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# Economic Forecasting Project

## **Old Dominion University 2017 National Economic Outlook**

**May 16, 2017**

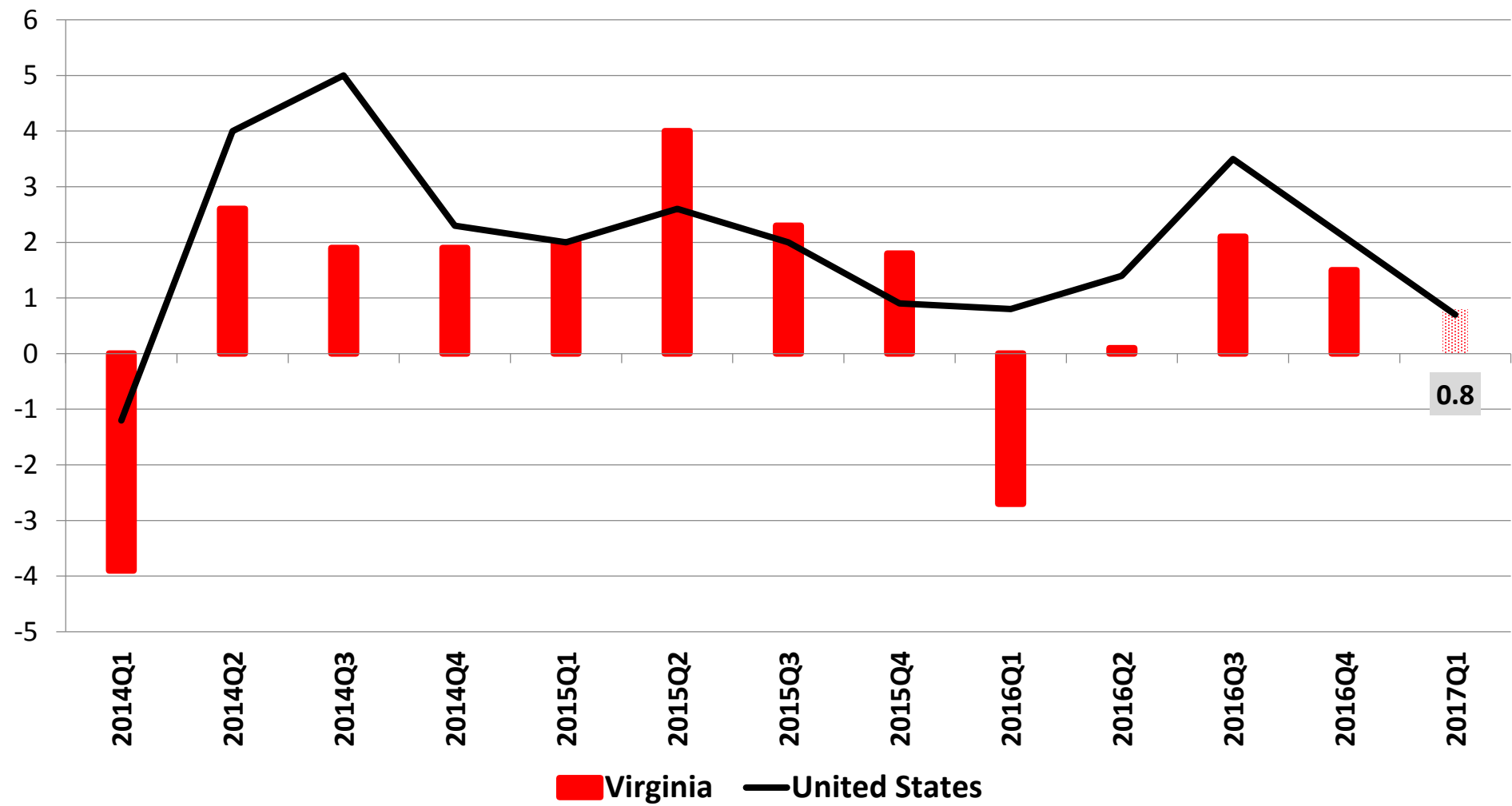
**Larry “Chip” Filer**

**Chair and Associate Professor of Economics**

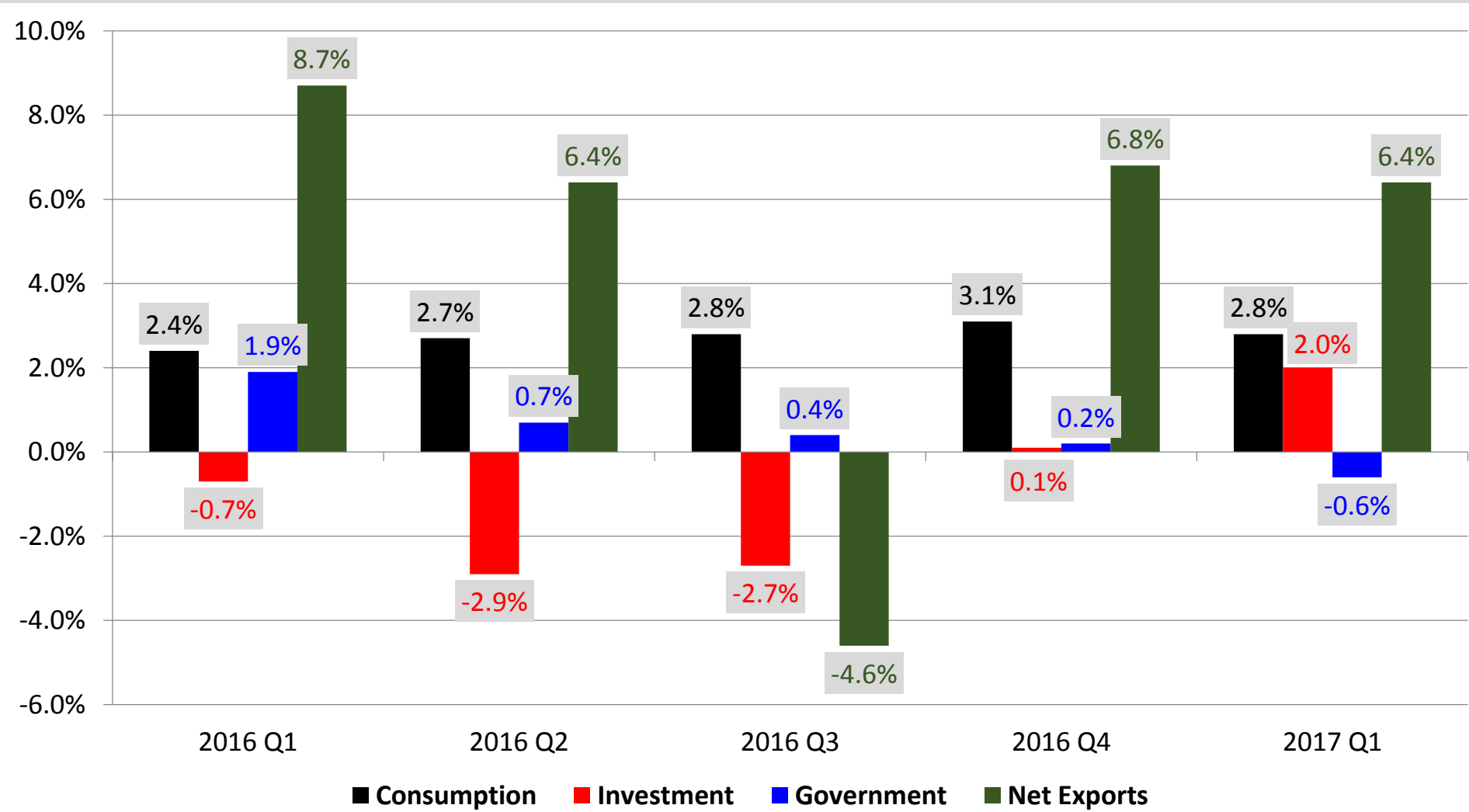
**Strome College of Business**

[www.odu.edu/forecasting](http://www.odu.edu/forecasting)

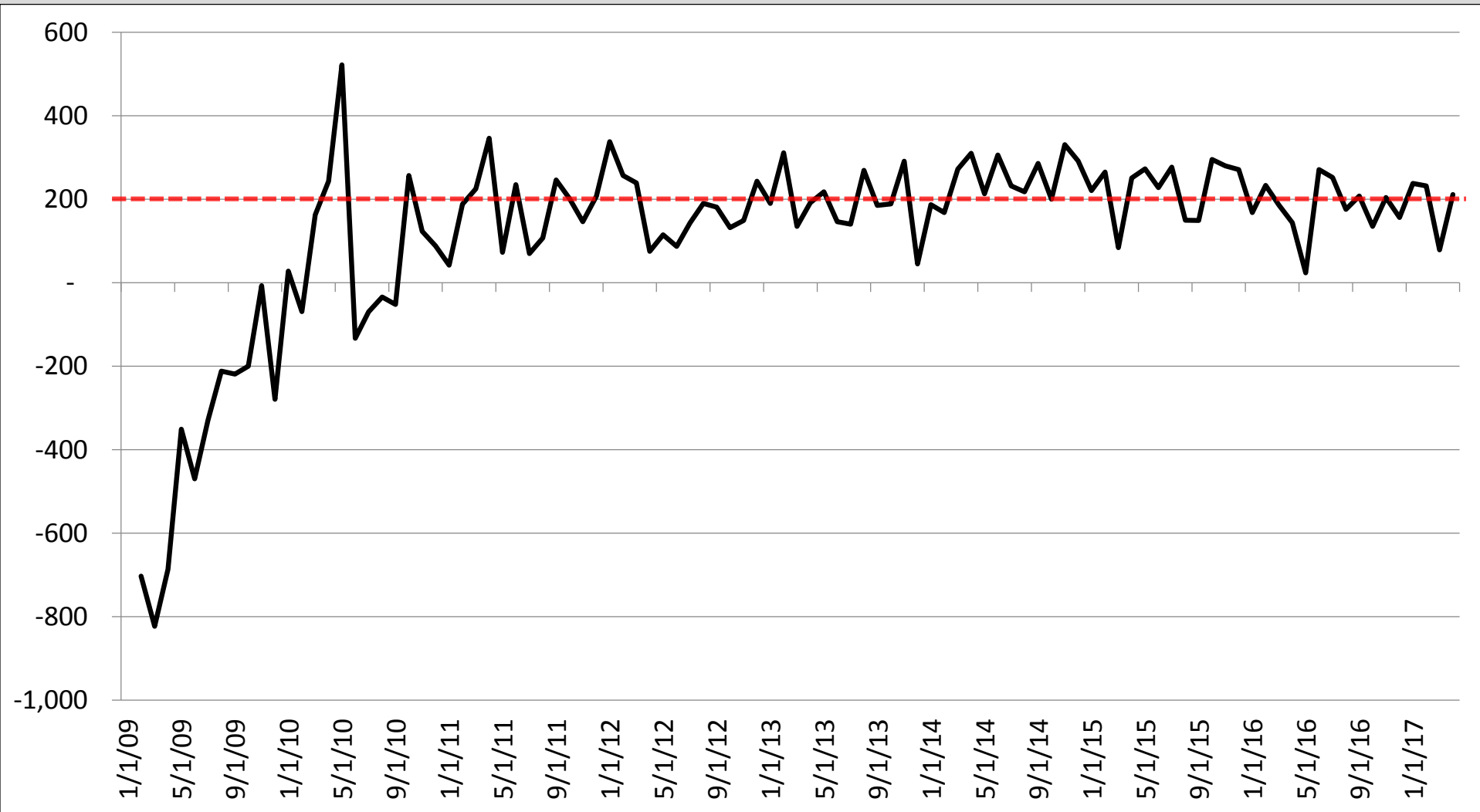
## Real GDP Growth United States and Virginia



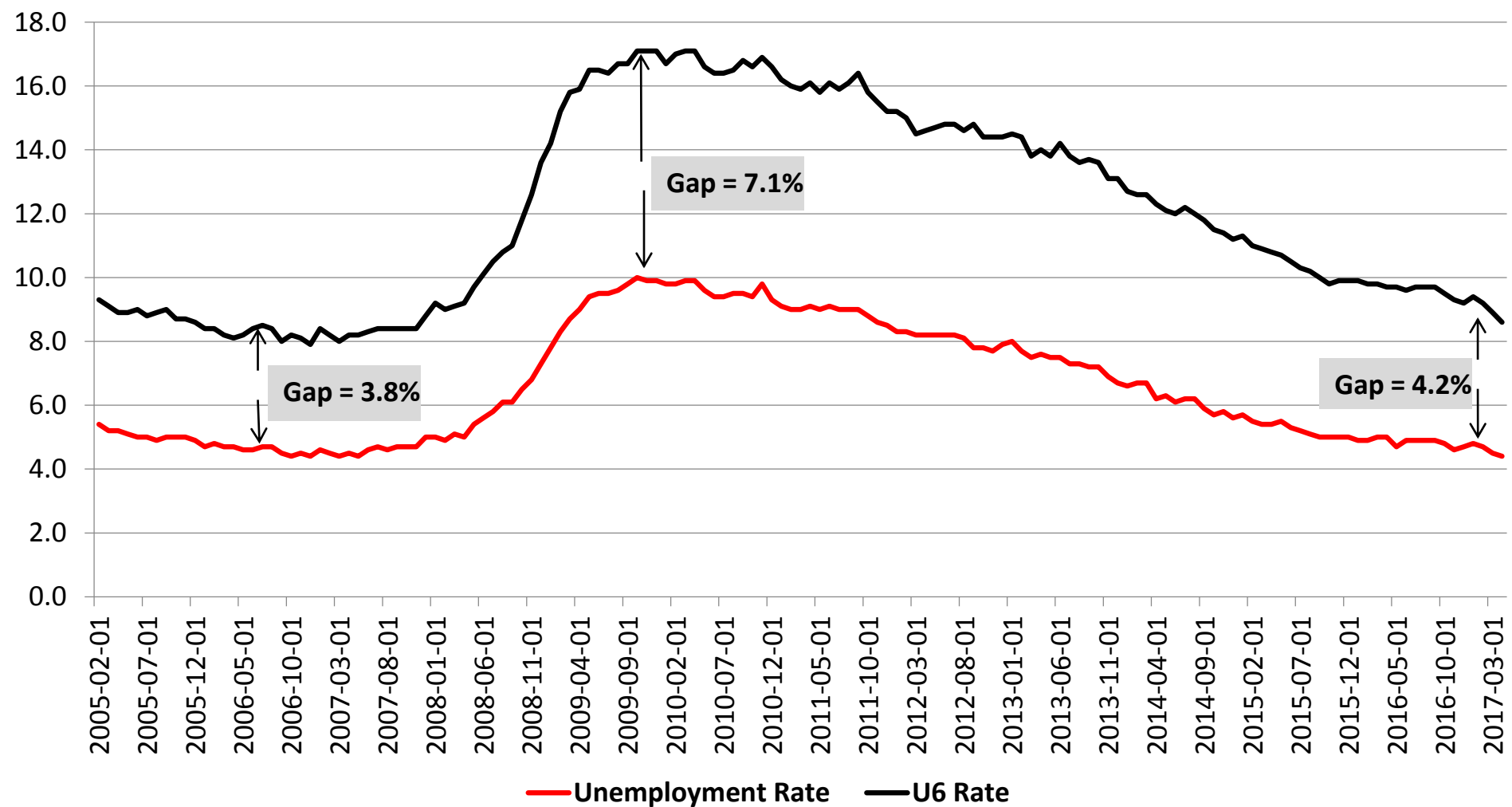
## Sources of Recent GDP Growth (12-month Growth Rates)



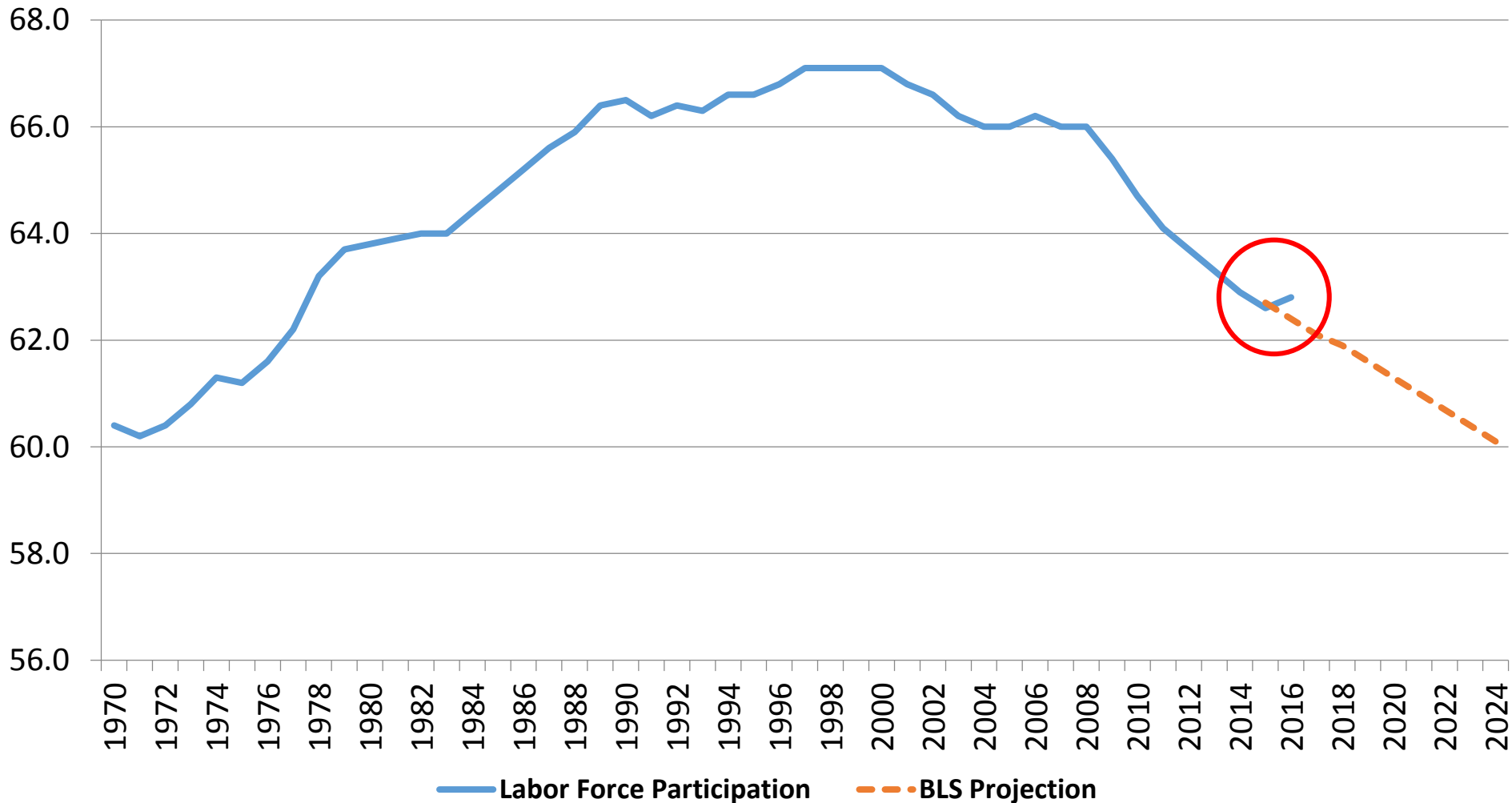
## Total Nonfarm Payroll Employment (Month over Month Net New Jobs)



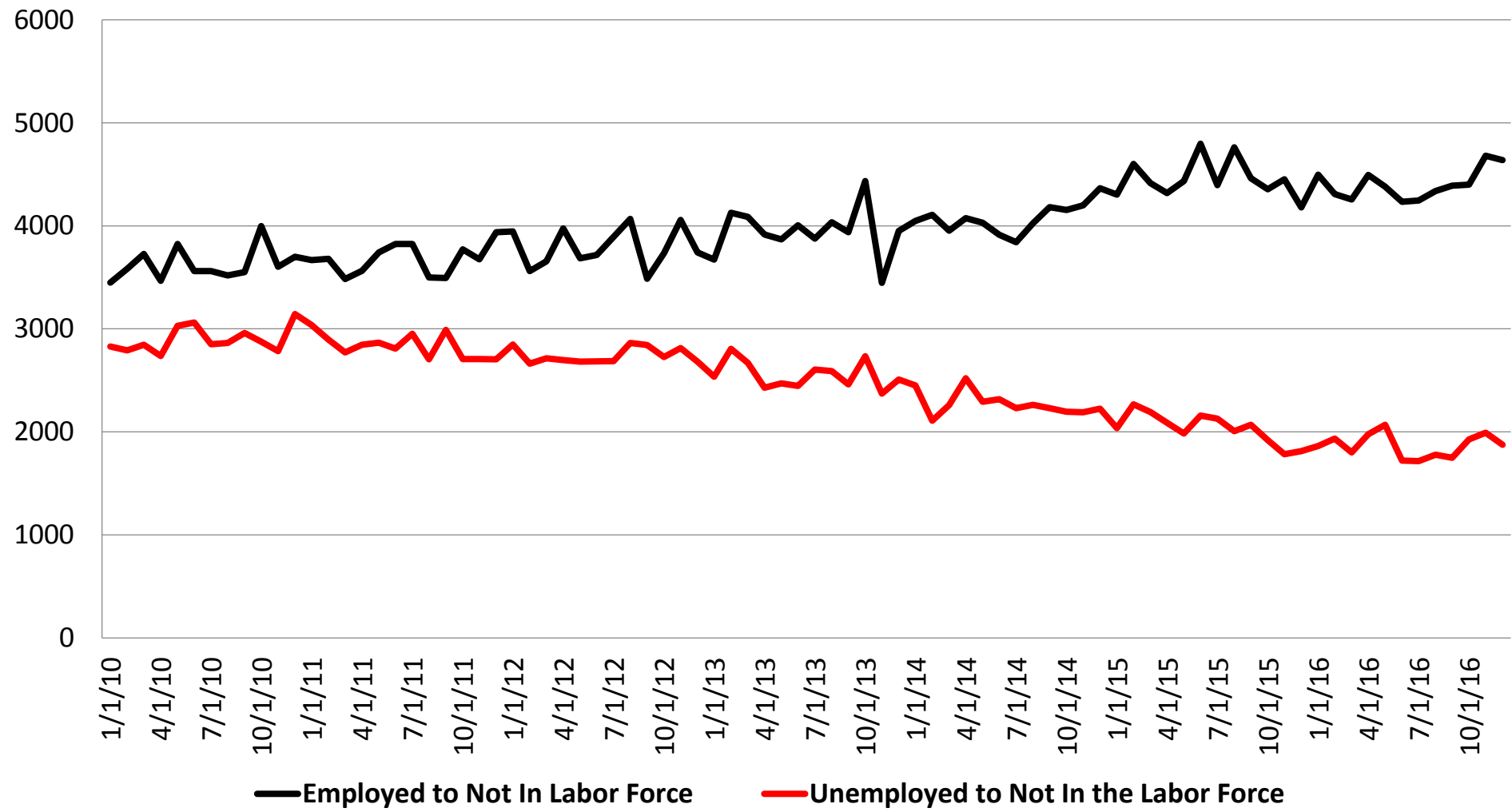
## The Unemployment Situation Civilian Unemployment Rate and the U6 Rate



## Labor Force Participation Rates Are Starting to Stabilize

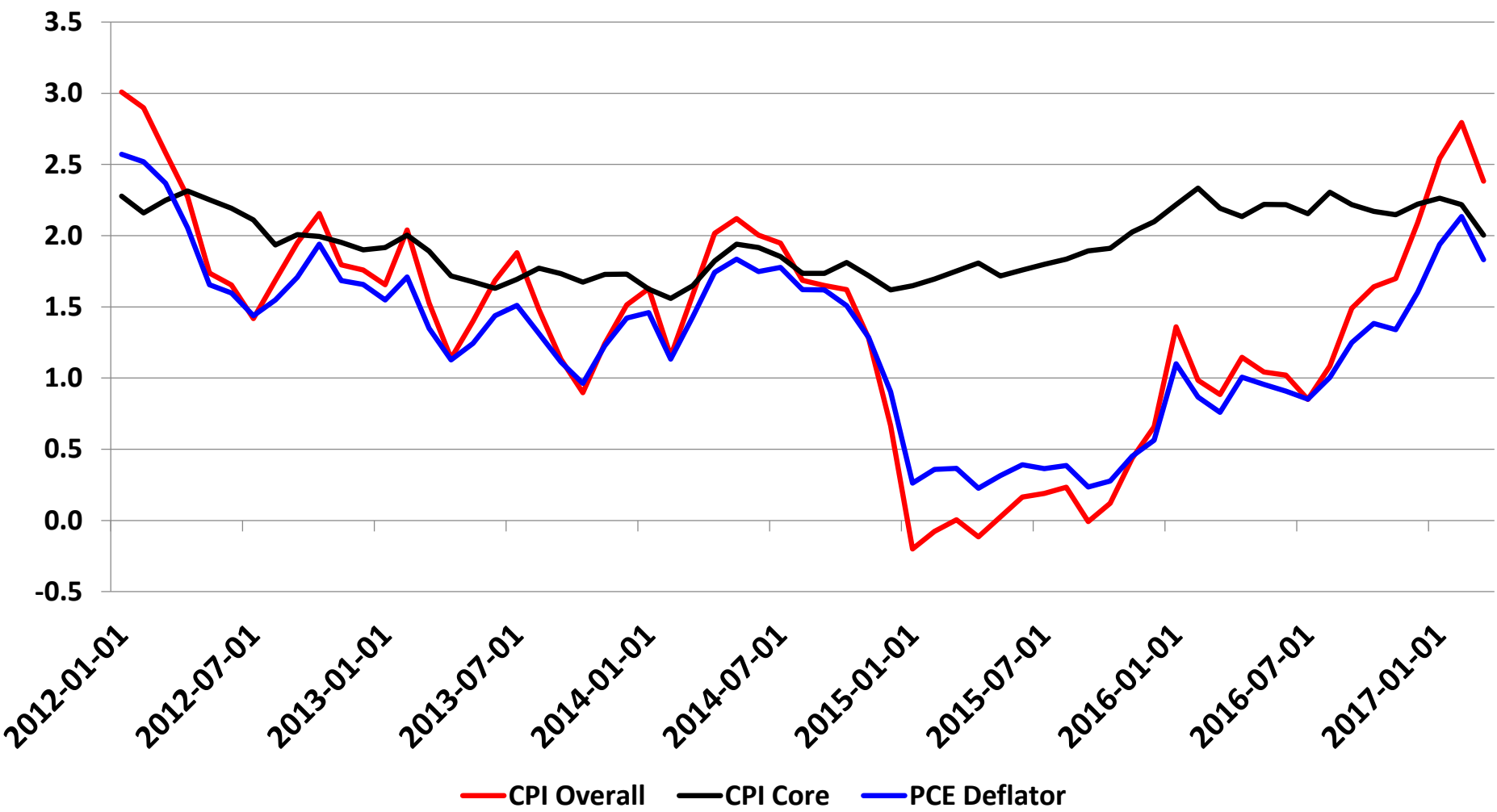


## Labor Force Flows from Prior Month





## Measures of Inflation – CPI, Core CPI and PCE Deflator





## The Fed in 2017

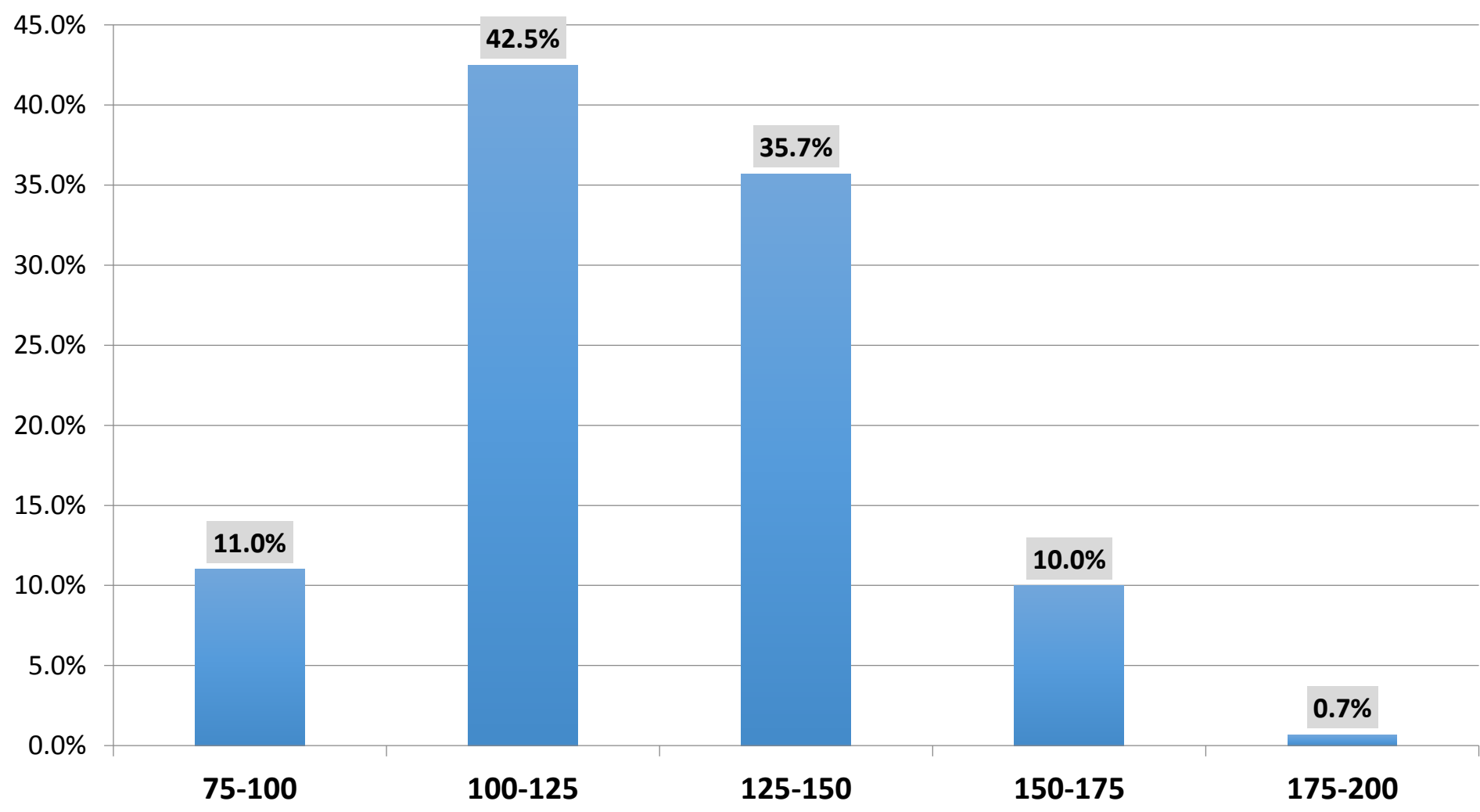
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- There is an expectation of 3 rate increases during 2017 (75 basis points total). This would leave the Fed Funds Target at the range 1.25% to 1.50% by December.
- Remaining Meeting dates in 2017:
  - June
  - July
  - Sept/Oct
  - December

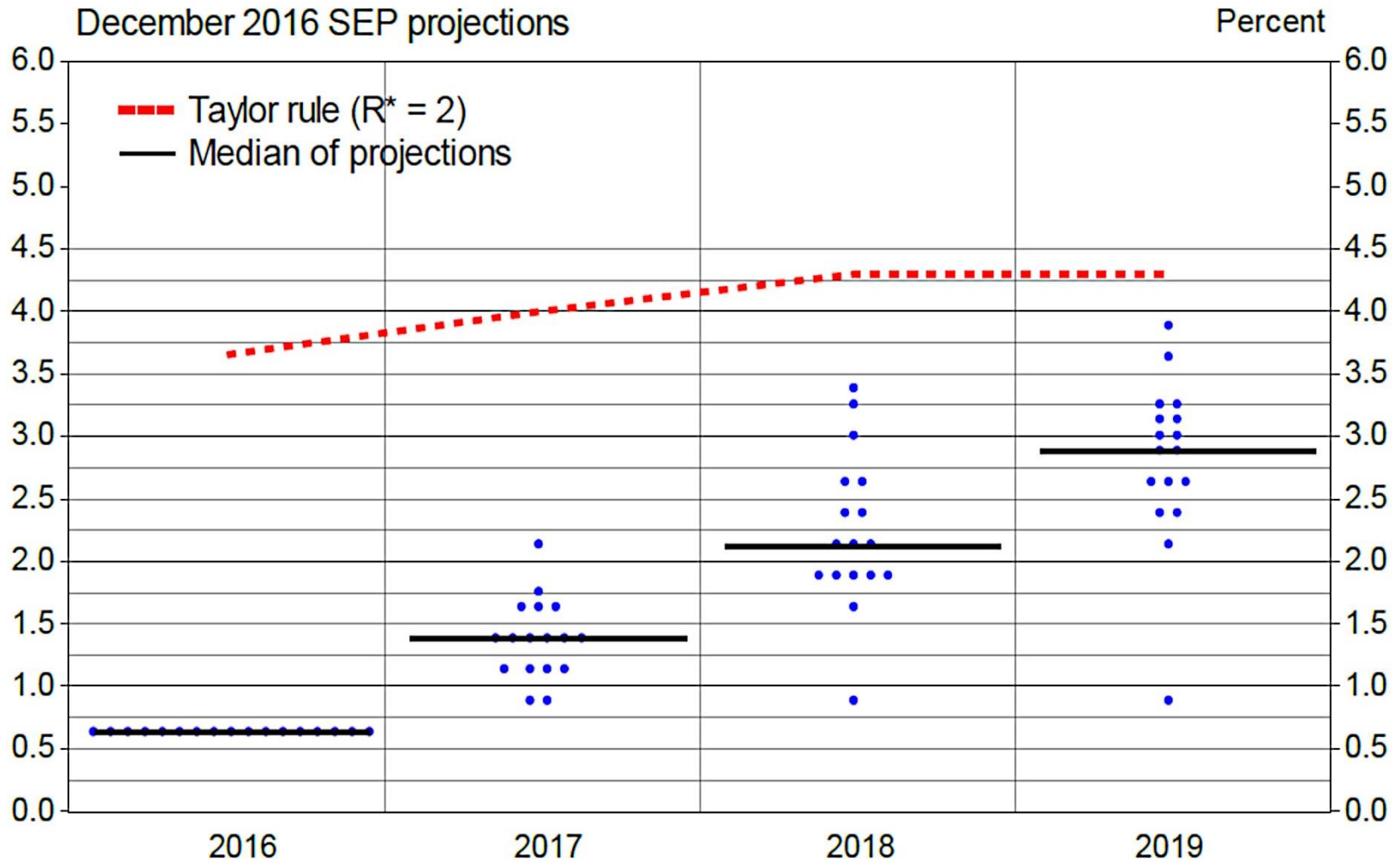


# Economic Forecasting Project

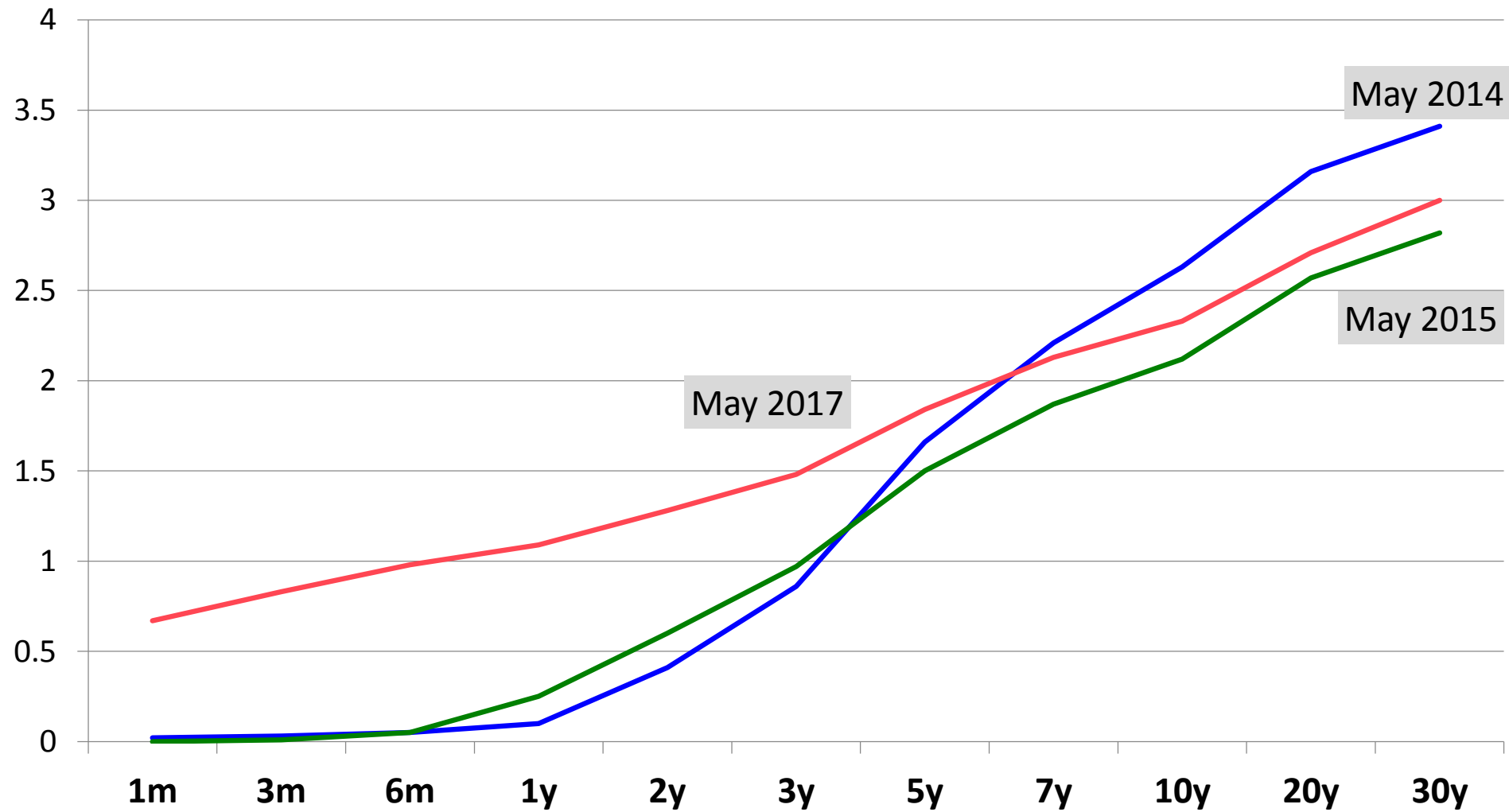
## Current Implied Probabilities of Fed Funds Target Rate (December 2017 Contract)



## Is The Fed Being Too Accommodative?



## Treasury Yield Curves

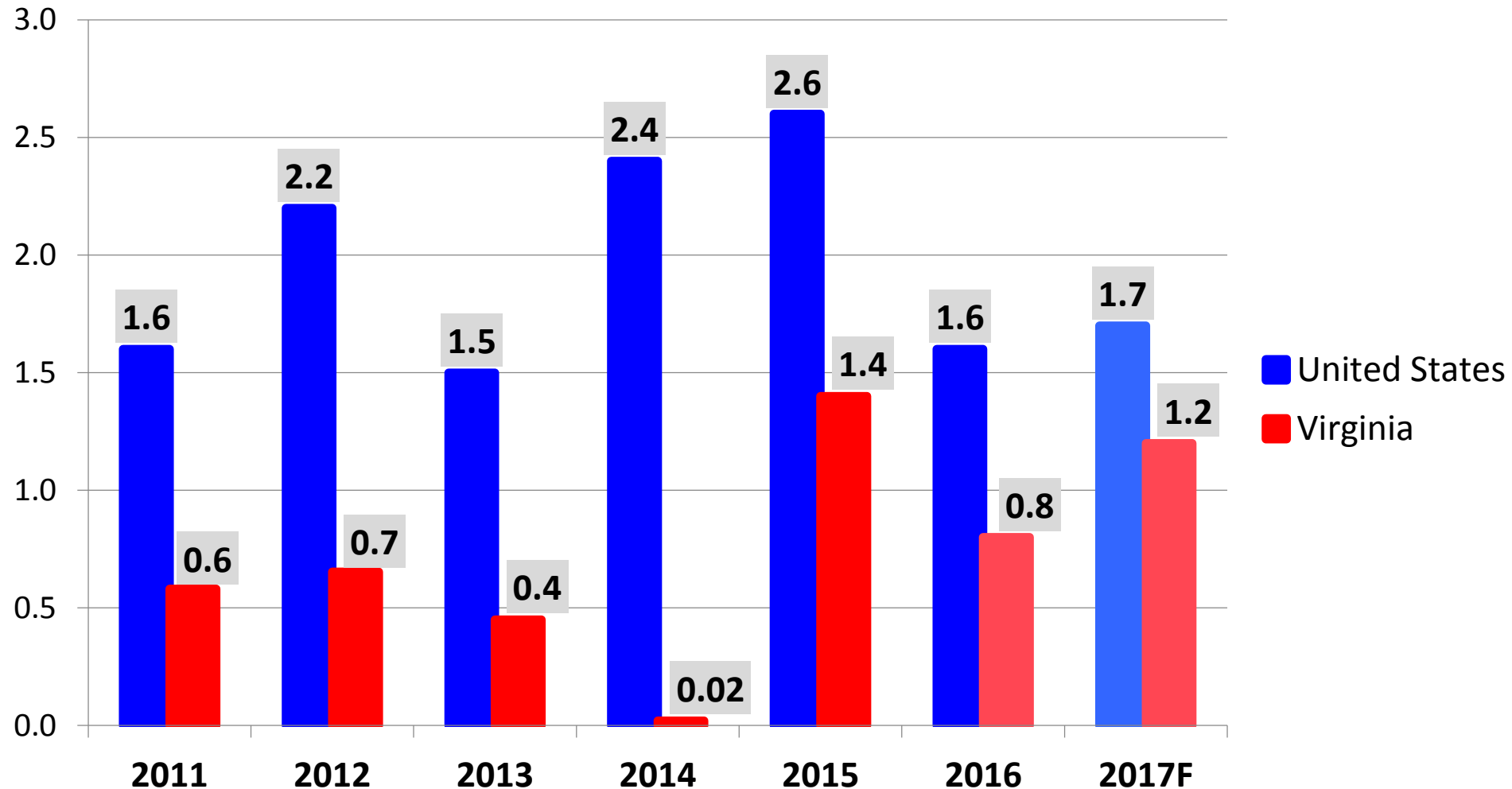


## The Current National Recovery

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<b>Recession End</b>	<b>Expansion Duration</b>
<b>October 1945</b>	<b>80 months</b>
<b>February 1961</b>	<b>106 months</b>
<b>March 1991</b>	<b>120 months</b>
<b>November 2001</b>	<b>73</b>
<b>June 2009</b>	<b>94 (ongoing)</b>

## Real GDP Growth Forecasts United States and Virginia





## National Economic Outlook for 2017

	2016		2017
	Forecast	Actual	Forecast
<b>Real Gross Domestic Product</b>	<b>2.03%</b>	<b>1.60%</b>	<b>1.7%</b>
<b>Employment Growth</b>	<b>1.50%</b>	<b>1.74%</b>	<b>1.5%</b>
<b>Unemployment Rate</b>	<b>5.1%</b>	<b>4.9%</b>	<b>4.6%</b>
<b>Consumer Price Index</b>	<b>1.34%</b>	<b>1.28%</b>	<b>2.7%</b>
<b>CPI - Core</b>	<b>2.03%</b>	<b>2.21%</b>	<b>2.0%</b>
<b>3-Month Treasury Bill</b>	<b>1.25%</b>	<b>0.32%</b>	<b>0.58%</b>
<b>10-Year Treasury Bond</b>	<b>3.15%</b>	<b>1.84%</b>	<b>2.39%</b>
<b>30-Year Conventional Mortgage Rate</b>	<b>4.25%</b>	<b>3.65%</b>	<b>4.25%</b>





# Economic Forecasting Project

## **Old Dominion University 2017 Regional Economic Forecast**

**May 16, 2017**

**Professor Vinod Agarwal**

**Director, Economic Forecasting Project**

**Strome College of Business**

**[www.odu.edu/forecasting](http://www.odu.edu/forecasting)**

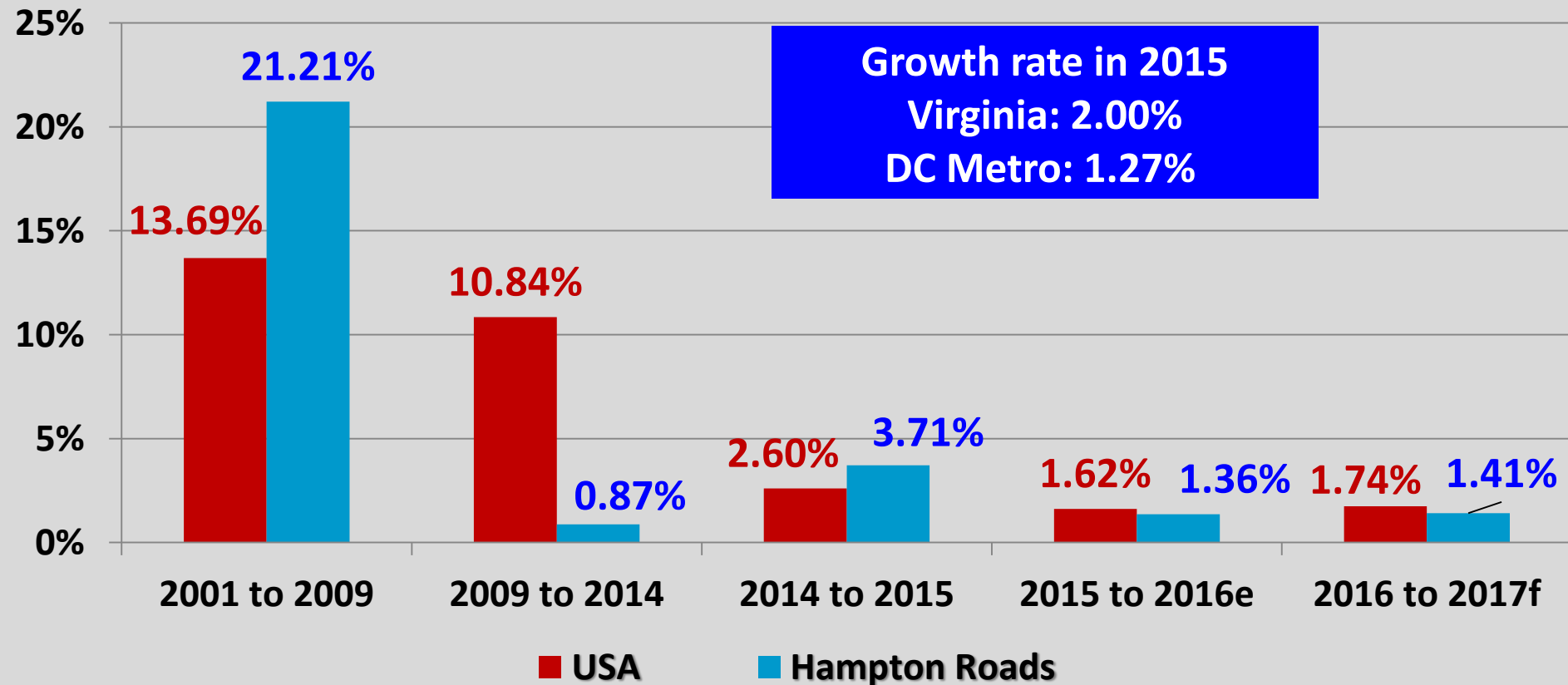
## Presentation outline

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- I. 2016 Economic Performance
  - a) Regional and National Economies
  - b) Defense
  - c) Civilian Nonfarm Jobs
  - d) Hotel Industry
  - e) Port and Cargo
  - f) Single Family Residential Housing Market
- II. Forecast for 2017

## Rate of Growth of Real Gross Domestic Product (U.S.) and Gross Regional Product (Hampton Roads)

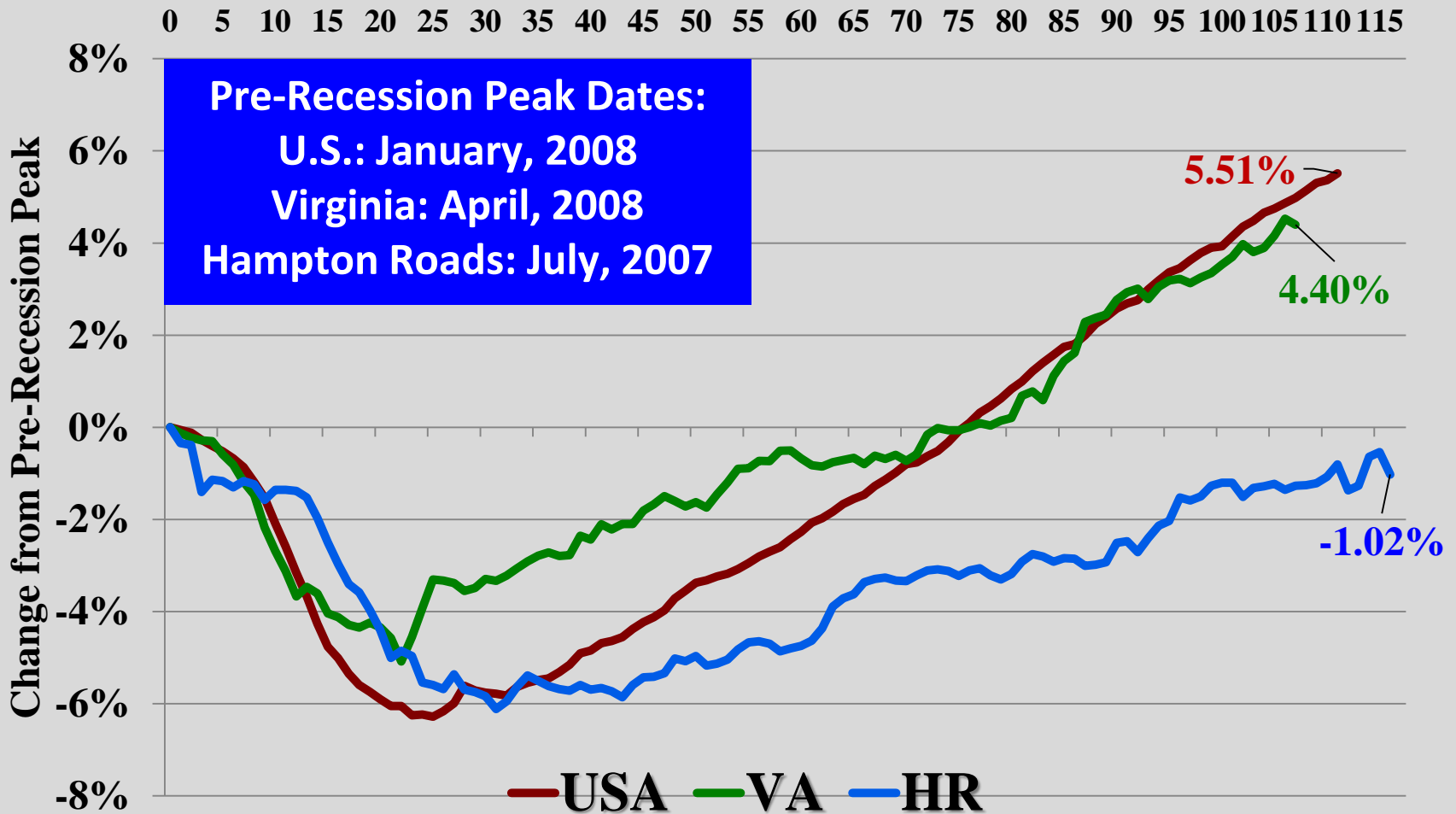
Selected Time Periods from 2001 to 2017\*



## The 2007-2009 Recession and its Recovery through March 2017

% Change in Total Non-farm Payroll Employment from Pre-Recession Peak

### Months After Pre-Recession Peak



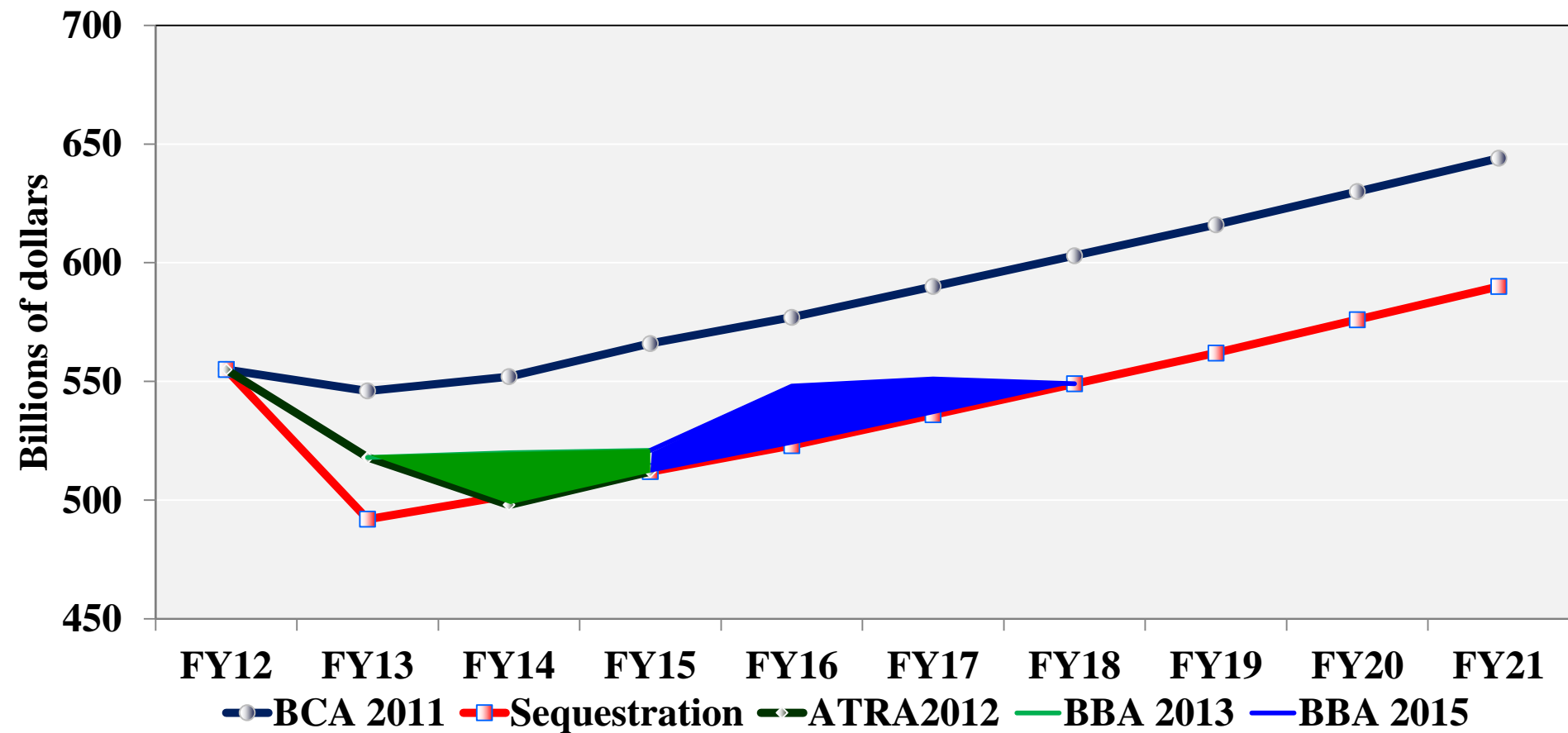


# Economic Forecasting Project

## Defense Spending

## Caps on Department of Defense Discretionary Spending, FY 2012 to FY 2021

The legislated cap on spending increased by \$27B (5.18%) during FY 2016 and by only \$3B or 0.55% during FY 2017; is expected to be \$2B less in FY 2018.





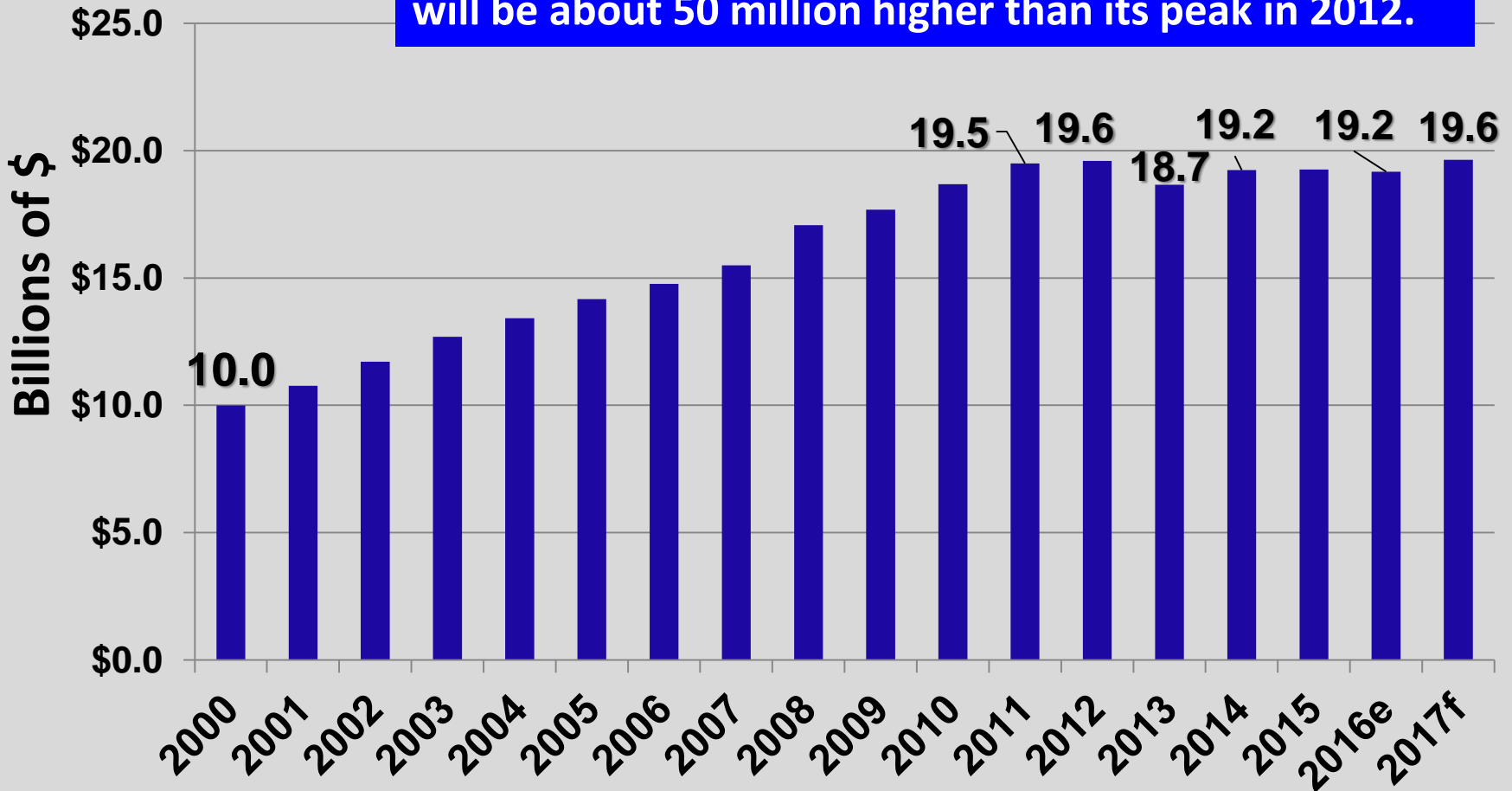
# Economic Forecasting Project

## Hampton Roads Economy

## Estimated Direct DOD Spending in Hampton Roads

2000 to 2017

Between 2000 and 2012, DOD spending in our region increased by an annual average of 5.8%. In 2017, it will be about 50 million higher than its peak in 2012.







## Estimated Average Compensation (Wages, Salaries and Fringe Benefits): Selected Categories

### Hampton Roads: 2014 and 2015

	<u>Earnings in</u> <u>2014</u>	<u>Earnings in</u> <u>2015</u>	<u>Percent change</u> <u>2014 to 2015</u>
<b>Military</b>	<b>\$91,531</b>	<b>\$91,283</b>	<b>-0.27%</b>
<b>Federal Civilian Govt. Employees</b>	<b>\$103,583</b>	<b>\$107,521</b>	<b>3.80%</b>
<b>State and Local Govt. Employees</b>	<b>\$59,150</b>	<b>\$60,088</b>	<b>3.28%</b>
<b>Private Nonfarm</b>	<b>\$41,279</b>	<b>\$42,185</b>	<b>2.19%</b>

Source: U.S. Bureau of Economic Analysis (BEA) and the Old Dominion University Economic Forecasting Project. \* BEA calls compensation as earnings.  
Data updated on November 17, 2016



## Growth (CAGR) in Estimated Average Compensation (Wages, Salaries and Fringe Benefits) Selected Categories

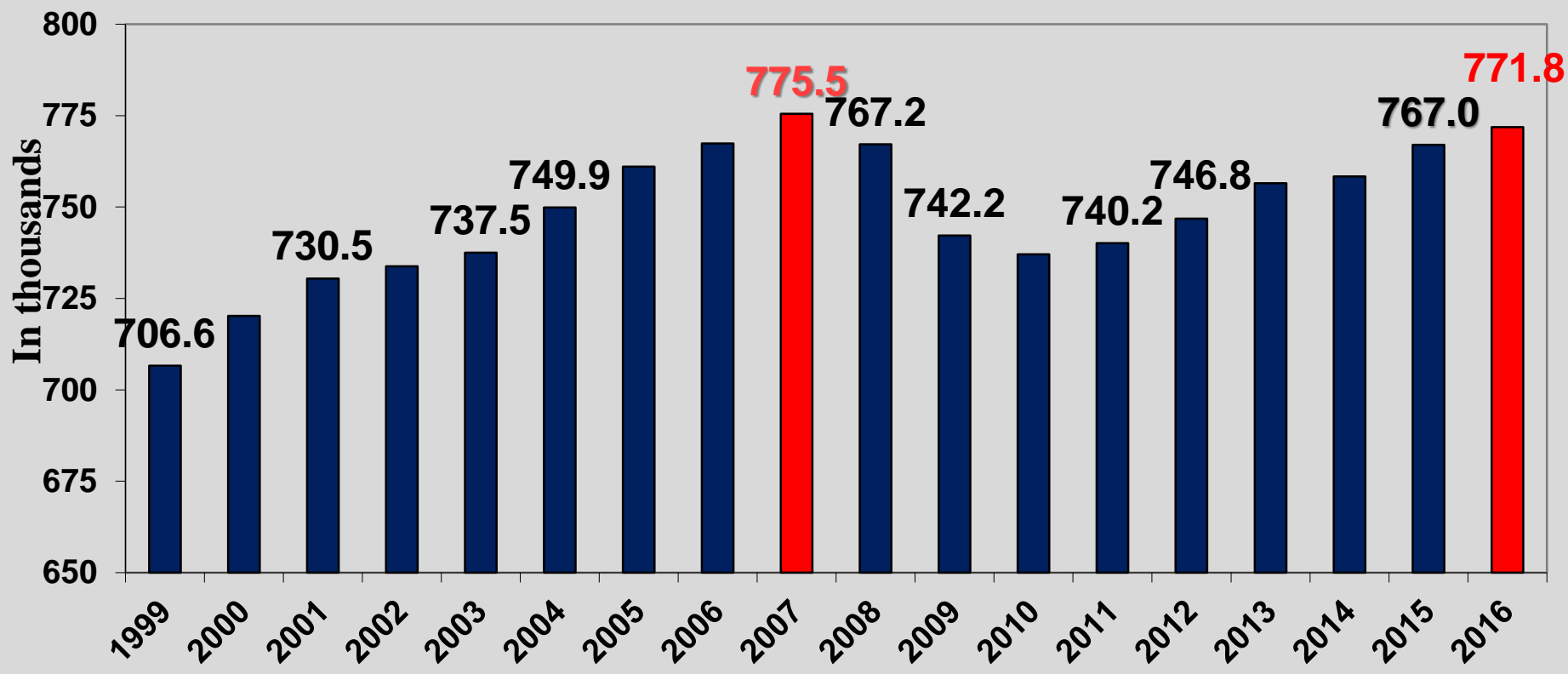
Hampton Roads: 2001 to 2015

	<u>Compound Annual Growth Rate</u> 2001 to 2010	<u>Compound Annual Growth Rate</u> 2010 to 2015
<b>Military</b>	<b>7.2%</b>	<b>0.7%</b>
<b>Federal Civilian Govt. Employees</b>	<b>4.5%</b>	<b>2.6%</b>
<b>State and Local Govt. Employees</b>	<b>3.6%</b>	<b>2.1%</b>
<b>Private Nonfarm</b>	<b>2.9%</b>	<b>2.0%</b>

Source: U.S. Bureau of Economic Analysis (BEA) and the Old Dominion University Economic Forecasting Project. BEA refers to compensation as earnings.

## Annual Civilian Employment (Jobs) in Hampton Roads: 1999 to 2016

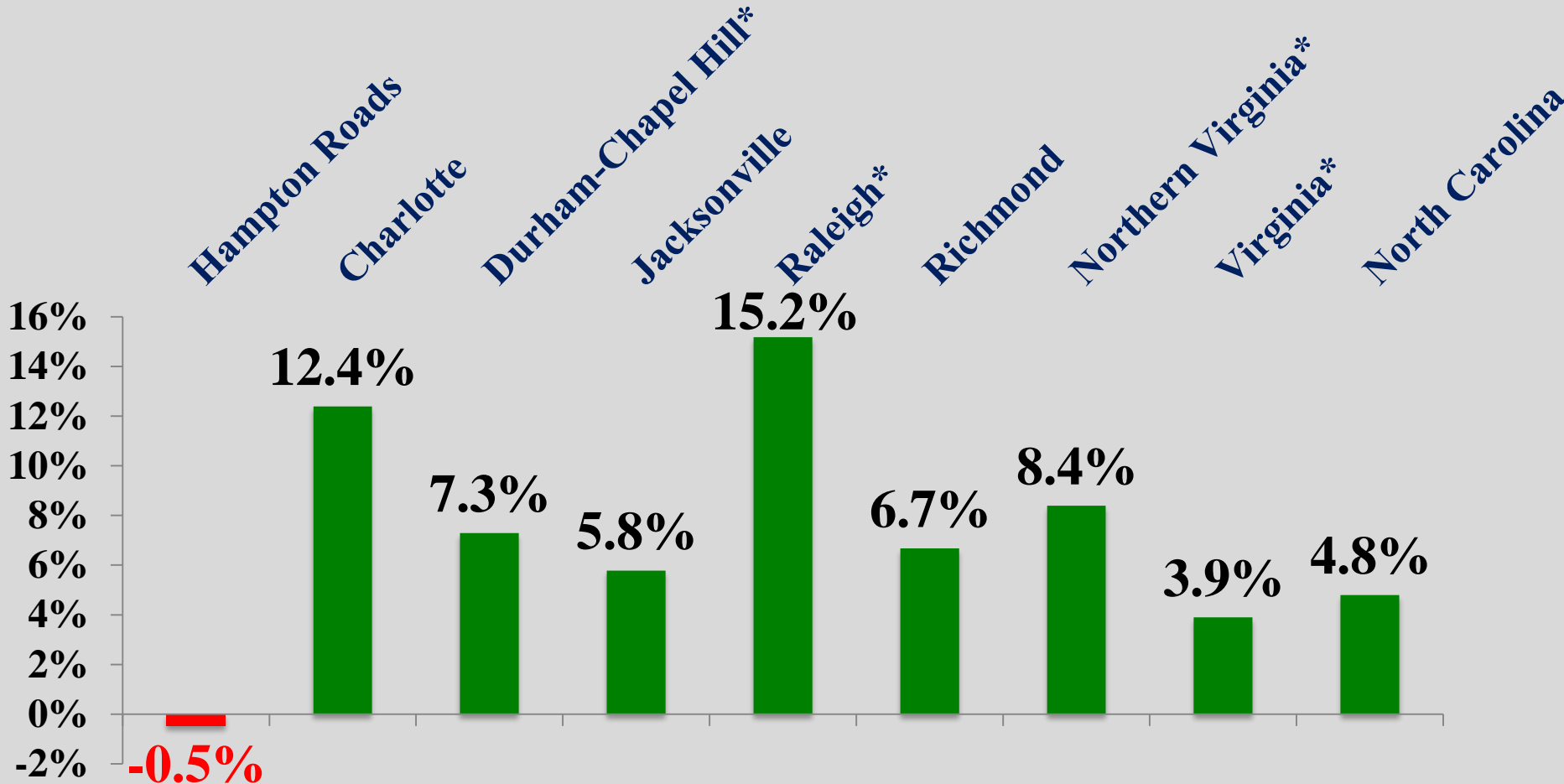
The HR economy added 4,800 jobs in 2016. At the end of 2016, on an annual basis, we were still about 3,700 jobs below our pre-recession level.



Source: U.S. Department of Labor CES data and the Old Dominion University Economic Forecasting Project. Not seasonally adjusted.

## Percent Net New Civilian Jobs Gained/Lost in Selected MSA's, Virginia, and North Carolina

From 2007\* to 2016



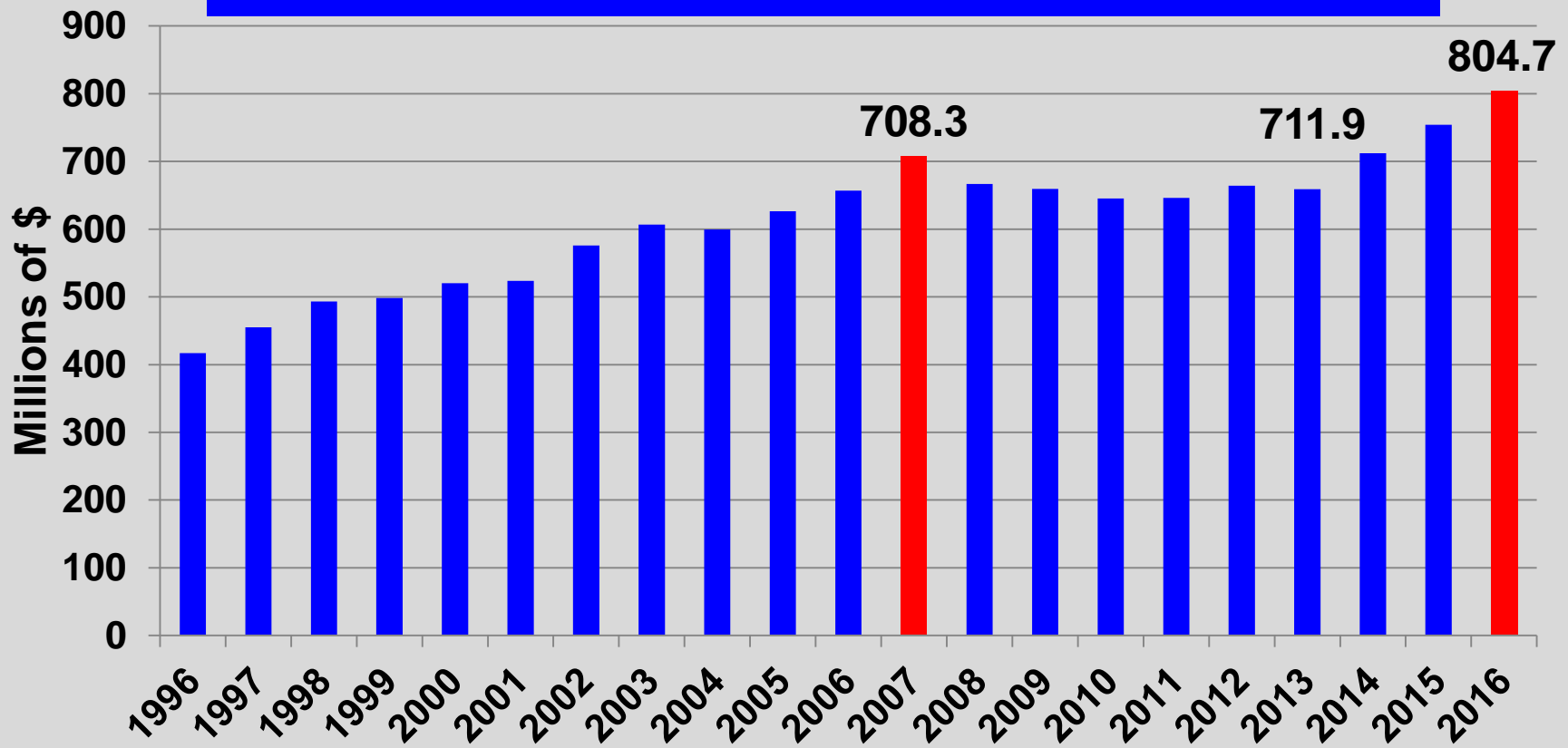
Source: U.S. Department of Labor CES **seasonally unadjusted data** and the Old Dominion University Economic Forecasting Project. \* Peak employment in Raleigh, Durham, Northern Virginia, and Virginia occurred in 2008. Change for these areas is shown for 2008 through 2016.



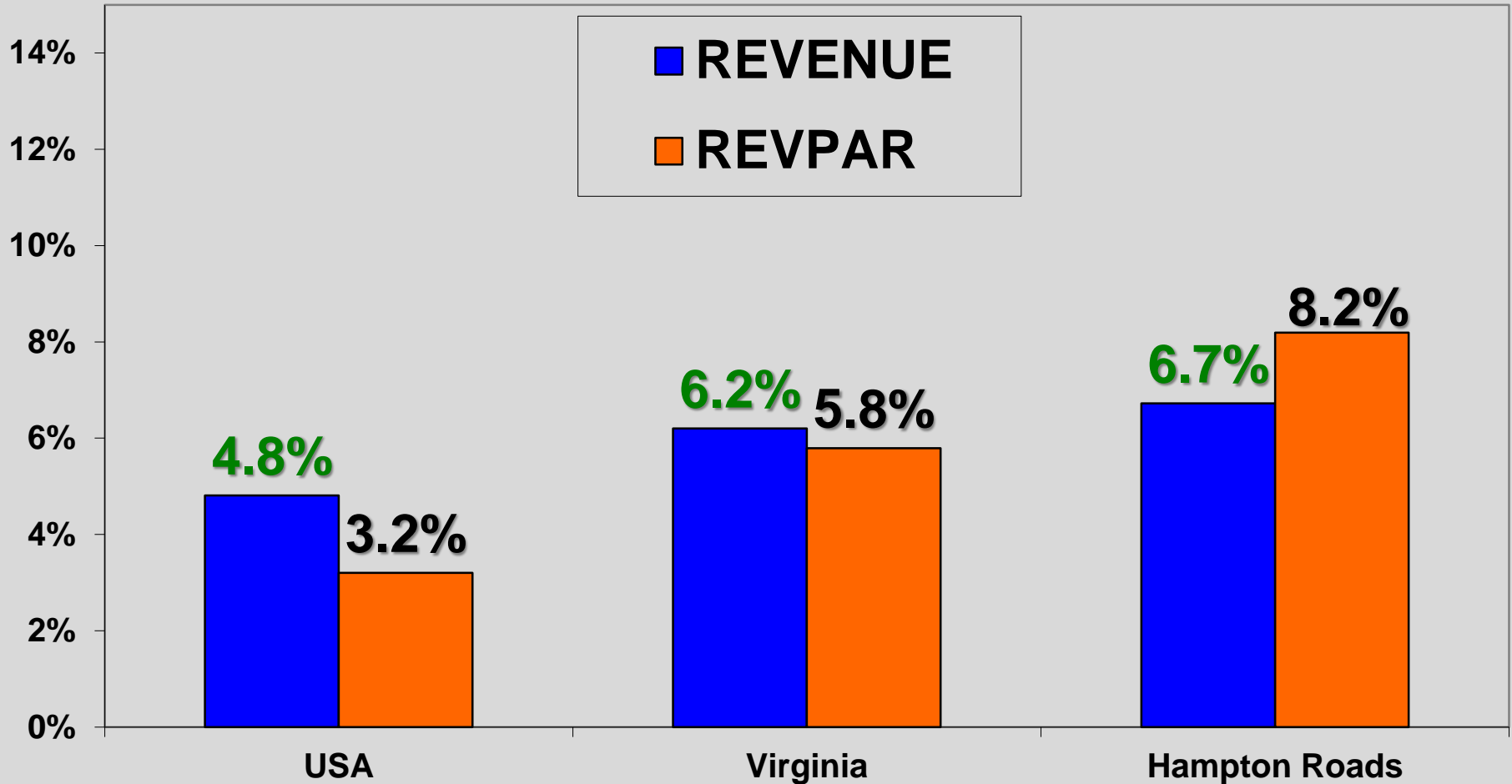
# Hotel Industry in Hampton Roads

## Hotel Revenue in Hampton Roads 1996-2016

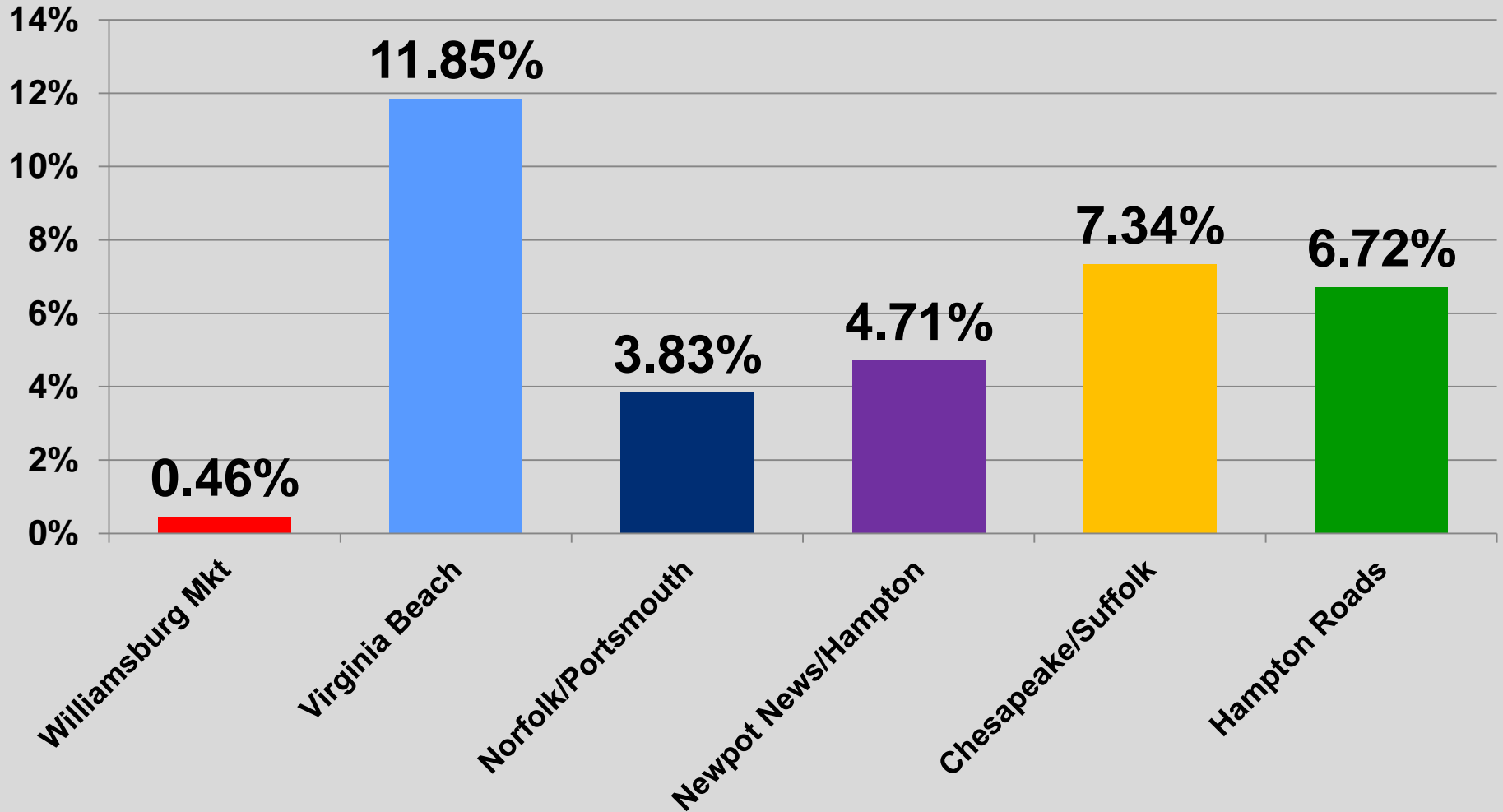
**Hotel Revenue grew by 5.9 % during 2015 and by another 6.7 % during 2016.**



## Percent Change in Hotel Revenue and REVPAR: 2015 to 2016

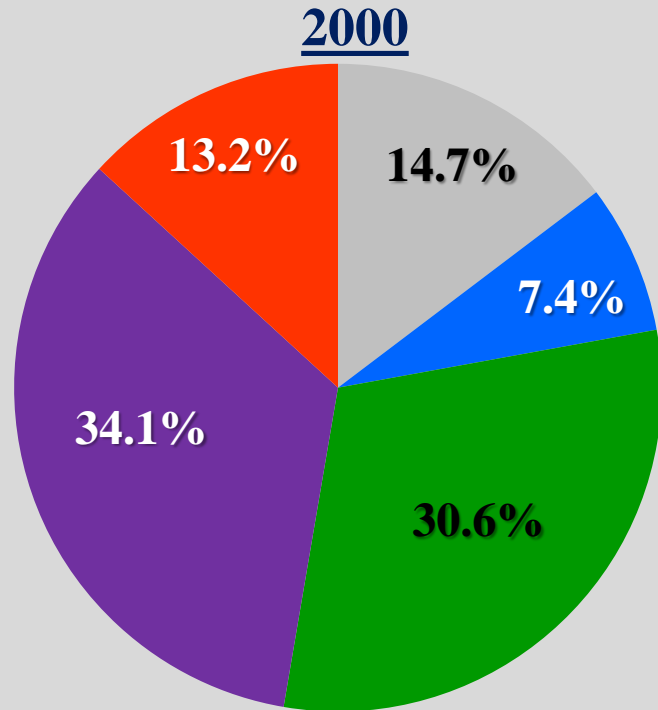


## Percent Change in Hotel Revenue within Hampton Roads: 2015 to 2016

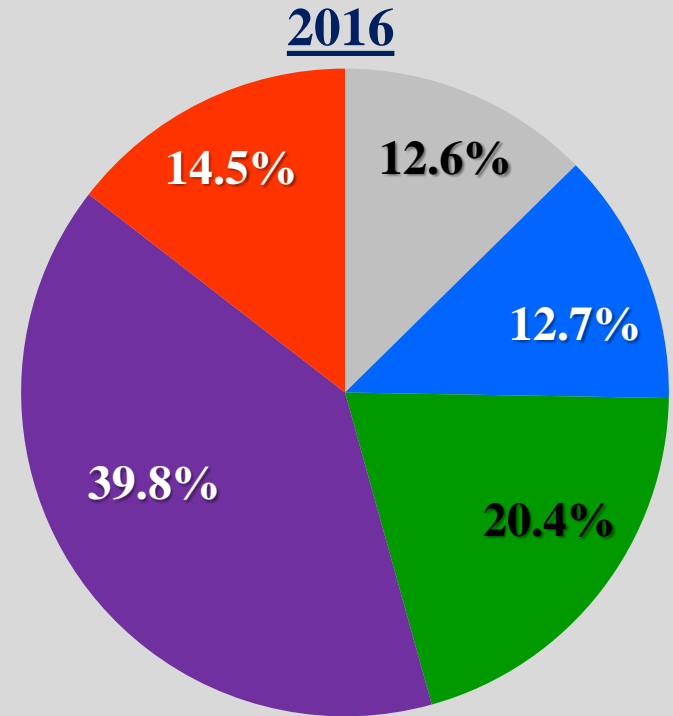




## Estimated Hotel Industry Market Shares in Hampton Roads (Measured by Hotel Room Revenue, 2000 and 2016)



- Norfolk/Portsmouth Market
- Chesapeake/Suffolk Market
- Williamsburg Market
- Virginia Beach Market
- Newport News/Hampton Market



- Norfolk/Portsmouth Market
- Chesapeake/Suffolk Market
- Williamsburg Market
- Virginia Beach Market
- Newport News/Hampton Market



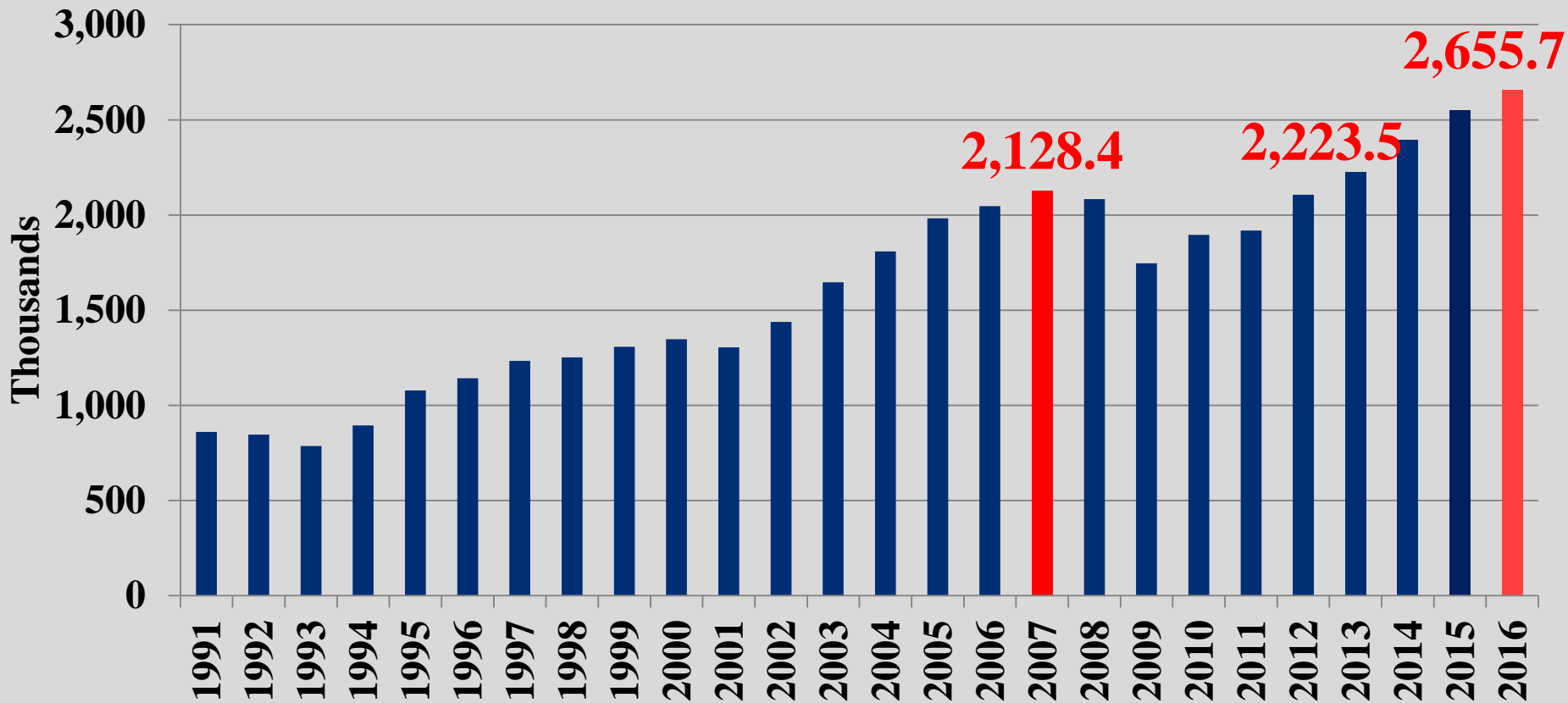
## REVPAR in Selected Markets: 2007 and 2016

	<u>2007</u>	<u>2016</u>	<u>Percent Change</u>	<u>Real Percent Change</u>
<b>USA</b>	<b>\$65.55</b>	<b>\$81.19</b>	<b>+23.9%</b>	<b>+7.0%</b>
<b>Virginia</b>	<b>\$61.91</b>	<b>\$68.04</b>	<b>+9.9%</b>	<b>-5.1%</b>
<b>Hampton Roads</b>	<b>\$52.93</b>	<b>\$59.46</b>	<b>+12.3%</b>	<b>-3.0%</b>
<b>Virginia Beach</b>	<b>\$64.62</b>	<b>\$79.36</b>	<b>+22.8%</b>	<b>+6.1%</b>
<b>Williamsburg</b>	<b>\$47.47</b>	<b>\$56.35</b>	<b>+18.7%</b>	<b>+2.6%</b>
<b>Newport News/Hampton</b>	<b>\$41.49</b>	<b>\$43.47</b>	<b>+4.8%</b>	<b>-9.5%</b>
<b>Norfolk/Portsmouth</b>	<b>\$54.05</b>	<b>\$54.68</b>	<b>+1.2%</b>	<b>-12.6%</b>
<b>Chesapeake/Suffolk</b>	<b>\$52.90</b>	<b>\$49.93</b>	<b>-5.6%</b>	<b>-18.5%</b>

## The Port of Virginia

## Twenty-Foot Equivalent Container Units (TEUs) at the Port of Virginia: 1991 to 2016

TEUs increased by 4.2% in 2016; Loaded TEUs increased by 4.8%; empty TEUs increased by only 1.2%.



## Operating Income/Loss for the Port of Virginia (In Million \$)

Fiscal Year 2006 through Fiscal Year 2016 (ending June 30)



**Port of Virginia's Operating Income for the first seven months of FY 2017 is \$8.3M compared to a loss of \$6.3M for the same time period in FY 2016.**

# Single Family Residential Housing Market in Hampton Roads

## Number of Existing and New Construction Homes Sold

### Hampton Roads: 2002-2016

Year	Existing Homes Sold	New Construction Homes Sold	Percent New Construction
2002	19,869	4,969	20.0%
2003	21,421	4,757	18.2%
2004	23,548	4,587	16.3%
2005	24,755	4,379	15.0%
2006	22,405	4,327	16.2%
2007	19,154	3,912	17.0%
2008	15,046	3,178	17.4%
2009	15,851	2,673	14.4%
2010	14,703	2,265	13.4%
2011	15,818	2,366	13.0%
2012	16,856	2,664	13.6%
2013	18,791	2,878	13.3%
2014	18,700	2,485	11.7%
2015	20,595	2,954	12.5%
2016	22,456	3,219	12.5%

41% decline in sale of existing homes from 2005 to 2010

existing homes Sales Have increased by 7,753 from 2010 to 2016

Source: 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.

## Median Sale Price of Existing Residential Homes

### Hampton Roads: 2002-2016

Year	Median Price	Percent change year to year
2002	\$116,900	7.3%
2003	\$130,000	11.2%
2004	\$156,500	20.4%
2005	\$192,000	22.7%
2006	\$214,900	11.9%
2007	\$223,000	3.8%
2008	\$219,000	-1.8%
2009	\$207,000	-5.5%
2010	\$203,900	-1.5%
2011	\$180,000	-11.7%
2012	\$185,000	+2.78%
2013	\$190,000	+2.70%
2014	\$193,205	+1.70%
2015	\$203,000	+5.07%
<b>2016</b>	<b>\$210,000</b>	<b>+3.5%</b>

**90% increase from 2002-07**

**19% decrease From 2007-11**

**16% increase from 2011-16**



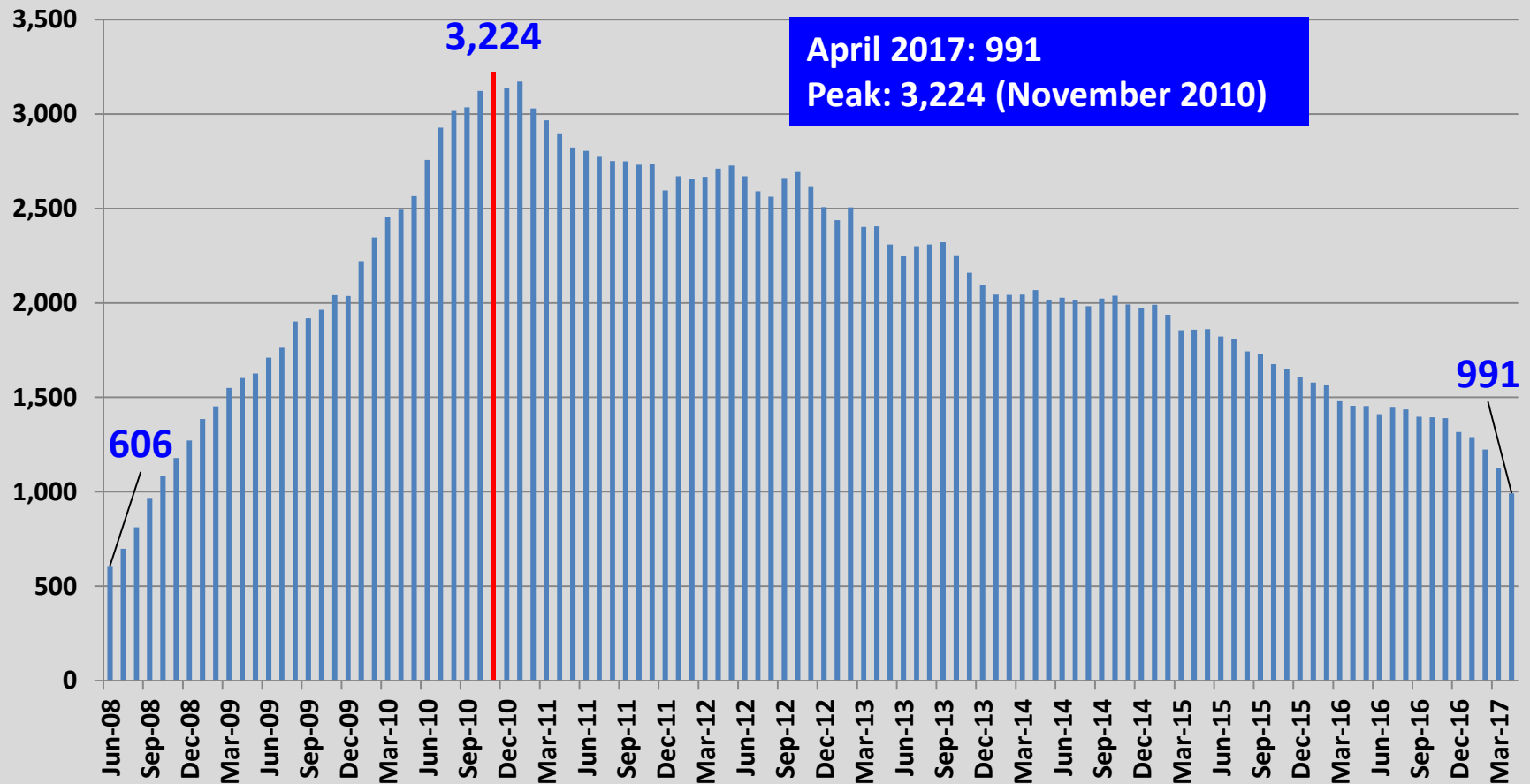
## Summary on Existing Homes Market since 2011

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- Inventories have decreased substantially.
- Days on market have decreased from 102 days in 2011 to 75 days in 2016.
- Number of homes sold has steadily increased.
- Estimated months of supply has steadily declined to 4.7 months compared to a historical average (January 1996 to April 2017) of 5.6 months.
- **But the median price has increased only slightly.**
- The explanation lies in the size of the *distressed market*--- which consists of short sales and bank-owned homes (REOs).

## Number of Active Listing of Distressed Homes (REO & Short Sales)

Hampton Roads: June 2008 to April 2017



## Number of Existing Short Sale and REOs Residential Homes Sold

### Hampton Roads: 2006- 2016

<u>Year</u>	<u>All Sales</u>	<u>Short Sales</u>	<u>Percent Short Sales</u>	<u>REO Sales</u>	<u>Percent REO Sales</u>
2006	22,405	3	<1%	56	<1%
2007	19,152	40	<1%	223	1.2
2008	15,047	217	1.4	833	5.5
2009	15,849	598	3.8	2,271	14.3
2010	14,696	784	5.3	3,021	20.6
<b>2011</b>	<b>15,817</b>	<b>1,127</b>	<b>7.1</b>	<b>4,213</b>	<b>26.6</b>
2012	16,856	1,644	9.8	3,337	19.8
2013	18,791	1,769	9.4	3,178	16.9
2014	18,700	1,347	7.2	2,744	14.7
2015	20,592	1,230	6.0	2,542	12.3
<b>2016</b>	<b>22,456</b>	<b>1,002</b>	<b>4.5</b>	<b>2,294</b>	<b>10.2</b>

## Median Sale Price of Existing Residential Homes

Selected Cities in Hampton Roads: 2002 and 2007

City	Median Price 2002	Median Price 2007	% change
Chesapeake	\$134,900	\$250,100	85.4%
Norfolk	\$ 93,200	\$195,000	<b>109.2%</b>
Portsmouth	\$ 80,300	\$165,500	<b>106.1%</b>
Suffolk**	\$139,900	\$257,500	84.1%
Virginia Beach	\$125,000	\$245,000	96.0%
Hampton	\$ 92,900	\$180,000	93.8%
Newport News	\$105,000	\$199,250	89.8%
Williamsburg*	\$157,325	\$284,450	80.8%
<b>Hampton Roads</b>	<b>\$116,900</b>	<b>\$223,000</b>	<b>90.8%</b>

Source: 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 price in Suffolk peaked in 2006 at \$263,950

## Median Sale Price of Existing Residential Homes

### Selected Cities in Hampton Roads: 2007 and 2016

<u>City</u>	<u>Median Price</u> <u>2007</u>	<u>Median Price</u> <u>2016</u>	<u>% change</u>
<b>Chesapeake</b>	<b>\$250,100</b>	<b>\$240,000</b>	<b>-4.0%</b>
<b>Norfolk</b>	<b>\$195,000</b>	<b>\$175,000</b>	<b>-10.3%</b>
<b>Portsmouth</b>	<b>\$165,500</b>	<b>\$134,900</b>	<b>-18.5%</b>
<b>Suffolk**</b>	<b>\$257,500</b>	<b>\$230,451</b>	<b>-10.5%</b>
<b>Virginia Beach</b>	<b>\$245,000</b>	<b>\$240,500</b>	<b>-1.8%</b>
<b>Hampton</b>	<b>\$180,000</b>	<b>\$149,000</b>	<b>-17.2%</b>
<b>Newport News</b>	<b>\$199,250</b>	<b>\$169,900</b>	<b>-14.7%</b>
<b>Williamsburg*</b>	<b>\$284,450</b>	<b>\$270,000</b>	<b>-5.1%</b>
<b>Hampton Roads</b>	<b>\$223,000</b>	<b>\$210,000</b>	<b>-5.8%</b>

Source: 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 price in Suffolk peaked in 2006 at \$263,950

# **Performance of Hampton Roads Economy through March 2017**

## Performance of Hampton Roads Economy

YTD March 2016 and YTD March 2017

	YTD March 2016	YTD March 2017	% Change
Civilian Labor Force	827,959	834,126	+ 0.74
Employment	788,632	797,217	+ 1.09
Unemployment	39,327	36,908	-6.15
Unemployment Rate	4.75%	4.42%	
Civilian Non-Farm Jobs	758,730	762,900	+ 0.55
New Auto Registrations	22,115	22,345	+ 1.04
Taxable Sales	\$5.05B	\$5.09B	+ 0.80

## Performance of Hampton Roads Economy

### YTD March 2016 and YTD March 2017

	YTD March 2016	YTD March 2017	% Change
Hotel Revenue	\$125.07M	\$132.29M	+ 5.77
General Cargo Tonnage*	6.679M	7.350M	+10.04
TEU Containers*	842,010	906,236	+ 7.63
Number of 1 Unit Housing Permits	907	1,193	+31.53
Value of 1 Unit Housing Permits	\$188.66M	\$260.12M	+37.88
Number of Existing Homes Sold**	6,178	6,424	+ 3.98
Distressed Homes as a Percentage of all Existing Homes Sold**	18.76	15.47	
Median Price of Existing Homes Sold**	\$198,000	\$206,000	+ 4.04

\*\* Data shown here are for YTD April 2016 and YTD April 2017.





## **Forecast for 2017**



## Old Dominion University 2017 Forecast for Hampton Roads MSA

	<u>2016</u>	<u>2017</u>	<u>% Change</u>
Nominal Gross Regional Product	\$98.96B	\$103.17B	
<b>Real Gross Regional Product**</b>	<b>\$86.73B</b>	<b>\$87.95B</b>	<b>+1.41%</b>
Civilian Employment	771,817	775,676	+0.50%
Unemployment Rate	4.57%	4.40%	
Taxable Sales	\$22.18B	\$22.76B	+2.60%
Hotel Revenue	\$804.70M	\$840.11M	+4.40%
General Cargo Tonnage	20.87M	21.43M	+2.70%
Housing Permit Value	\$843.13M	\$865.05M	+2.60%

\*\* Base year is 2009

# The Dashboard: Center for Economic Analysis and Policy, Strome College of Business



COMMONWEALTH ECONOMIC DASHBOARD

Select Area: VA

<p>REAL GDP</p> <p>2016 Q3</p> <p><b>\$436.96 bil</b></p> <p>↑ 2.25% from 2016 Q2</p>	<p>UNEMPLOYMENT RATE</p> <p>March 2017</p> <p><b>3.8%</b></p> <p>↓ -0.2% from March 2016</p>	<p>TOTAL NONFARM EMPLOYMENT</p> <p>2017 Q1</p> <p><b>3.91 mil</b></p> <p>↑ 1.35% from 2016 Q1</p>
<p>SIZE OF THE LABOR FORCE</p> <p>March 2017</p> <p><b>4.29 mil</b></p> <p>↑ 1.31% from March 2016</p>	<p>AVERAGE WEEKLY WAGES</p> <p>2016 Q3</p> <p><b>\$1,063</b></p> <p>↑ 5.04% from 2015 Q3</p>	<p>INITIAL UNEMPLOYMENT CLAIMS</p> <p>March 2017</p> <p><b>11,786</b></p> <p>↓ -11.98% from March 2016</p>
<p>TAXABLE RETAIL SALES</p> <p>2016 Q4</p> <p><b>\$32,557,036,400</b></p> <p>↑ 2.15% from 2015 Q4</p>	<p>FHFA HOUSING PRICE INDEX</p> <p>2016 Q4</p> <p>↑ <b>3.12%</b></p> <p>from 2015 Q4</p>	<p>HOTEL REVENUE PER AVAILABLE ROOM (REVPAR)</p> <p>YTD March 2017</p> <p><b>\$56.84</b></p> <p>↑ 6.77% from YTD March 2016</p>

# Center for Economic Analysis and Policy, Strome College of Business at Old Dominion University

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# Economic Forecasting Project

**Any Questions?**

*Professor Vinod Agarwal  
Professor Larry "Chip" Filer*

**Strome College of Business**

**[www.odu.edu/forecasting](http://www.odu.edu/forecasting)**

