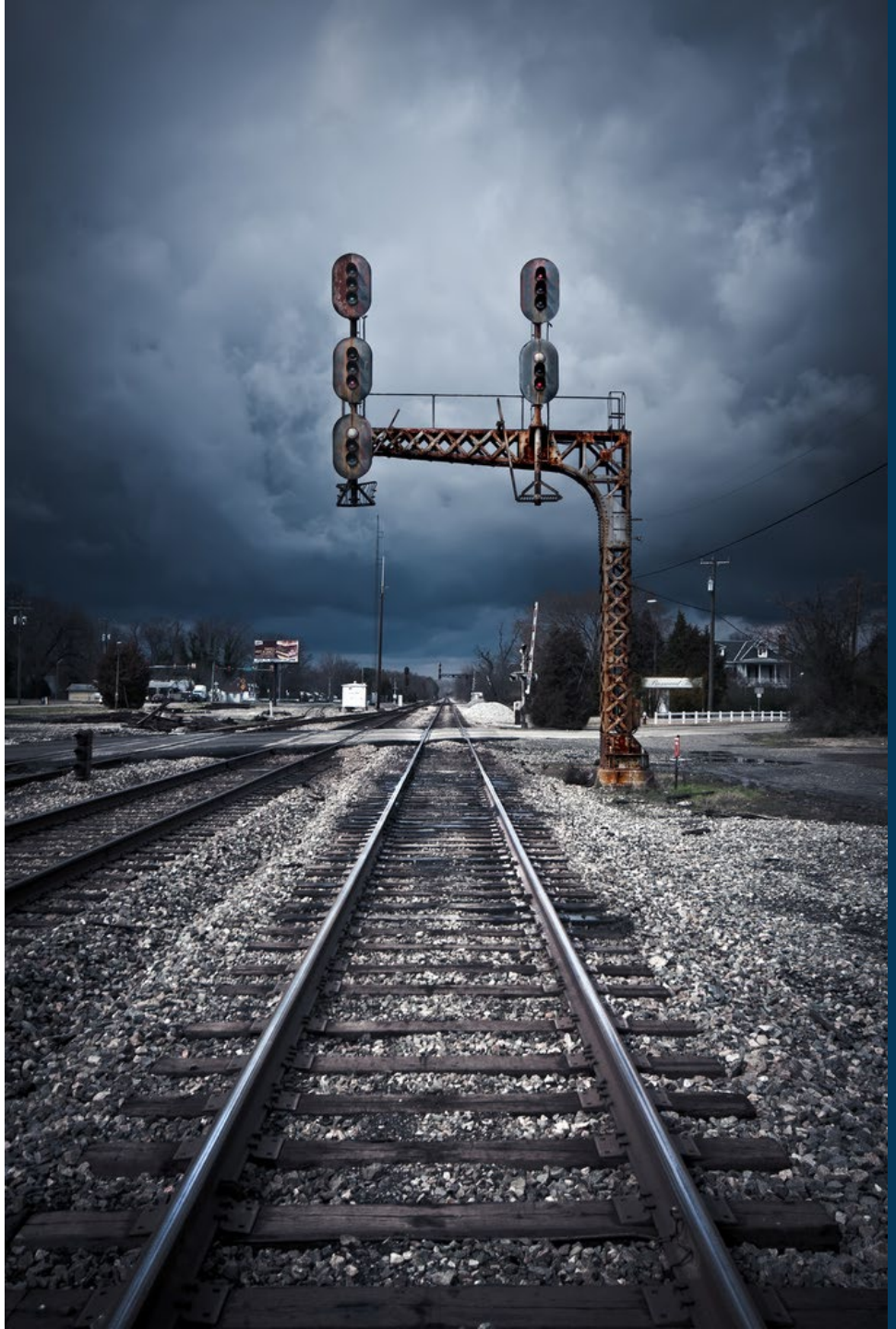
OLD DOMINION UNIVERSITY

2019 Annual Economic Forecast

Robert M. McNab and Vinod Agarwal
Dragas Center for Economic Analysis and Policy
Strome College of Business
Old Dominion University

January 30, 2019



Agenda for Today

I will cover economic conditions in the United States and Virginia and the challenges to growth.

My colleague, Vinod Agarwal, will examine economic conditions in Hampton Roads and the prospects for growth in 2019.

All of our presentation materials can be found at our website: www.ceapodu.com

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The data in this presentation are subject to revision. To our knowledge, all data used are accurate at the time of the presentation.

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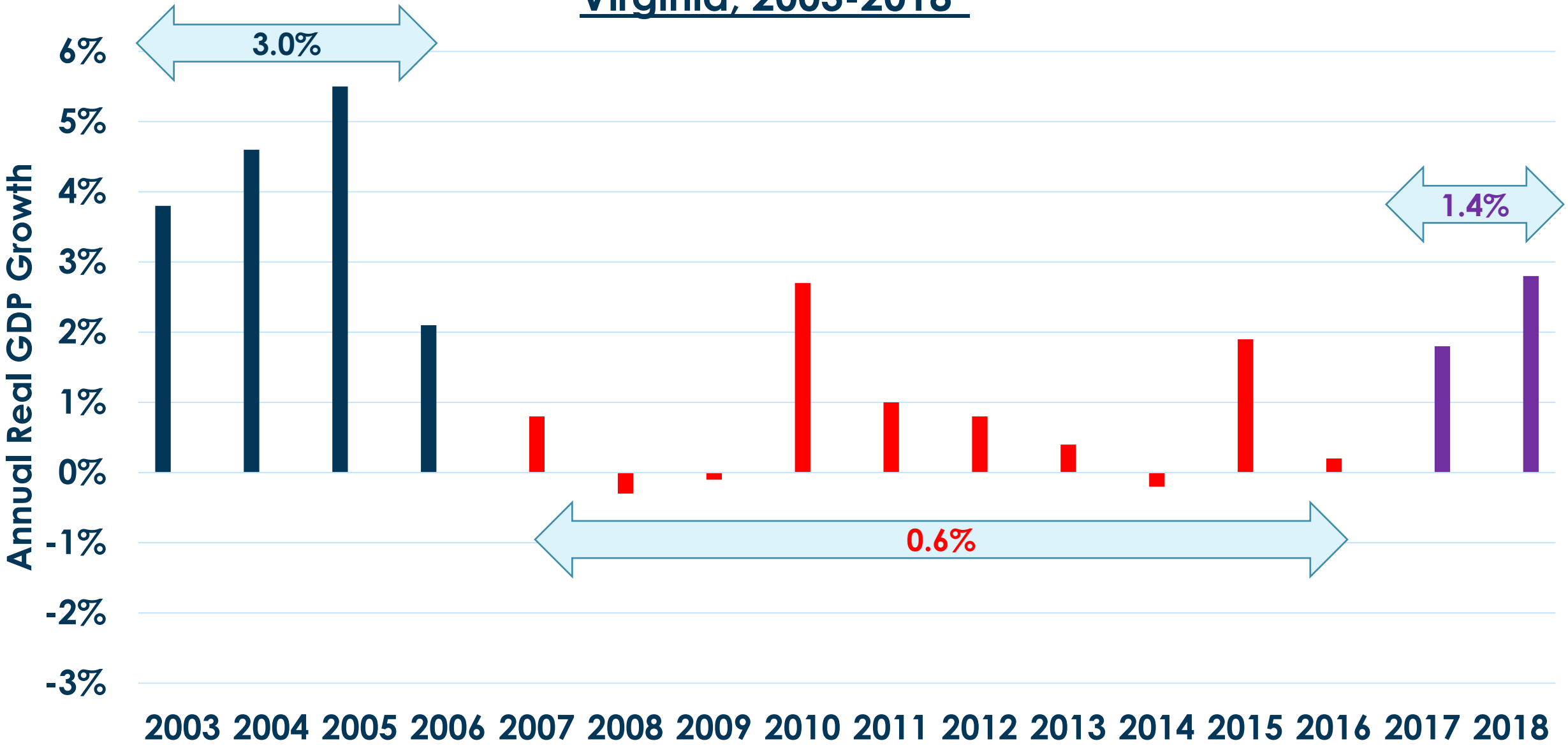
Prospects for 2019

Current and Historical Expansions

Expansion	Duration In months	Annual Employment Growth	Annual Real GDP Growth
October 1949 – July 1953	45	4.35%	6.95%
May 1954 – August 1957	39	2.51%	3.96%
April 1958 – April 1960	24	3.58%	5.42%
February 1961 – December 1969	106	3.23%	4.81%
November 1970 – November 1973	36	3.38%	4.99%
March 1975 – January 1980	58	3.51%	4.20%
December 1982 – July 1990	91	2.81%	3.90%
March 1991 – March 2001	120	2.01%	3.55%
November 2001 – December 2007	73	0.88%	2.86%
June 2009 – Present*	114	1.42%	2.30%

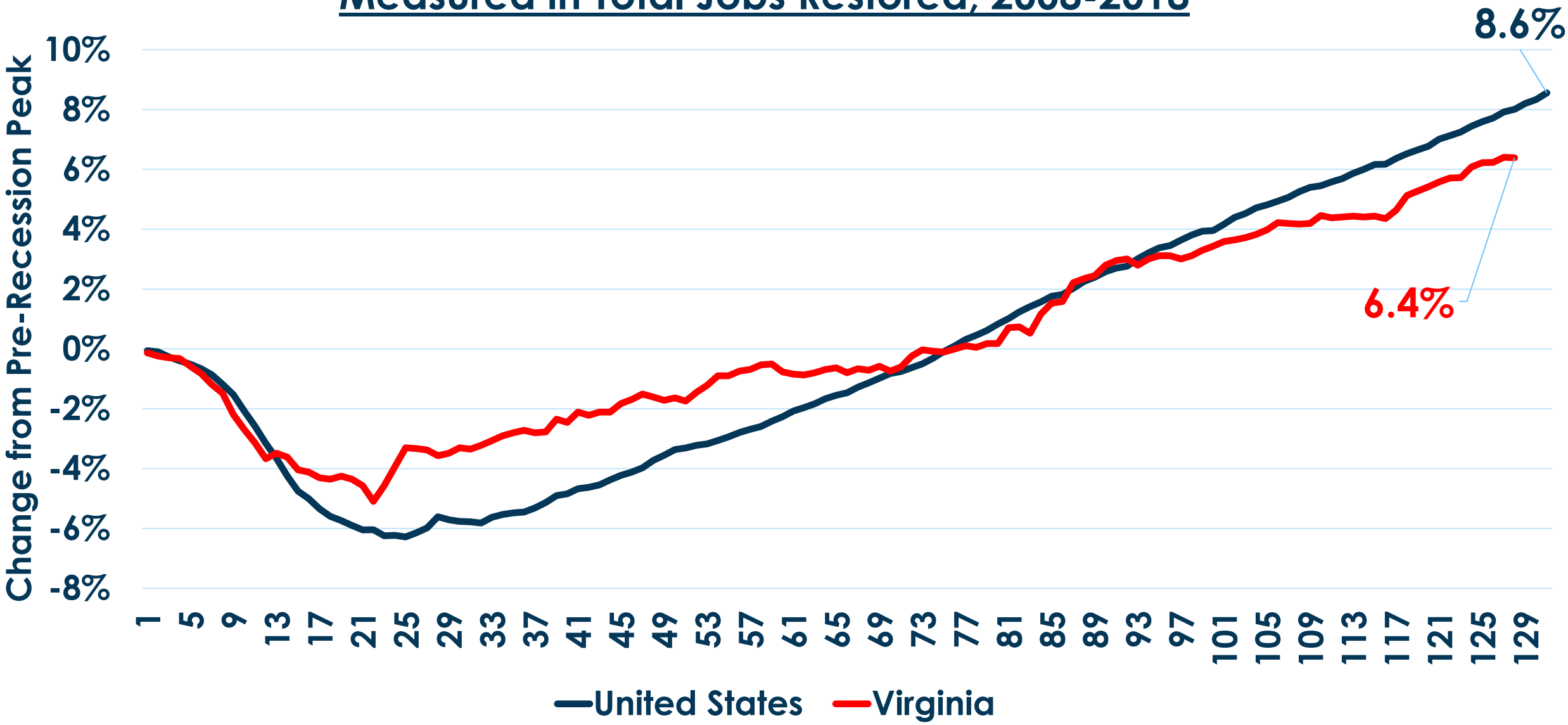
Sources: Bureau of Labor Statistics, Bureau of Economic Analysis, National Bureau of Economic Research, and Dragas Center for Economic Analysis and Policy. Real GDP in chained 2012 dollars. CAGR = Compound Annual Growth Rate. Annual Real GDP CAGR derived from quarterly series. Annual employment CAGR derived from monthly series. *Current expansion data ends in 2018 Q3 for GDP and November 2018 for US Nonfarm Payrolls. Average annual Real GDP CAGR of previous expansions = 4.21% while average annual employment CAGR from previous expansions = 2.92%.

Growth in Real Gross Domestic Product
Virginia, 2003-2018*



Sources: Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy. Data on GDP incorporates latest BEA revisions in September 2018. *Data for 2018 represents our forecast. CAGR GDP growth in horizontal bars.

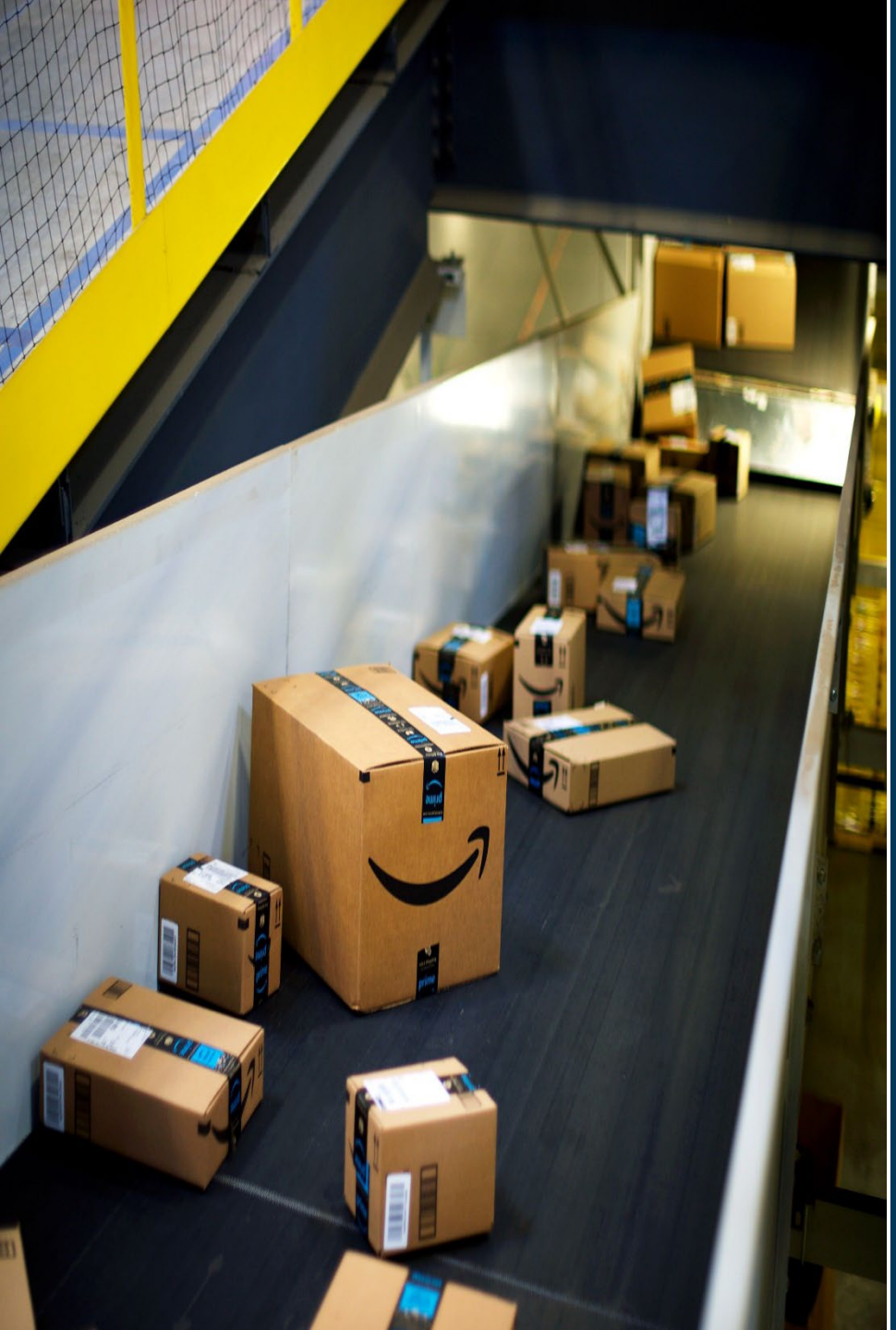
Recovery from the Great Recession
Measured in Total Jobs Restored, 2008-2018*



Sources: Bureau of Labor Statistics and Dragas Center for Economic Analysis and Policy. Peak Pre-Recession Dates are January 2008 (United States), and April 2008 (Virginia). *Data through December 2018. US data are preliminary the last two months. Virginia data are preliminary for the last month. Seasonally adjusted data.

2018-2019: The Good

- **Price and wage inflation** remain moderate, and interest rates remain historically low.
- Virginia was one of the two sites selected for **Amazon HQ2.**
- Decreases in federal business tax rates and increased repatriation of overseas profits **increased share buybacks and dividends**.
- **Increases in federal discretionary spending caps** continue to boost growth in Virginia.



Amazon

Projected Impact of Amazon's HQ2 – 2019 to 2030

- About 25,000 more Amazon jobs in Virginia by 2030
- About 30,000 more jobs through indirect and induced effects
- An economic impact of around $14 billion annually by 2030
- A $300 million-plus increase in tax collections
- The potential to create an innovation – technology cluster that attracts other firms to Virginia

Projected Costs Associated with Amazon's HQ2

- **Increased road congestion** in Northern Virginia
- **Higher home prices and rents** in Northern Virginia
- Increased demands on public infrastructure and schools
- **Increased economic inequality** across Virginia
- The public policy challenge is to ensure the benefits associated with HQ2 are spread throughout the Commonwealth

Federal Spending

What Was the Cost of the Shutdown?

- Approximately 800,000 federal employees worked without pay or were furloughed. Over 10,000 firms had contracts with federal agencies that had a lapse in appropriations.

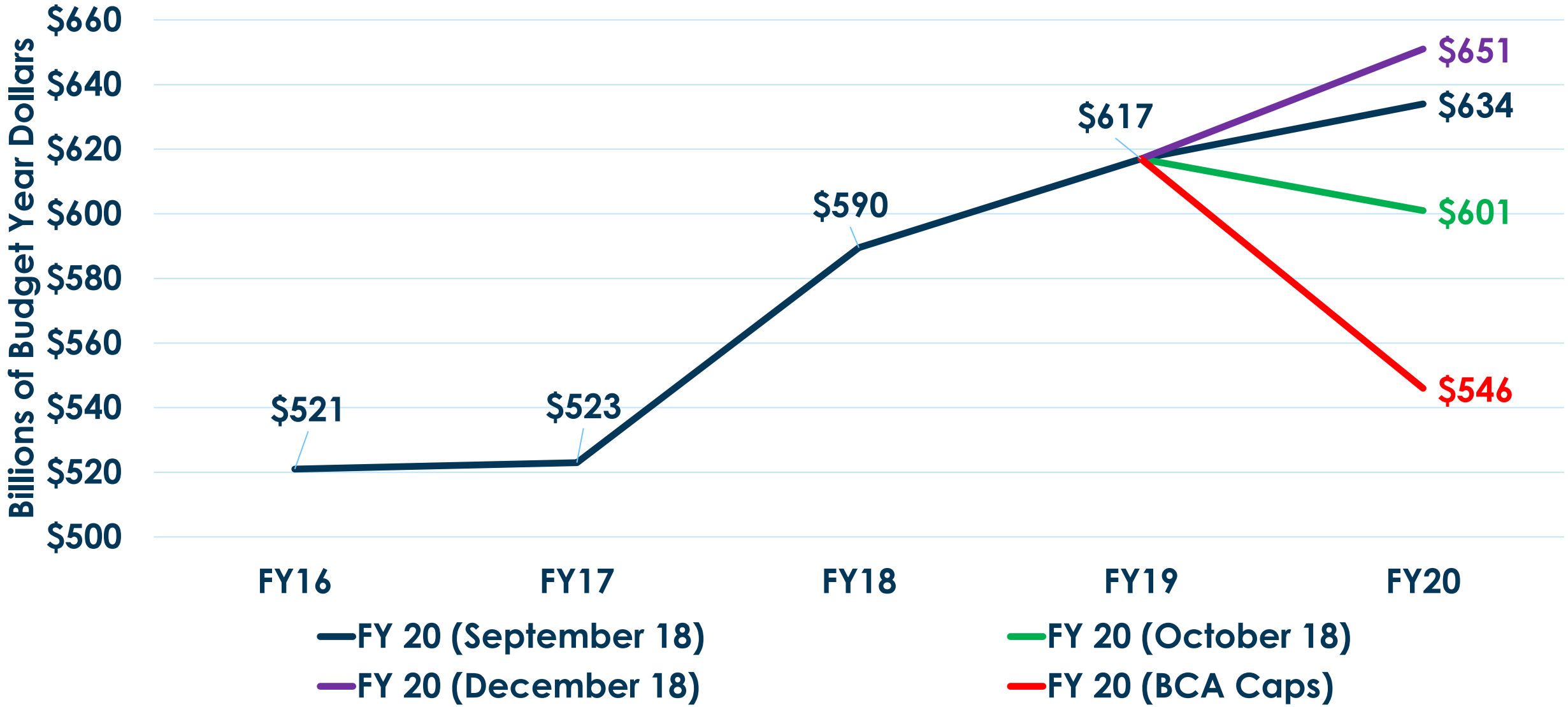
- While federal employees will receive pay for the period of the shutdown, many contractors will not receive reimbursement. Businesses that serve federal employees, agencies, and contractors will also not recoup most of their losses.

- The Congressional Budget Office projects that GDP in 2019 will be about $3 billion lower than it would have been if there had been no shutdown.

- There are now less than three weeks to either pass another Continuing Resolution or full-year appropriations. Failing that, another partial shutdown would occur.

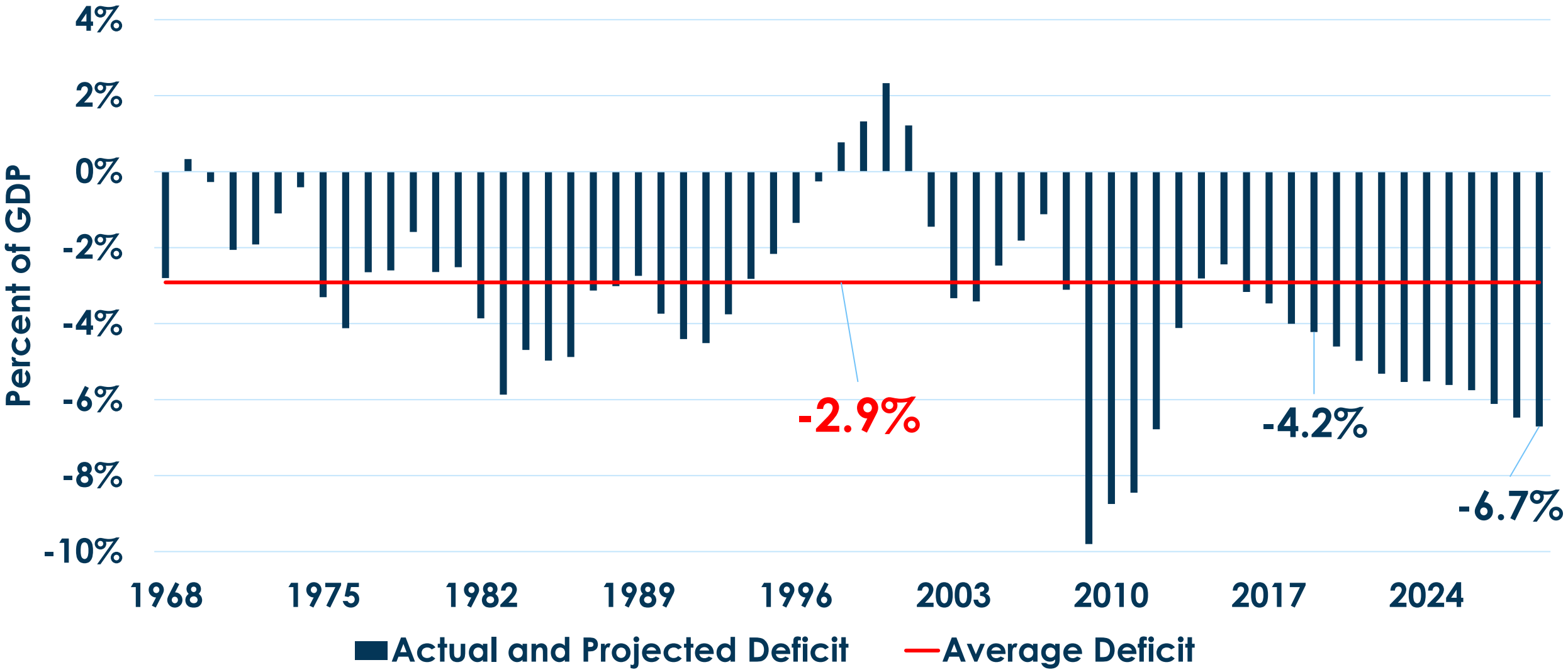
Note: The CBO estimate is likely a lower bound as it does not include other impacts of the shutdown, including delayed travel, slower permitting, and a host of other issues. As federal workers are repaid, 2nd and 3rd quarter 2019 GDP will increase above the prior projection, assuming there is not another shutdown. See https://www.cbo.gov/publication/54937.

Department of Defense
Base Budget, FY 2016 – FY 2020



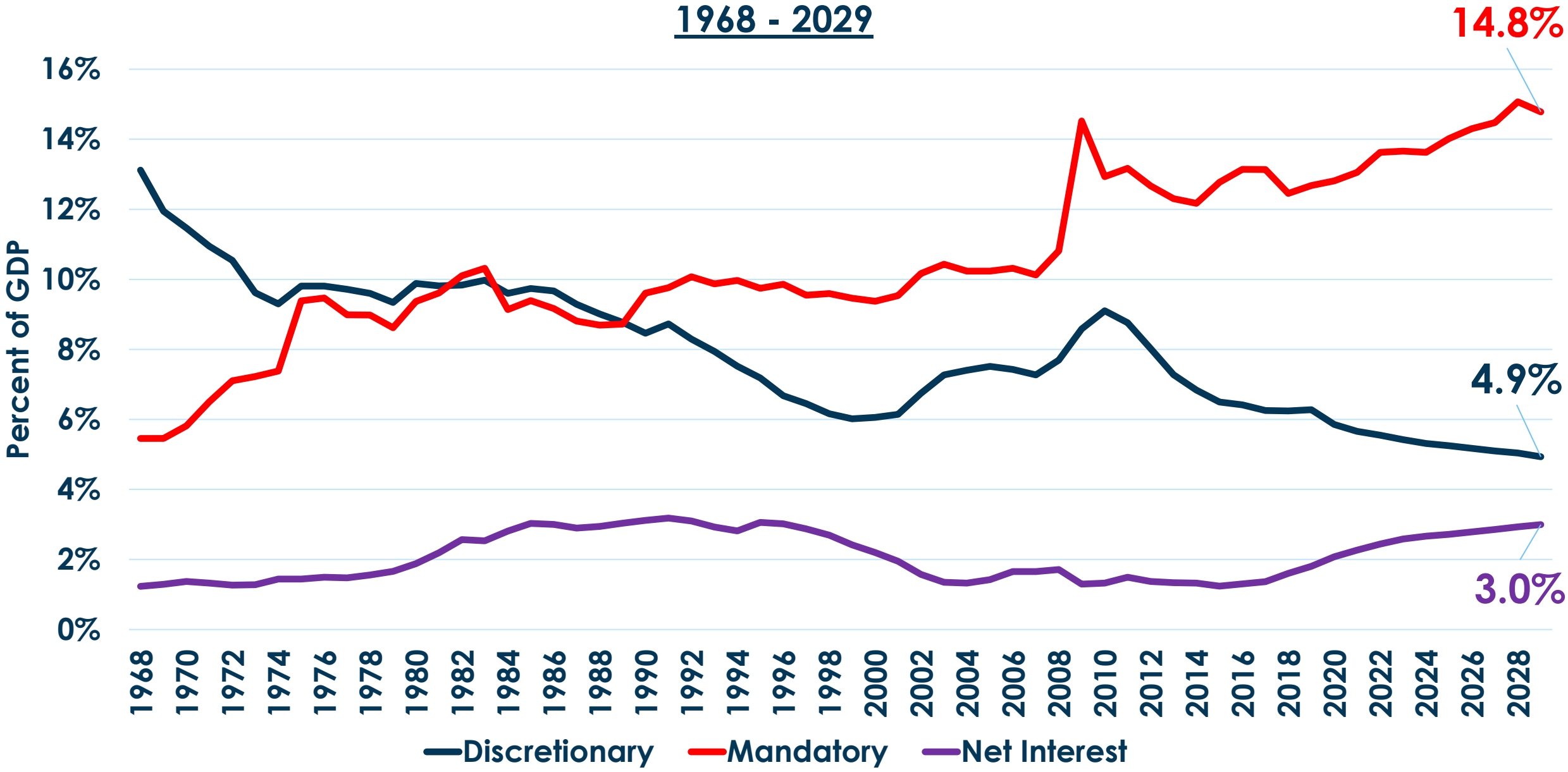
Sources: U.S. Department of Defense and the Dragas Center for Economic Analysis and Policy. FY 2019 DoD appropriations bill and CQ Now. FY 20 estimates assume $69 billion in OCO and $30 billion in non-DoD national defense spending. The proposed 5% reduction in the base budget is a reduction from the FY20 full request, not FY 19.

Total Federal Deficit or Surplus as Percent of GDP
1968 - 2029



Sources: Congressional Budget Office (2019), Budget and Economic Output: 2019 to 2029 and Dragas Center for Economic Analysis and Policy. Alternative fiscal scenario deficits. Average deficit is for 1968 – 2018.

Federal Outlays as Percent of GDP
1968 - 2029



Sources: Congressional Budget Office (2019), Budget and Economic Output: 2019 to 2029 and Dragas Center for Economic Analysis and Policy.

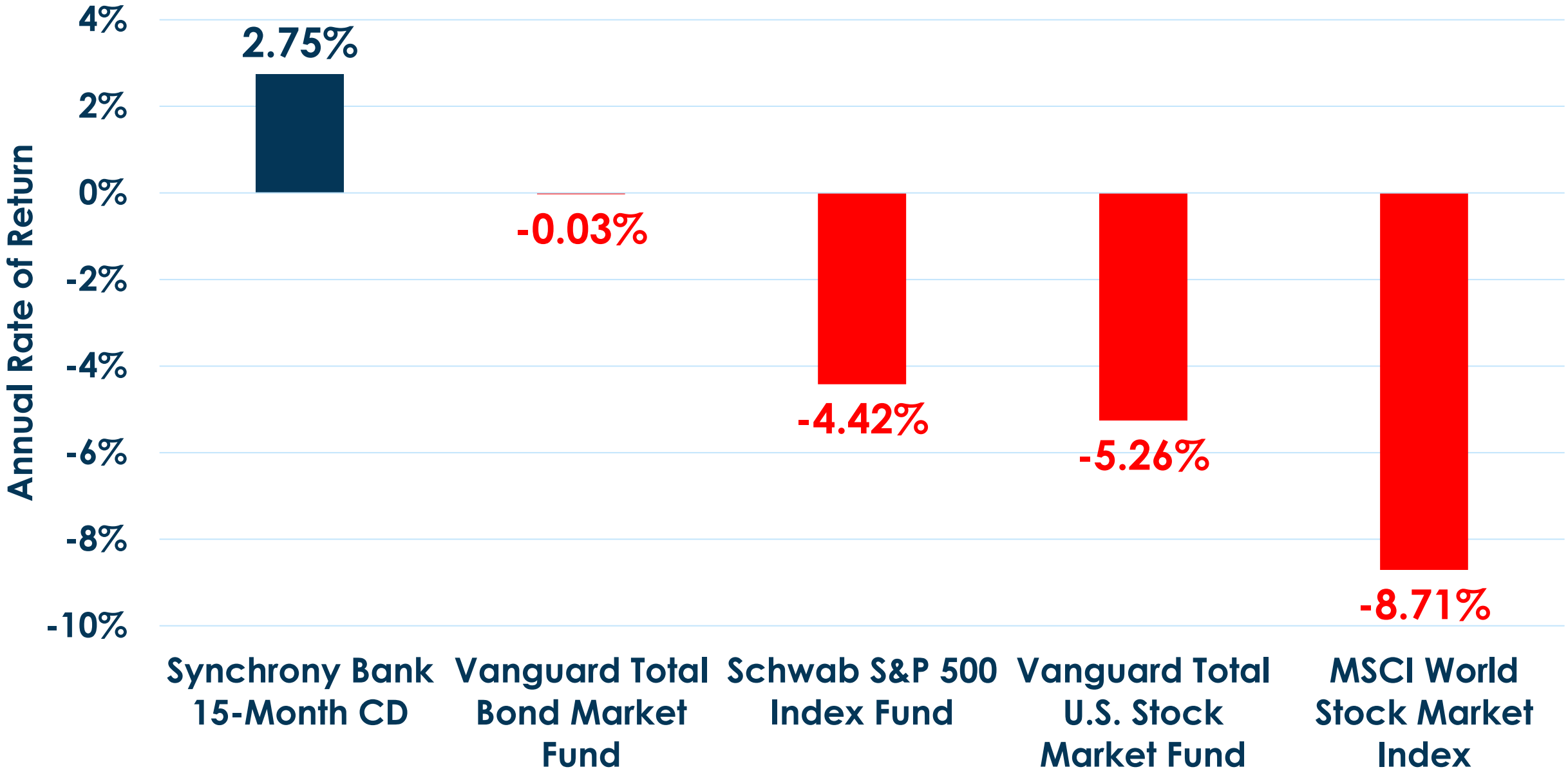
2018-2019: The Bad

- There are several upcoming fiscal speedbumps in 2019
  - Expiration of the 3-week CR (February 15th)
  - Debt Ceiling (Spring-Summer)
  - National Flood Insurance Program (May 31)
  - Discretionary Spending Caps (October 1)
  - Paid Family Leave Credit Expires (December 31)
  - Affordable Care Act Taxes are Reinstated (December 31)

- The defense environment is also quickly evolving
  - Climate driven conflicts will strain alliances and supply chains
  - Sea-level rise will threat DoD infrastructure in Virginia
  - Future wars will be "hot, urban, and complex"
  - Asymmetry in costs will erode U.S. advantages (Quantity has a quality all its own)
  - China is cutting its ground forces and increasing air and naval assets

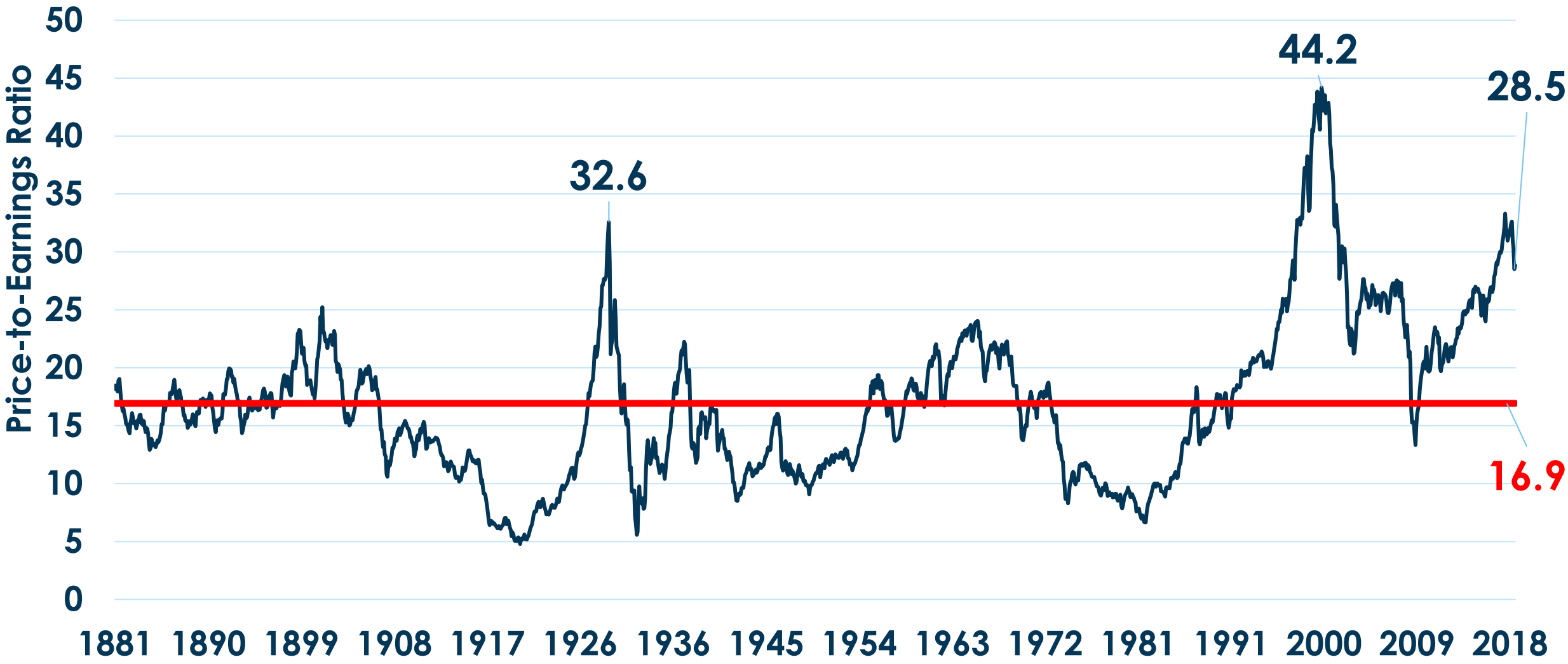
Earnings and Expectations: Prospects for 2019

Comparing Annual Rates of Return, 2018



Sources: Yahoo Finance and MSCI (2019). Annual rates of return for 2018. CD rate as of January 21, 2019. Bitcoin lost approximately 65% of its value over 2018. Vanguard Bond (VBTLX), Schwab (SWPPX), Vanguard Total US Stock (VTSMX).

Cyclically Adjusted Price/Earnings Ratio
Standard and Poor's Composite Price Index
January 1881 – January 2019*

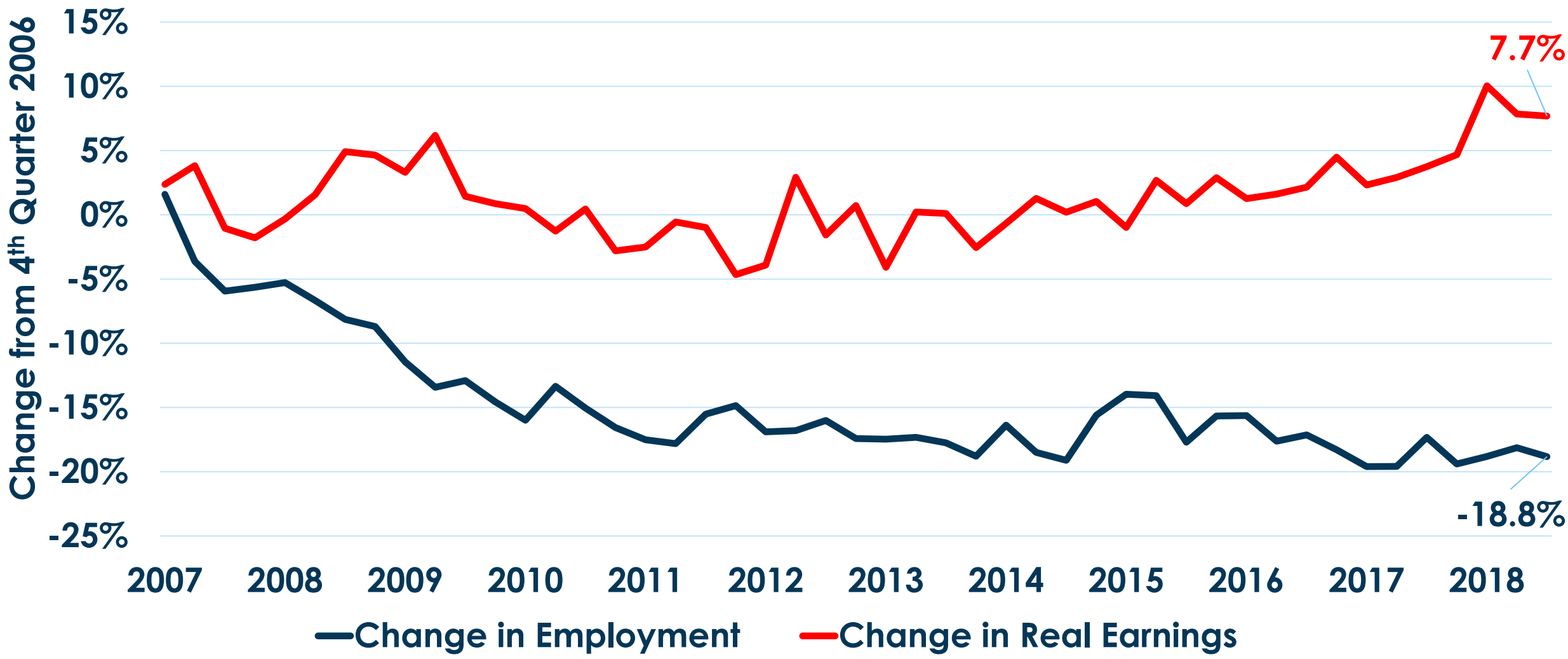


Source: Robert Schiller, *Irrational Exuberance*. Prices and earnings are in January 2000 dollars. *Data as January 15, 2019 market close. For further information: http://www.econ.yale.edu/~shiller/data.htm

10-Year Breakeven Inflation Rate
January 2014 – January 2019*

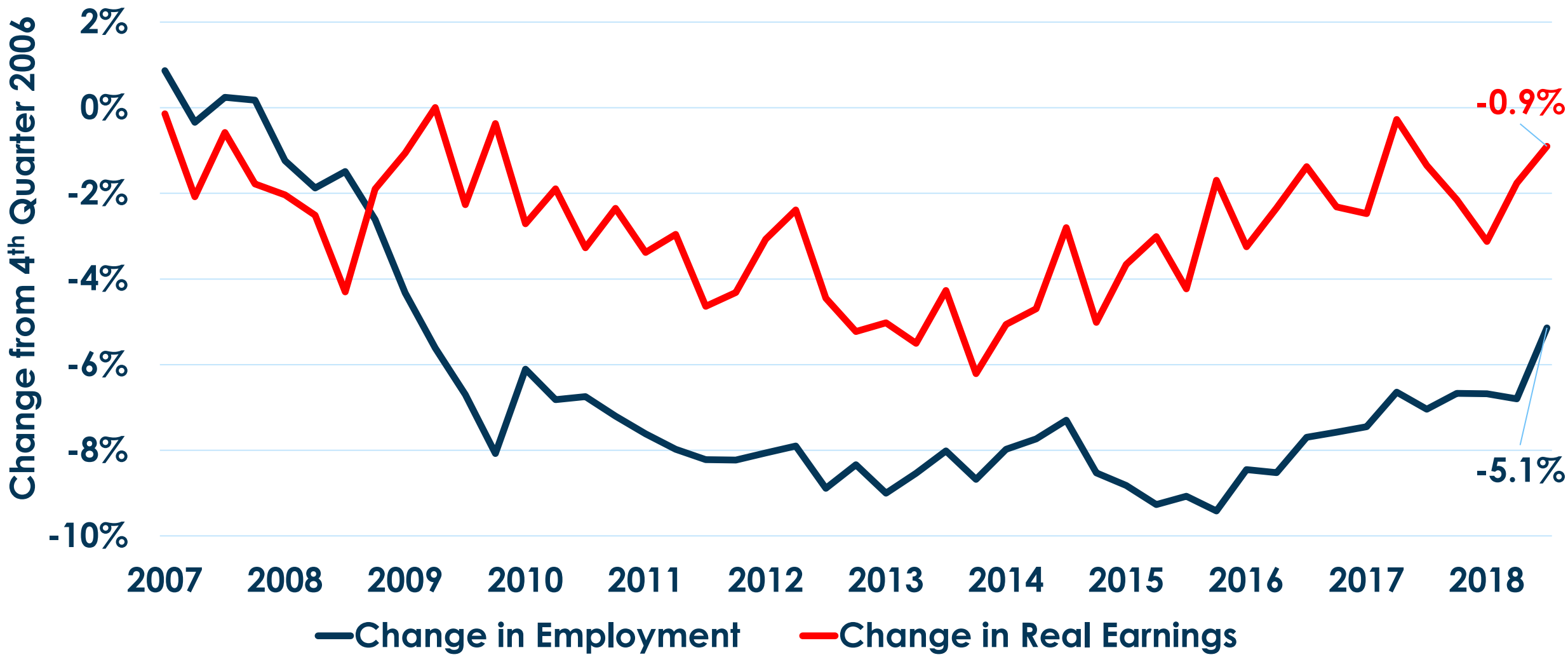
Source: Board of Governors of the Federal Reserve System. *Data current as of January 24, 2018. The 10-Year breakeven inflation rate is a measure of expected inflation that is equal to the difference between 10-Year U.S. Treasury Constant Maturity Securities and 10-Year Treasury Inflation-Index Constant Maturity Securities. The value implies expectations of inflation in the next ten years.

Change in Employment and Median Real Hourly Earnings
Full-Time Workers with Less than High School Education
1st Quarter 2007 to 3rd Quarter 2018



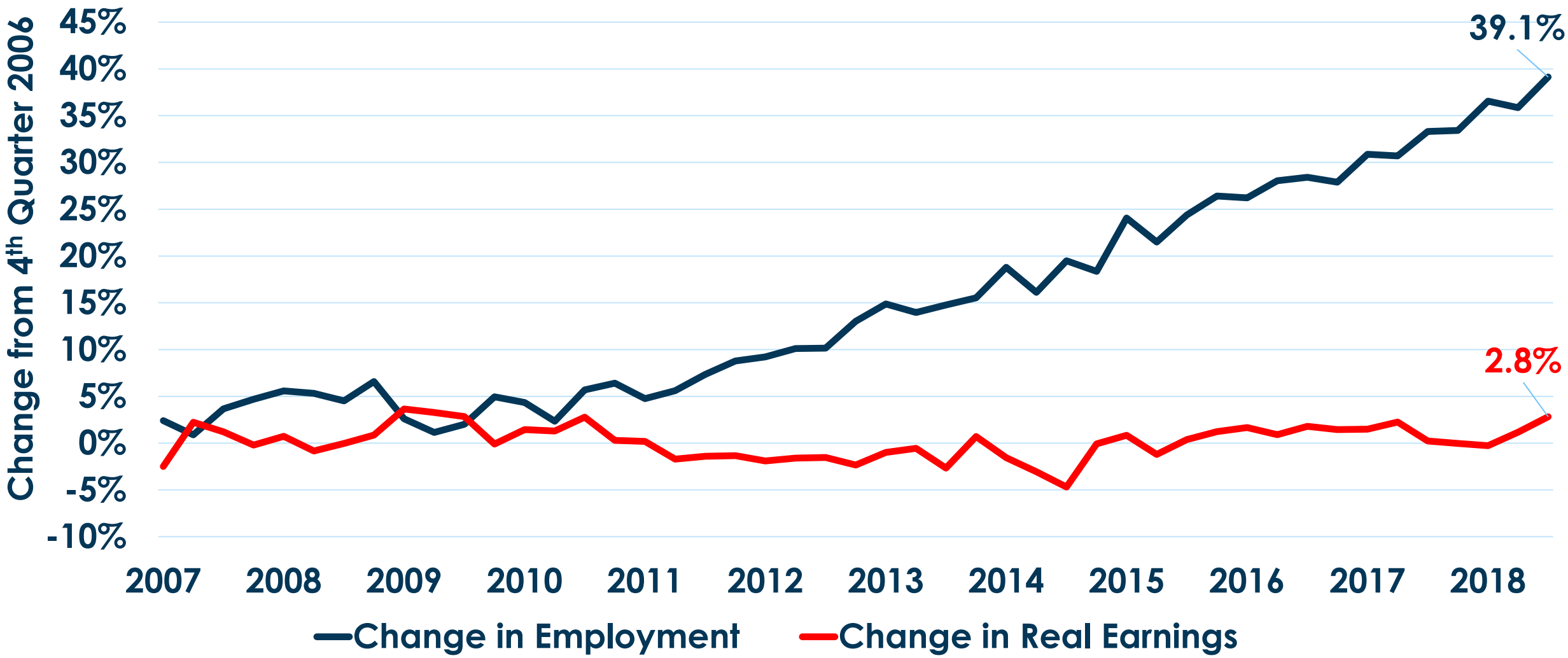
Sources: Bureau of Labor Statistics, Current Population Survey and Dragas Center for Economic Analysis and Policy. Individuals 25 years or older employed full time. Real median hourly earnings calculated using the Consumer Price Index for All Urban Consumers.

Change in Employment and Median Real Hourly Earnings
Full-Time Workers with High School Education (No College)
1st Quarter 2007 to 3rd Quarter 2018



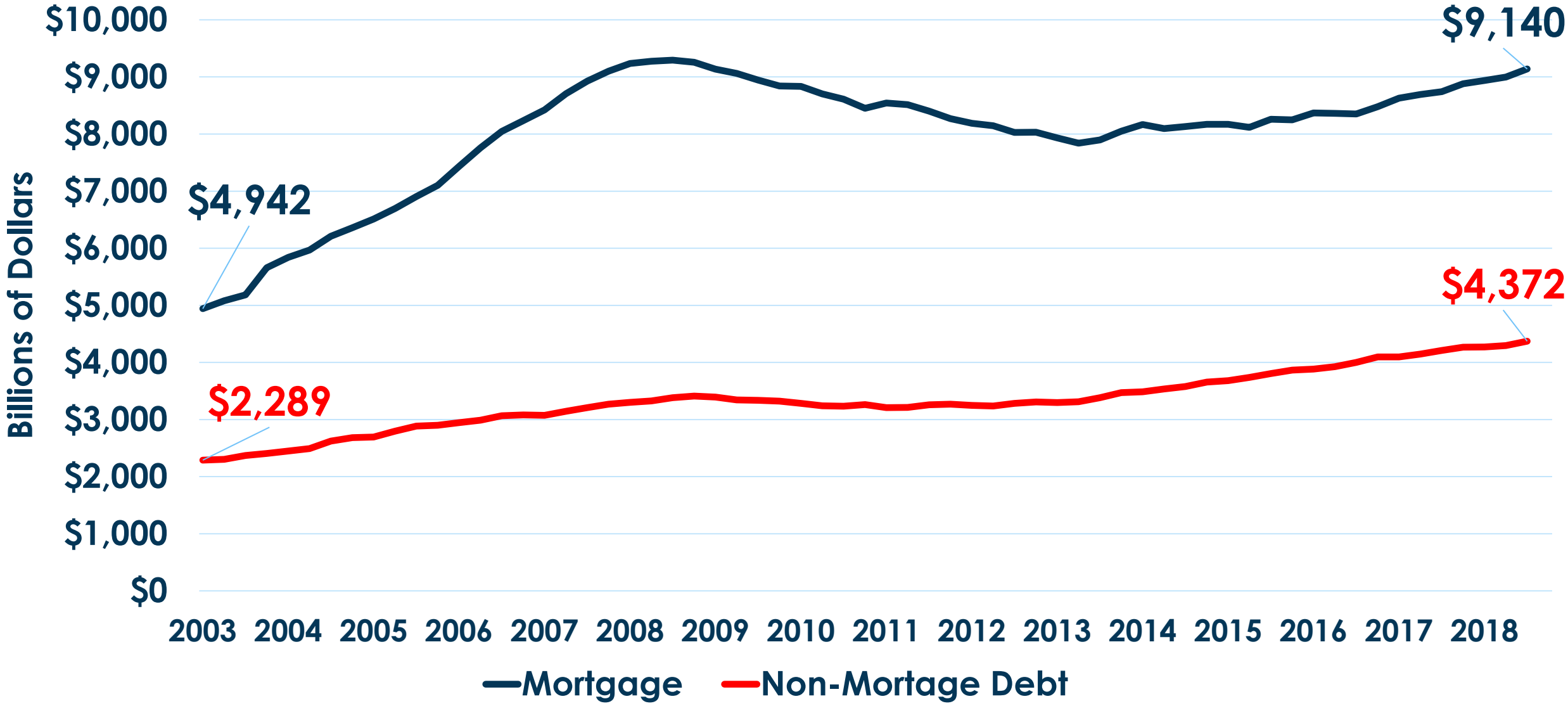
Sources: Bureau of Labor Statistics, Current Population Survey and Dragas Center for Economic Analysis and Policy. Individuals 25 years or older employed full time. Real median hourly earnings calculated using the Consumer Price Index for All Urban Consumers.

Change in Employment and Median Real Hourly Earnings
Full-Time Workers with Bachelor's Degree or Higher
1st Quarter 2007 to 3rd Quarter 2018



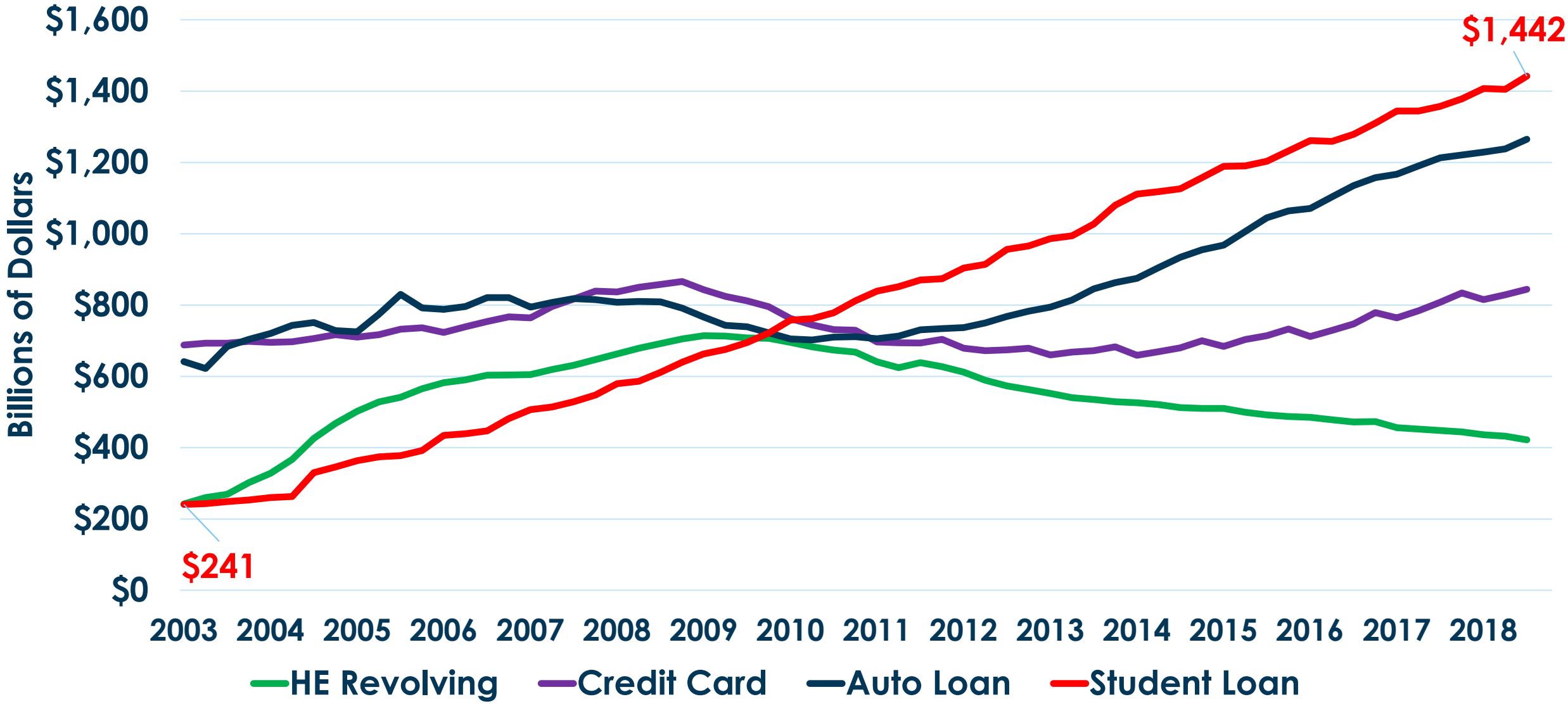
Sources: Bureau of Labor Statistics, Current Population Survey and Dragas Center for Economic Analysis and Policy. Individuals 25 years or older employed full time. Real median hourly earnings calculated using the Consumer Price Index for All Urban Consumers.

Household Debt in Billions of Dollars
2nd Quarter 2003 – 3rd Quarter 2018



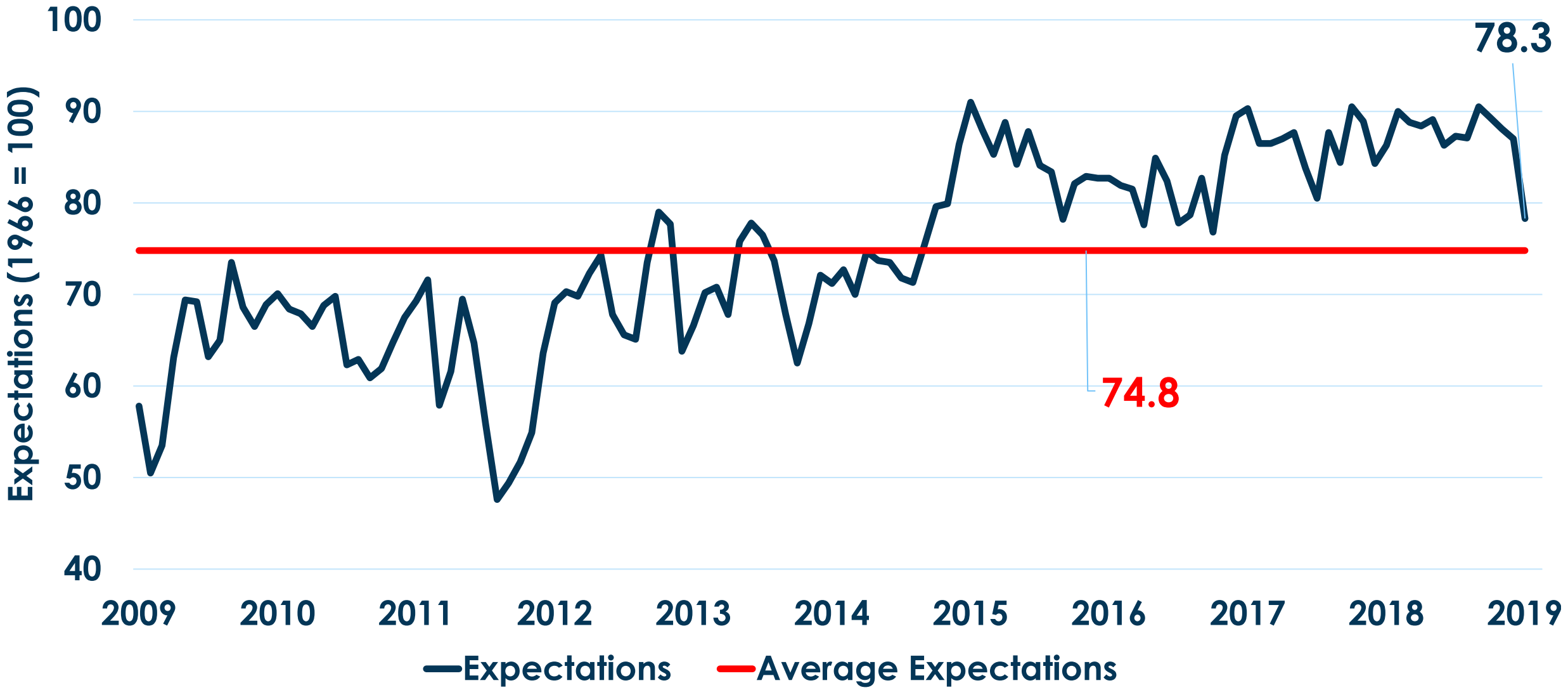
Source: Center for Microeconomic Data, Federal Reserve Bank of New York and Dragas Center for Economic Analysis and Policy.

Non-Mortgage Household Debt in Billions of Dollars
2nd Quarter 2003 – 3rd Quarter 2018



Sources: Center for Microeconomic Data, Federal Reserve Bank of New York and Dragas Center for Economic Analysis and Policy. Does not include mortgage debt or other debt. Total household debt was approximately 13.4 trillion dollars in Q3 2018.

University of Michigan, Index of Consumer Expectations
January 2009 – January 2019



Source: University of Michigan, Survey of Consumer Sentiment, January 2019.

2018-2019: The (Potentially) Ugly

- Interest rates are likely to rise over the coming decade due to increased borrowing by the federal government.
- Global economic growth is slowing and Brexit is a disaster.
- The Federal Government will run trillion dollar deficits through 2028.
- The Federal Reserve is trying to 'claw back' monetary policy space.
- All business cycles come to an end. When it happens, can we manage a 'soft landing' or will it be similar to 2008-2009?

	2017 Actual	2018 Forecast (May)	2018 Actual*	2019 Forecast
U.S. Real Gross Domestic Product	2.3%	3.1%	3.0%	2.5%
Civilian Job Growth	1.2%	1.2%	1.6%	1.2%
Unemployment Rate	4.1%	3.6%	3.9%	3.7%
Consumer Price Index	2.2%	3.0%	2.4%	2.7%
Core Consumer Price Index	1.7%	2.3%	2.1%	2.3%
3-month Treasury Bill	1.4%	2.1%	2.4%	2.5%
10-year Treasury Bill	2.4%	3.3%	2.8%	3.0%
30-year Treasury Bill	2.8%	3.6%	3.1%	3.6%
30-year Conventional Mortgage	4.0%	5.0%	4.6%	4.8%
Federal Deficit	-$666 Billion	-$825 Billion	-$793 Billion	-$998 Billion
Virginia Real GDP	2.0%	2.7%	2.6%	2.6%
Virginia Employment Growth	1.4%	1.5%	1.9%	1.5%

Notes: Data reflects the annual rate of growth, last month, or day business day of the year where appropriate. Data are rounded to nearest tenth. *2018 data are, where possible, actual, or forecasted due to the lack of data on the 4th quarter of 2018. Virginia's Real GDP data is estimated for the 3rd and 4th quarter of 2018.

2019 Hampton Roads Economic Forecast

Improving Prospects

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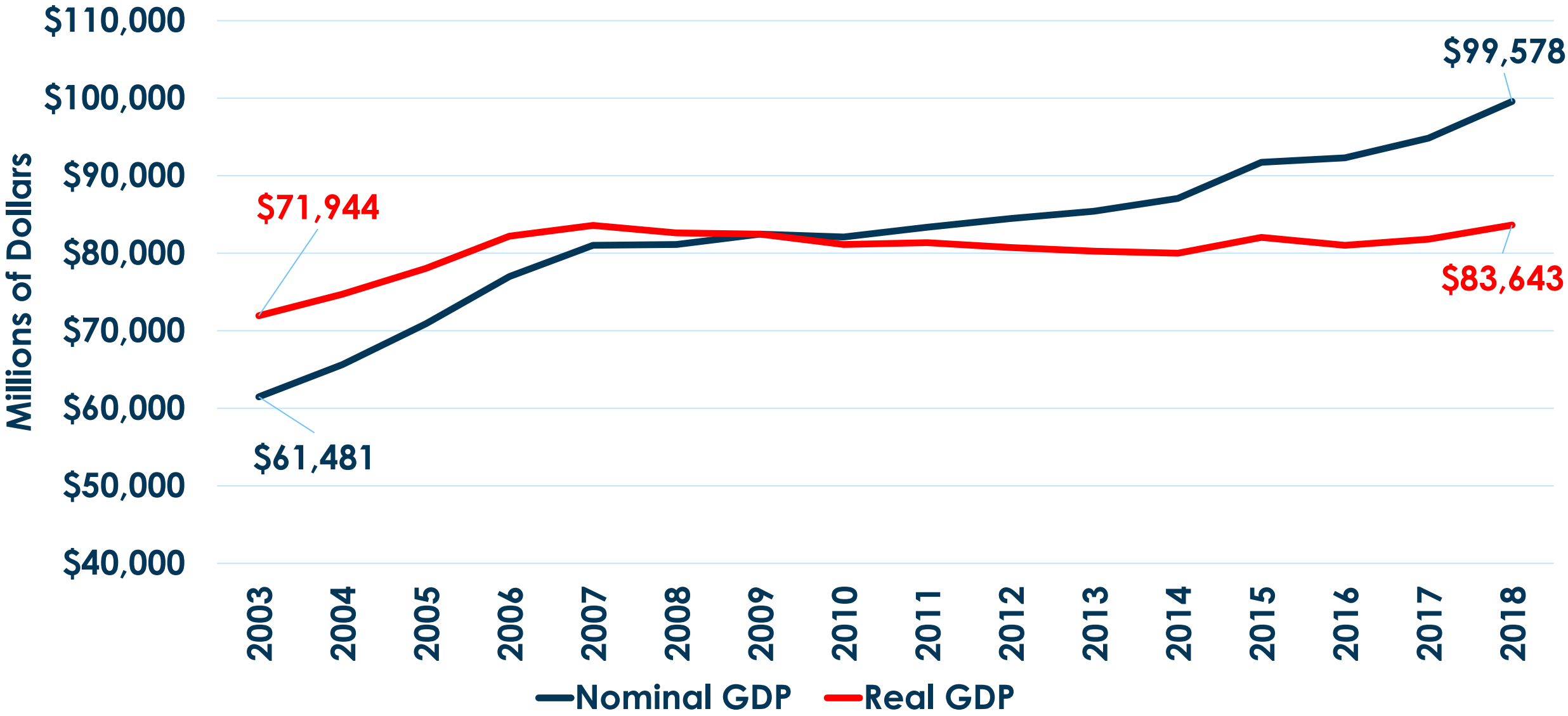
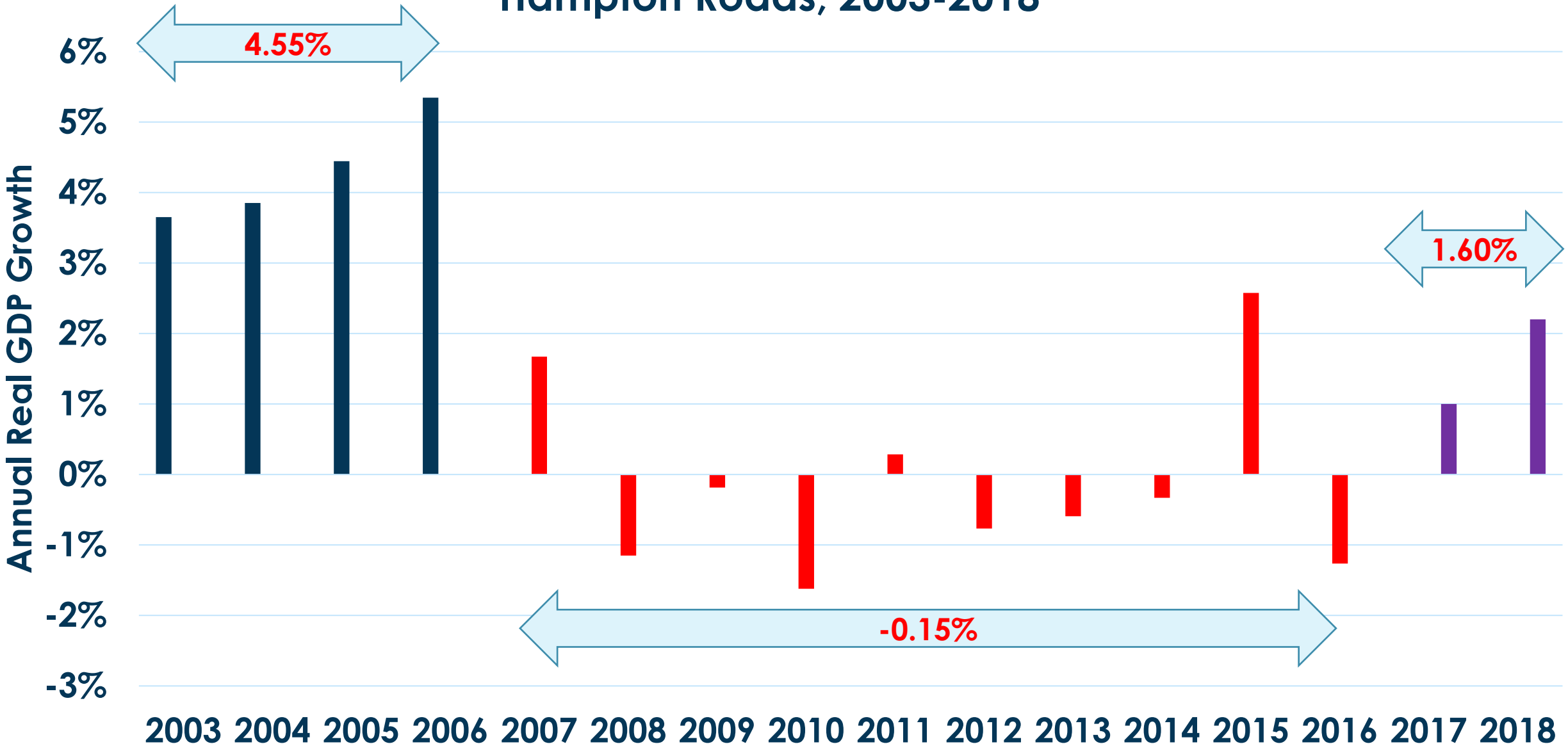
Nominal and Real Gross Domestic Product (GDP)
Hampton Roads, 2003 – 2018*



Sources: Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy. Data on GDP incorporates latest BEA revisions in September 2018. Data for 2017 for Hampton Roads is the advance estimate. *Data for 2018 represents our forecast. Real GDP in 2009 Chained Dollars.

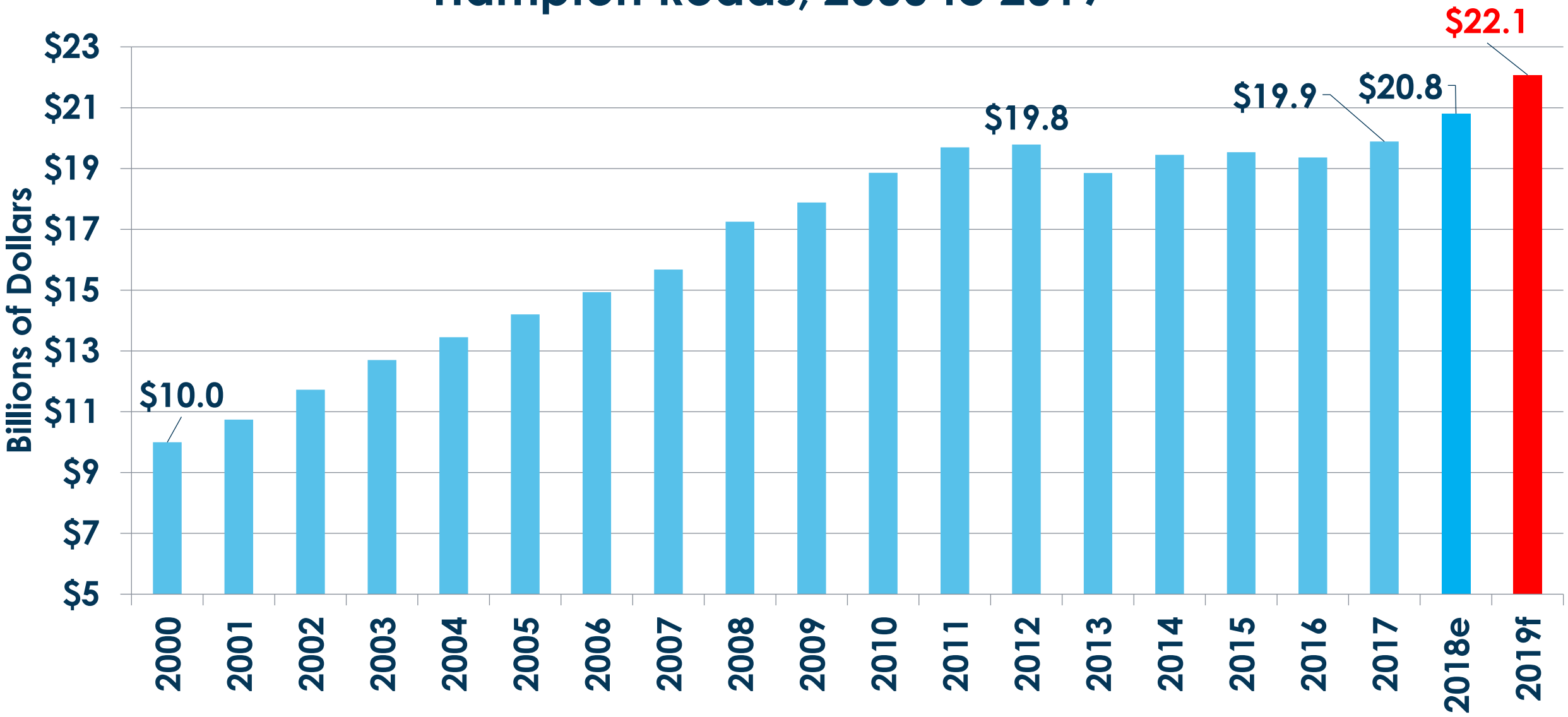
Growth in Real Gross Domestic Product
Hampton Roads, 2003-2018*



Sources: Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy. Data on GDP incorporates latest BEA revisions in September 2018. Data for 2017 for Hampton Roads are the advance estimates. *Data for 2018 represents our forecast. CAGR GDP growth in horizontal bars.

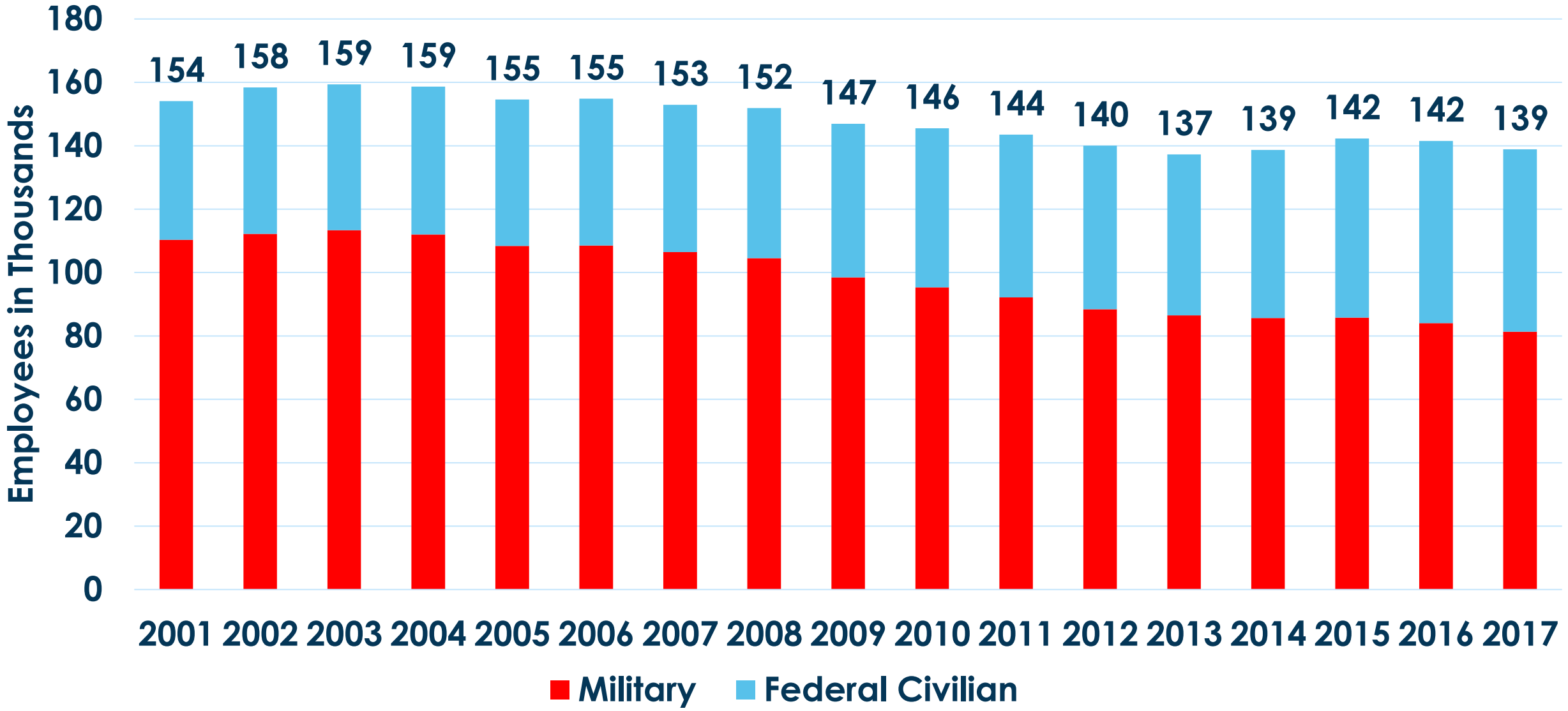
Defense Spending in Hampton Roads

Estimated Direct Department of Defense Spending Hampton Roads, 2000 to 2019*



Sources: U.S. Department of Defense and Dragas Center for Economic Analysis and Policy. Includes Federal Civilian and Military Personnel and Procurement. *Data for 2018 are estimates while 2019 is our forecast.

Military and Federal Civilian Employment
Hampton Roads, 2001 - 2017



Sources: U.S. Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy. Last updated by BEA on November 15, 2018.

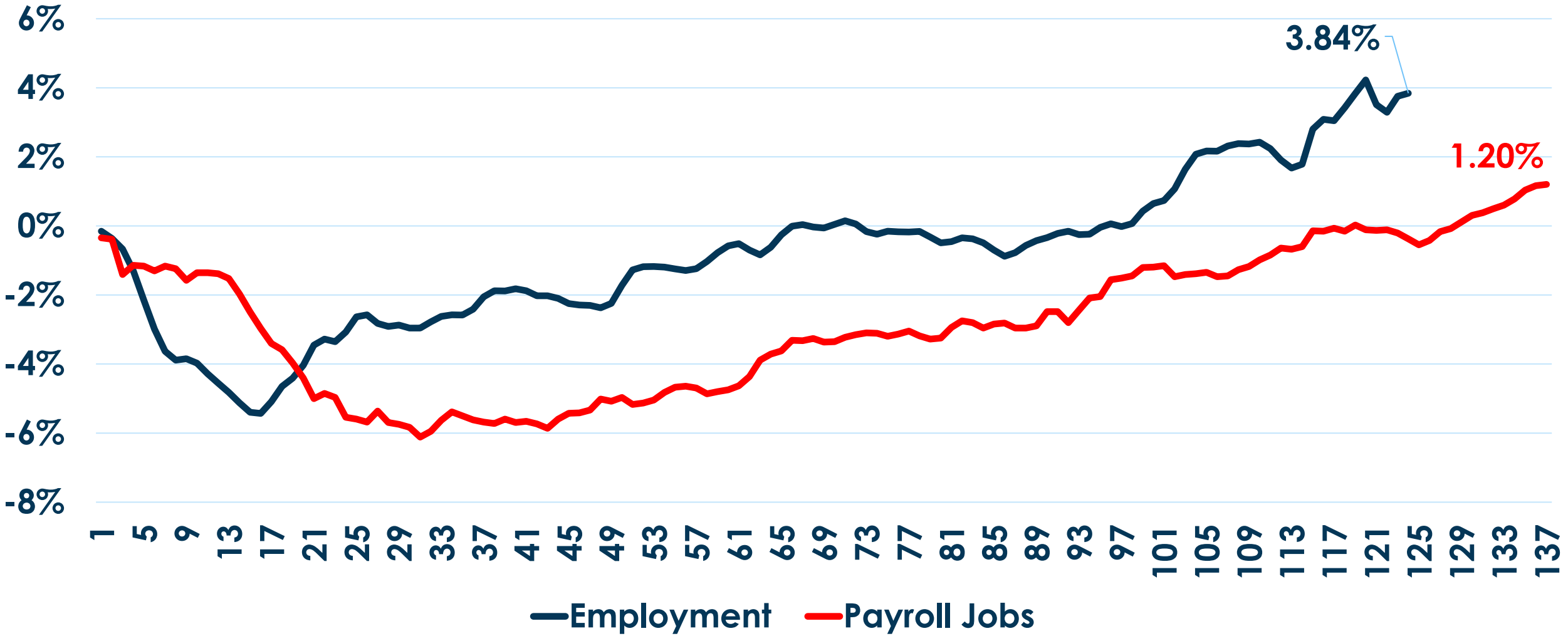
Estimated Average Compensation
Hampton Roads, Selected Categories

	2016	2017	Change in Compensation
Military	$92,112	$94,067	2.12%
Federal Civilian Govt. Employees	$110,092	$113,961	3.51%
State and Local Govt. Employees	$62,224	$64,558	3.75%
Private Nonfarm	$41,628	$42,647	2.45%

Sources: Bureau of Economic Analysis and Old Dominion University Economic Forecasting Project. Compensation includes wages, salaries, and benefits. Last updated November 15, 2018.

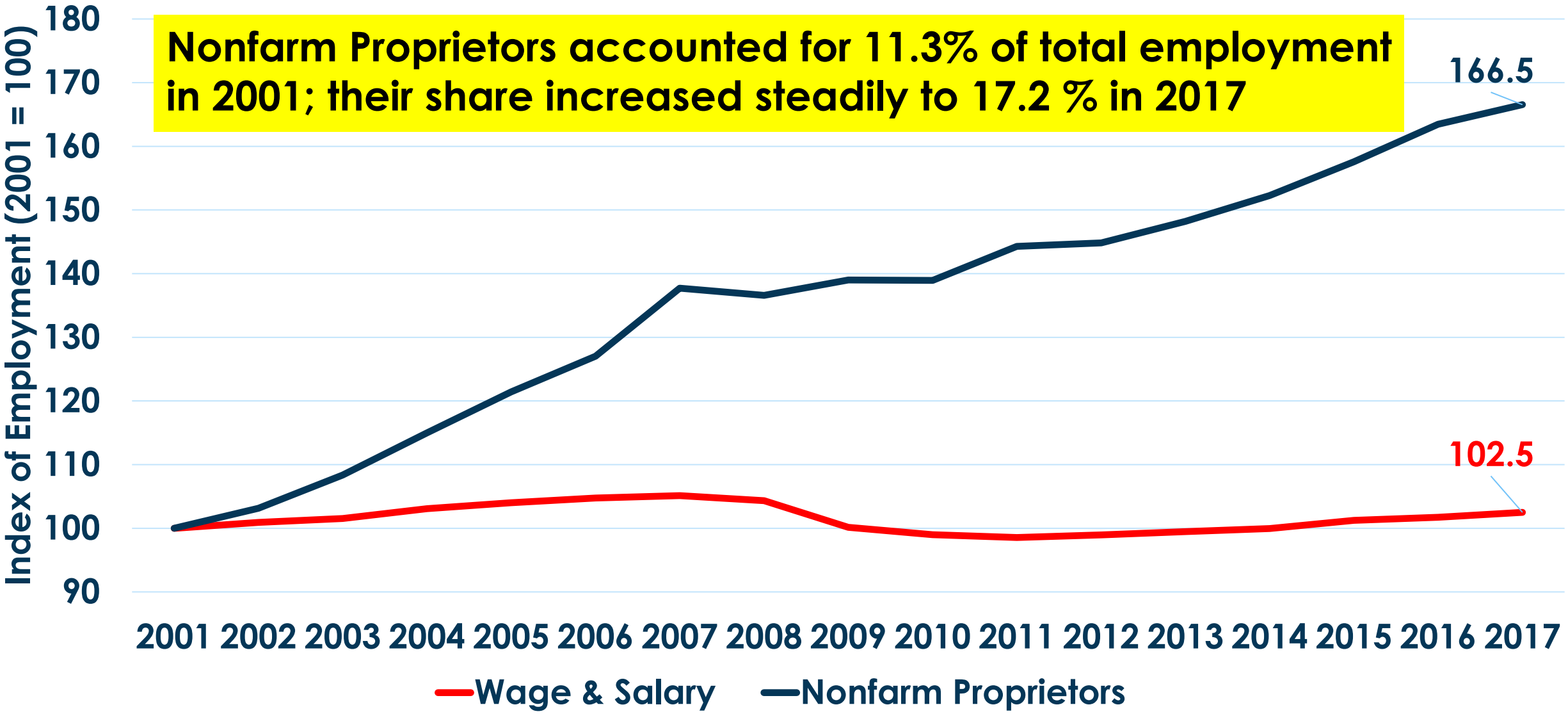
Jobs and Employment (Steadily Growing)

Recovery from the Great Recession
Measured in Jobs and Employment Restored in Hampton Roads: 2007-2018*



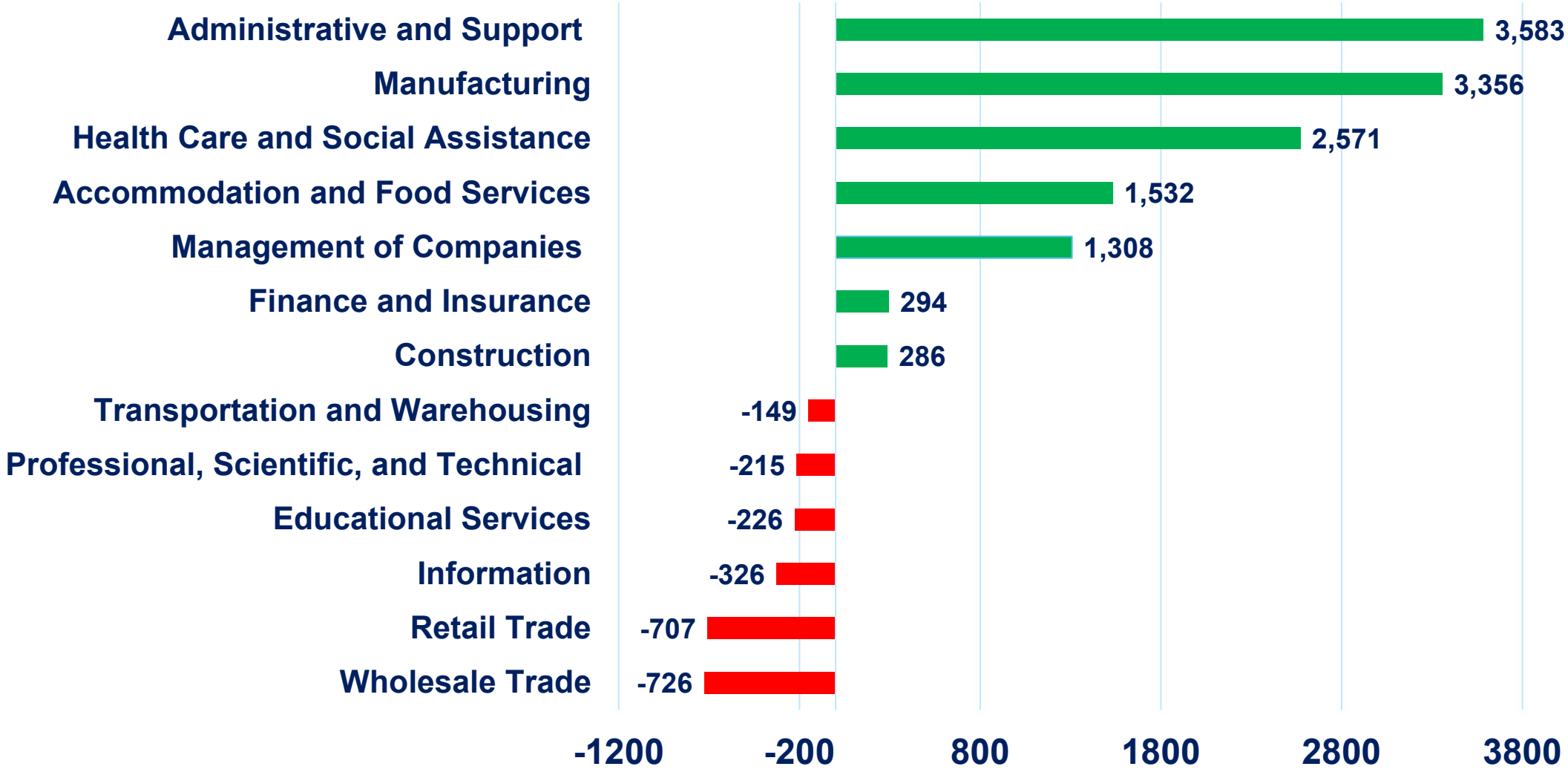
Sources: Bureau of Labor Statistics and Old Dominion University Economic Forecasting Project. Peak Pre-Recession Dates are July 2007 for payroll jobs and July 2008 for employment. Data shown for jobs are through December 2018 and data for employment are through November 2018. Hampton Roads data for jobs are preliminary for December 2018 and data for employment are preliminary for November 2018. Seasonally adjusted data.

Index of Wage & Salary and Nonfarm Proprietors Employment
Hampton Roads, 2001-2017



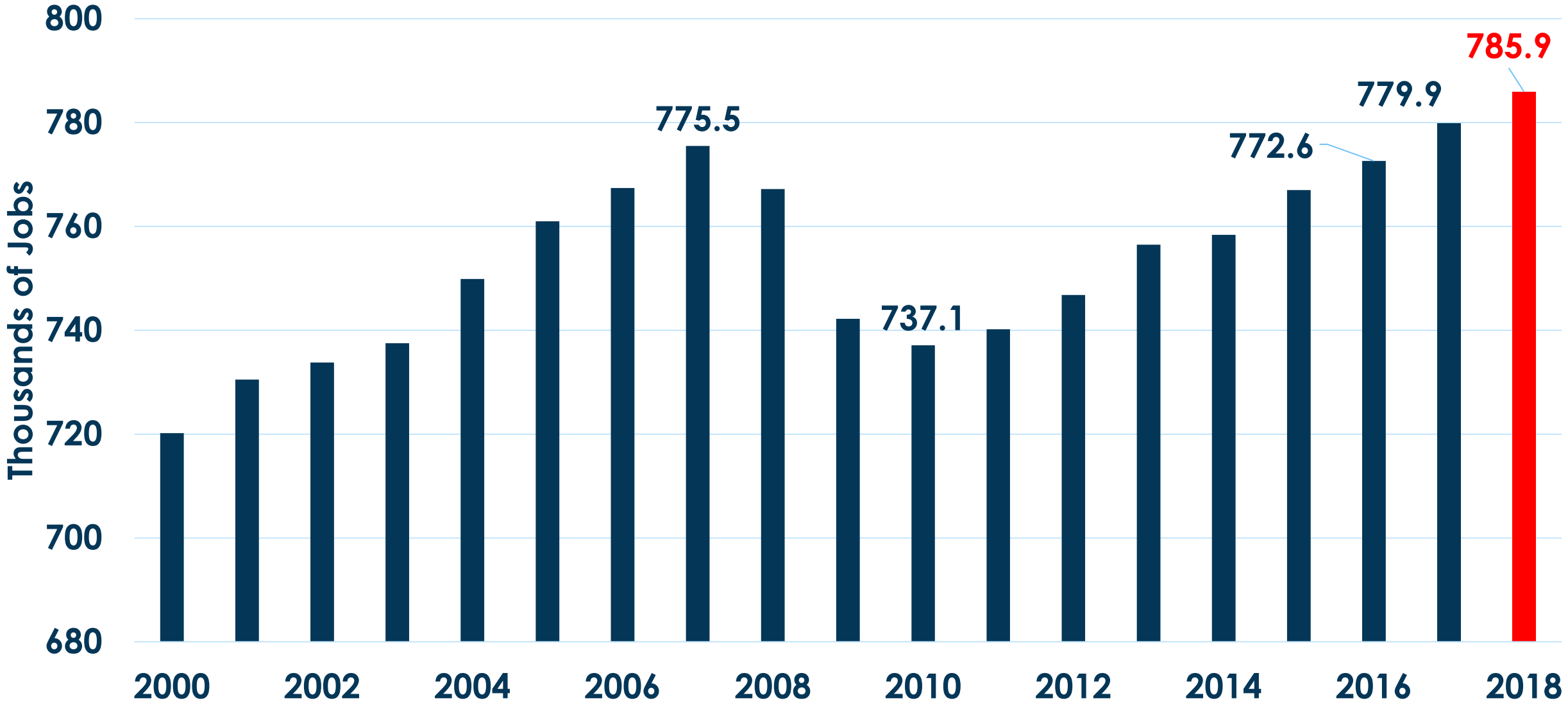
Sources: Bureau of Economic Analysis and Dragas Center for Economic Analysis and Policy. Data incorporate latest BEA revisions on November 15, 2018. Proprietors employment excludes limited partners. Farm Proprietors employment throughout this period has accounted for 0.12% to 0.14 % of total employment.

Change in Employment: Selected Industries in Hampton Roads, 2017 Q1 to 2018 Q1



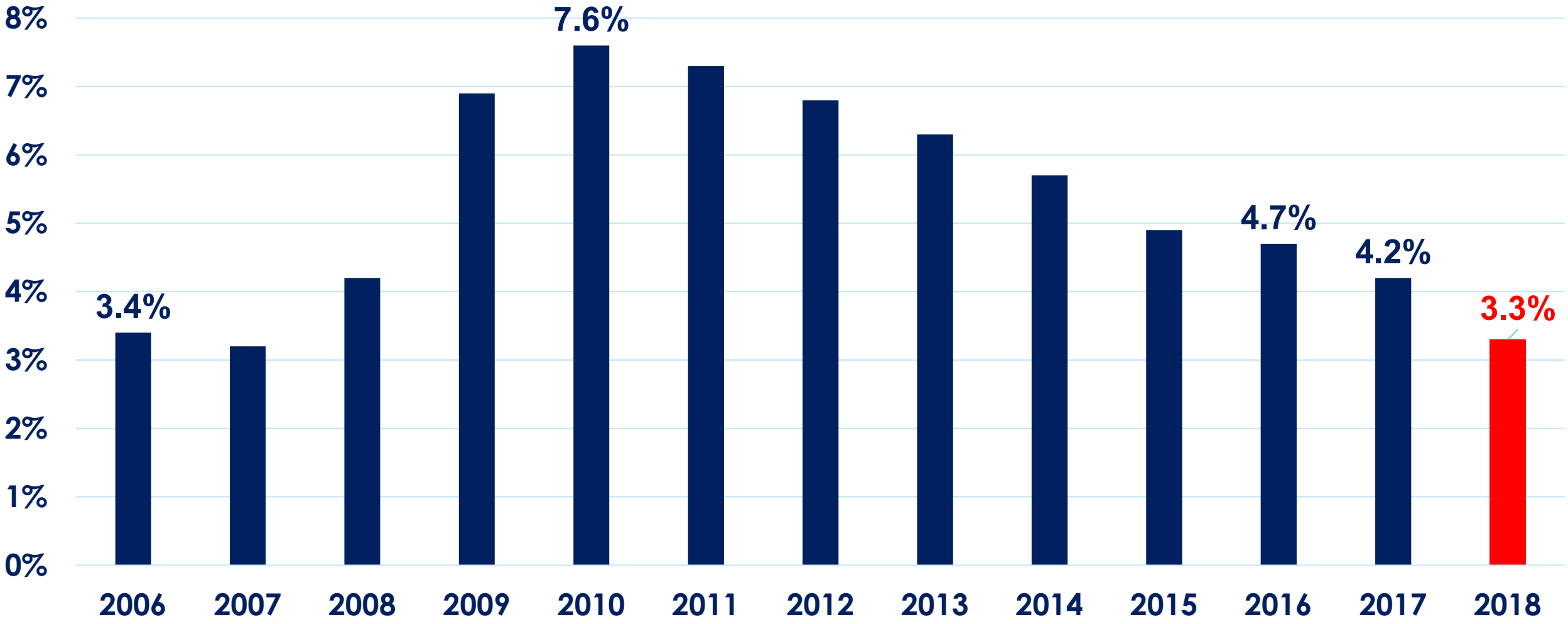
Sources: Virginia Employment Commission: Covered Employment and Wages by all types of Ownership (VA part of MSA) and the Old Dominion University Economic Forecasting Project.

Average Civilian Nonfarm Employment (Jobs): Hampton Roads, 2000 – 2018



Sources: U.S. Department of Labor CES data and the Old Dominion University Economic Forecasting Project. Annual averages based on non-seasonally adjusted data. Data will be revised in March 2019.

Unemployment Rate: Hampton Roads, 2006-2018*



Sources: Bureau of Labor Statistics and Old Dominion University Economic Forecasting Project. *Data for 2018 are our estimates.

- Good news: Increases in defense spending in FY 19 will help raise economic growth. Increases in ship building and maintenance are included in the FY 2019 appropriations bill.

- An immediate challenge: Finding the right labor at the right time for employers. The long-term challenge: Labor force participation rates have not recovered; difficulty moving disaffected back into workforce.

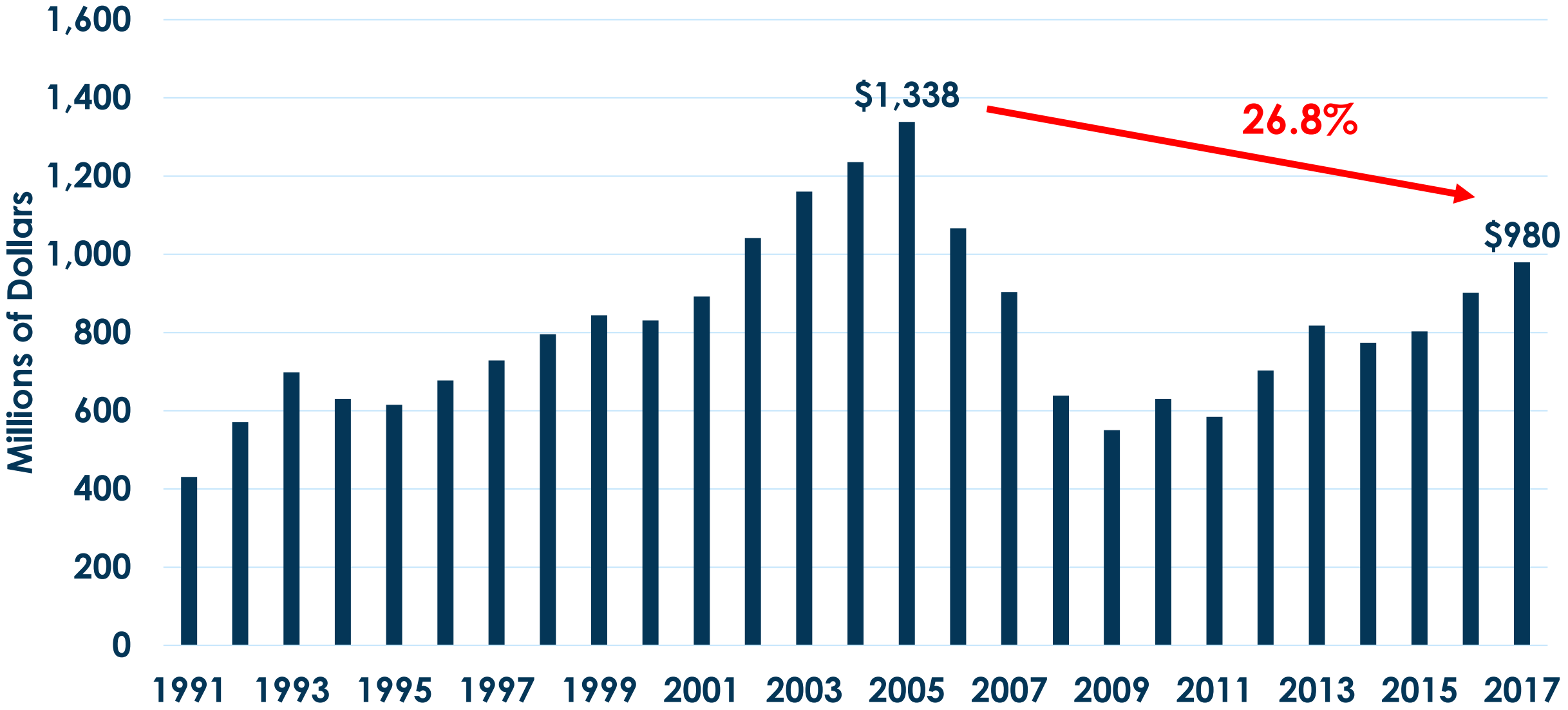
- The opportunity: Improving collaborative efforts among cities to retain/attract businesses while defense spending is increasing.

- Federal deficits are expected to exceed $1 trillion in FY 22 (and beyond); interest on the debt may reach $800 billion annually by FY 27.

- Position Hampton Roads now to win in the coming BRAC round.

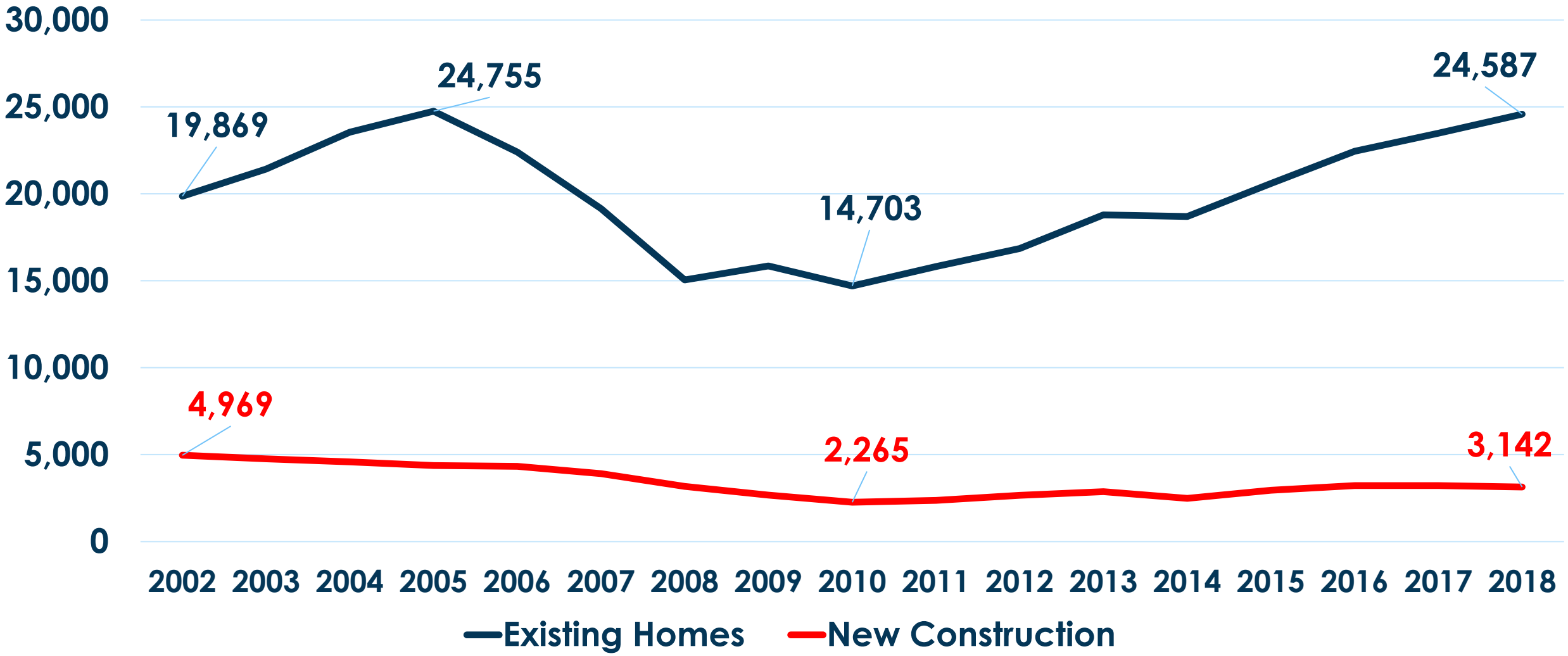
Residential Housing is Looking Up Again

Value of Building Permits for One-Unit Family Homes
Hampton Roads: 1991-2017



Sources: U.S. Bureau of the Census and the Old Dominion University Economic Forecasting Project.

Existing and New Construction Home Sales Hampton Roads, 2002-2018



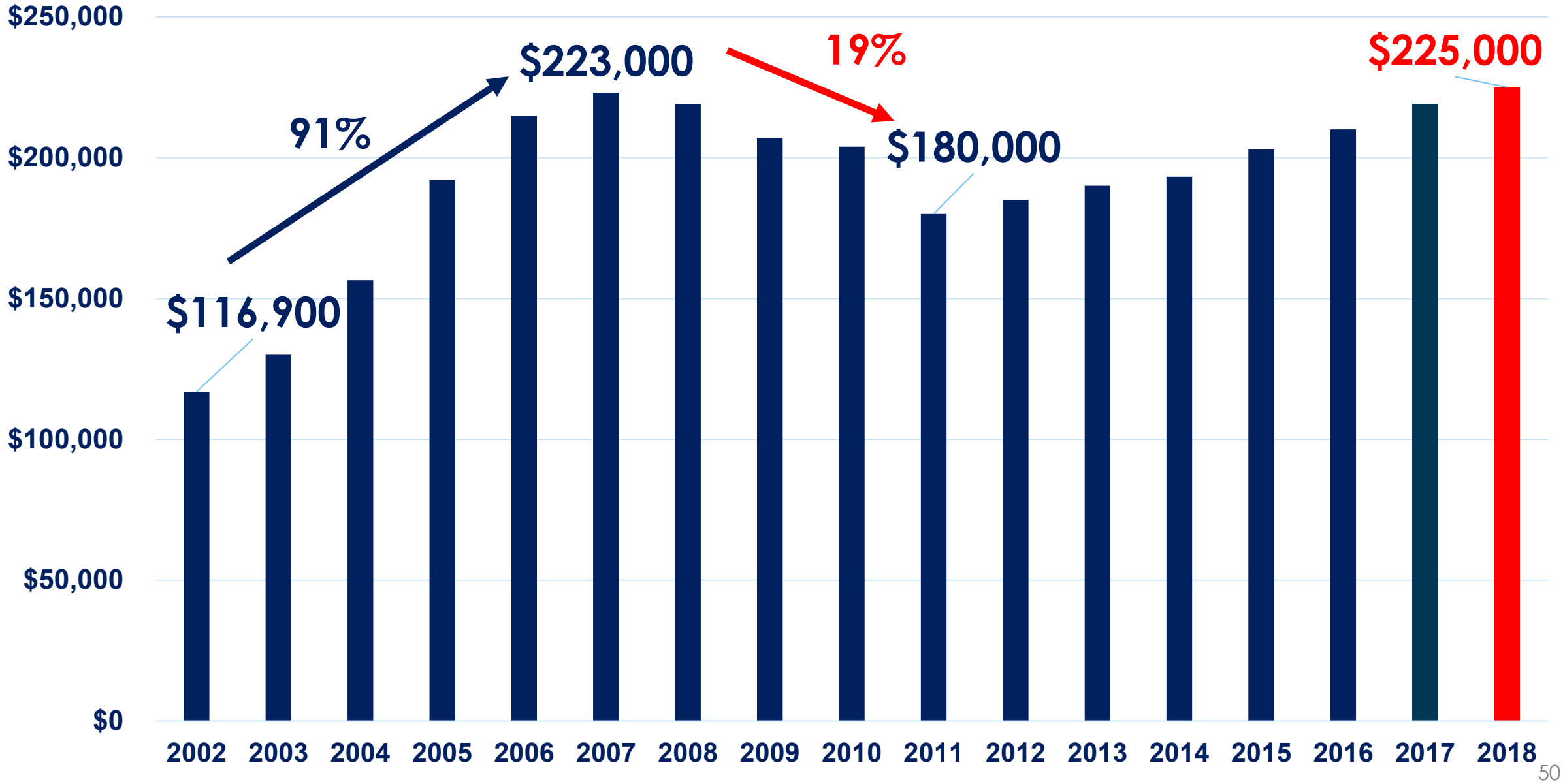
Sources: Real Estate Information Network and Old Dominion University Economic Forecasting Project. Information deemed reliable but not guaranteed. Figures reported here represent only those properties that are listed through REIN by REIN members and may not represent all new construction activity in our region.

Existing and New Construction Homes Sold, Selected Cities in Hampton Roads, 2018

City	Total Homes Sold	Existing Homes Sold	New Construction Homes Sold	Percent New Construction
Chesapeake	4,564	3,590	974	21.3%
Norfolk	3,237	2,959	278	8.6%
Portsmouth	1,748	1,614	134	7.7%
Suffolk	1,714	1,319	395	23.1%
Virginia Beach	7,549	7,097	452	6.0%
Hampton	2,008	1,889	119	5.9%
Newport News	2,154	2,065	89	4.1%
Williamsburg*	3,066	2,655	411	13.4%
Hampton Roads	27,729	24,587	3,142	11.3%

Sources: Real Estate Information Network and Old Dominion University Economic Forecasting Project. Information deemed reliable but not guaranteed.
* Williamsburg represents Williamsburg, James City County, York County and Gloucester County.

Median Sale Price of Existing Homes Hampton Roads, 2002-2018



Sources: Real Estate Information Network and Old Dominion University Economic Forecasting Project. Information deemed reliable but not guaranteed. 2002-2007 = 91% increase. 2011-2018 is a 25% increase.

Median Sale Price of Existing Residential Homes for Selected Cities in Hampton Roads: 2017 and 2018

City	2017	2018	Percent Change
Chesapeake	$245,000	$254,900	4.04%
Norfolk	$183,500	$192,000	4.63%
Portsmouth	$140,000	$149,900	7.07%
Suffolk	$240,000	$243,000	1.25%
Virginia Beach	$247,750	$254,900	2.89%
Hampton	$155,000	$165,900	7.03%
Newport News	$170,000	$179,000	5.29%
Williamsburg*	$283,000	$291,500	3.75%
Hampton Roads	$219,000	$225,000	2.74%

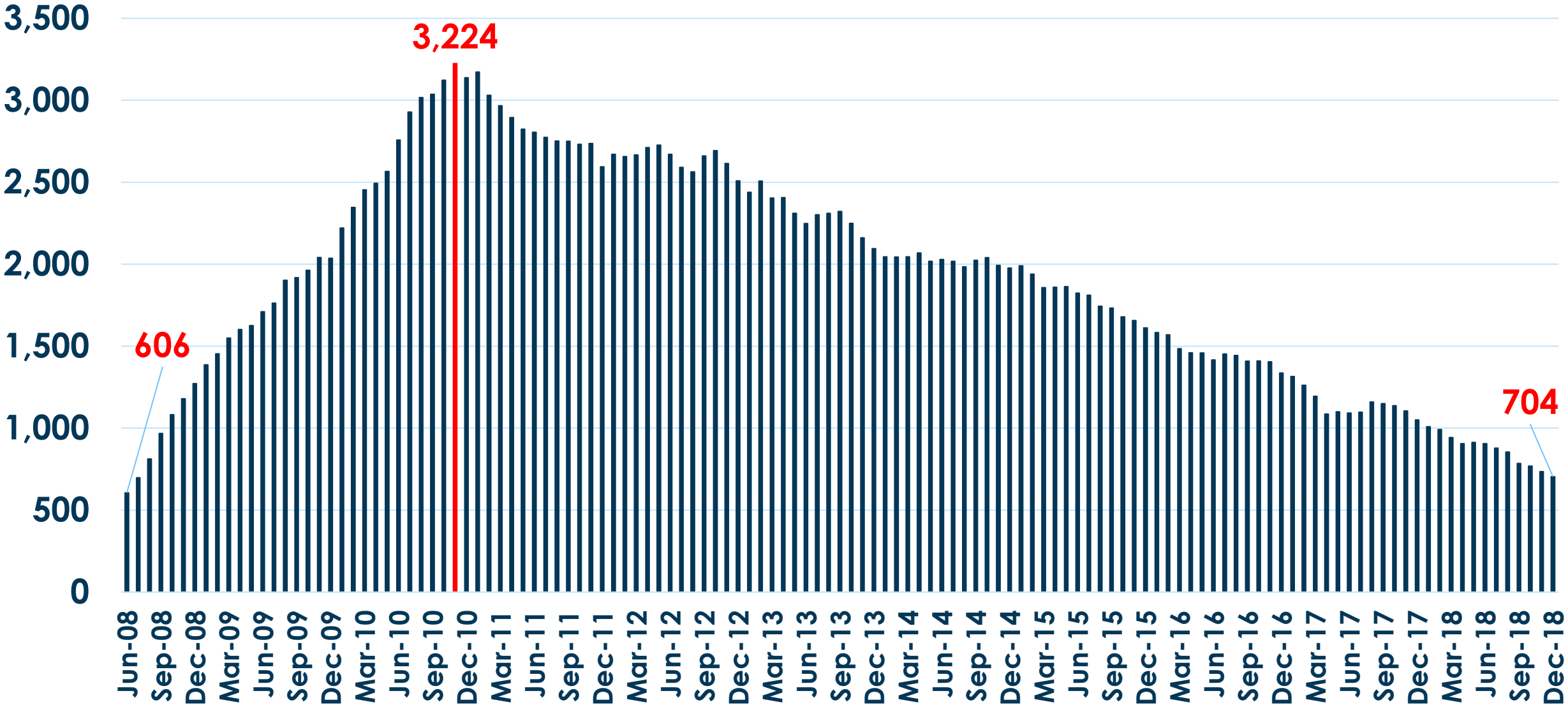
Sources: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed.

* Williamsburg represents Williamsburg, James City County, York County and Gloucester County.

Observations on the Existing Homes Market since 2011

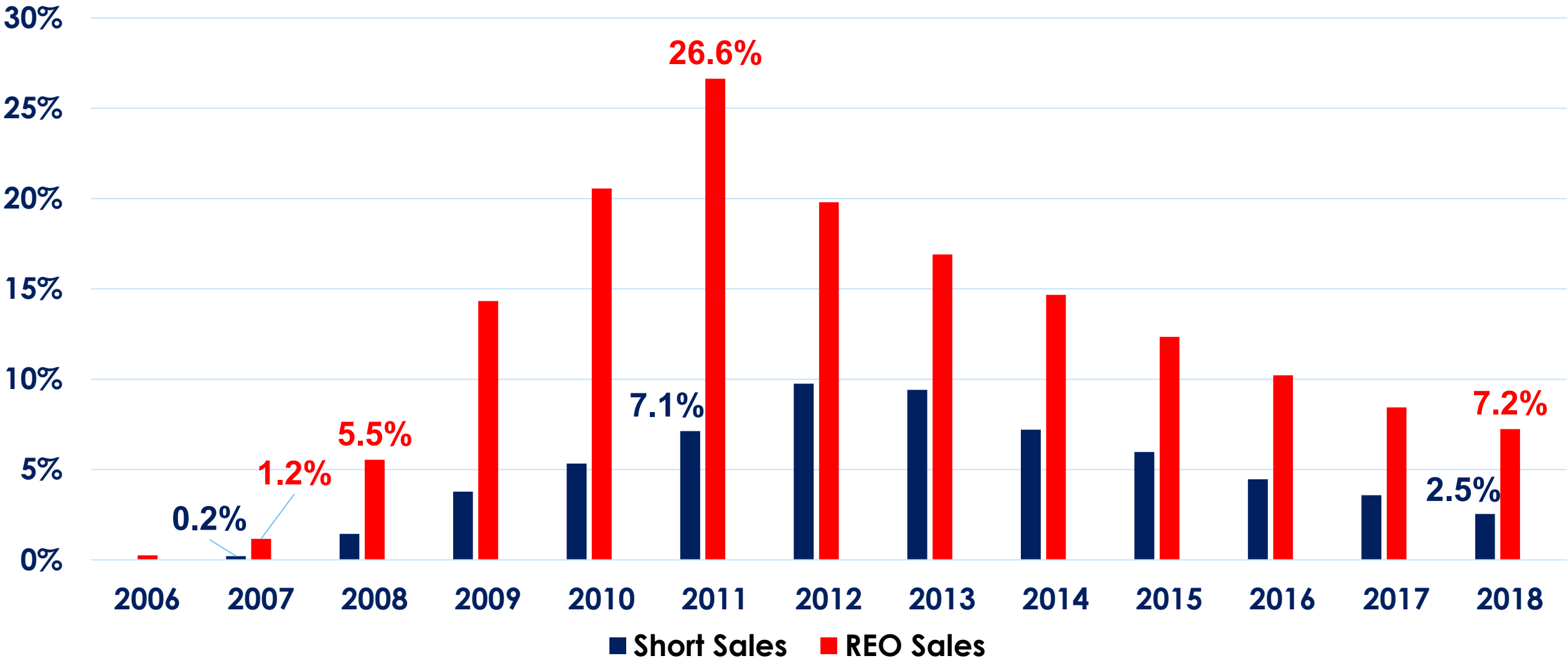
- Inventories continue to decrease.
- Days on market have also decreased.
- Number of homes sold has steadily increased.
- Estimated months of supply have declined substantially.
- Mortgage rates continue to be at historically low levels.
- But the median home price, however, has increased only slightly.
- The explanation lies in the distressed market– short sales and bank-owned homes (REOs).

Number of Active Listings of Distressed Homes: Hampton Roads, June 2008 to December 2018



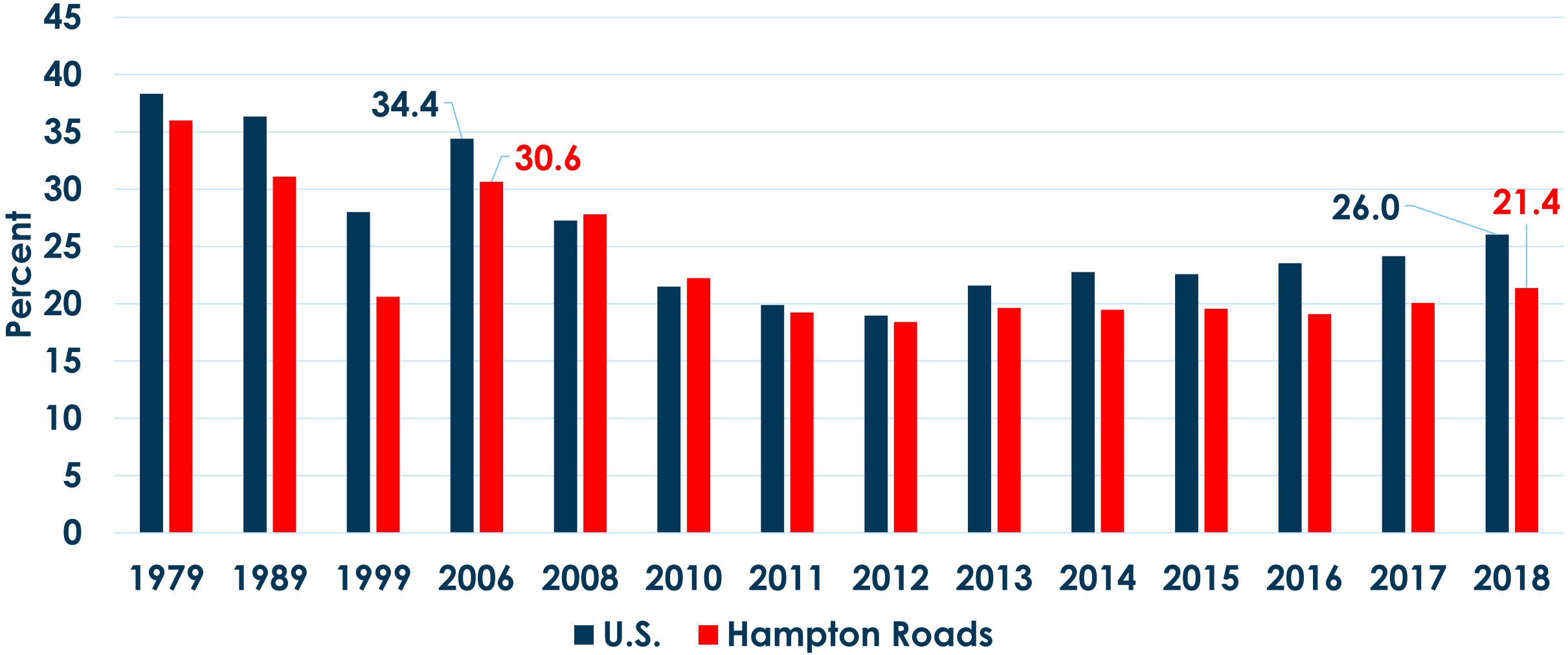
Sources: Real Estate Information Network and Dragas Center Economic Forecasting Project. Information deemed reliable but not guaranteed. Distressed properties are short-sales or bank-owned .

Short Sales and Bank-Owned Sales as Percent of Existing Homes Sales: Hampton Roads, 2006 - 2018



Sources: Real Estate Information Network and Old Dominion University Economic Forecasting Project. Information deemed reliable but not guaranteed.

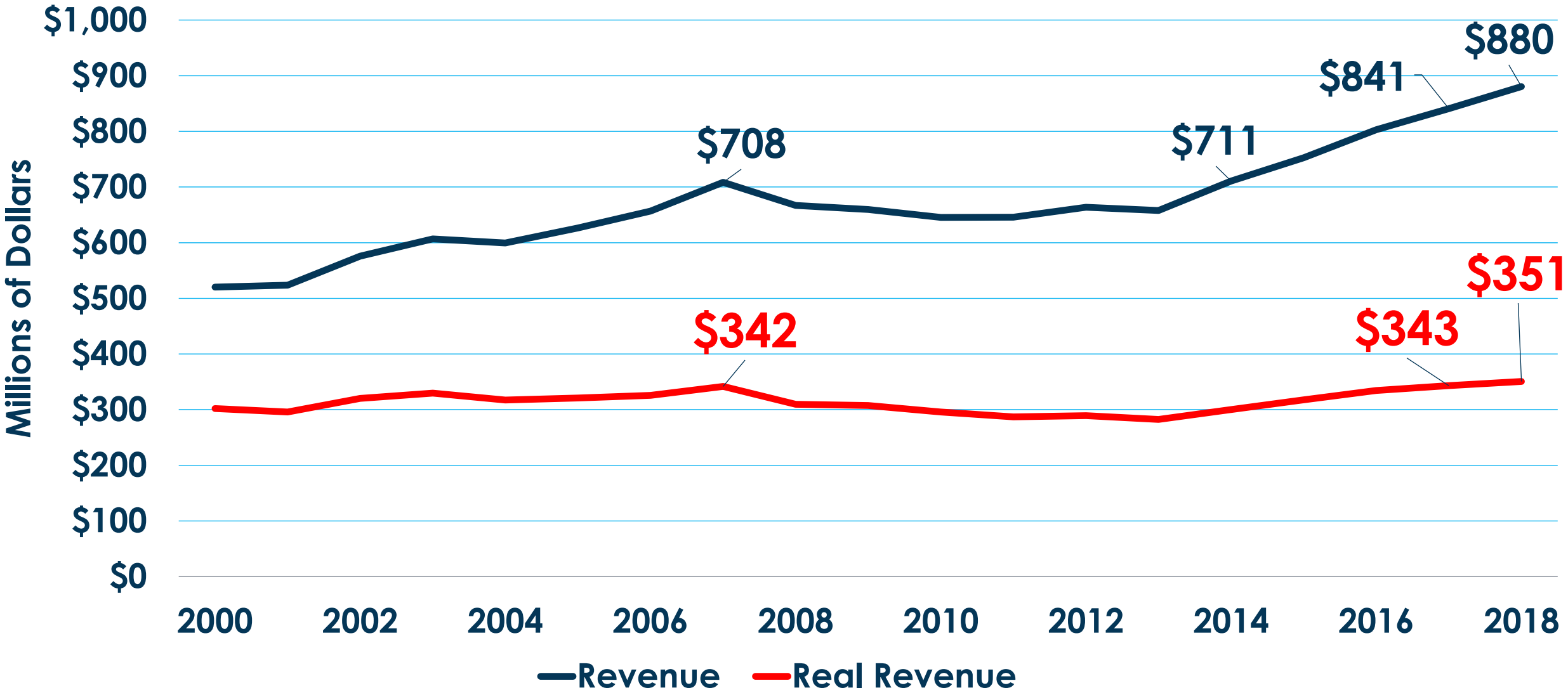
Housing Affordability: Monthly Payment for a Median-Price Resale House as a Percent of Median Household Monthly Income, Hampton Roads and the U.S.: 1979 to 2018



Sources,: H.U.D. and the Old Dominion University Economic Forecasting Project. It is assumed that real estate tax rate is 1%, and the tax reduction received by home owners would compensate for home owners insurance and maintenance expenditures. Prevailing 30-year average mortgage rate is used for each year. For example rate used for 2015 is 3.85 %; for 2016 it is 3.65% ; for 2017 it is 4.00 % ; and for 2018 it is 4.54 %.

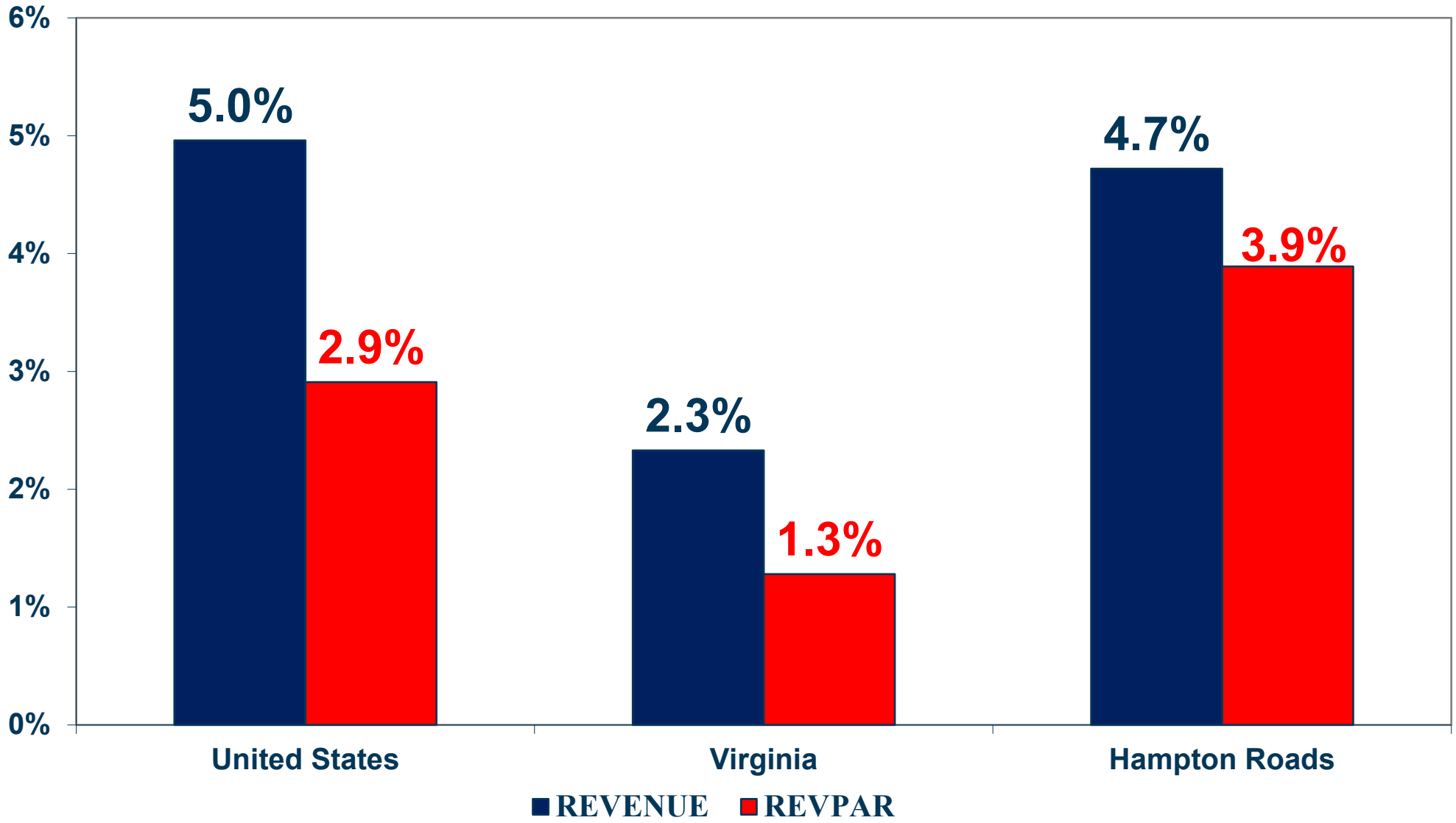
Hotel Industry Growth Continues

Nominal and Real (Inflation-Adjusted) Hotel Revenue
Hampton Roads, 2000 - 2018



Sources: STR Trend Report January 2019, Bureau of Labor Statistics, and the Dragas Center for Economic Analysis and Policy, Economic Forecasting Project.

Growth in Hotel Revenue and Revenue Per Available Room United States, Virginia, and Hampton Roads, 2017-2018



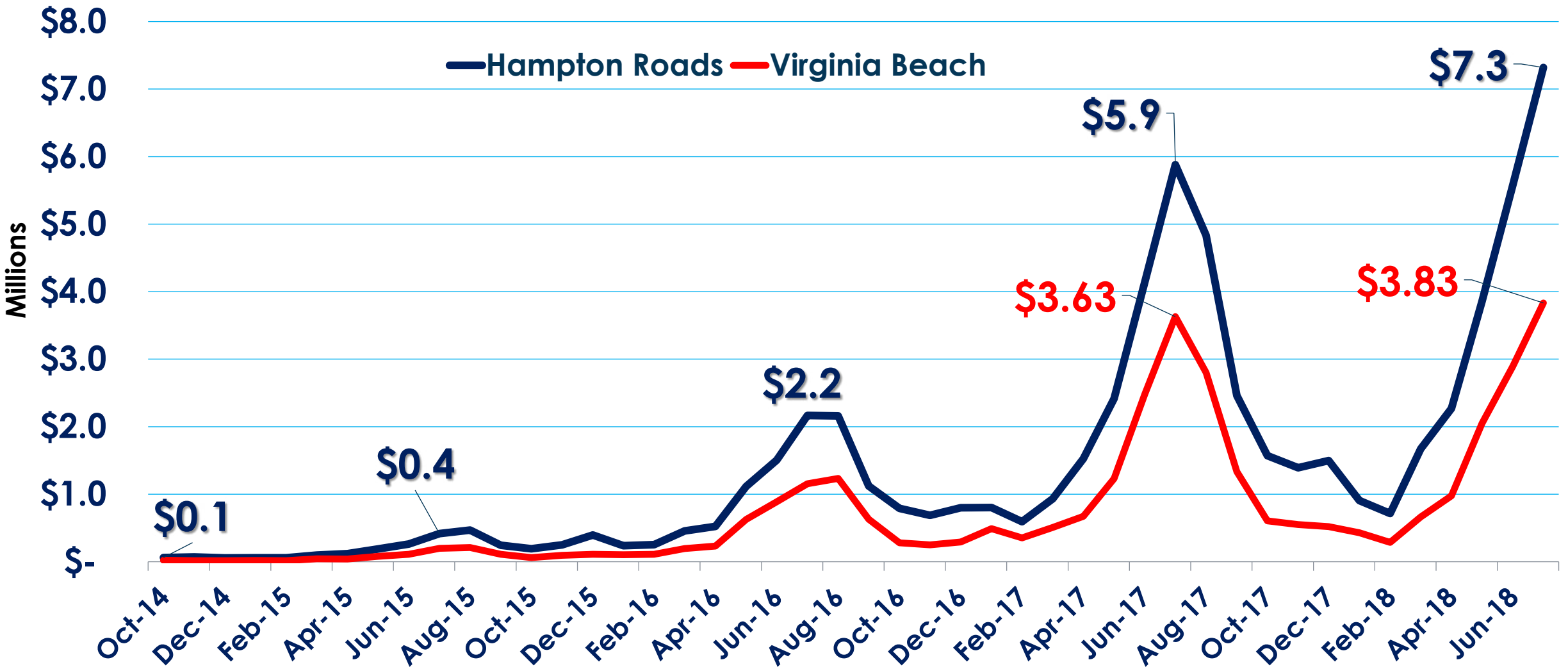
Sources: STR Trend January 17, 2019 and the Old Dominion University Economic Forecasting Project.

REVPAR in U.S., Virginia, and Selected Markets: 2007 and 2018

	2007	2018	Percent Change	Real Percent Change
USA	$65.54	$85.96	+31.2%	+8.3%
Virginia	$61.91	$71.24	+15.1%	-5.0%
Hampton Roads	$52.78	$65.03	+23.2%	+1.7%
Virginia Beach	$64.29	$82.44	+28.2%	+5.2%
Williamsburg	$47.47	$60.03	+26.5%	+4.4%
Newport News/Hampton	$41.49	$49.85	+20.1%	-0.8%
Norfolk/Portsmouth	$54.05	$64.34	+19.0%	-1.7%
Chesapeake/Suffolk	$52.90	$56.95	+7.7%	-11.1%

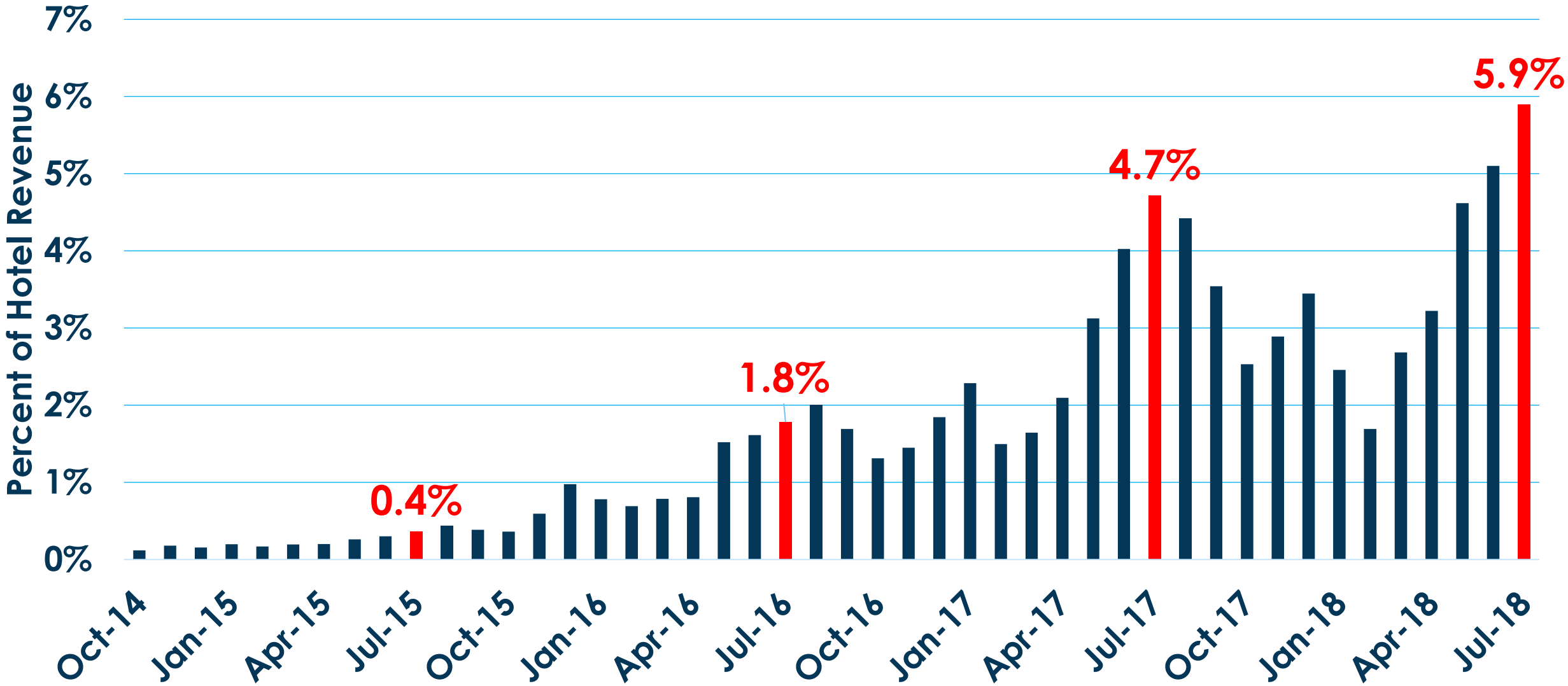
Sources: STR Trend Reports, January 24, 2017, January 17,2019, Bureau of Labor Statistics (base year is chained; 1982-84=100), and the Dragas Center for Economic Analysis and Policy at Old Dominion University.

Monthly Airbnb Revenue in Hampton Roads and Virginia Beach, October 2014 to July 2018 (Millions of $)



Source: Airdna data received in September 2018 excluding shared rooms.

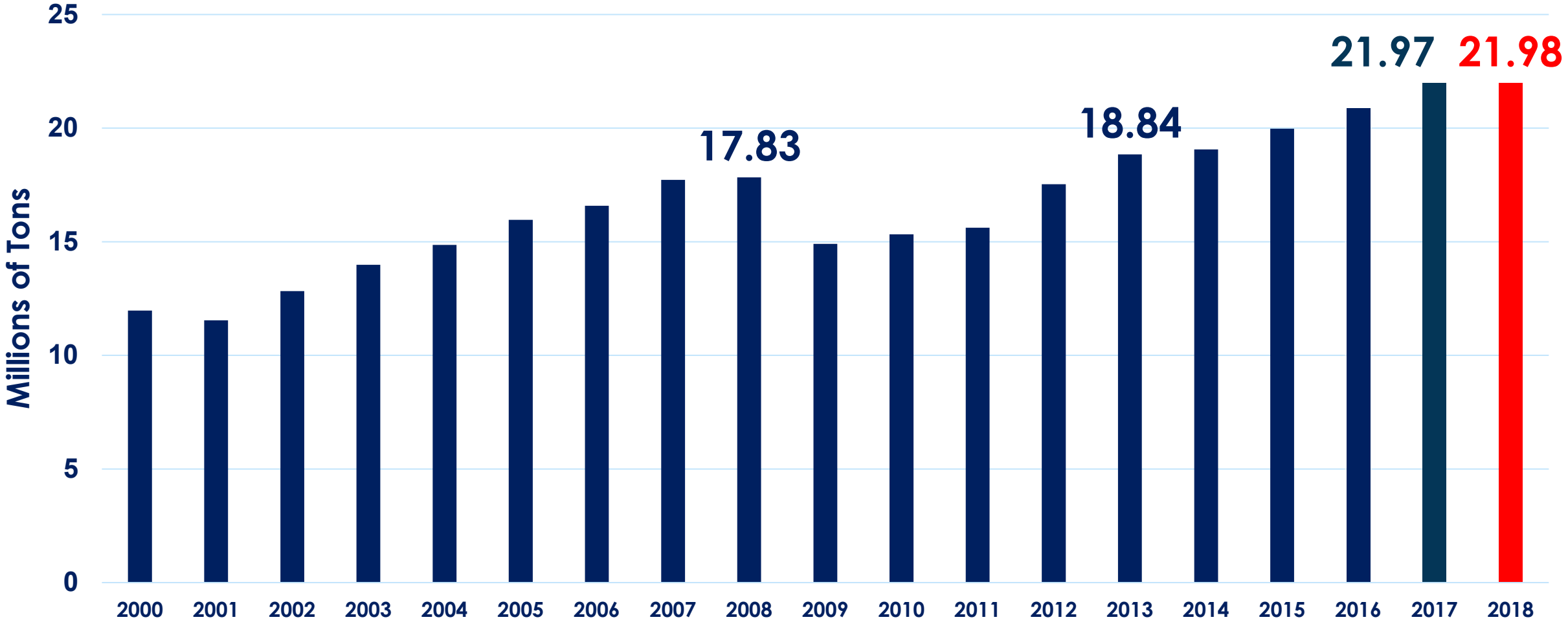
Airbnb Revenue as Percentage of Total Hotel Revenue
Hampton Roads, October 2014 to July 2018



Sources: STR Trend Reports and AirDNA data received in September 2018 excluding shared rooms. Selected data points are July of each year. July 2018 = $7.3mil.

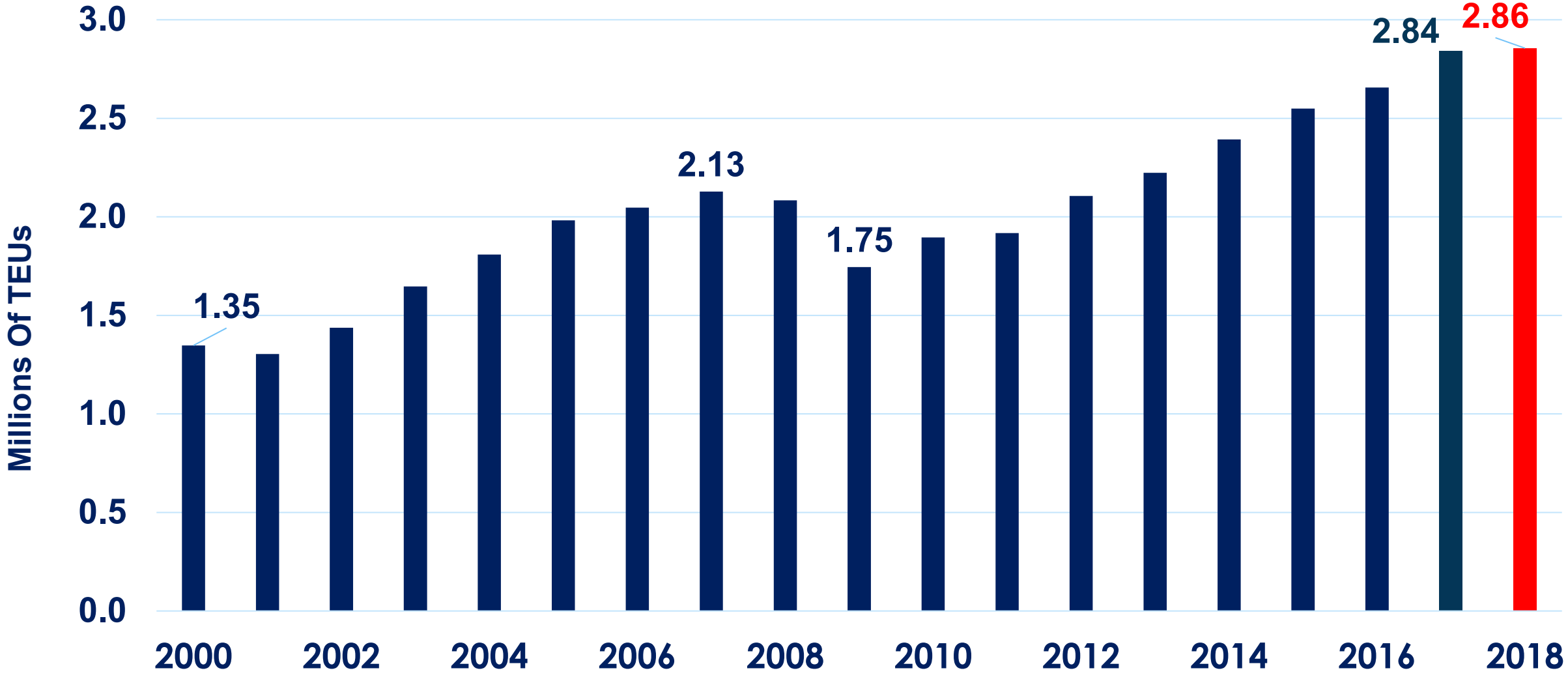
Port of Virginia: Managing Growth

General Cargo Tonnage
Port of Virginia, 2000-2018



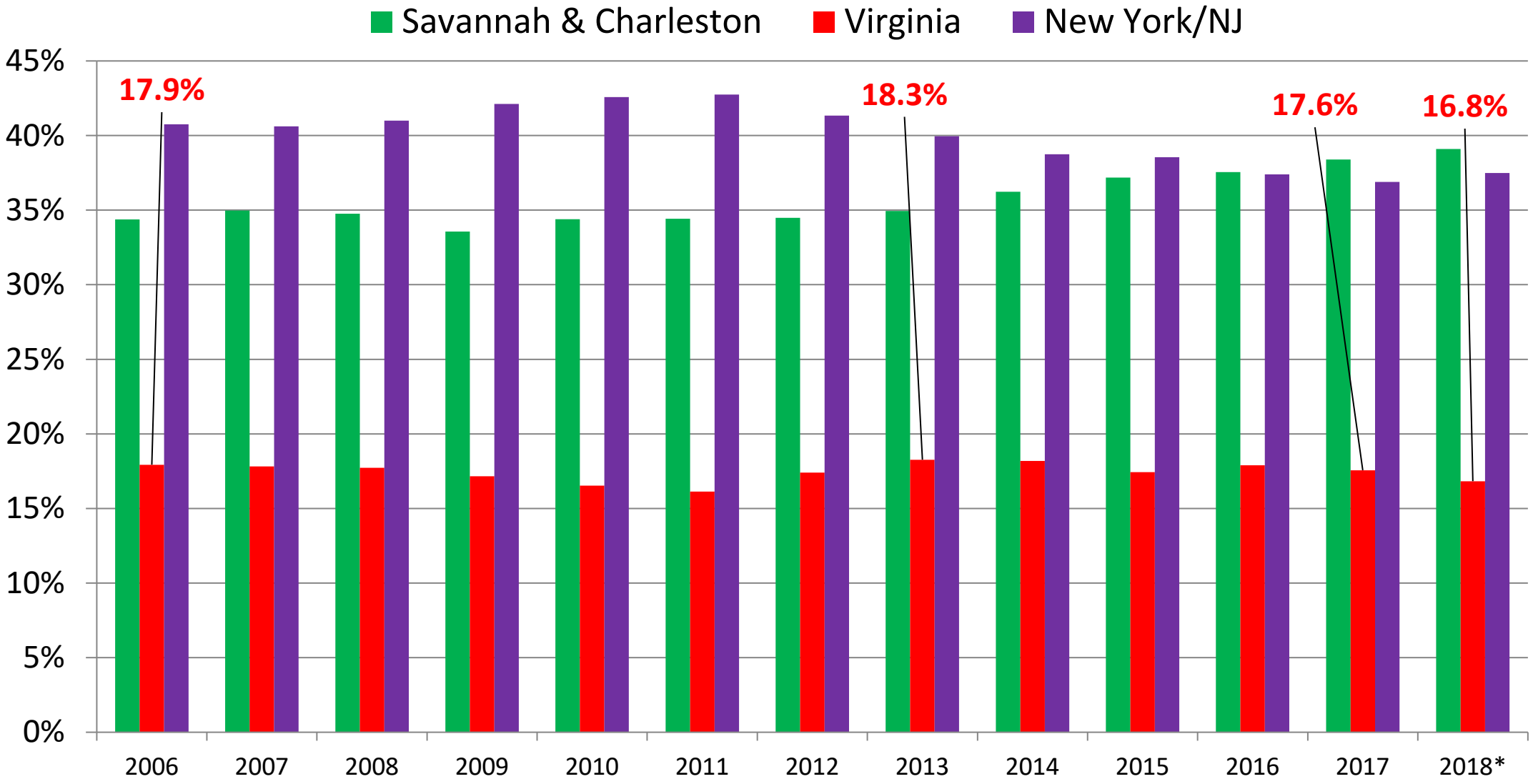
Sources: Virginia Port Authority and Old Dominion University Economic Forecasting Project.

Twenty Foot Equivalent Container Units (TEUs)
Port of Virginia, 2000-2018



Sources: Virginia Port Authority and Old Dominion University Economic Forecasting Project.

Shares of Total Loaded TEU Containers for Selected Ports on the East Coast, 2006-2018*



Sources: American Association of Port Authorities, websites of ports and the Old Dominion University Economic Forecasting Project. Market shares are based on TEUs for Baltimore, Boston, Charleston, Virginia, New York/New Jersey, and Savannah. * for 2018, data are through November 2018.

	2018 Forecast	2018 Actual	2019 Forecast
Hampton Roads Real Gross Domestic Product	2.2%	--	2.4%
Civilian Job Growth	0.5%	0.8%	0.8%
Unemployment Rate	3.9%	3.3%	3.1%
Taxable Sales	3.0%	3.4%	3.3%
Hotel Revenue	3.9%	4.7%	3.8%
General Cargo Tonnage	2.8%	0.0%	2.0%
General Cargo TEUs	4.0%	0.5%	3.6%
One Unit Housing Permit Value	2.4%	2.8%	2.0%

Source: 2018 data reflects the annual rate of growth. Dragas Center forecast current as of January 2019.

2019: Accelerating growth in Hampton Roads

- Regional GDP growth in 2019 is forecasted to be greater than the growth observed in 2018 and 2017.
- Defense, port, health-care industries, and tourism are likely to help the region's moderate economic expansion in 2019.
- Single-family home prices in 2019 are likely to increase at a moderate pace. Months of supply of existing homes are lower than their historic average.
- Going forward, uncertainty in Washington will be a major concern.

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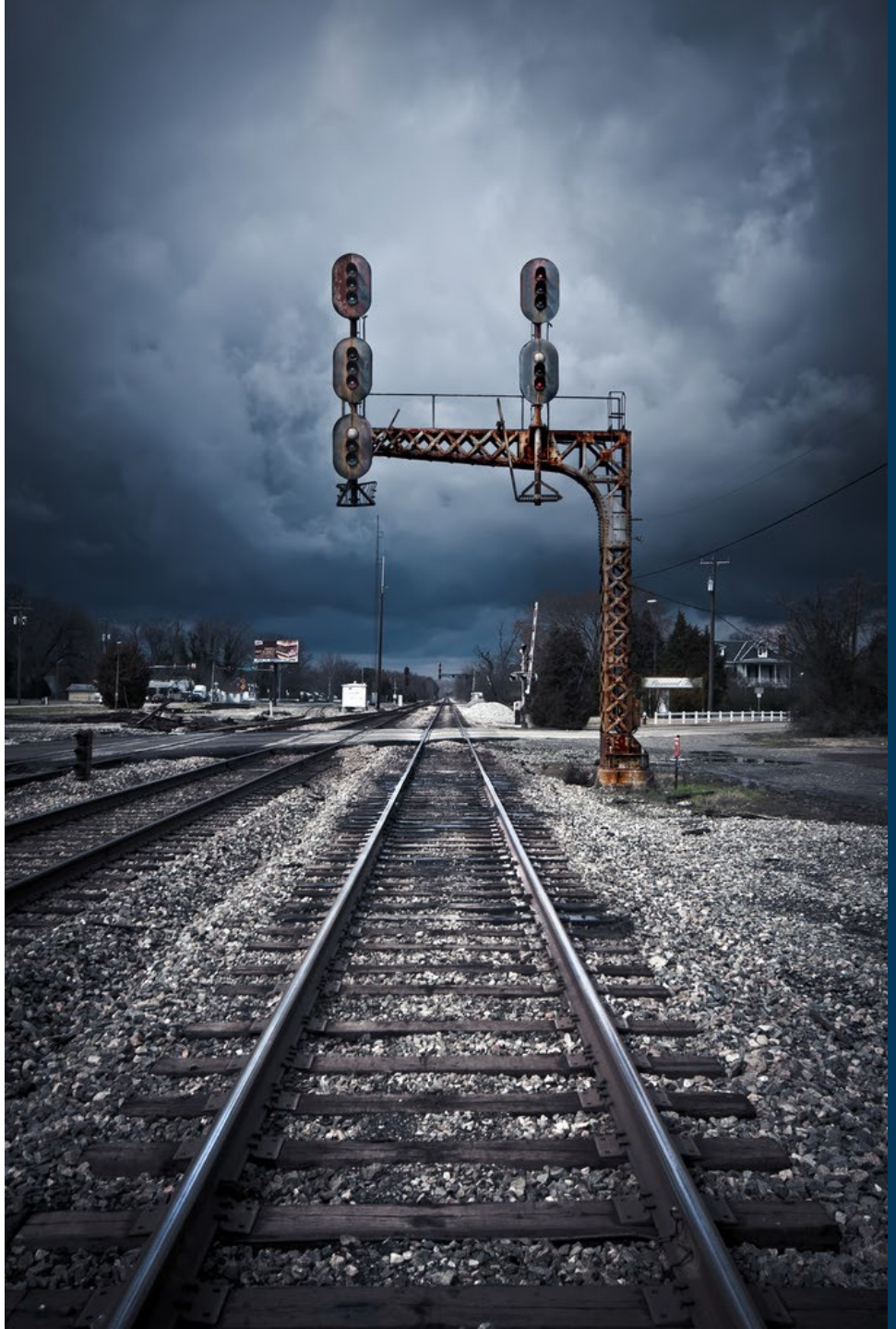

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