Vitner, Dougherty & Honnold
September-26	Ohio State vs. Nebraska	Vitner, Dougherty & Honnold
Global Economy		
October-10	Is There Too Much Debt in the Eurozone?: Part V	Bryson, Pugliese & Mathews
October-02	Political Pressure, Trade Policy and Potential Market Effect	McKenna, Bennenbroek & Licis
October-01	RBA: A Gentle Turn to More Rate Cuts	McKenna
October-01	ECB Snaps, Crackles, then Watches Rates Pop	Bennenbroek & Nelson
September-19	Norges Bank, the Lone G10 Hawk?	Licis & Nelson
Interest Rates/Credit Market		
September-27	Repo Running Wild: A Deeper Dive	Bryson & Pugliese
September-17	Repo Running Wild	Pugliese
July-31	FOMC Cuts Rates 25 bps, but Two Members Dissent	Bryson
July-31	Treasury Refunding Highlights	Bryson & Pugliese
July-30	Was the Fed's Rate Hike in December a "Policy Mistake"?	Iqbal & Licis
Real Estate & Housing		
October-11	Assessing the Risk of Co-working Office Space	Vitner, Dougherty & Honnold
July-30	Housing Demographics Turn More Positive	Vitner, Dougherty & Honnold
July-09	Housing Chartbook: July 2019	Vitner, Dougherty & Honnold
June-18	Housing Chartbook: June 2019	Vitner, Dougherty & Honnold
March-20	Q4 CRE Chartbook: Construction Outlook	Vitner, Dougherty & Honnold
March-18	Housing Chartbook: March 2019	Vitner, Dougherty & Honnold

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On the Current Economic Outlook

Raymond Sauer
John E. Walker Department of Economics
Clemson University

Regional Advisory Committee Roundtable
South Carolina Board of Economic Advisors

October 17, 2019

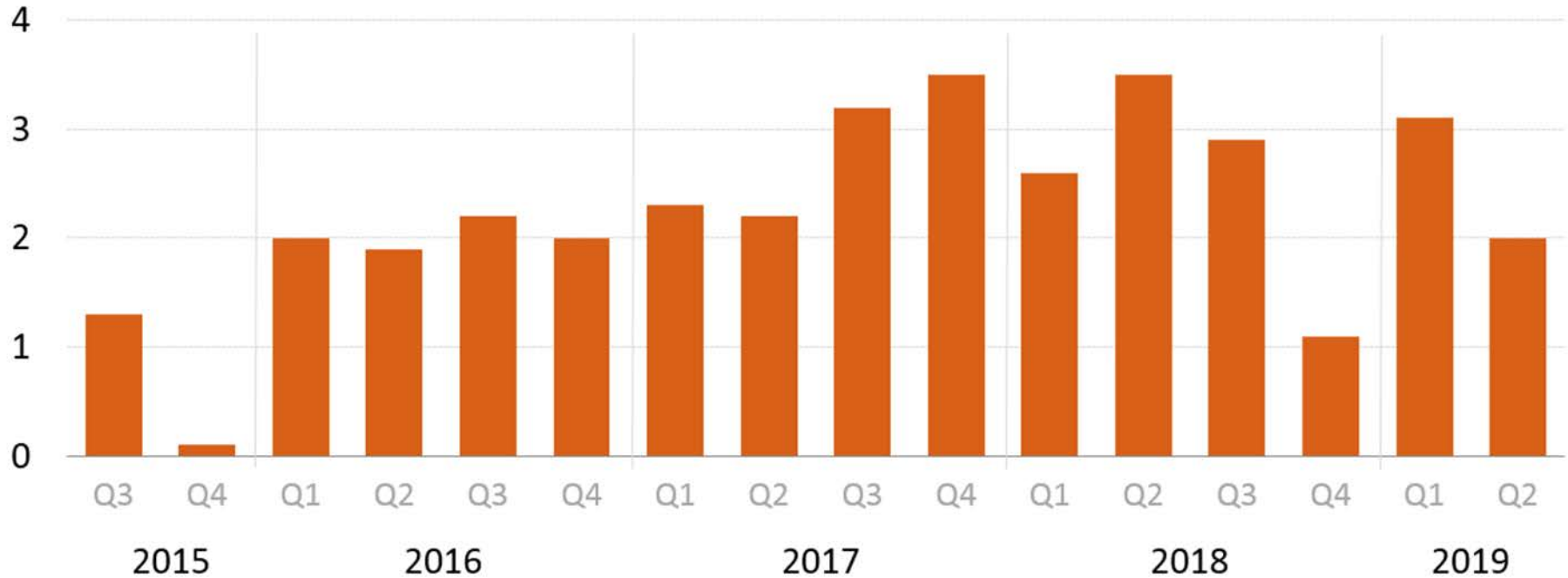


A steady but slow current expansion

- At 125+ months the current period of growth broke the previous record of 120 consecutive months of GDP growth
- Unemployment has fallen from 2009 peak of 10% to 3.5% -- the largest decline since the Great Depression

A steady but slow current expansion

Real GDP: Percent change from preceding quarter



With surprising(?) labor market gains

Year	Employment (millions)	Unemployment Rate (%)	Avg Hourly Earnings
2010	130.4	9.8	\$22.59
2011	131.9	9.1	\$23.11
2012	134.2	8.2	\$23.52
2013	136.4	7.5	\$23.99
2014	138.9	6.3	\$24.48
2015	141.8	5.4	\$25.01
2016	144.3	4.9	\$25.70
2017	146.6	4.4	\$26.36
2018	149.1	3.9	\$27.11
2019	151.3	3.5	\$28.00

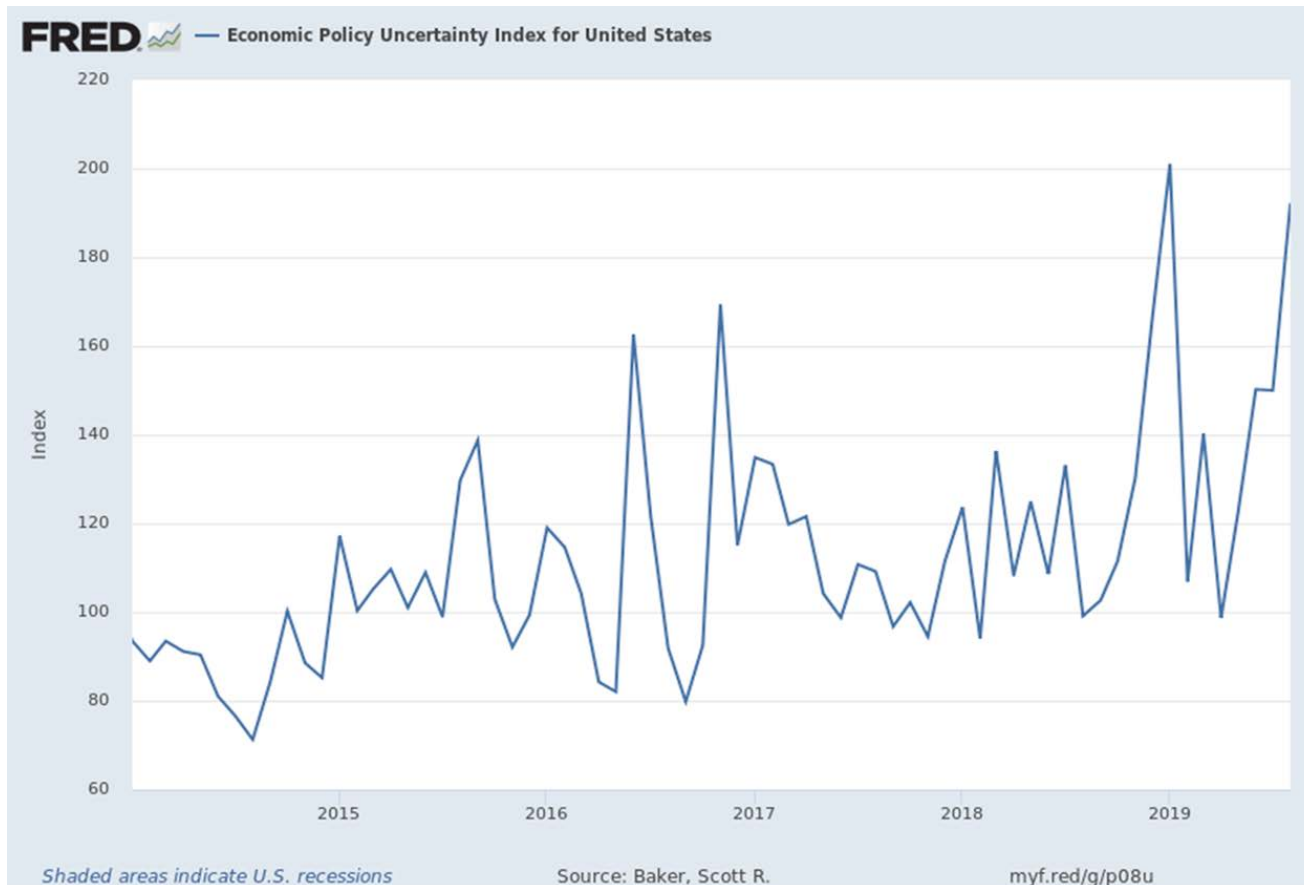
Risks to growth are emerging

1. sluggish productivity

Decade	Labor Productivity Growth
1950-1959	2.7
1960-1969	2.8
1970-1979	2.1
1980-1989	1.6
1990-1999	2.2
2000-2009	2.8
2010-2019	1.0

Risks to growth are emerging

2. high policy uncertainty



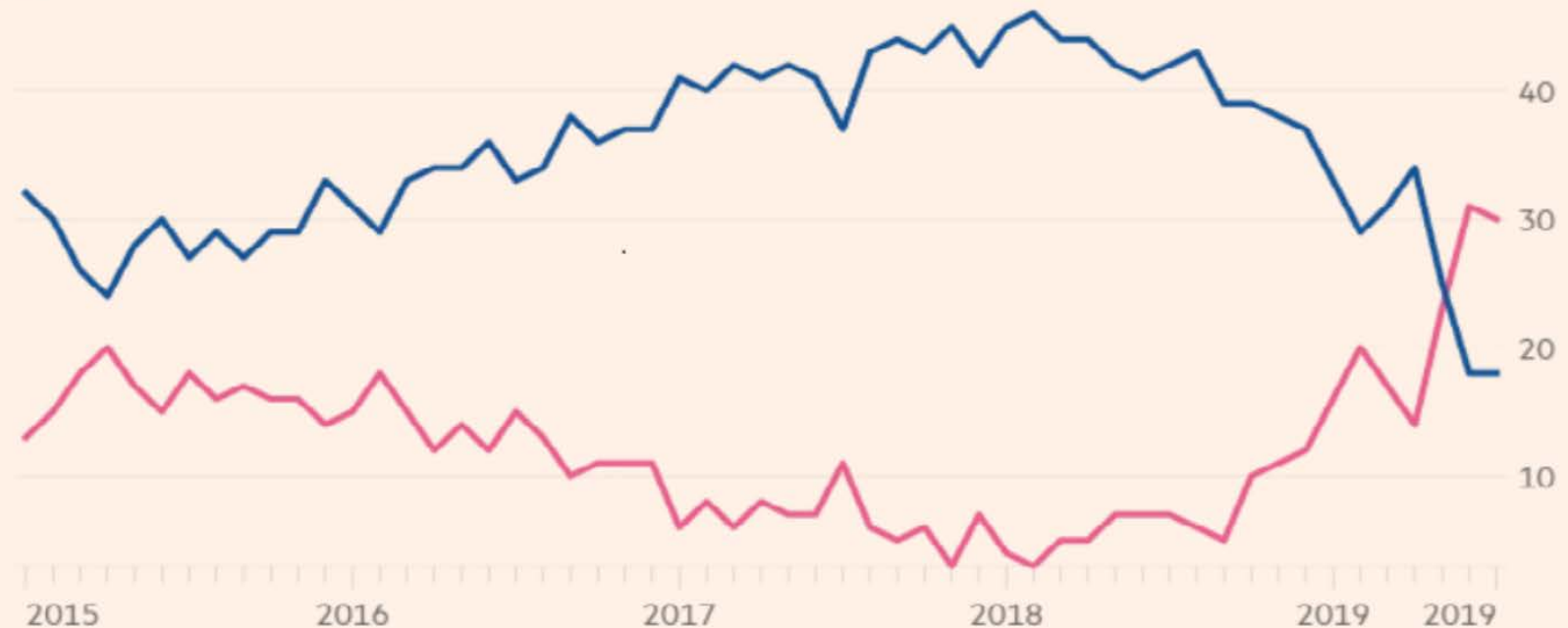
Risks to growth are emerging

3. global manufacturing slowdown

The manufacturing contraction is spreading

Manufacturing purchasing managers' indices

- No of countries reporting expansion
- No of countries reporting contraction



Risks to growth continued

- Exports & investment declines in 2nd quarter
GDP
- Leading Economic Indicators have turned down and are increasingly bearish
- 65% of NABE forecasters predict recession by 2021

My crystal ball

- Sluggish growth to continue at a slower pace due to global weakness and policy uncertainty
- Risk of recession is considerably higher now than in previous years

**South Carolina Board of Economic Advisors
Regional Advisory Committee
Economic Forecast Assumptions**

What is your forecast growth rate for the following variables:

Variable	Actual FY2018-19	Most Recent 2/	Current 1/ Forecast Rates FY2019-20	Forecast FY2019-20	Forecast FY2020-21
S.C. Personal Income	5.40%	5.78%	4.25%	4.9%	3.5%
S.C. Employment	1.9%	1.4%	1.8%	1.7%	1.5%
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	2.9%	2.9%
Sales Tax (Y-T-D)	5.0%	11.1%	4.2%	4.9%	3.5%
Individual Income Tax (Y-T-D)	7.2%	3.2%	4.5%	4.9%	3.5%

Notes: 1/ Current forecast rates as of February 14, 2019 (the last official BEA forecast estimate).
2/ Growth rate as of the most recent time period, e.g. month, quarter.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.
U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.
S.C. Board of Economic Advisors, Columbia, S.C.

BEA/RWM/09/24/19

Issues to Consider:

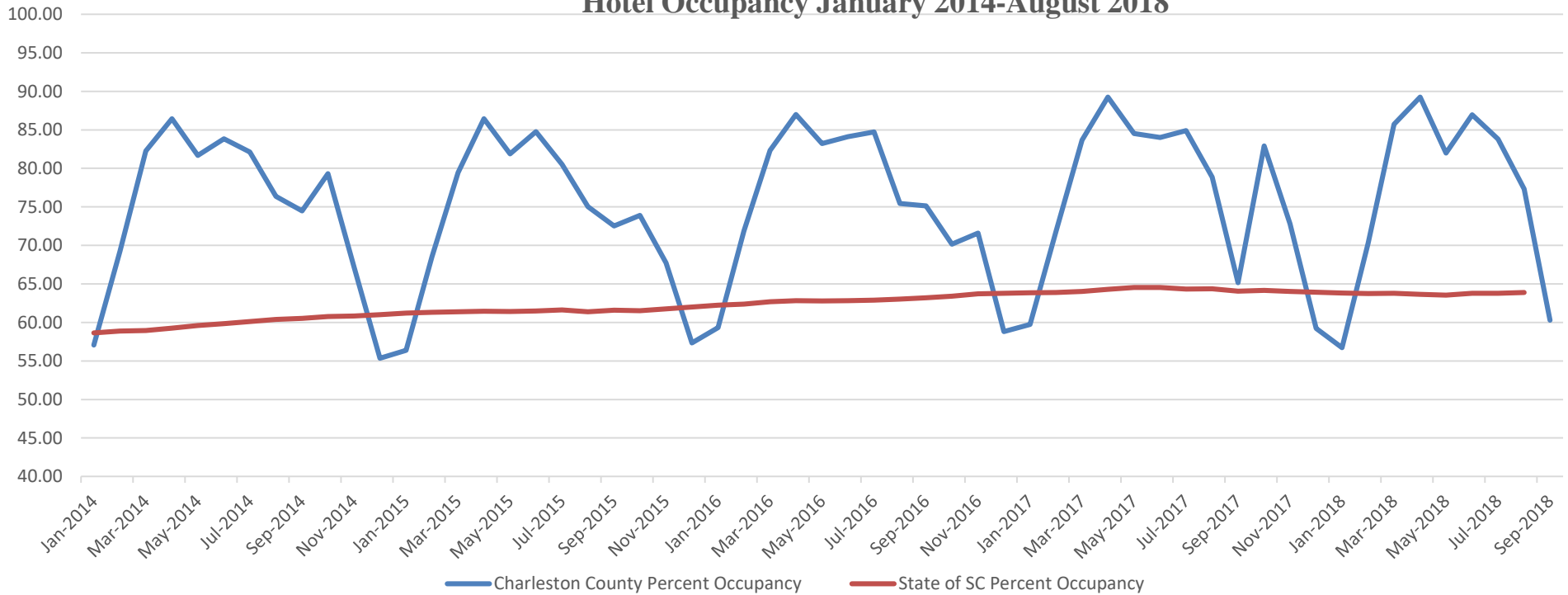
- What are the significant/specific factors/sectors affecting personal income?**
- What are the significant/specific factors/sectors affecting employment?**
- What are the key risks you see over the next 20 months?**
- Are there any other key points that should be considered?**

**South Carolina
Board of Economic Advisors
Regional Advisory Committee
Economic Update
Stormy Weather
Deju Vu All Over Again
With Increasing Uncertainty
October 17, 2019
Frank Hefner**



	Hurricane Andrew	Hurricane Katrina		Hurricane Ike	Superstorm Sandy		Hurricane Matthew	
Month	Unemployment Rate in Florida	Unemployment Rate in Louisiana	Unemployment Rate in Mississippi	Unemployment Rate in Texas	Unemployment Rate in New York	Unemployment Rate in New Jersey	Unemployment Rate in Florida	Unemployment Rate in South Carolina
t-6	8.5	5.9	6.8	4.4	8.7	9.2	4.9	5.2
t-5	8.5	5.8	6.8	4.4	8.7	9.3	4.9	5.1
t-4	8.5	5.7	6.7	4.5	8.7	9.6	4.9	4.9
t-3	8.4	5.7	6.8	4.7	8.6	10.0	4.9	4.8
t-2	8.4	6.0	7.0	4.8	8.4	9.4	4.9	4.6
t-1	8.3	6.6	7.4	5.0	8.3	9.0	4.9	4.5
Hurricane Month (t)	8.2	7.3	8.0	5.1	8.2	8.9	4.9	4.4
t+1	8.1	9.3	7.7	5.3	8.2	9.0	4.9	4.3
t+2	8.0	9.5	8.4	5.6	8.1	8.9	4.9	4.3
t+3	7.8	9.3	8.4	5.8	8.0	9.7	5.0	4.4
t+4	7.6	7.7	8.3	6.1	7.9	9.2	5.0	4.4
t+5	7.5	6.2	7.9	6.3	7.8	8.7	4.8	4.4
t+6	7.4	5.4	7.3	6.5	7.7	8.2	4.5	4.3

Hotel Occupancy January 2014-August 2018



Inclement Weather	
Month	Event
Oct-2015	Charleston flood
Oct-2016	Hurricane Matthew
Sep-2017	Hurricane Irma
Jan-2018	Ice storm
Sep-2018	Hurricane Florence
Sep-2019	Hurricane Dorian

Year	Charleston County Occupancy	State of SC Percent Occupancy
2014	69.2%	61.0%
2015	73.7%	62.0%
2016	75.6%	63.8%
2017	76.7%	63.9%
2018	78.9%	63.7%



— All Employees: Total Nonfarm in South Carolina



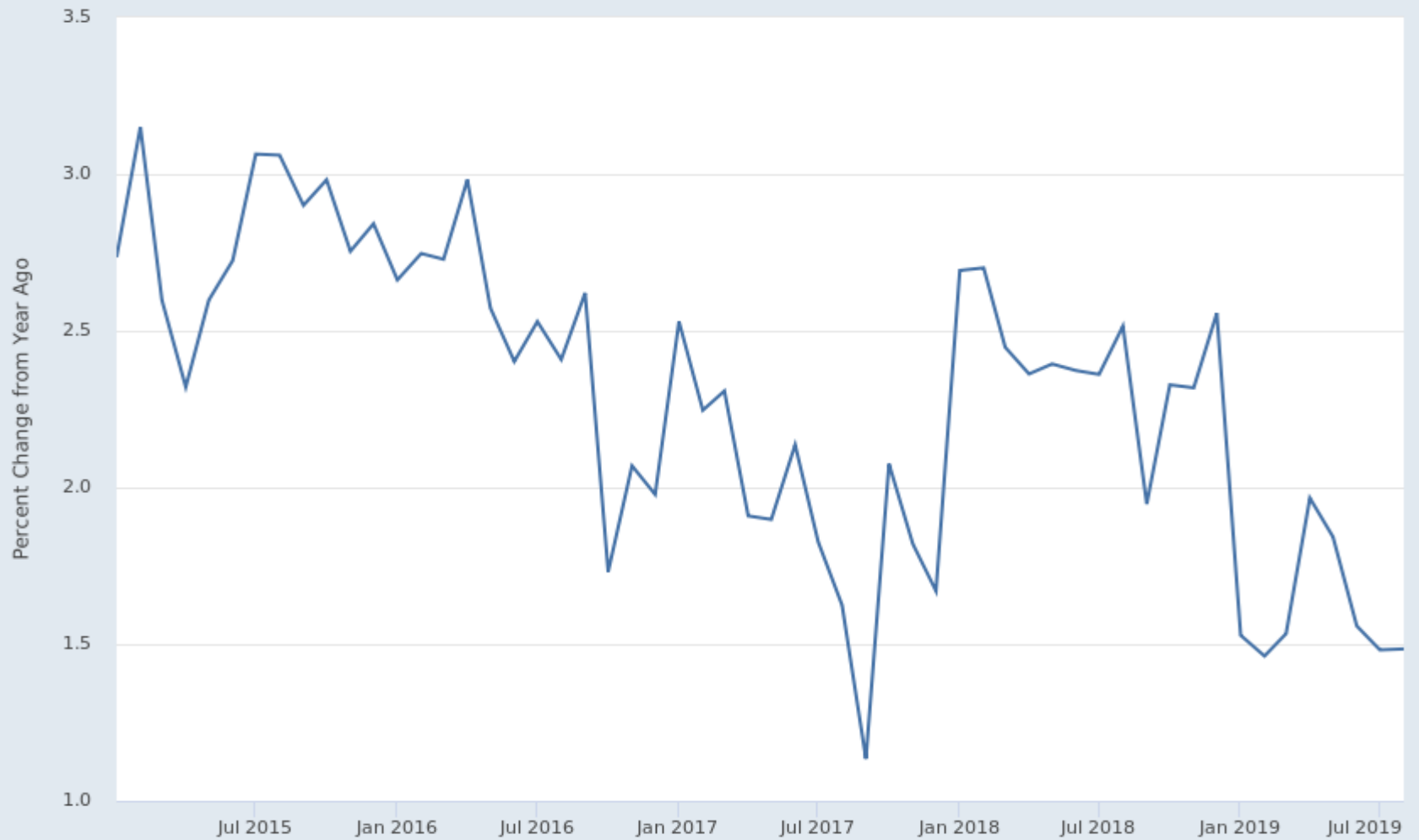
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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— All Employees: Total Nonfarm in South Carolina



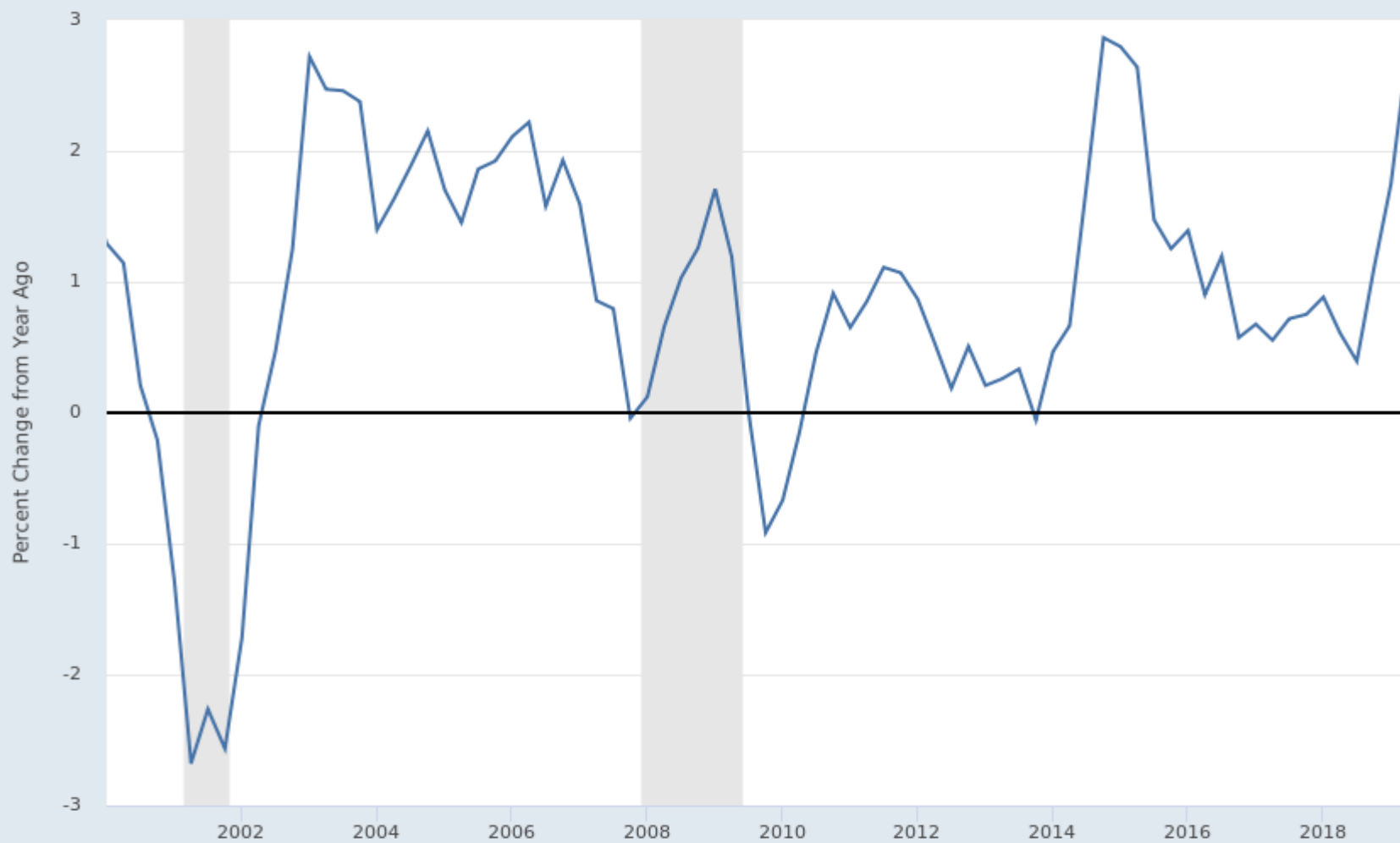
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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Civilian Labor Force in South Carolina



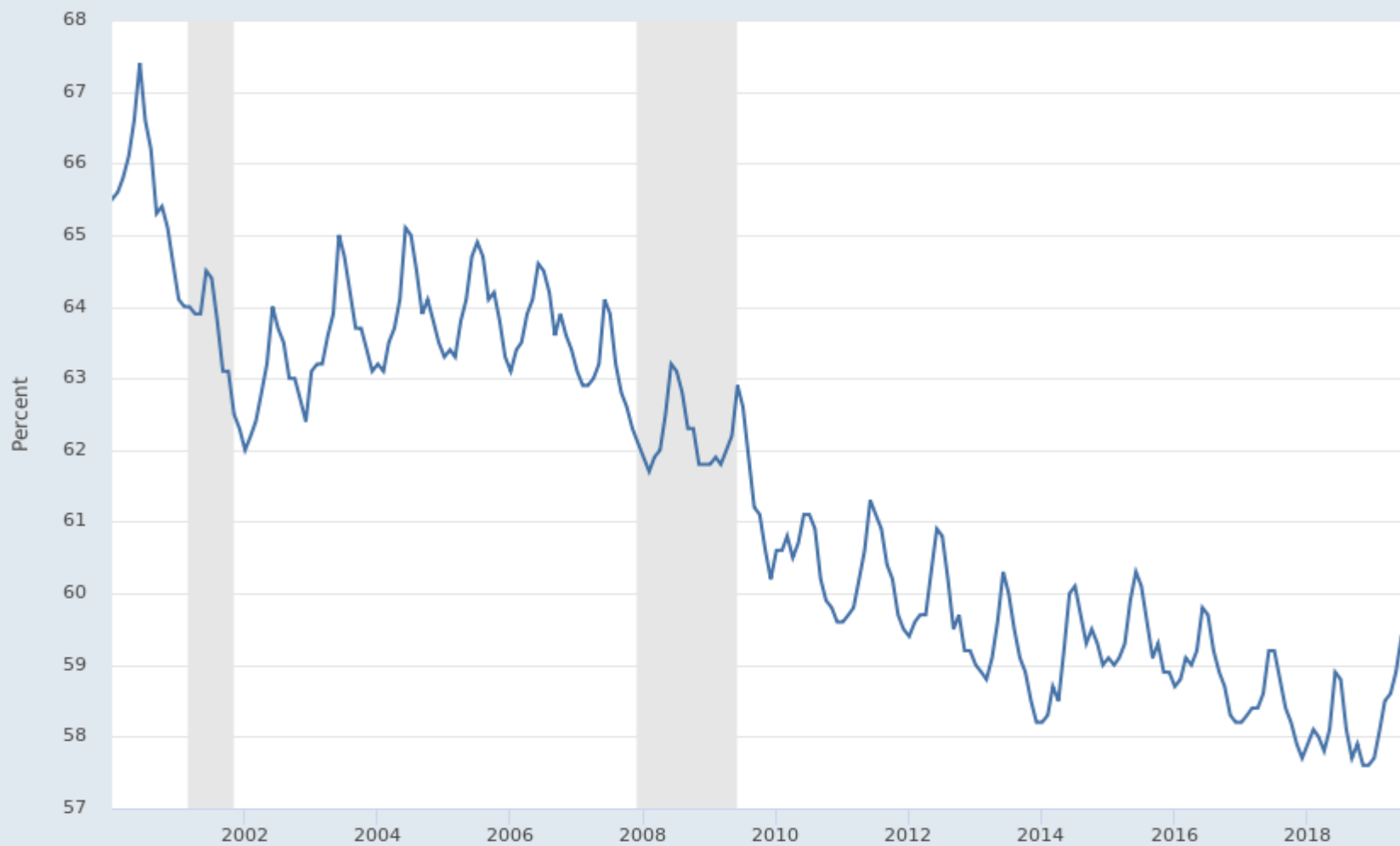
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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Labor Force Participation Rate for South Carolina



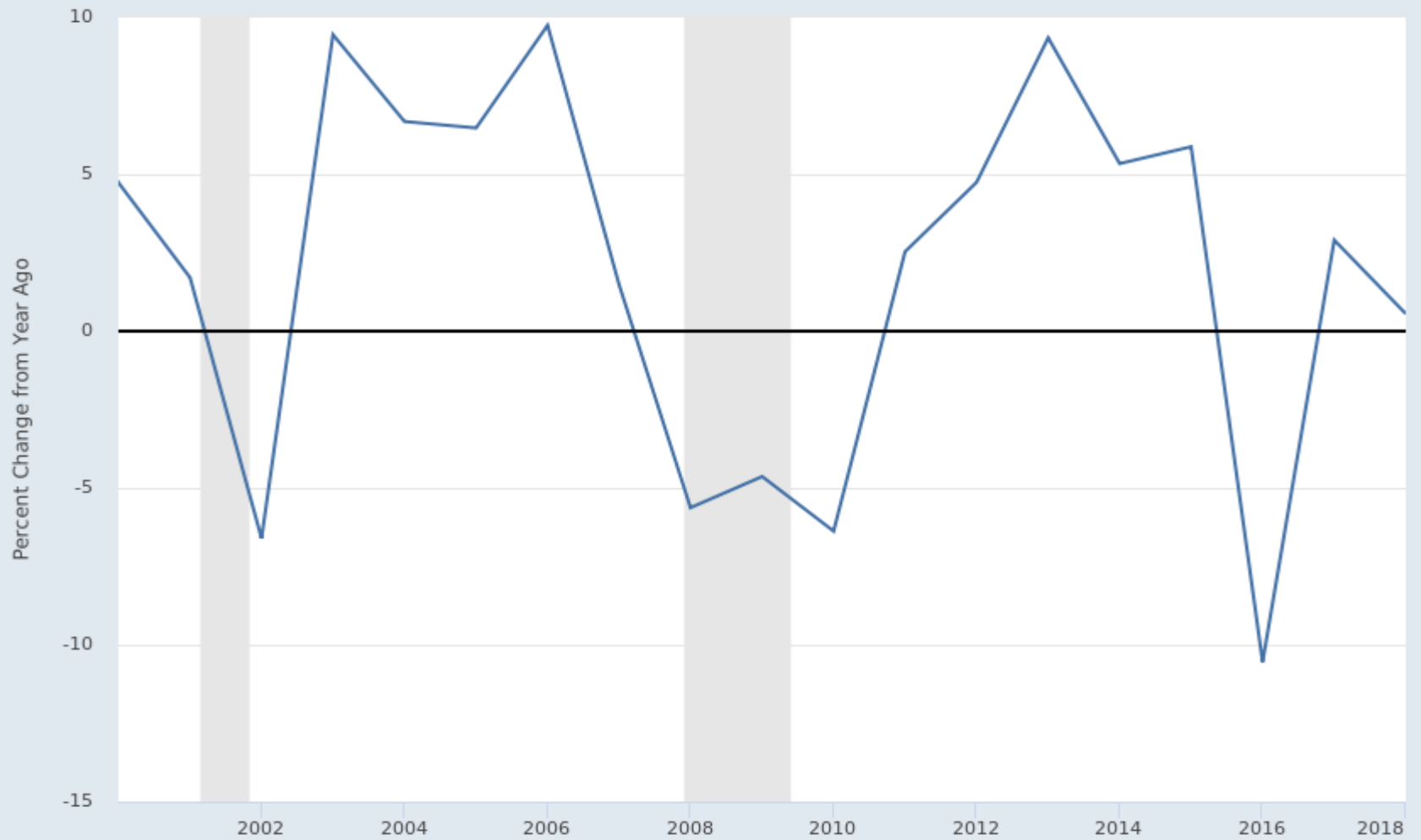
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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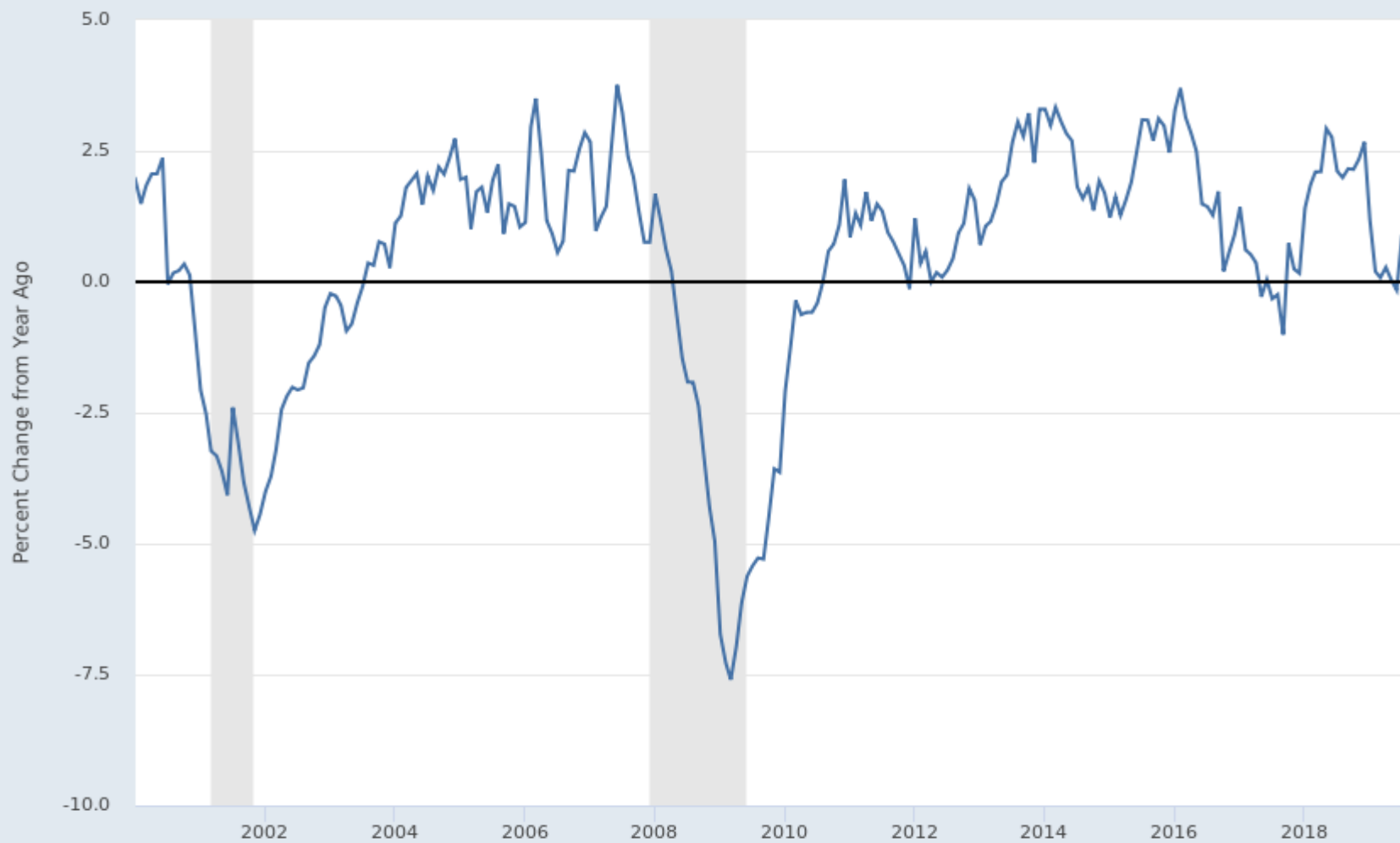
State Government Tax Collections, General Sales and Gross Receipts Taxes in South Carolina



Shaded areas indicate U.S. recessions

Source: U.S. Census Bureau

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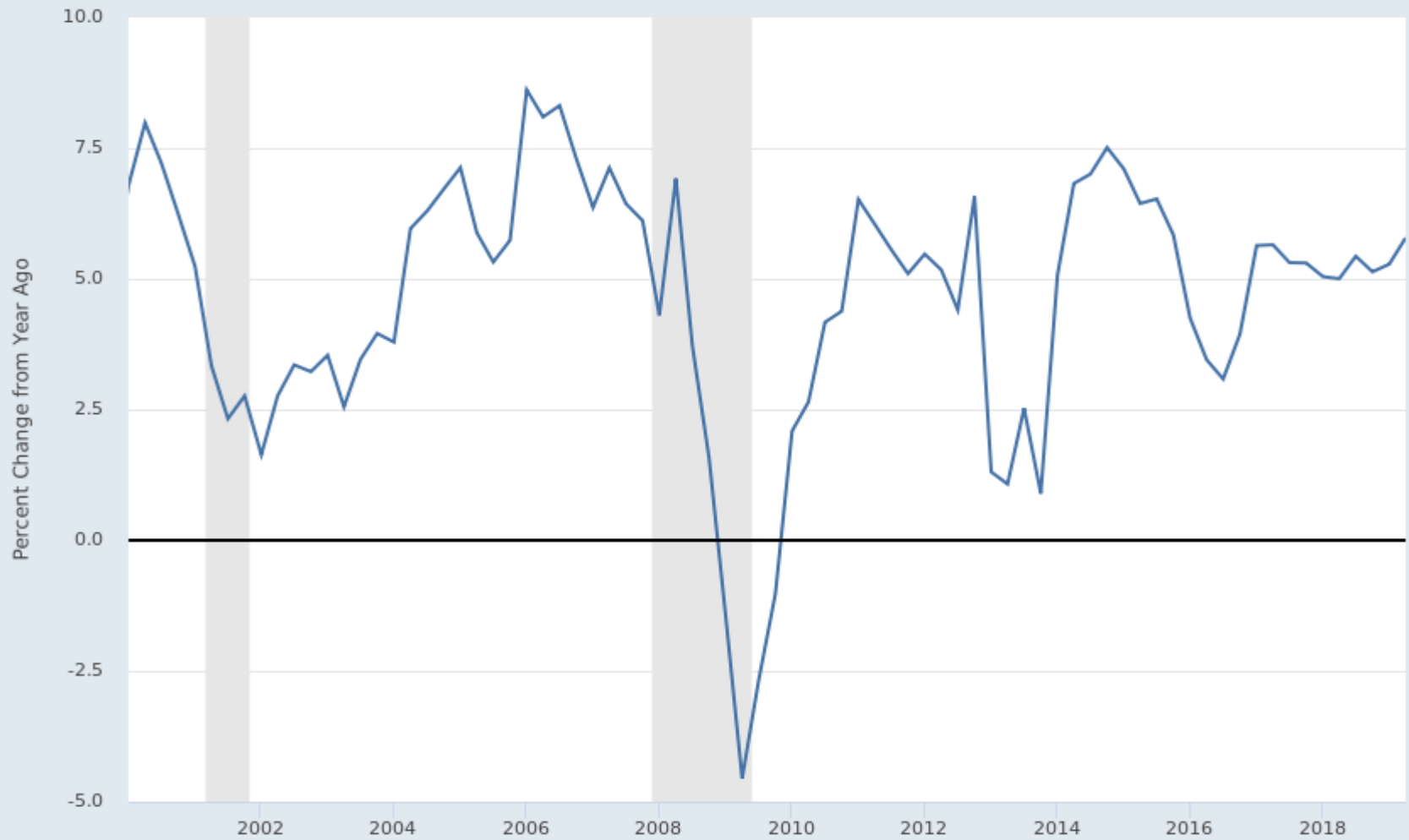
Shaded areas indicate U.S. recessions

Source: Federal Reserve Bank of St. Louis

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— Total Personal Income in South Carolina



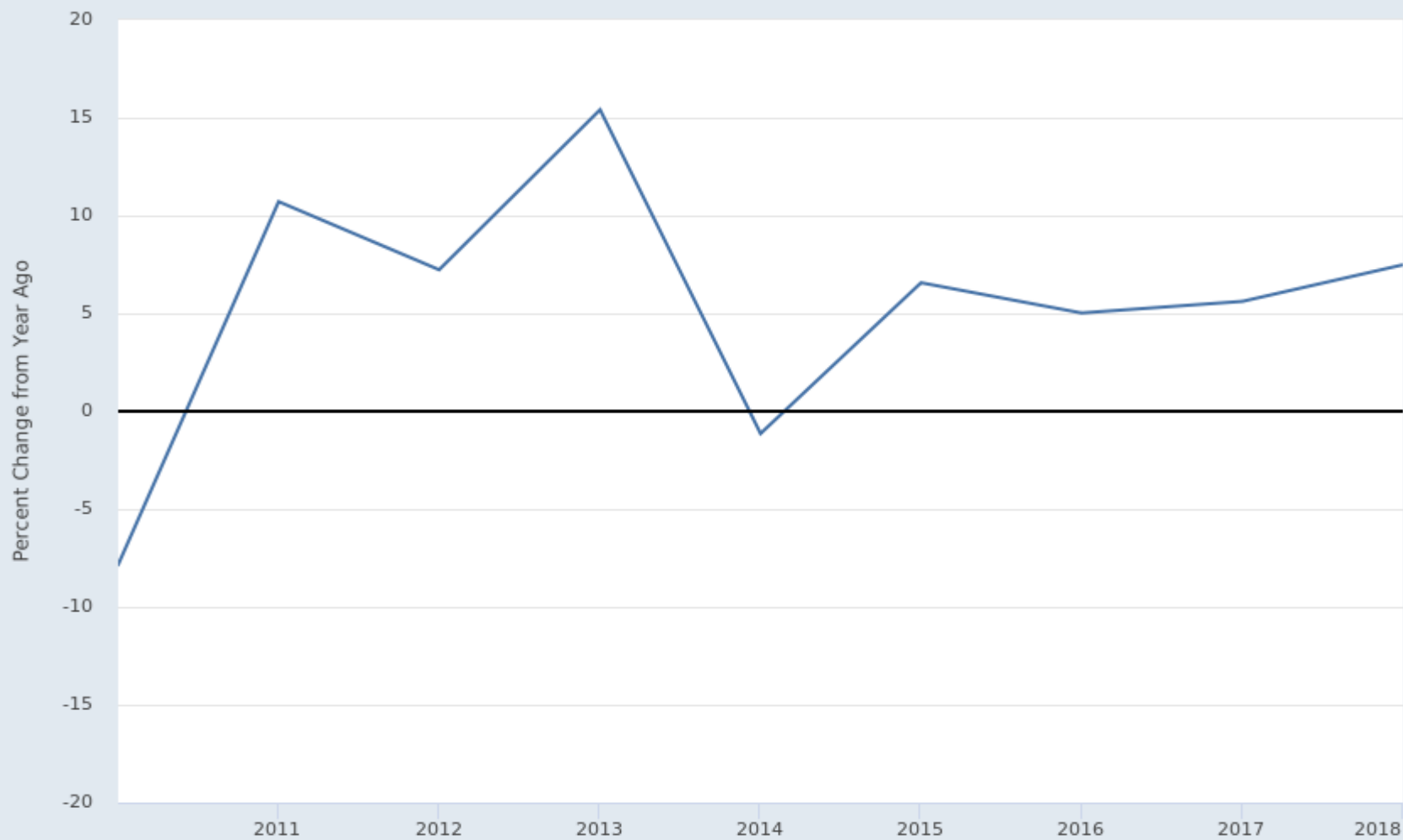
Shaded areas indicate U.S. recessions

Source: Federal Reserve Bank of St. Louis

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State Government Tax Collections, Total Income Taxes in South Carolina



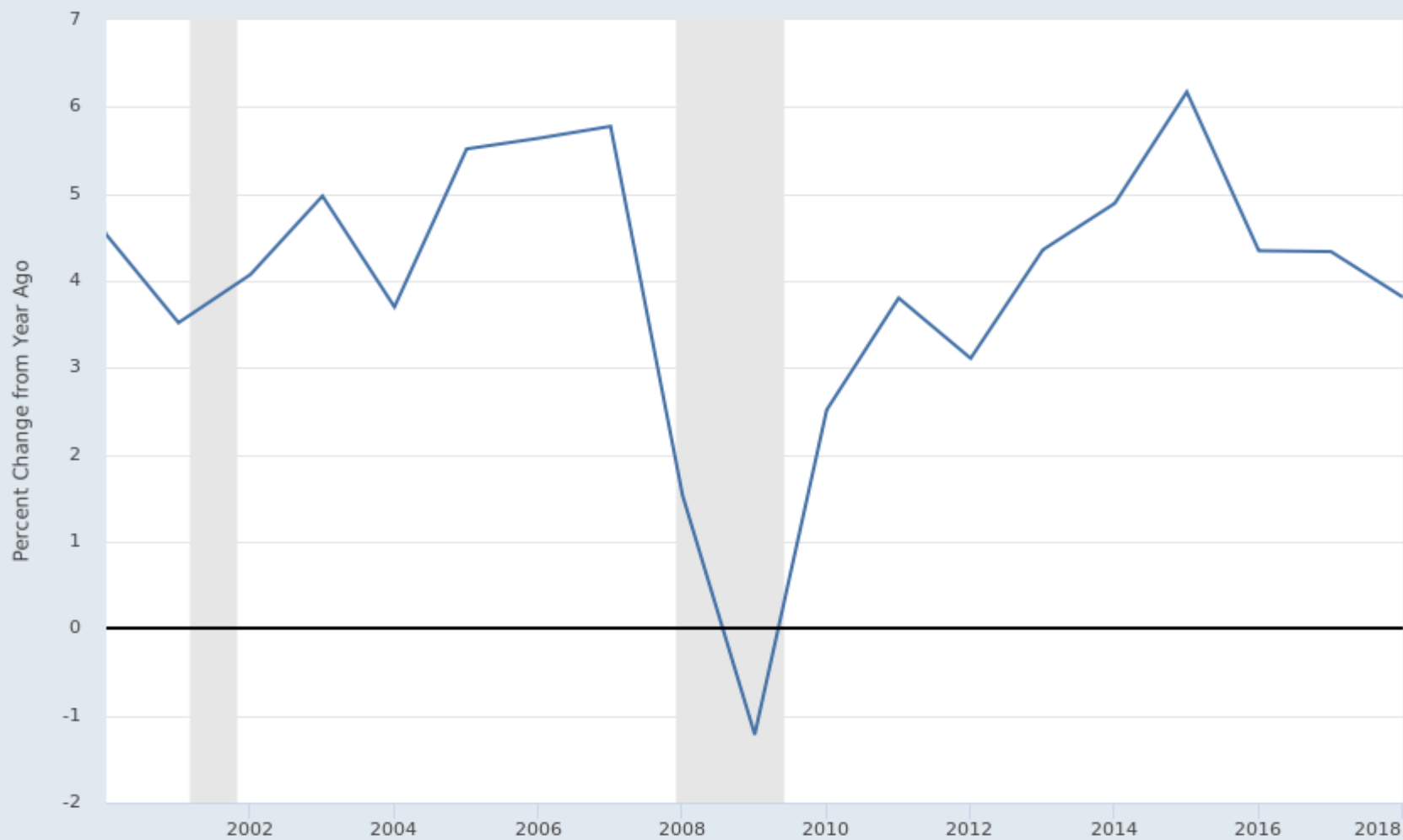
Shaded areas indicate U.S. recessions

Source: U.S. Census Bureau

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Total Gross Domestic Product for South Carolina



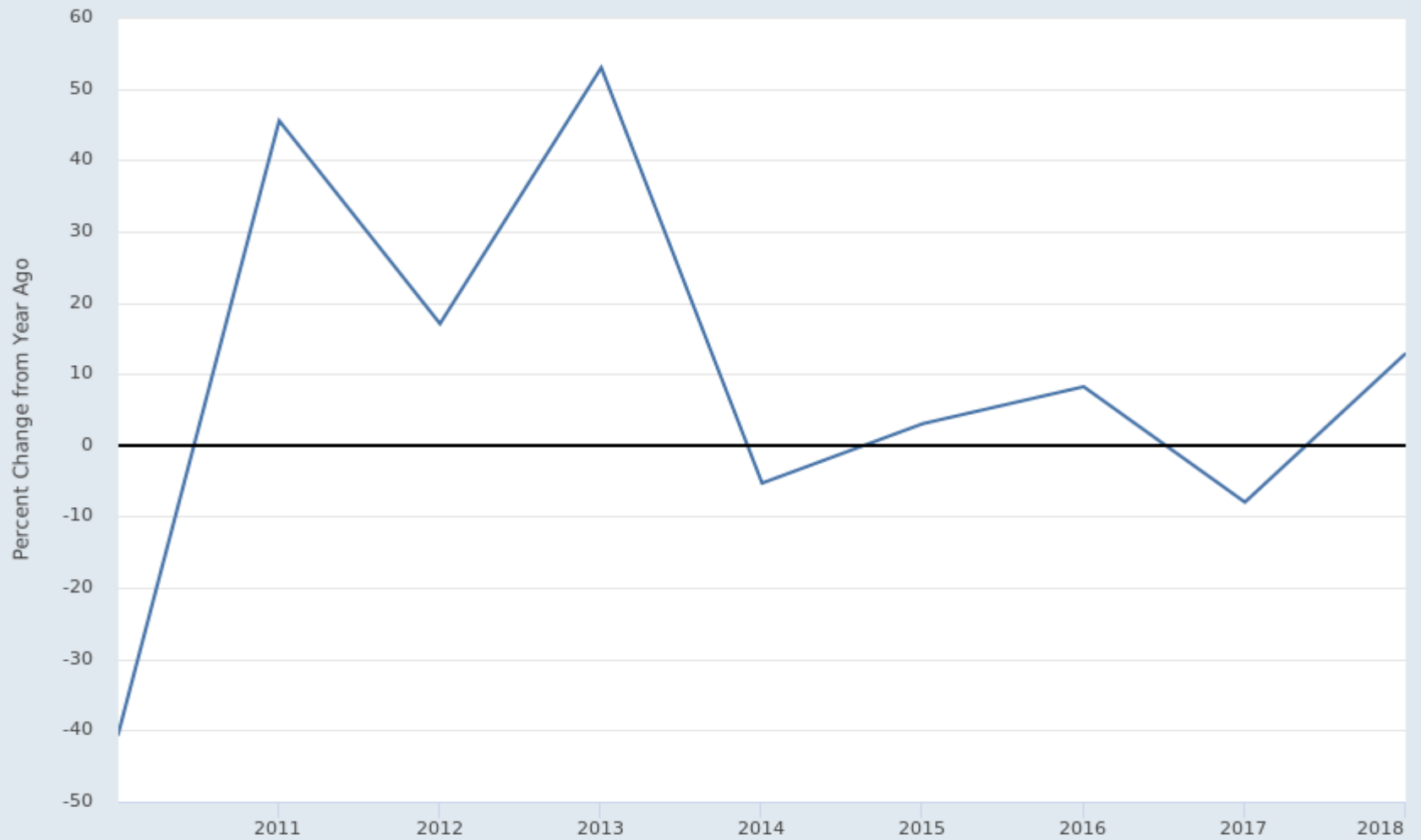
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis

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State Government Tax Collections, Corporation Net Income Taxes in South Carolina



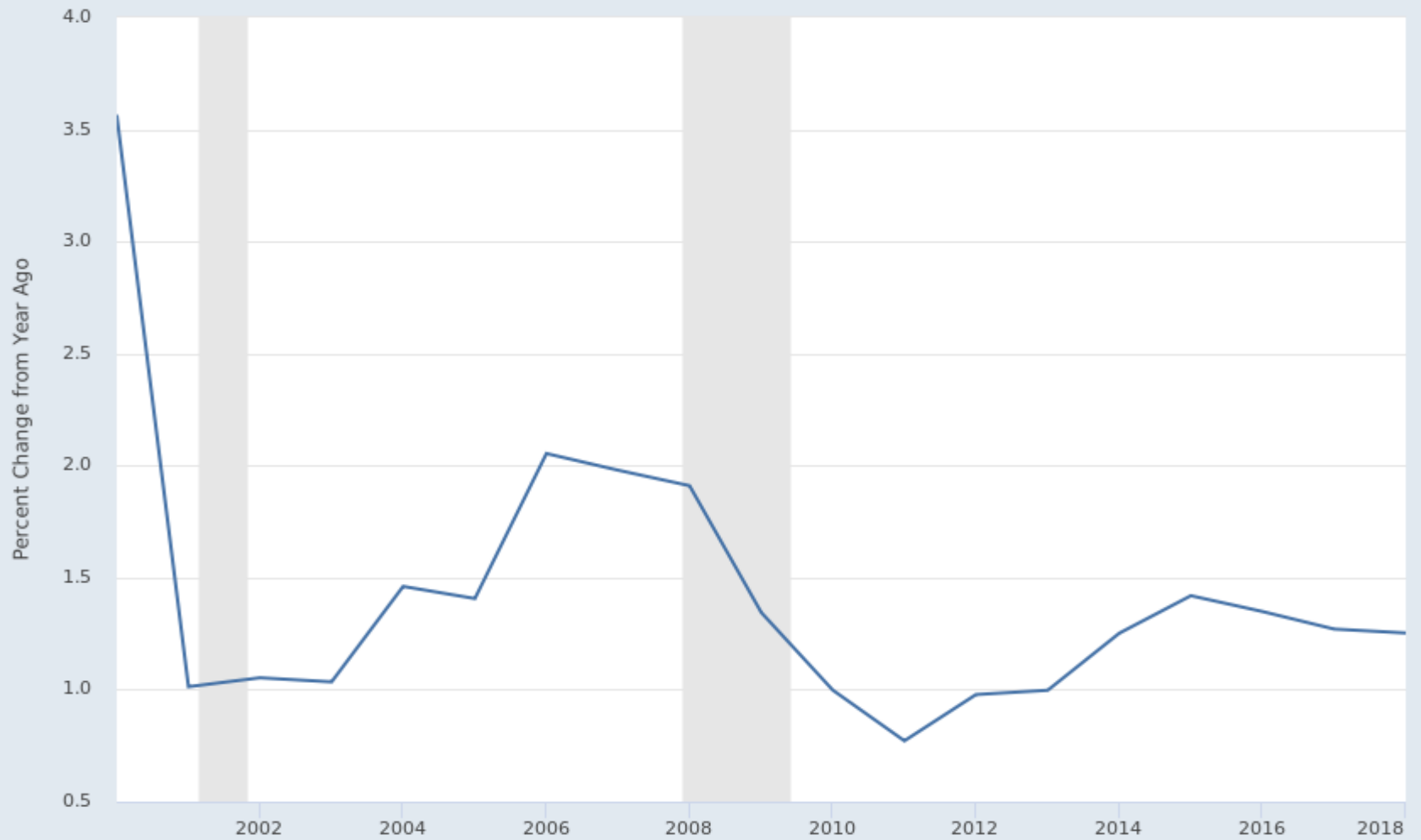
Shaded areas indicate U.S. recessions

Source: U.S. Census Bureau

myf.red/g/oZnE



— Resident Population in South Carolina



Shaded areas indicate U.S. recessions

Source: U.S. Census Bureau

[myf.fred/g/p81Y](https://myf.fred.stlouisfed.org/g/p81Y)

**South Carolina Board of Economic Advisors
Regional Advisory Committee
Economic Forecast Assumptions**

Frank Hefner

What is your forecast growth rate for the following variables:

Variable	Actual FY2018-19	Most Recent 2/	Current 1/ Forecast Rates FY2019-20	Forecast FY2019-20	Forecast FY2020-21
S.C. Personal Income	5.40%	5.78%	4.25%	5.6	5.7
S.C. Employment	1.9%	1.4%	1.8%	1.5	1.5
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	1.8	2.0
Sales Tax (Y-T-D)	5.0%	11.1%	4.2%	4.0	4.5
Individual Income Tax (Y-T-D)	7.2%	3.2%	4.5%	4.5	4.7

Notes: 1/ Current forecast rates as of February 14, 2019 (the last official BEA forecast estimate).
2/ Growth rate as of the most recent time period, e.g. month, quarter.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.
U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.
S.C. Board of Economic Advisors, Columbia, S.C.

BEA/RWM/09/24/19

Issues to Consider:

What are the significant/specific factors/sectors affecting personal income?

What are the significant/specific factors/sectors affecting employment?

What are the key risks you see over the next 20 months?

Are there any other key points that should be considered?

BEA Regional Advisory Committee

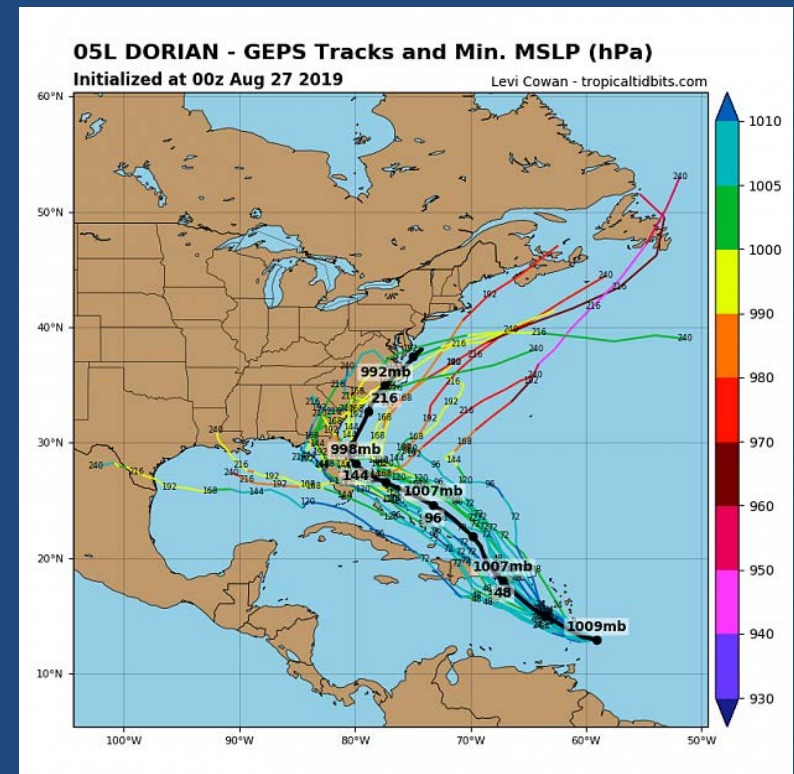
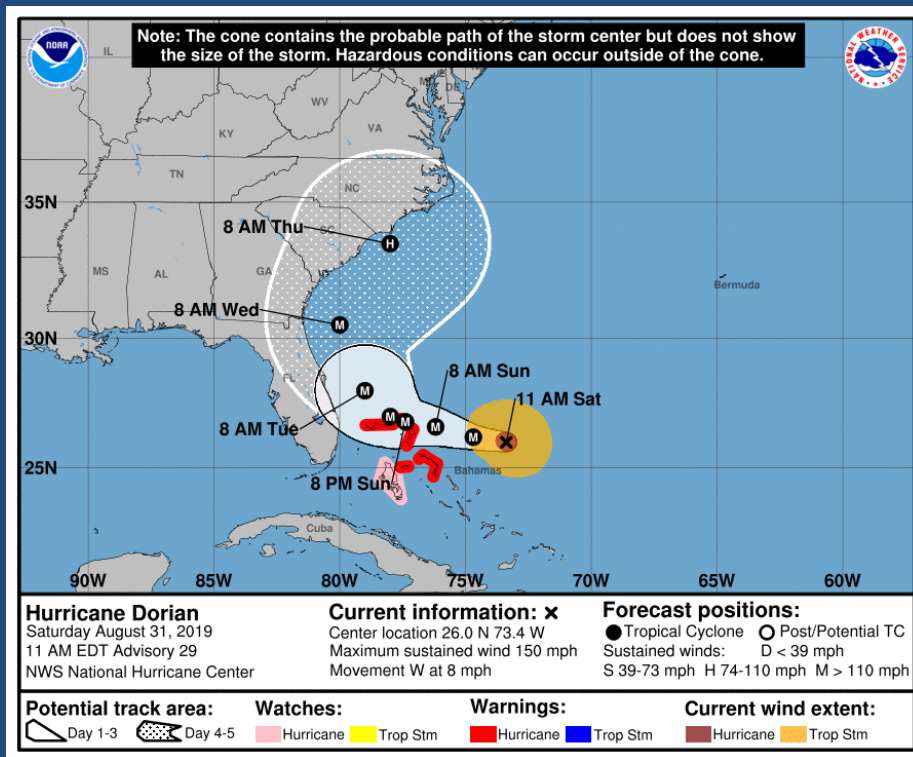
October 17, 2019

Russell S. Sobel, Ph.D.



Assessing Prior Accuracy:

1. The science of forecasting improves by subjecting past predictions to the test of their after-the-fact accuracy.
2. Using the average of multiple independent forecasts does the best (I do this individually & we do as a group)



Accuracy within 50 miles at 5 to 7-day advance forecasts are now the norm Russell S. Sobel, Ph.D.

Using a type of AVERAGING is best and is how NHC does their path

Assessing Prior Accuracy:

In 2015 the BEA began providing us with the data to begin assessing our own forecasts (and averaging methods) so we may improve.

South Carolina Board of Economic Advisors Survey Results of Regional Advisory Committee Summary of Economic Forecast Assumptions					
Variable	Regional Advisory Committee Forecast Rates Forecast for FY2018-19				
	Hefner	Martin	Sobel	Vitner	von Nessen
S.C. Personal Income	4.25%	4.30%	5.10%	N/A	4.20%
S.C. Employment	1.80%	1.80%	1.82%	N/A	1.70%
Inflation Rate (CPI-U)	2.50%	2.30%	2.28%	N/A	2.50%
Sales Tax	4.90%	4.00%	3.80%	N/A	N/A
Individual Income Tax 1/	7.00%	N/A	3.40%	N/A	N/A

I begin with a fifth year assessment of this prior to turning to my forecasts.


Which Averaging Methodology?

- We have 5 variables to forecast and have had 5 forecasters in the past (but not all do all variables and not 5 in all years)
- “Simple” average is the normal average (mean) using data from all forecasters for each variable
- “Olympic” averaging (scoring) drops both the highest and lowest forecasts for each variable, and then averages the remaining scores

Which Averaging Methodology?

Question 1: Olympic vs. Simple Average Methodology for Combining Forecasts

My Prior Conclusions: Olympic came closer in three of the five in 2015, 2016, and 2018, and tied in 2017

 = Closest to Actual

FY2018-19	Simple Average	Olympic Scoring	Actual	Winner
Personal Income	4.46%	4.28%	5.40%	Simple
Employment	1.78%	1.80%	1.90%	Olympic
Inflation	2.40%	2.40%	2.10%	Tie
Sales Tax	4.23%	4.00%	5.00%	Simple
Inc. Tax	5.20%	N/A	7.20%	N/A

One weakness of Olympic is it needs more than two forecasters!

October 2019 Update: The Simple average was better in two, the Olympic in one, with one Tie and one N/A
Implication: Olympic still slightly better including all years, but not by much

Individual Accuracy vs. Averages

Question 2: How Are We Doing Individually & Wisdom of Crowds Logic

My Prior Conclusions: “(1) I tended to underestimate employment so enacted an adjustment, (2) no one person dominates forecasts, showing value of multiple forecasters; (3) the Olympic averages have done better than any one person.”

Closest Forecaster (1 year ahead forecasts), updated to include FY 18-19

Variable	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19
Personal Income	Sobel	von Nessen	Sobel/von Nessen (tie)	Hefner	Sobel
Employment	Witte (Hefner)	Hefner	Kaglic	Kaglic	Sobel
Inflation	Witte (Hefner)	Kaglic	Hefner / Sobel (tie)	Sobel	Sobel
Sales Tax	Sobel	Brown	Sobel	Kaglic	Hefner
Income Tax	Sobel	Hefner	Hefner	Hefner	Hefner

 = Closest to Actual

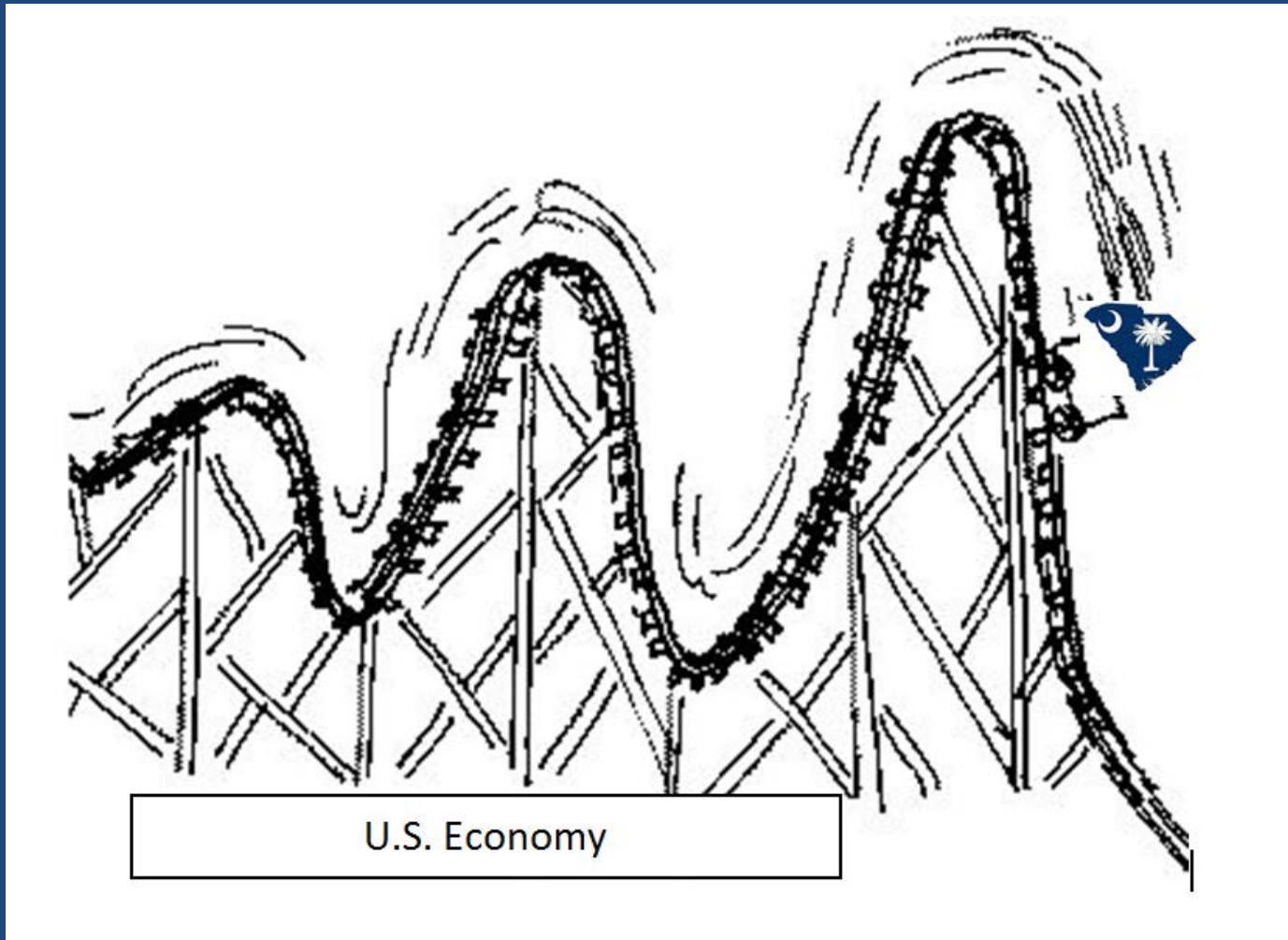
FY2018-19	Hefner	Martin	Sobel	Vitner	von Nessen	Actual
Personal Income	4.25%	4.30%	5.10%	N/A	4.20%	5.40%
Employment	1.80%	1.80%	1.82%	N/A	1.70%	1.90%
Inflation	2.50%	2.30%	2.28%	N/A	2.50%	2.10%
Sales Tax	4.90%	4.00%	3.80%	N/A	N/A	5.00%
Inc. Tax	7.00%	N/A	3.40%	N/A	N/A	7.20%

W-L-T vs Olympic	
Hefner	1-2-1
Martin	2-0-2
Sobel	3-1-0
Vitner	N/A
von Nessen	0-3-0

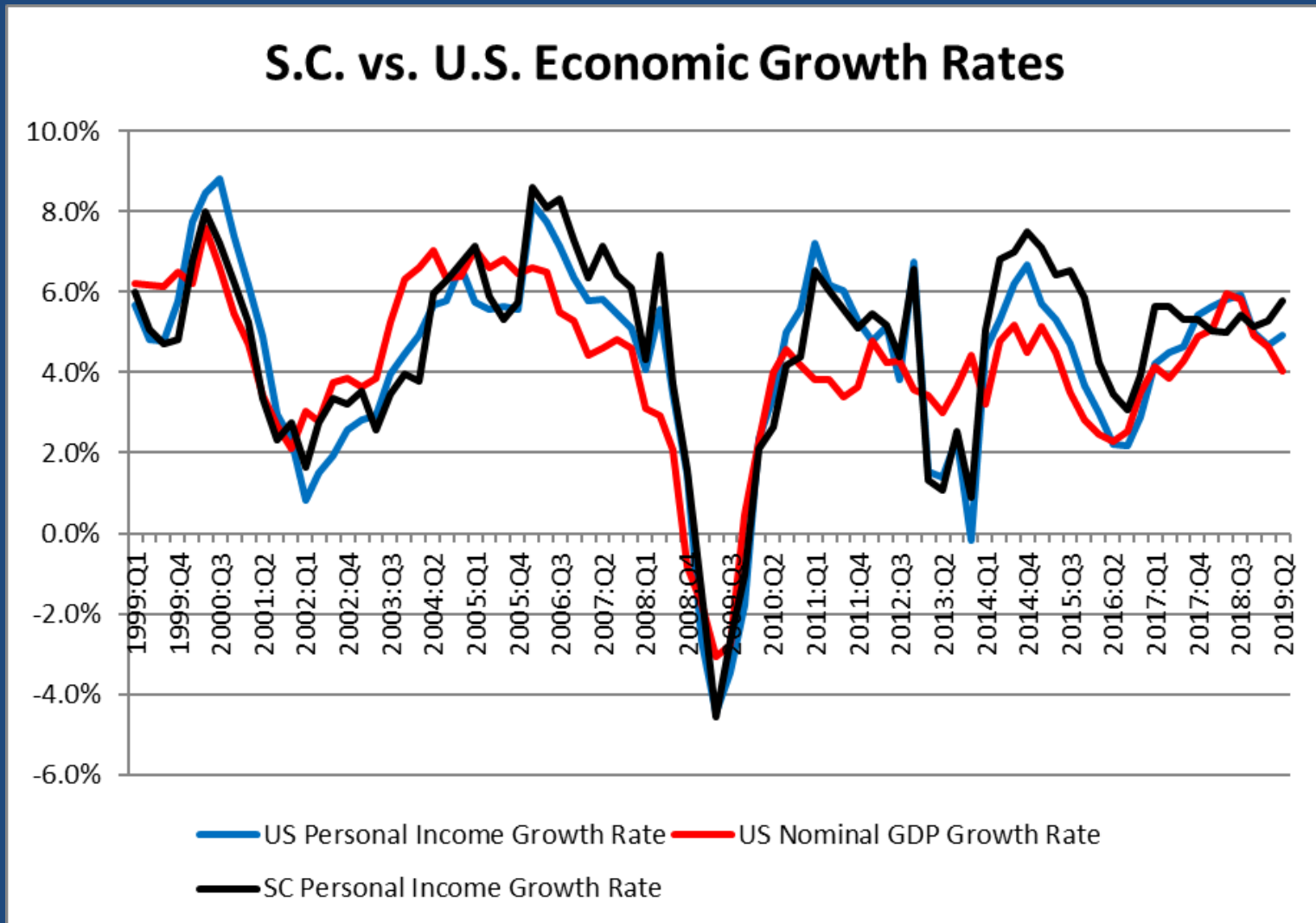
October 2019 Update: My employment forecasts have improved (in fact, I was the closest). Olympic average is still generally better than any one of us overall (except me this year).

- On to my forecasts for this year and the methodology.....
- Worth explicitly noting that our job is to forecast NOMINAL income and revenue (not “inflation adjusted” REAL values as in many other forecasts)

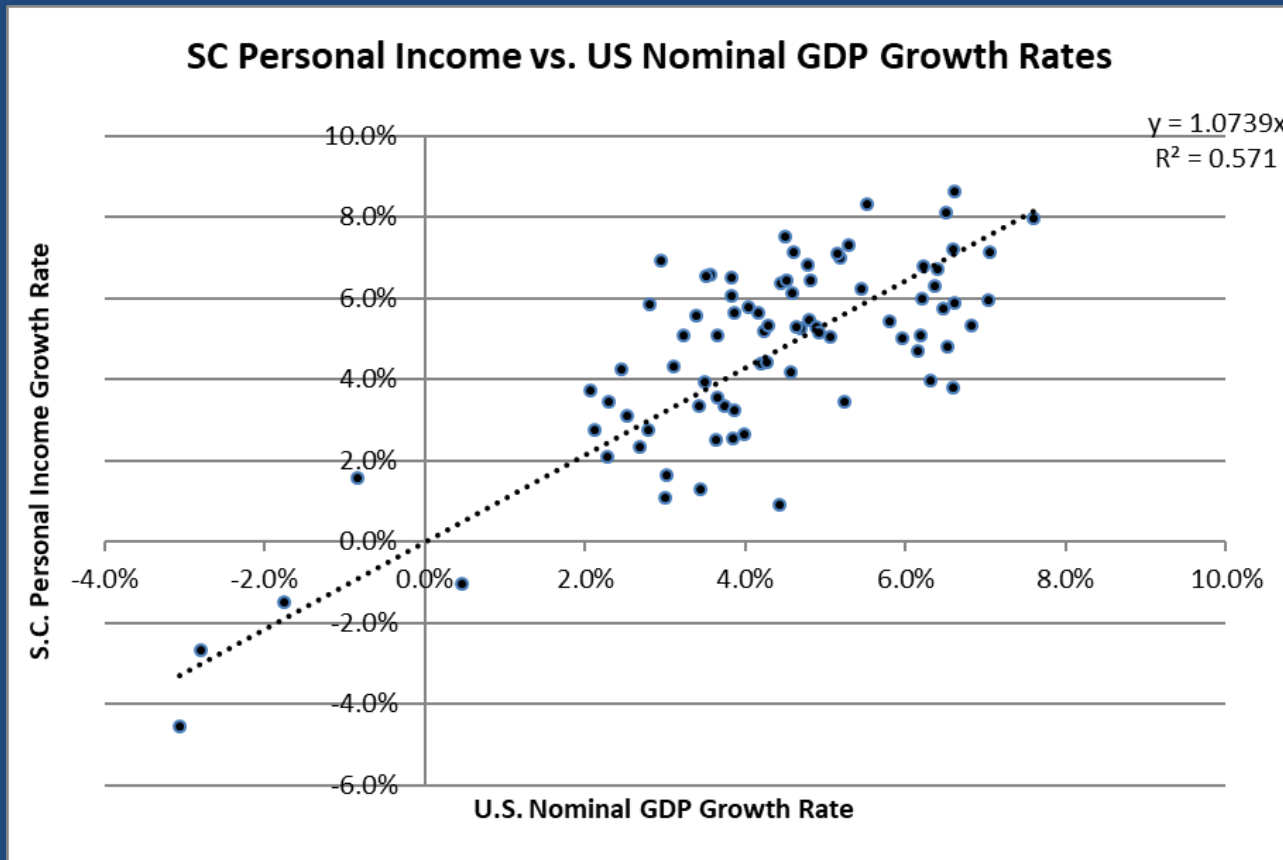
S.C. Economy is Closely Tied to the U.S. National Economy:



S.C. Personal Income vs U.S. Economy:



S.C. Personal Income vs U.S. Economy:



The elasticity of S.C. Personal Income with Respect to U.S. Nominal GDP over the long term is not significantly different from 1.0 using quarterly data (converted to annual changes vs. 4 quarters ago), from 1992 Q1 to present. I therefore assume that:

S.C. Personal Income Growth Rate \approx U.S. Nominal GDP Growth Rate

Summary of Major Economic Forecasts:

I rely on three independent major national forecasts as the basis for my state-level forecasts:

1. IMF World Economic Outlook
2. Federal Reserve Bank of Philadelphia's Livingston Survey
3. Survey of Professional Forecasters

I will skip quickly through the detail slides, but have them in case there are questions (in handout).

Summary of Major Economic Forecasts:

1. IMF World Economic Outlook (July 2019 Update and April 2019 original)¹

	<i>World Output Growth</i>	<i>U.S. Inflation</i>		<i>U.S. Nominal GDP</i>	
2019:	3.2%	1.9%		4.2%	<div style="border: 1px solid black; padding: 5px;">Averaging these two gives 4.25% for FY2019-20, and averaging lower two gives 4.025% for FY2020-2021.</div>
2020:	3.5%	2.4%		4.3%	
<i>Long Term (through 2024):</i>		2.15%		3.75%	
			<div style="border: 1px solid black; padding: 5px;">Averaging these two gives 2.15% for FY2019-20</div>		
			<div style="border: 1px solid black; padding: 5px;">Long term for FY2020-21 average of these two is 2.275%</div>		

Summary of Major Economic Forecasts:

2. Federal Reserve Bank of Philadelphia's Livingston Survey (June 2019)²

U.S. Nominal GDP Growth Rate

2019Q2 to 2019Q4:	4.2%	} 2019Q3 to 2020Q2 is FY2019-2020 , the avg. of these two is 4.2%
2019Q4 to 2020Q2:	4.2%	
Annual 2018 to 2019:	4.4%	
Annual 2019 to 2020:	4.2%	} FY2020-2021 , avg. 4.265%
Long Term (Next 10 Years):	4.3%	

CPI Inflation Rate

June 2019 to Dec 2019:	2.0%	} June 2019 to June 2020 is roughly FY2019-2020 , the average of these two is 1.85%
Dec 2019 to June 2020:	1.7%	
Annual 2018 to 2019:	1.9%	
Annual 2019 to 2020:	2.0%	} Looking out into FY2020-2021 , inflation average 2.13%
Long Term (Next 10 Years):	2.26%	

Summary of Major Economic Forecasts:

3. Survey of Professional Forecasters (Third Quarter 2019 released August 9, 2019)³

Nominal GDP%

2019: Q3	3.7%
2019: Q4	4.0%
2020: Q1	3.8%
2020: Q2	3.9%
2020: Q3	3.8%
2020 (year over year)	3.9%

2019Q3 to 2020Q2 is **FY2019-20**, the average of the top four is 3.85%, **FY2020-21** based on bottom two is 3.85%

Employment Growth%

1.2%
1.2%
1.1%
1.2%
0.9%
1.1%

2019Q3 to 2020Q2 is **FY2019-20**, the average of the top four is 1.175%, **FY2020-21** based on bottom two is 1.0% for US. [My new adjustment is: SC=1.3*US] or 1.53% and 1.30%

Probability of Negative Real GDP Growth by Quarter (Means):

2019: Q3	11.7%
2019: Q4	14.2%
2020: Q1	17.6%
2020: Q2	21.5%
2020: Q3	26.1%

The chance of a negative quarter of GDP growth during FY2019-20 (2019Q3 to 2020Q2) averages 16.25%, and the probability grows as we move toward first quarter of FY2020-21 – **ABOUT 5% HIGHER THAN A YEAR AGO**

Continued.....

Summary of Major Economic Forecasts:

3. Survey of Professional Forecasters

U.S. Inflation Rate (CPI):

Quarterly Data

2019: Q3	1.9%
2019: Q4	2.1%
2020: Q1	2.0%
2020: Q2	2.0%
2020: Q3	2.1%

2019Q3 to 2020Q2 is **FY2019-20**, the average of these four is 2.0%

Q4/Q4 Annual Averages

2019	1.9%
2020	2.0%
2021	2.2%

2020Q3 into 2021 is **FY2020-21**, the average of these two is 2.15%

Summary of Forecast Data:

Economic Estimates:

	FY 2019-2020			FY 2020-2021		
	SC Personal Income Growth (=US Nominal GDP Growth)	CPI Inflation Rate	SC Employment Growth	SC Personal Income Growth (=US Nominal GDP Growth)	CPI Inflation Rate	SC Employment Growth
International Monetary Fund	4.25%	2.15%		4.025%	2.275%	
Livingston Survey	4.2%	1.85%		4.265%	2.13%	
Survey of Professional Forecasters	3.85%	2.0%	1.53%	3.85%	2.15%	1.30%
Average	4.10%	2.00%	1.53%	4.05%	2.19%	1.30%
Median	4.20%	2.00%	1.53%	4.03%	2.15%	1.30%

****I use the Medians as the basis for my overall forecast****

Revenue Estimates:

	FY2019-20	FY2020-21
Sales Tax Revenue ⁴	3.0%	2.9%
Individual Income Tax Revenue ⁵	2.8%	2.5%

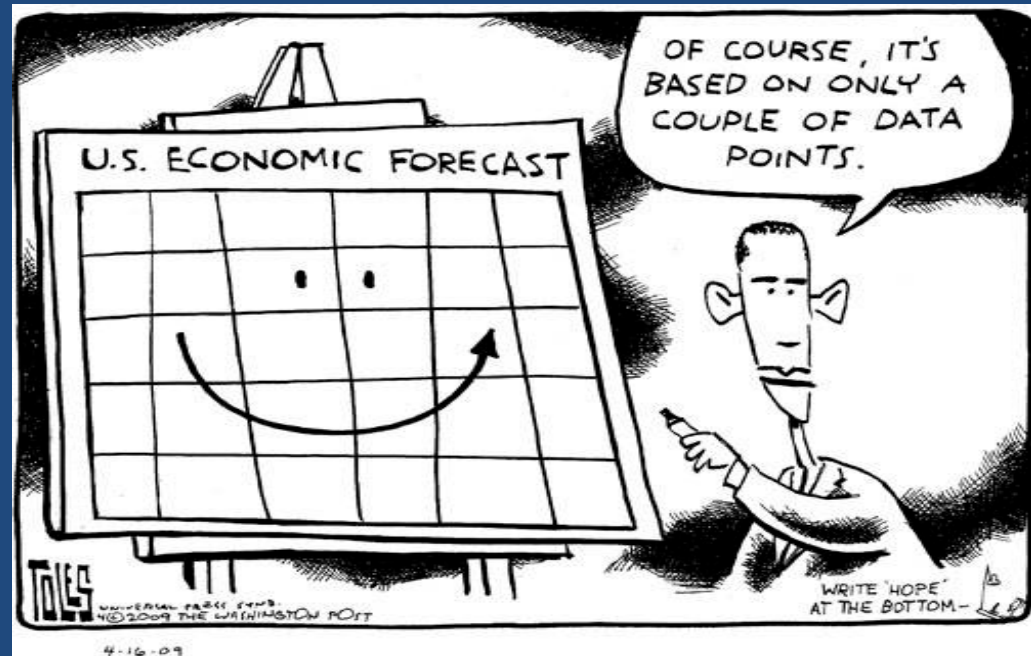
Using estimated elasticities per Sobel & Holcombe (1996) method.

Forecast Table:

What is your forecast growth rate for the following variables:

Variable	Actual FY2018-19	Most Recent 2/	Current 1/ Forecast Rates FY2019-20	Forecast FY2019-20	Forecast FY2020-21
S.C. Personal Income	5.40%	5.78%	4.25%	4.20%	4.03%
S.C. Employment	1.9%	1.4%	1.8%	1.53%	1.30%
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	2.0%	2.15%
Sales Tax (Y-T-D)	5.0%	11.1%	4.2%	3.0%	2.9%
Individual Income Tax (Y-T-D)	7.2%	3.2%	4.5%	2.8%	2.5%

Caveats & Notes:



1. There is rising uncertainty and slightly higher risks of recession.
2. The impact of the increase in U.S. tariffs and the counter response has the potential to significantly lower overall U.S. (and S.C.) growth ...
3. In general, we should expect a slight slowdown in growth the next few years.
4. My new adjustment factor for my employment forecasts has resulted in an improvement, showing the value of comparing predictions to actual and making adjustments.
5. Ask that the BEA continue to provide us with the numbers necessary to continue to assess the accuracy of our methodologies.

Forecasts vs. Actual – Year 5 of the Analysis

Question 1: Olympic vs. Simple Average Methodology for Combining Forecasts

My Prior Conclusions: Olympic came closer in three of the five in 2015, 2016, and 2018, and tied in 2017

 = Closest to Actual

FY2018-19	Simple Average	Olympic Scoring	Actual	Winner
Personal Income	4.46%	4.28%	5.40%	Simple
Employment	1.78%	1.80%	1.90%	Olympic
Inflation	2.40%	2.40%	2.10%	Tie
Sales Tax	4.23%	4.00%	5.00%	Simple
Inc. Tax	5.20%	N/A	7.20%	N/A

October 2019 Update: The Simple average was better in two, the Olympic in one, with one Tie and one N/A
Implication: *Olympic still slightly better including all years, but not by much*

Question 2: How Are We Doing Individually & Wisdom of Crowds Logic

My Prior Conclusions: “(1) I tended to underestimate employment so enacted an adjustment, (2) no one person dominates forecasts, showing value of multiple forecasters; (3) the Olympic averages have done better than any one person.”

Variable	Closest Forecaster (1 year ahead forecasts), updated to include FY 18-19				
	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19
Personal Income	Sobel	von Nessen	Sobel/von Nessen (tie)	Hefner	Sobel
Employment	Witte (Hefner)	Hefner	Kaglic	Kaglic	Sobel
Inflation	Witte (Hefner)	Kaglic	Hefner / Sobel (tie)	Sobel	Sobel
Sales Tax	Sobel	Brown	Sobel	Kaglic	Hefner
Income Tax	Sobel	Hefner	Hefner	Hefner	Hefner

 = Closest to Actual

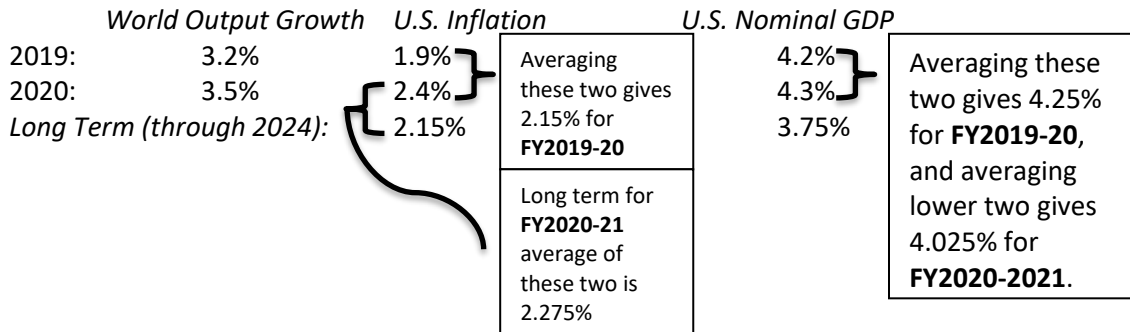
FY2018-19	Hefner	Martin	Sobel	Vitner	von Nessen	Actual
Personal Income	4.25%	4.30%	5.10%	N/A	4.20%	5.40%
Employment	1.80%	1.80%	1.82%	N/A	1.70%	1.90%
Inflation	2.50%	2.30%	2.28%	N/A	2.50%	2.10%
Sales Tax	4.90%	4.00%	3.80%	N/A	N/A	5.00%
Inc. Tax	7.00%	N/A	3.40%	N/A	N/A	7.20%

W-L-T vs Olympic	
Hefner	1-2-1
Martin	2-0-2
Sobel	3-1-0
Vitner	N/A
von Nessen	0-3-0

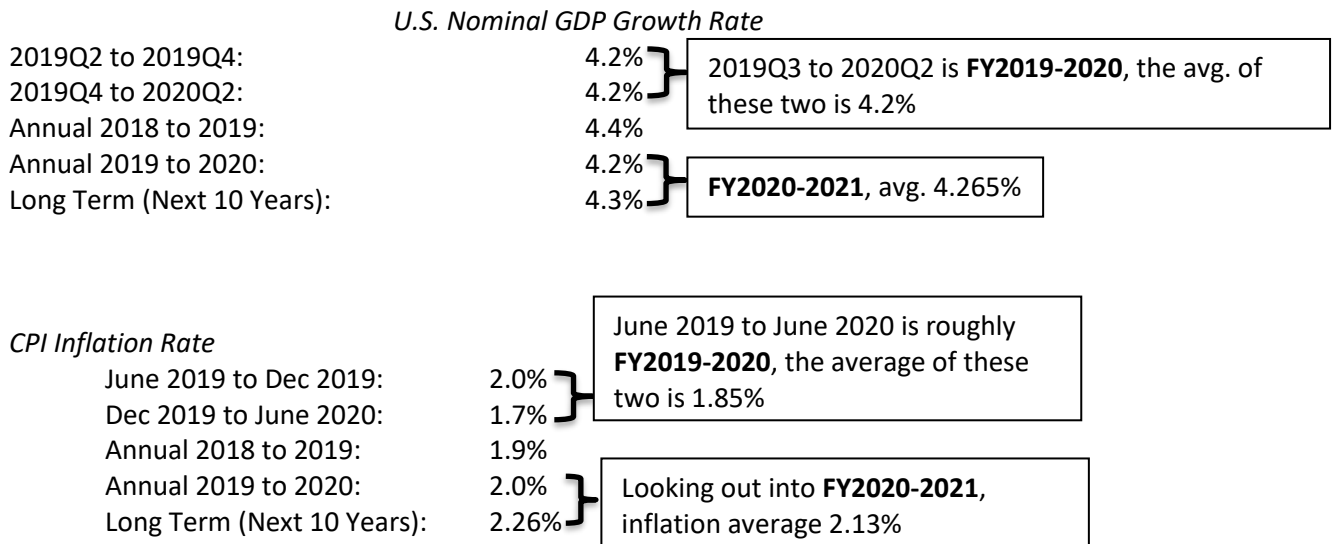
October 2019 Update: *My employment forecasts have improved (in fact, I was the closest). Olympic average is still generally better than any one of us overall (except me this year).*

Summary of Major Economic Forecasts:

1. IMF World Economic Outlook (July 2019 Update and April 2019 original)¹



2. Federal Reserve Bank of Philadelphia's Livingston Survey (June 2019)²



¹ See <https://www.imf.org/en/Publications/WEO/Issues/2019/07/18/WEOupdateJuly2019> and <https://www.imf.org/en/Publications/WEO/Issues/2019/03/28/world-economic-outlook-april-2019>. Inflation rates are averages of forecasted GDP deflator and CPI inflation rates; nominal GDP is sum of real GDP and inflation.

² See <https://www.philadelphiafed.org/-/media/research-and-data/real-time-center/livingston-survey/2019/livjun19.pdf?la=en>.

3. Survey of Professional Forecasters (Third Quarter 2019 released August 9, 2019)³

Nominal GDP%			Employment Growth%	
2019: Q3	3.7%	<div style="border: 1px solid black; padding: 5px;"> 2019Q3 to 2020Q2 is FY2019-20, the average of the top four is 3.85%, FY2020-21 based on bottom two is 3.85% </div>	1.2%	<div style="border: 1px solid black; padding: 5px;"> 2019Q3 to 2020Q2 is FY2019-20, the average of the top four is 1.175%, FY2020-21 based on bottom two is 1.0% for US. [My new adjustment is: SC=1.3*US] or 1.53% and 1.30% </div>
2019: Q4	4.0%		1.2%	
2020: Q1	3.8%		1.1%	
2020: Q2	3.9%		1.2%	
2020: Q3	3.8%		0.9%	
2020 (year over year)	3.9%		1.1%	

Probability of Negative Real GDP Growth by Quarter (Means):

2019: Q3	11.7%	<div style="border: 1px solid black; padding: 5px;"> The chance of a negative quarter of GDP growth during FY2019-20 (2019Q3 to 2020Q2) averages 16.25%, and the probability grows as we move toward first quarter of FY2020-21 – ABOUT 5% HIGHER THAN A YEAR AGO </div>
2019: Q4	14.2%	
2020: Q1	17.6%	
2020: Q2	21.5%	
2020: Q3	26.1%	

U.S. Inflation Rate (CPI):

Quarterly Data		
2019: Q3	1.9%	<div style="border: 1px solid black; padding: 5px;"> 2019Q3 to 2020Q2 is FY2019-20, the average of these four is 2.0% </div>
2019: Q4	2.1%	
2020: Q1	2.0%	
2020: Q2	2.0%	
2020: Q3	2.1%	
Q4/Q4 Annual Averages		
2019	1.9%	<div style="border: 1px solid black; padding: 5px;"> 2020Q3 into 2021 is FY2020-21, the average of these two is 2.15% </div>
2020	2.0%	
2021	2.2%	

³ See: <https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2019/survq319>.

Summary of Forecast Data:**Economic Estimates:**

	FY 2019-2020			FY 2020-2021		
	SC Personal Income Growth (=US Nominal GDP Growth)	CPI Inflation Rate	SC Employment Growth	SC Personal Income Growth (=US Nominal GDP Growth)	CPI Inflation Rate	SC Employment Growth
International Monetary Fund	4.25%	2.15%		4.025%	2.275%	
Livingston Survey	4.2%	1.85%		4.265%	2.13%	
Survey of Professional Forecasters	3.85%	2.0%	1.53%	3.85%	2.15%	1.30%
Average	4.10%	2.00%	1.53%	4.05%	2.19%	1.30%
Median	4.20%	2.00%	1.53%	4.03%	2.15%	1.30%

****I use the Medians as the basis for my overall forecast****

Revenue Estimates:

	FY2019-20	FY2020-21
Sales Tax Revenue ⁴	3.0%	2.9%
Individual Income Tax Revenue ⁵	2.8%	2.5%
<i>Using estimated elasticities per Sobel & Holcombe (1996) method.</i>		

Caveats/Notes:

1. There is rising uncertainty and slightly higher risks of recession.
2. The impact of the increase in U.S. tariffs and the counter response has the potential to significantly lower overall U.S. (and S.C.) growth
3. In general, we should expect a slight slowdown in growth the next few years.
4. My new adjustment factor for my employment forecasts has resulted in an improvement, showing the value of comparing predictions to actual and making adjustments.
5. Ask that the BEA continue to provide us with the numbers necessary to continue to assess the accuracy of our methodologies.

⁴ STR = -0.0059 + 0.8566*PI (employing decimal equivalents of percentages).

⁵ IITR = -0.0451 + 1.7523*PI (employing decimal equivalents of percentages).

**South Carolina Board of Economic Advisors
Regional Advisory Committee
Economic Forecast Assumptions**

What is your forecast growth rate for the following variables:

Variable	Actual FY2018-19	Most Recent 2/	Current 1/ Forecast Rates FY2019-20	Forecast FY2019-20	Forecast FY2020-21
S.C. Personal Income	5.40%	5.78%	4.25%	4.20%	4.03%
S.C. Employment	1.9%	1.4%	1.8%	1.53%	1.30%
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	2.0%	2.15%
Sales Tax (Y-T-D)	5.0%	11.1%	4.2%	3.0%	2.9%
Individual Income Tax (Y-T-D)	7.2%	3.2%	4.5%	2.8%	2.5%

Notes: 1/ Current forecast rates as of February 14, 2019 (the last official BEA forecast estimate).
2/ Growth rate as of the most recent time period, e.g. month, quarter.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.
U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.
S.C. Board of Economic Advisors, Columbia, S.C.

**South Carolina Board of Economic Advisors
Survey Results of Regional Advisory Committee
Summary of Economic Forecast Assumptions**

Variable	Actual FY2018-19	Most Recent	Current 1/ Forecast Rates FY2019-20	Regional Advisory Committee Forecast Rates Forecast for FY2019-20					Simple Average	Olympic Scoring	MEMO BEA
				Hefner	Sauer	Sobel	Vitner	von Nessen			
S.C. Personal Income	5.40%	5.78%	4.25%	5.60%	4.00%	4.20%	4.80%	3.90%	4.50%	4.33%	5.25%
S.C. Employment	1.9%	1.4%	1.8%	1.50%	1.70%	1.53%	1.60%	1.50%	1.57%	1.54%	1.50%
Inflation Rate (CPI-U)	2.1%	1.7%	2.0%	1.80%	2.00%	2.00%	2.00%	1.90%	1.94%	1.97%	2.00%
Sales Tax	5.0%	10.0%	4.2%	4.00%	4.00%	3.00%	N/A	N/A	3.67%	4.00%	5.20%
Individual Income Tax 1/	7.2%	6.9%	4.5%	4.50%	4.00%	2.80%	N/A	N/A	3.77%	4.00%	5.20%

Variable	Actual FY2018-19	Most Recent	Current Forecast Rates FY2020-21	Regional Advisory Committee Forecast Rates Forecast for FY2020-21					Simple Average	Olympic Scoring	MEMO BEA
				Hefner	Sauer	Sobel	Vitner	von Nessen			
S.C. Personal Income 1/	5.40%	5.78%	N/A	5.70%	3.50%	4.03%	4.80%	N/A	4.51%	4.42%	4.75%
S.C. Employment	1.9%	1.4%	N/A	1.50%	1.50%	1.30%	1.40%	N/A	1.43%	1.45%	1.40%
Inflation Rate (CPI-U)	2.1%	1.7%	N/A	2.00%	2.00%	2.15%	2.20%	N/A	2.09%	2.08%	2.00%
Sales Tax	5.0%	10.0%	N/A	4.50%	3.50%	2.90%	N/A	N/A	3.63%	3.50%	4.70%
Individual Income Tax 1/	7.2%	6.9%	N/A	4.70%	3.50%	2.50%	N/A	N/A	3.57%	3.50%	4.60%

Notes: 1/ Current forecast rates as of February 14, 2019 (the last official BEA forecast estimate).
2/ Growth rate as of the most recent time period, e.g., month, quarter.
N/A - Not Available.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Washington, D.C.
U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.
S.C. Board of Economic Advisors, Columbia, S.C.