

The State of the Region

HAMPTON ROADS 2017

CENTER FOR ECONOMIC ANALYSIS AND POLICY | STROME COLLEGE OF BUSINESS | OLD DOMINION UNIVERSITY

**VIRGINIA BEACH-NORFOLK-
NEWPORT NEWS, VA-NC
METROPOLITAN STATISTICAL AREA**



October 2017

Dear Reader:

This is Old Dominion University's 18th annual State of the Region report. While it represents the work of many people connected in various ways to the university, the report does not constitute an official viewpoint of Old Dominion, or its president, John R. Broderick. The report maintains the goal of stimulating thought and discussion that ultimately will make Hampton Roads an even better place to live. We are proud of our region's many successes, but realize that it is possible to improve our performance. In order to do so, we must have accurate information about "where we are" and a sound understanding of the policy options open to us.

The 2017 report is divided into seven parts:

We May Have Turned the Economic Corner: The outlook for increased regional economic growth has improved. Each of the major building blocks of our regional economy (defense, the Port, tourism) has gained momentum and our housing market continues to show slow, but steady improvement.

Airbnb in Virginia Beach: Airbnb has become an increasingly significant competitor to conventional hotels throughout the United States, and Virginia Beach is no exception. The rise of Airbnb is yet another manifestation of the emergence of the "gig" economy.

Who Delivers Health Care in Hampton Roads Today? The Rise of Nonphysician Professionals: Health care in our region increasingly is being delivered by nonphysician professionals, who include nurses and physician assistants. We trace the development of this trend and its implications for the future.

Affordability and Access in Virginia Public Higher Education: The typical public four-year college in Virginia has increased its tuition and fees two to four times as rapidly as the rise in the consumer price index. Reduced state appropriations can account for only some of these increases.

The Scourge of Opioids: The number of opioid-induced deaths has skyrocketed in Hampton Roads. Approximately three-quarters of opioid addicts began their fall from grace with a legitimate prescription from a knowledgeable physician. We estimate the costs.

Foreign Language Instruction in the Region's Public Schools: Where Do We Stand? Foreign language instruction has declined in Hampton Roads and immersion programs are relatively rare. This is not a positive development insofar as our ability to conduct international trade, understand world developments or even communicate with many other Americans.

Do We Suffer from Brain Drain in Hampton Roads? Hampton Roads has been experiencing net out-migration of residents to other metropolitan areas in recent years. Who is leaving? Why are they leaving? We address these questions and their implications.

The Strome College of Business and the university continue to provide support for this report. However, it would not appear without the vital backing of the private donors whose names appear below. They believe in Hampton Roads and the power of rational discussion to improve our circumstances, but are not responsible for the views expressed in the report.

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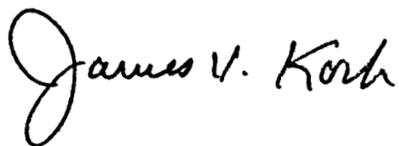
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All 18 State of the Region reports are available at www.ceapodu.edu. If you have comments or suggestions, please email us at jkoch@odu.edu or rmcnab@odu.edu. Individual copies may be purchased for \$25 each.

Sincerely,



James V. Koch

Board of Visitors Professor of Economics Emeritus
and President Emeritus



Robert M. McNab

Professor of Economics
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We May Have Turned The Economic Corner



WE MAY HAVE TURNED THE ECONOMIC CORNER

After the great Allied military victory at El Alamein in November 1942, over none other than Erwin Rommel – the legendary “Desert Fox” – Winston Churchill observed, “Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.” Perhaps the same might now be said of our regional economy. After eight years of piddling economic growth, it appears that Hampton Roads finally is poised for much better things. Let’s examine the details.

Changes In Output And Incomes

Our estimate of economic growth in the Hampton Roads economy in 2017 is 1.41 percent, only slightly higher than 2016’s 1.36 percent (see Table 1). Once again, we will grow more slowly than our historical average of 2.6 percent over the past 30 years and we will grow more slowly than the United States.¹

This is not thrilling news, but we also estimate that the value of our region’s nominal gross output will approach \$103.17 billion in 2017. If Hampton Roads were a nation, we would have approximately the 60th-largest economy in the world. Thus, some perspective is required.

Earlier this year, the Bureau of Economic Analysis (BEA) reported that the region’s economy, as measured by real gross regional product (GRP), expanded at a rate of 3.71 percent in 2015. This followed a 0.73 percent contraction in 2014. The difference between the two estimates was unexpectedly huge and we fully expect the BEA to revise this number significantly downward.² At the same time, the BEA also estimated that Virginia’s economy grew by 2.41 percent in 2015. It further estimated that the Washington, D.C., metropolitan economy grew by only 1.27 percent. Since Northern Virginia accounts for approximately 45 percent of the

¹ Note that the 2016 economic growth number is our estimate and the 2017 number our forecast.

² Post-completion of this report and prior to its release, the BEA will have revised the 2015 GDP data and released the 2016 advanced GDP estimate.

Commonwealth’s economic activity, it is difficult to see how Virginia overall could grow more than 1 percent faster than Northern Virginia. We don’t see that level of growth occurring elsewhere in the Commonwealth. One should anticipate revisions of these discordant numbers as well.

Graph 1 provides some historical perspective to our regional situation. During the first decade of this century, the Hampton Roads economy grew about 55 percent faster than the national economy. Since then, the story has been very different and we have grown more slowly than the nation. The key to our superb economic performance in the first decade was expanding defense spending. Between 2001 and 2009, direct defense spending in our region grew at an average of 6.3 percent annually.

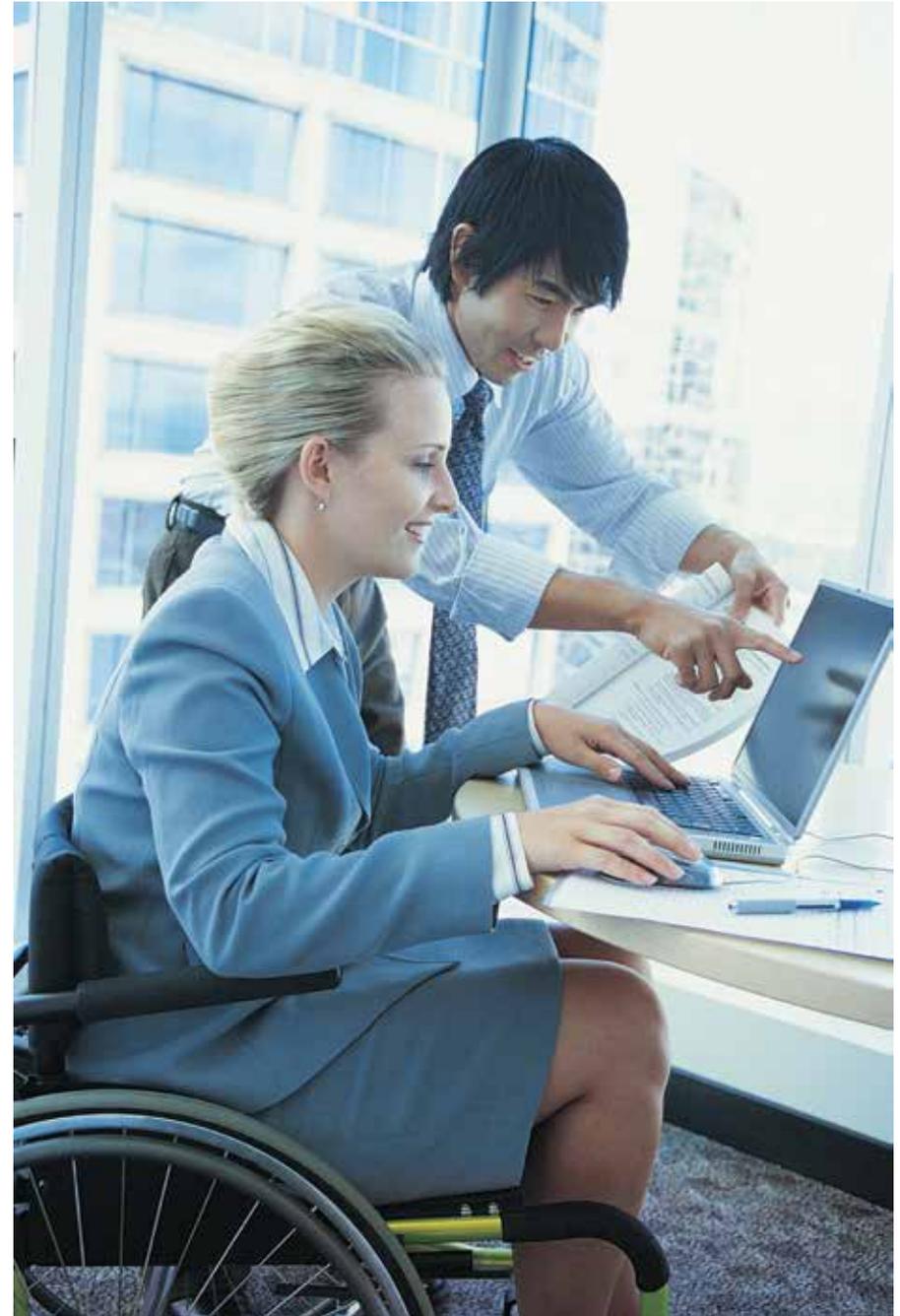
There is a similar story to be recited when we talk about median household income. In Hampton Roads, median (50th percentile) household income increased significantly until 2008, but since has stagnated. As one can see in Graph 2, median household income in Hampton Roads historically has been higher than that of the nation, but has been growing more slowly during this decade. The gap between the two has narrowed. **Our regional median household income was 14.5 percent higher than that of the nation in 2010, but by 2015 was only 7.7 percent higher.**

Interestingly, when we focus on per capita income – income per person – it turns out that we now trail the nation in this regard (see Graph 3). Not only have we grown slower than the nation but also the average size of households in our region exceeds the national average.

TABLE 1**NOMINAL AND REAL (INFLATION-ADJUSTED) GROSS REGIONAL PRODUCT: HAMPTON ROADS, 2001-2017**

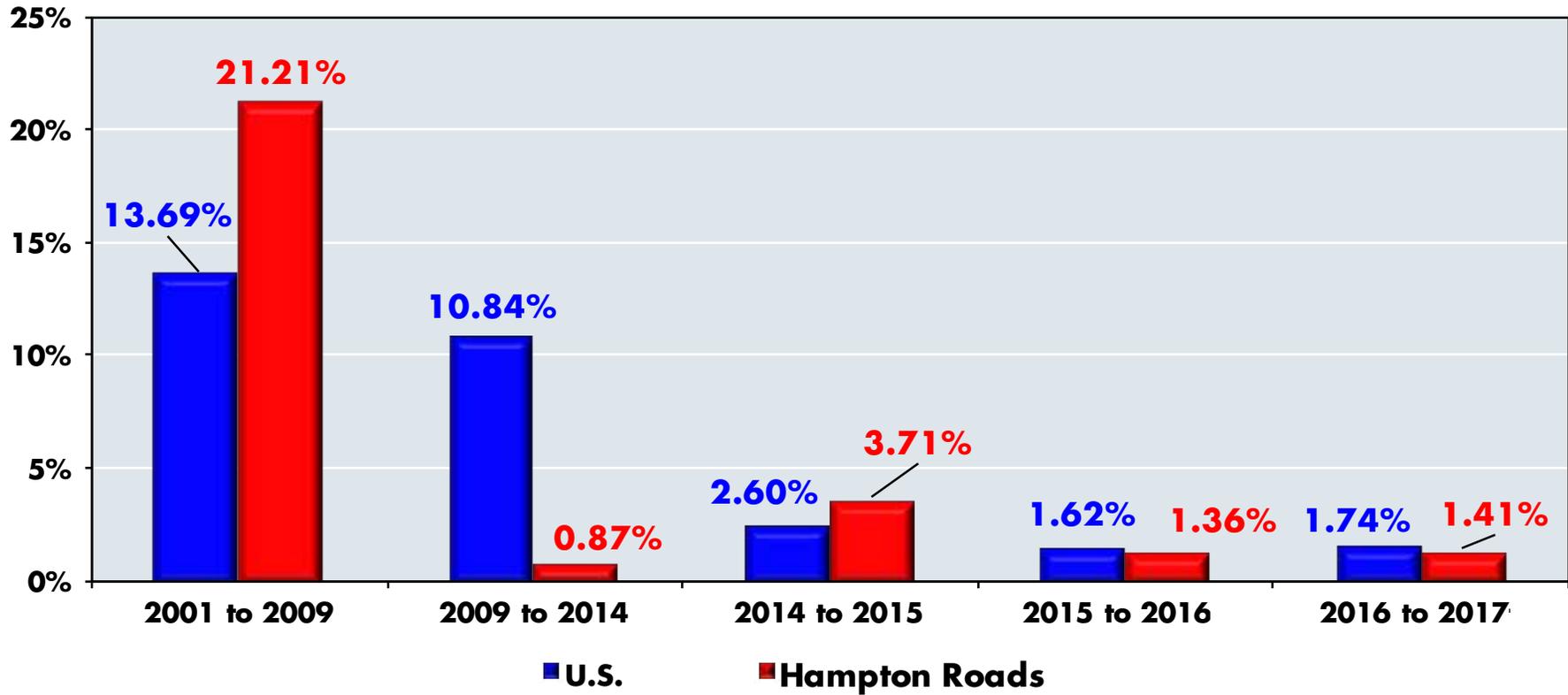
YEAR	NOMINAL GRP (BILLIONS OF \$)	REAL GRP (2009=100) (BILLIONS OF \$)	REAL GRP GROWTH RATE PERCENT
2001	\$54.04	\$67.48	4.00%
2002	\$57.38	\$69.55	3.07%
2003	\$61.74	\$72.59	4.37%
2004	\$65.41	\$74.73	2.95%
2005	\$70.45	\$77.75	4.05%
2006	\$74.99	\$80.19	3.14%
2007	\$79.00	\$81.51	1.64%
2008	\$79.85	\$81.27	-0.29%
2009	\$81.80	\$81.80	0.65%
2010	\$82.69	\$81.67	-0.16%
2011	\$84.27	\$82.20	0.66%
2012	\$86.79	\$82.89	0.83%
2013	\$88.51	\$83.11	0.28%
2014	\$89.87	\$82.51	-0.73%
2015	\$95.68	\$85.56	3.71%
2016	\$98.96	\$86.73	1.36%
2017	\$103.17	\$87.95	1.41%

Source: Old Dominion University Economic Forecasting Project. The data incorporate U.S. Department of Commerce personal income revisions through September 2016. The base year for real GRP is 2009.



GRAPH 1

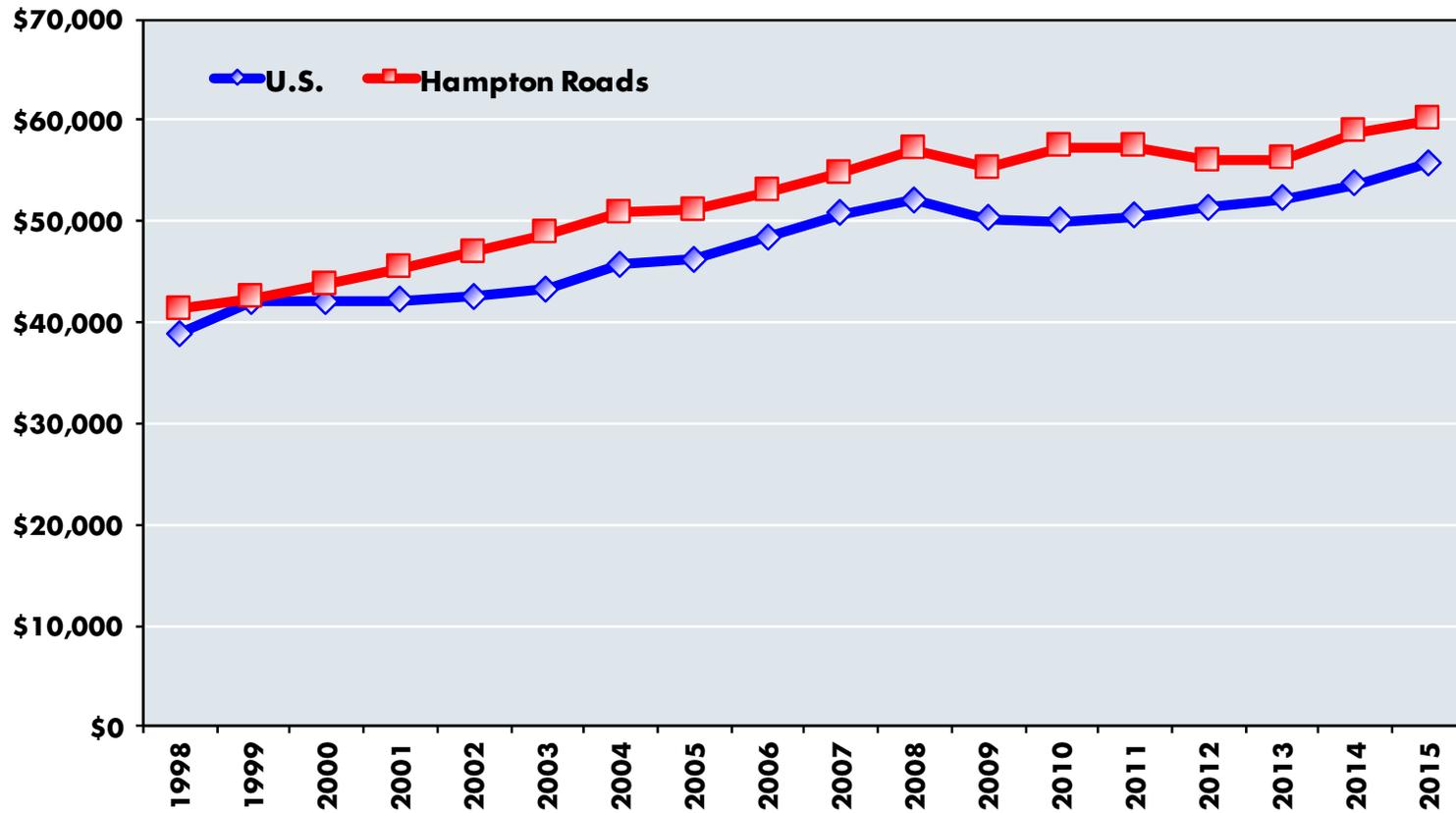
RATE OF GROWTH OF REAL GROSS DOMESTIC PRODUCT (U.S.) AND GROSS REGIONAL PRODUCT (HAMPTON ROADS): SELECTED TIME PERIODS FROM 2001 TO 2017*



Sources: Bureau of Economic Analysis and the Old Dominion University Economic Forecasting Project. Data on GDP incorporate latest BEA revisions in September 2016. *GRP numbers for 2016 are estimates. GDP and GRP growth rates for 2017 represent our forecast.

GRAPH 2

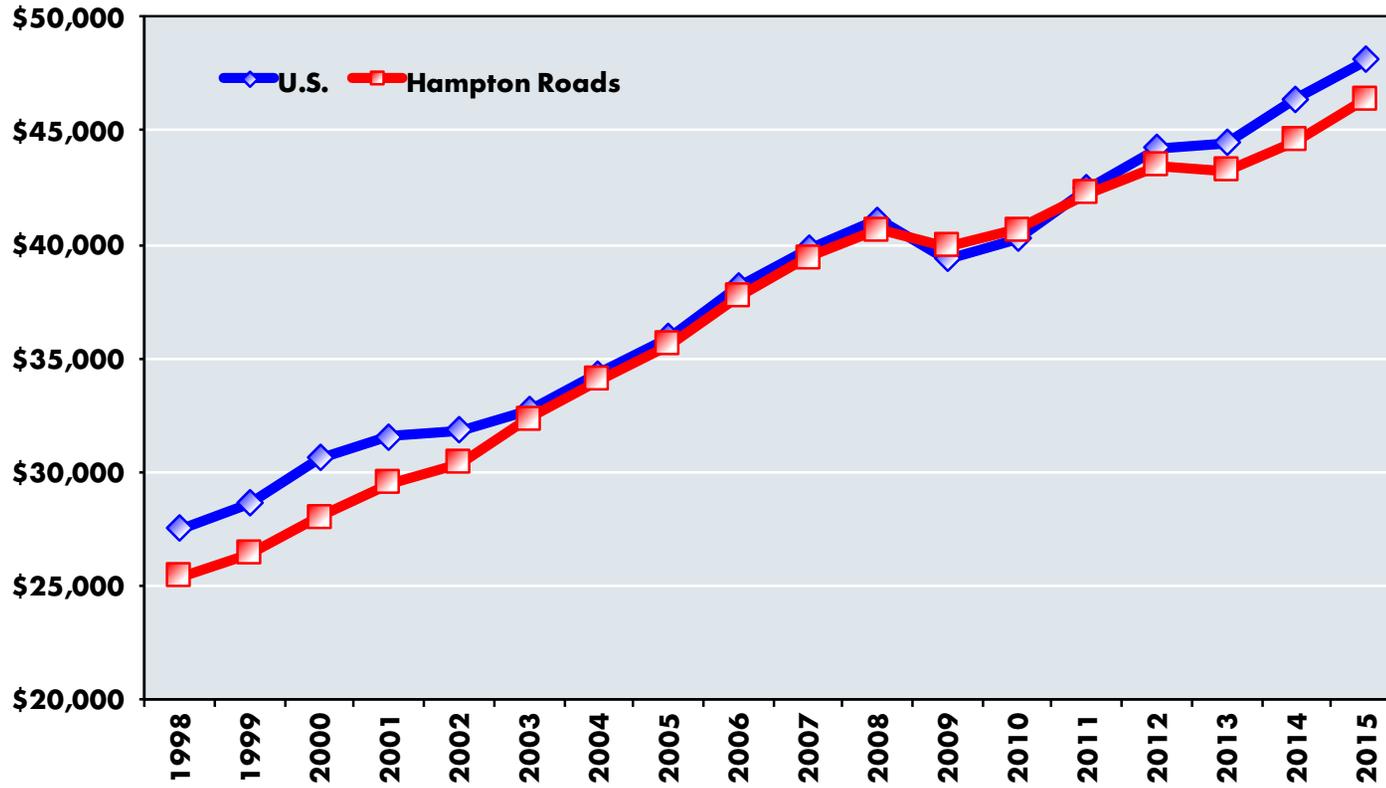
COMPARISON OF MEDIAN HOUSEHOLD INCOME: HAMPTON ROADS AND THE U.S., 1998-2015



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

GRAPH 3

COMPARISON OF PER CAPITA INCOME: HAMPTON ROADS AND THE U.S., 1998-2015



Sources: U.S. Department of Commerce - Bureau of Economic Analysis (BEA) tables CA1 and SA1 and the Old Dominion University Economic Forecasting Project

Recovery From The Great Recession

The Great Recession inflicted economic pain on Hampton Roads and we still are feeling some of this distress. The recession saw the sharpest decline in economic activity since the Great Depression. Initially, we were fortunate not to experience as large a decline in economic activity as the rest of the nation, but subsequently our region has recovered more slowly than the rest of the country.

Graph 4 reveals that as of April 2017, Hampton Roads still had not regained all the jobs it lost in the Great Recession. By contrast, this graph also tells us that both Virginia and the United States have recovered the jobs they lost, and then some. Graph 5 discloses that we still were about 3,700 jobs short of complete recovery by the end of 2016, but will recover all of our lost jobs by the end of the year if current trends continue.

Economic change typically produces winners and losers, and such has been the case in Hampton Roads (see Graph 6). Sectors that have gained jobs recently include Health Care and Social Assistance, Public Administration, Accommodation and Food Services, and Professional, Scientific and Technical Services. Losing economic sectors include Construction (an especially large decline), Retail Trade (continuing a long trend), Administrative Support and Waste Management, Information, Wholesale Trade and Manufacturing.

The data in Table 2 reflect the average weekly wage earned by individuals in the major categories we have cited and what has happened to those wages over the space of a decade. Broadly speaking, the sectors that have been losing jobs also have been experiencing declining wages. The lesson is that stagnant or declining demand for an industry's products is a recipe for slow wage growth. On the other hand, when industries are expanding, they must compete to attract and retain workers and this usually leads to larger wage increases.

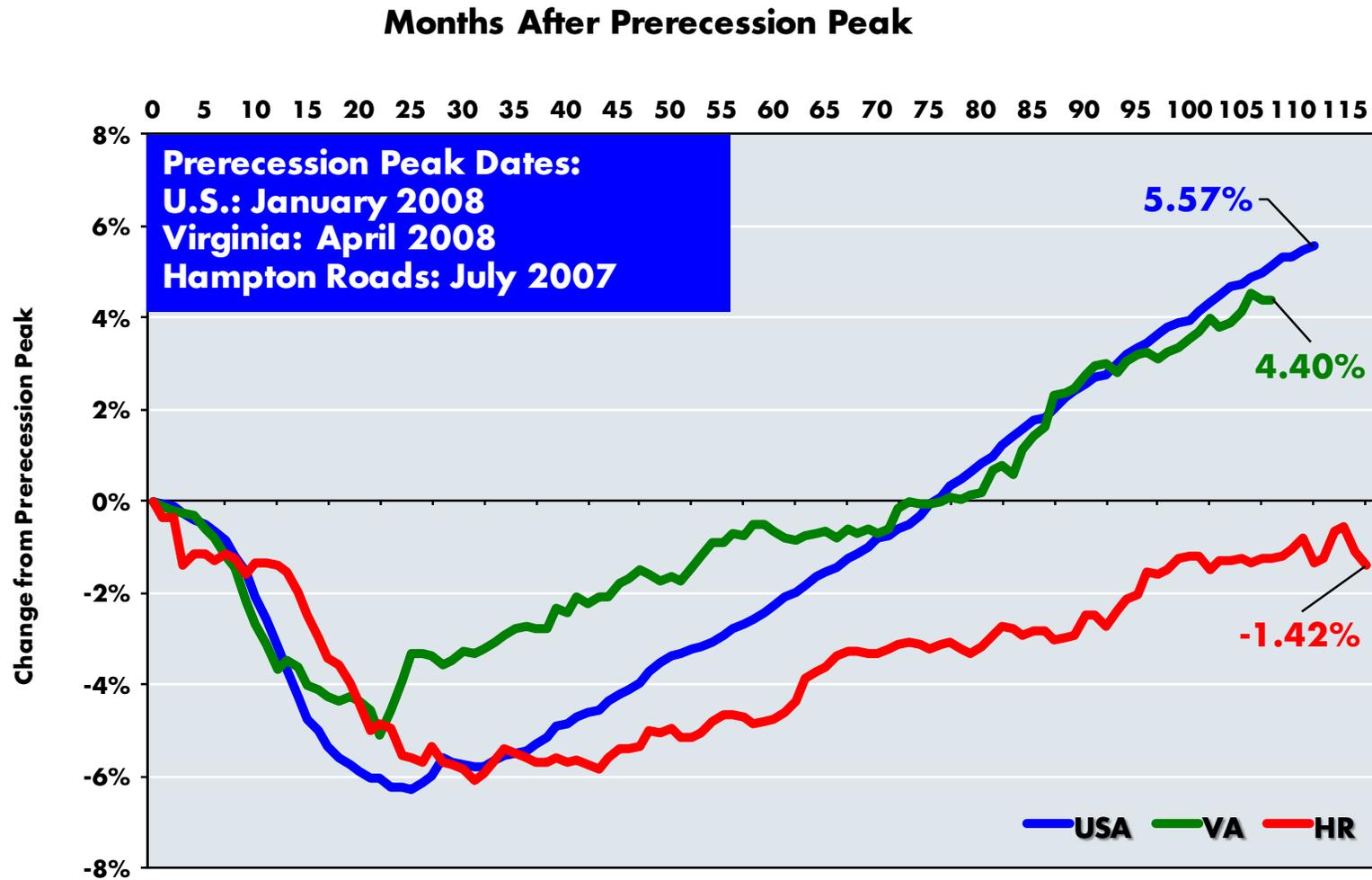
Hampton Roads is not a high-wage region in any case. In May 2016, the average hourly wage (all occupations) in our region was 6.8 percent below the national average.³ In a subsequent chapter, we will explore whether this might be one reason why our region has experienced a net out-migration of residents in recent years.



³ www.bls.gov/regions/mid-atlantic/news-release/occupationalemploymentandwages_viriniabeach.htm.

GRAPH 4

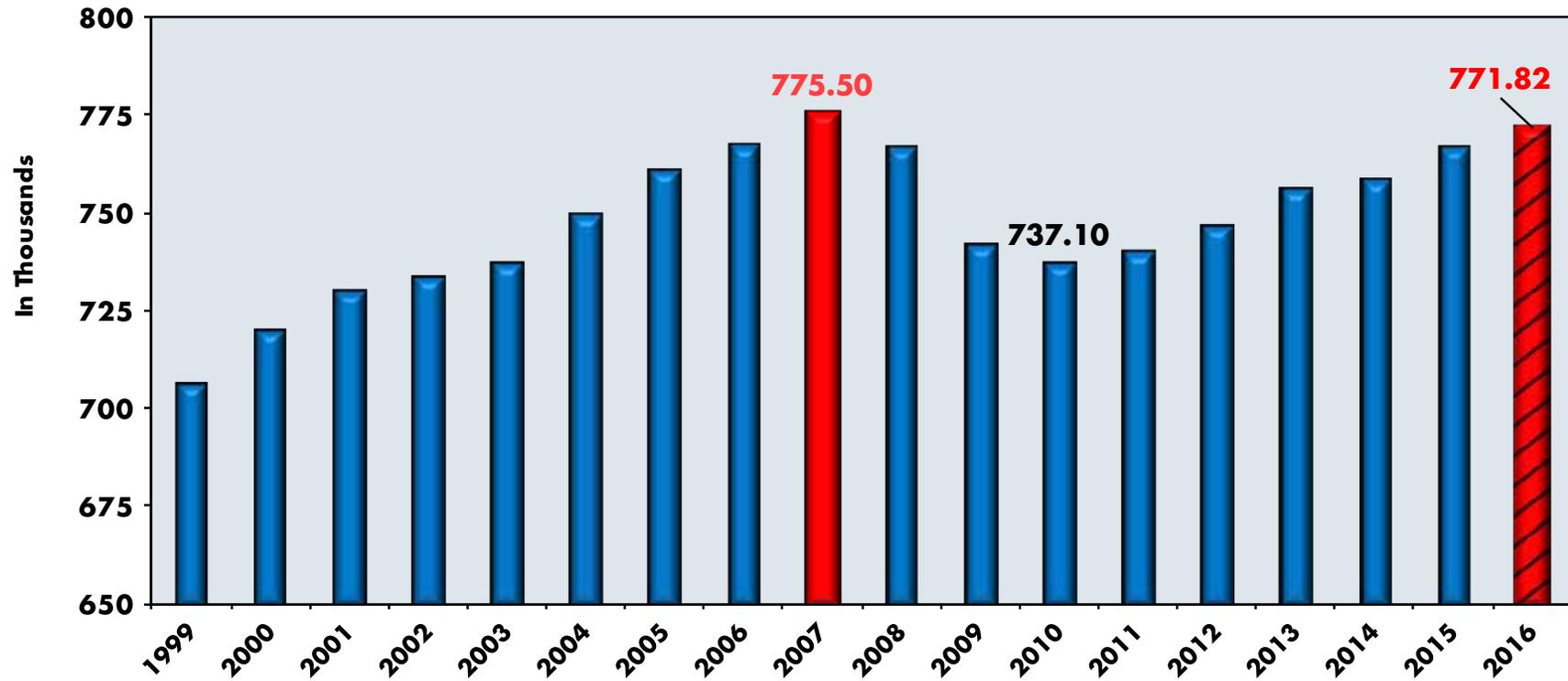
RECESSION RECOVERY IN THE U.S., VIRGINIA AND HAMPTON ROADS MEASURED BY TOTAL JOBS RESTORED, 2007-2017*



Sources: Bureau of Labor Statistics and the Old Dominion University Economic Forecasting Project. *Data for Virginia and Hampton Roads are through April 2017.

GRAPH 5

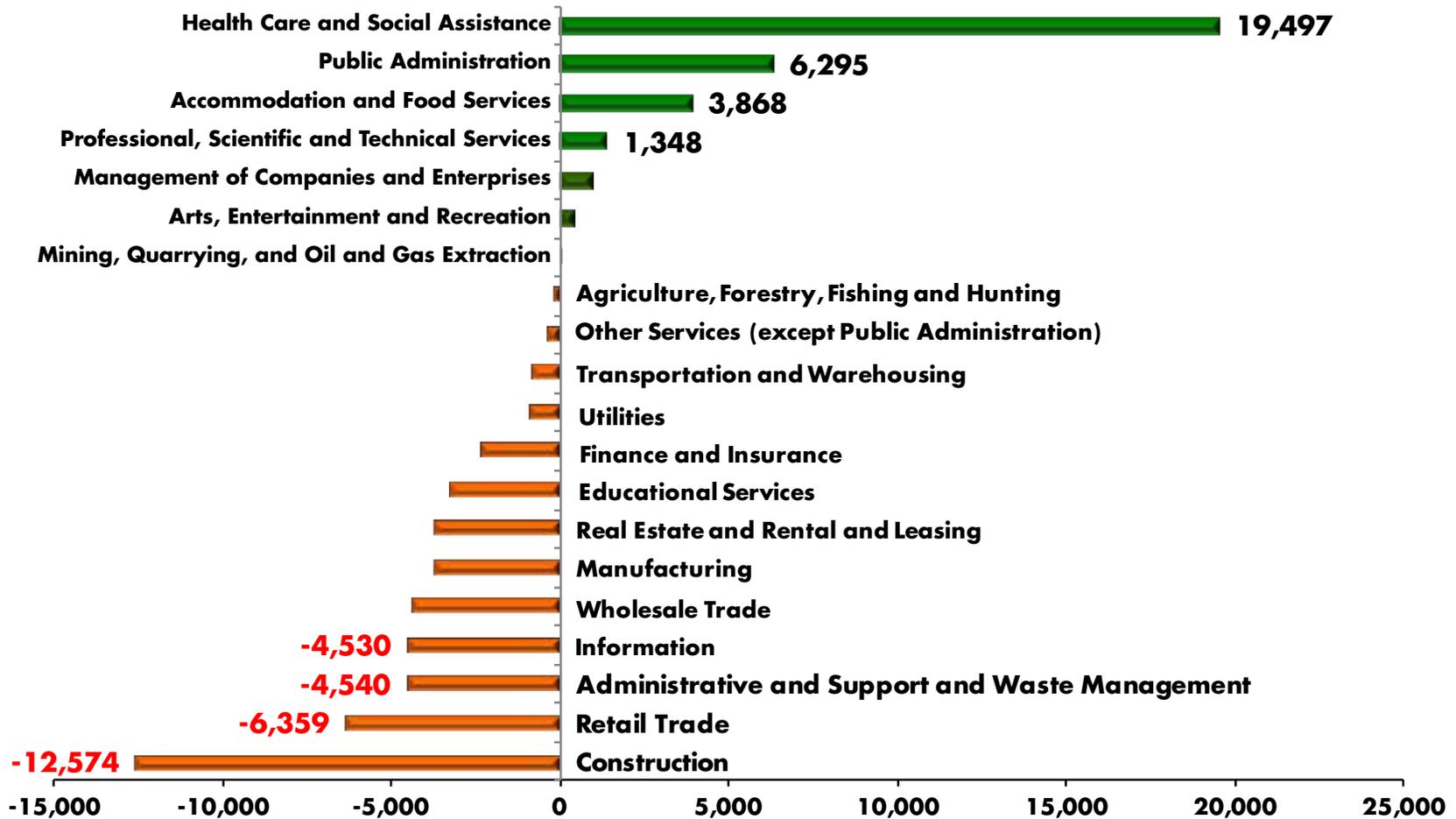
CIVILIAN EMPLOYMENT IN HAMPTON ROADS, 1999-2016 (000S)



Sources: U.S Department of Labor CES Data and the Old Dominion University Economic Forecasting Project (not seasonally adjusted)

GRAPH 6

CHANGE IN EMPLOYMENT BY SECTORS IN HAMPTON ROADS
FROM 1ST QUARTER 2007 TO 1ST QUARTER 2016 (VIRGINIA PORTION OF HAMPTON ROADS)



Sources: Virginia Employment Commission: Covered Employment and Wages by Private Ownership and the Old Dominion University Economic Forecasting Project

TABLE 2

AVERAGE WEEKLY WAGES IN SELECTED INDUSTRIES: HAMPTON ROADS, 2007 AND 2016

Industry	1st Quarter 2007	1st Quarter 2016	Changes
Management of Companies and Enterprises	\$1,268	\$2,503	\$1,235 (97.4%)
Finance and Insurance	\$1,093	\$1,400	\$307 (28.1%)
Public Administration	\$1,044	\$1,283	\$239 (22.9%)
Professional, Scientific and Technical Services	\$1,085	\$1,277	\$192 (17.7%)
Wholesale Trade	\$902	\$1,077	\$175 (19.4%)
Information	\$891	\$1,048	\$157 (17.6%)
Administrative and Support and Waste Management	\$484	\$632	\$148 (30.6%)
Real Estate and Rental and Leasing	\$671	\$814	\$143 (21.3%)
Health Care and Social Assistance	\$716	\$854	\$138 (19.3%)
Construction	\$739	\$876	\$137 (18.5%)
Transportation and Warehousing	\$867	\$988	\$121 (14.0%)
Manufacturing	\$1,075	\$1,185	\$110 (10.2%)
Educational Services	\$681	\$781	\$100 (14.7%)
Retail Trade	\$428	\$478	\$50 (11.7%)
Accommodation and Food Services	\$258	\$304	\$46 (17.8%)
Utilities	\$1,313	\$1,202	-\$111 (-8.5%)

Sources: U.S. Department of Labor Quarterly Census of Employment and Wages for Virginia portion of the Hampton Roads area and the Old Dominion University Economic Forecasting Project

Defense Spending

Total Department of Defense (DOD) spending in Hampton Roads almost doubled from 2000 to 2011, growing at about 6.3 percent per year, compounded (see Graph 7). However, DOD spending since that time has been stagnant and even has declined in some years. We anticipate that DOD spending in Hampton Roads in 2017 will be only about \$50 million higher than its peak in 2012.

The somnolent character of defense spending in our region has reduced the proportion of our regional economic activity that one can attribute to the DOD.

Graph 8 discloses that estimated defense spending accounted for almost half of the value of our regional gross output in 2011, but since has fallen to 37.1 percent. Given this change, we might be tempted to congratulate ourselves for having successfully diversified our regional economic base, but the truth is that our diversification is due primarily to sluggish defense spending rather than a dramatic expansion in our private sector.

What happened to military employment and compensation while defense spending was remaining roughly constant? Table 3 tells us that military employment (both active duty and reserves) shrank considerably in recent years and that compensation increases for those employees also tapered off. Indeed, the total compensation paid to all military employees in Hampton Roads has declined in the very recent past.

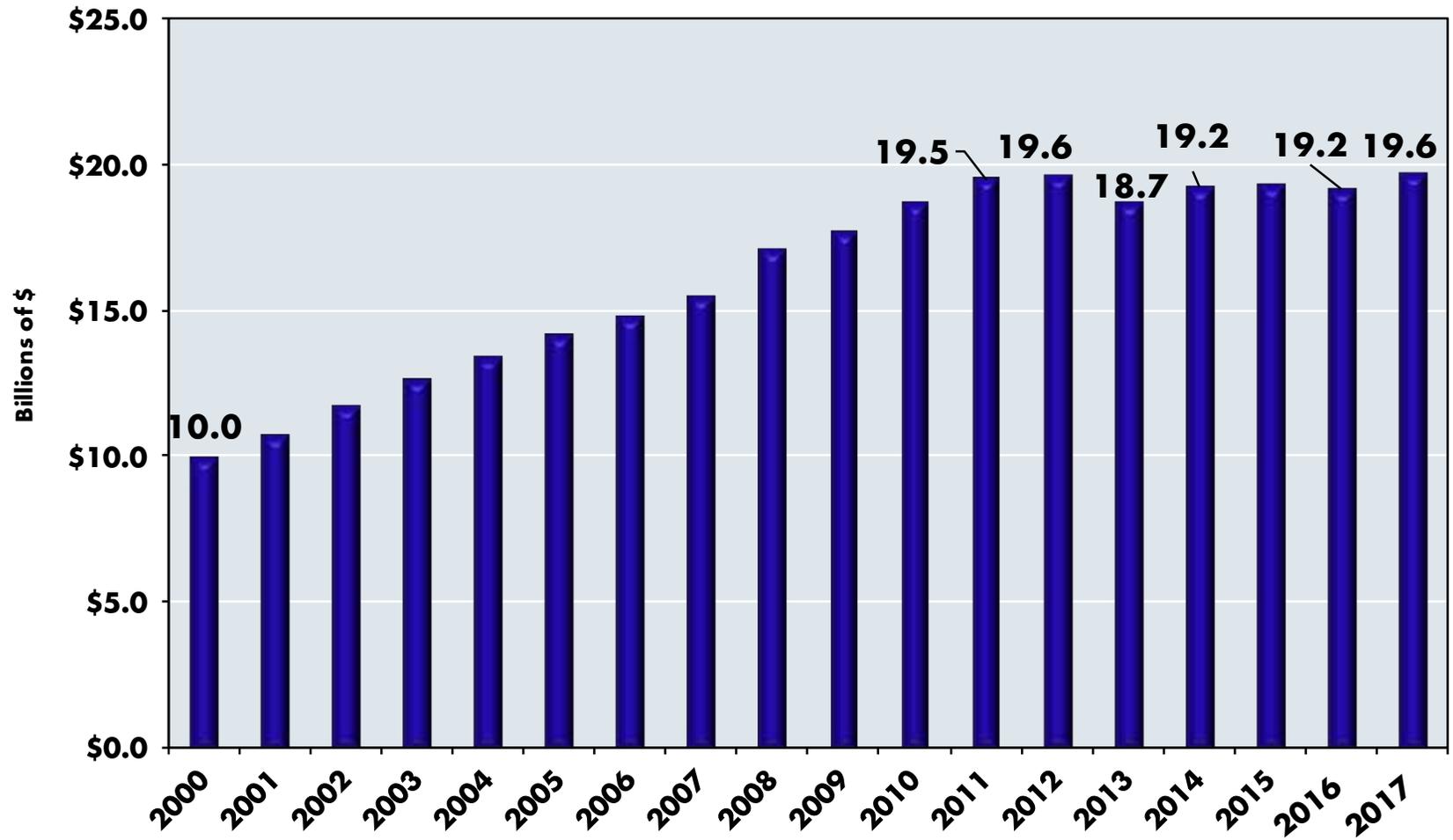
Fortunately, private-sector and nonmilitary federal activities have been much more energetic, with employment and compensation increases occurring in both of those sectors between 2010 and 2015. This helps explain why the proportion of our regional economic activity generated by DOD spending has declined by approximately 8 percent during this decade.

Table 4 is revealing because it presents compensation data on a per-employee basis. Three important inferences can be drawn. First, both overall and on a per-person basis, military compensation per individual has stagnated in our region. **Second, federal civilian employees in Hampton Roads**

constitute fiscal gold; their average compensation (a term that includes the value of fringe benefits) is more than double the private-sector average. Third, federal government budget sequestration rules that limit federal spending and federal government hiring freezes represent economic bad news for us. Whatever one's views on the efficacy of federal spending, it remains true that the typical federal civilian jobs in our region are quite valuable. Moves to reduce the federal workforce would undoubtedly negatively impact our region.

GRAPH 7

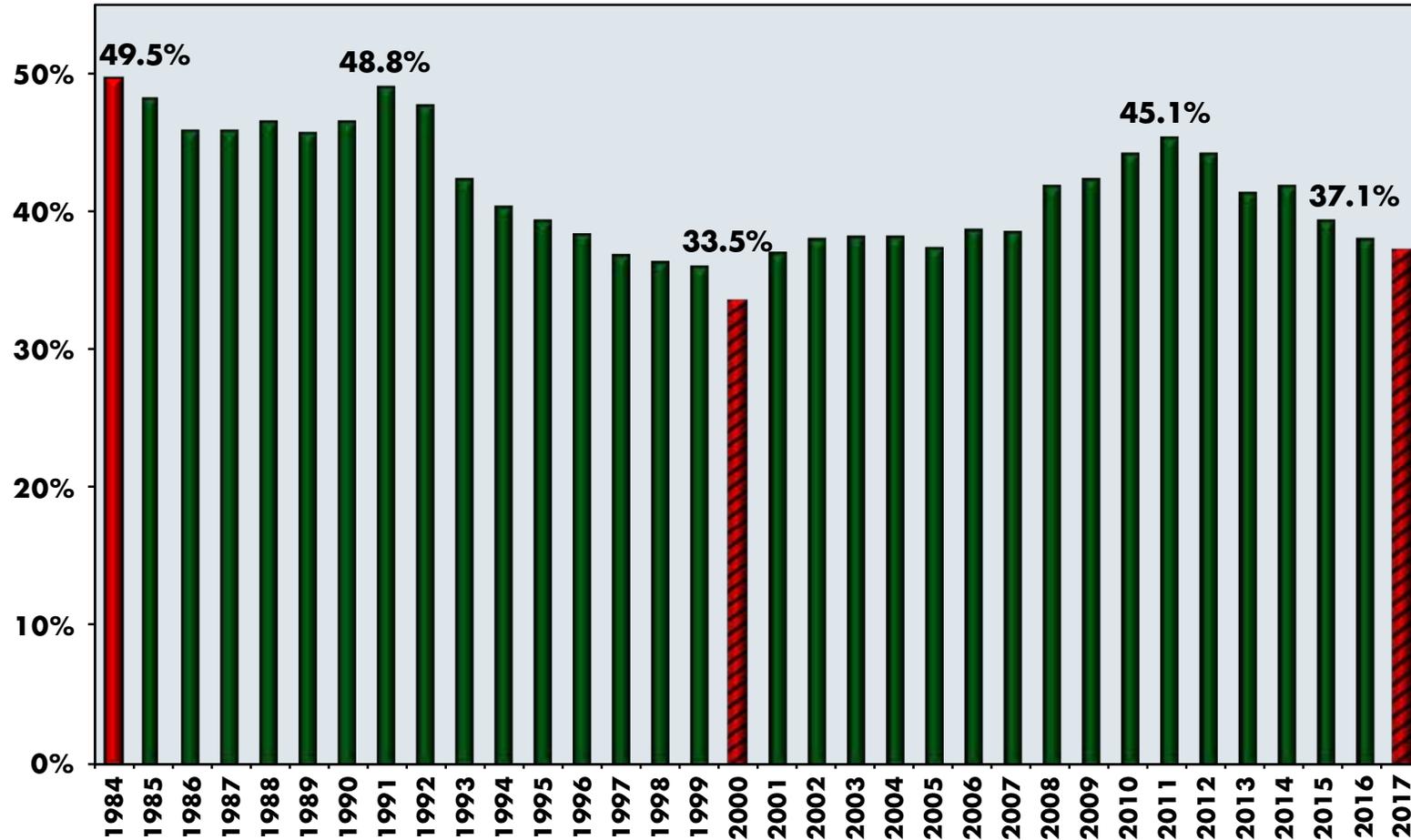
ESTIMATED DIRECT DOD SPENDING: HAMPTON ROADS, 2000-2017



Sources: U.S. Department of Defense and the Old Dominion University Economic Forecasting Project. *Includes federal civilian and military personnel and procurement. 2016 represents our estimate and 2017 represents our forecast.

GRAPH 8

GROSS REGIONAL PRODUCT ATTRIBUTABLE TO DOD SPENDING: HAMPTON ROADS, 1984-2017



Sources: U.S. Department of Defense, U.S Department of Commerce and the Old Dominion University Economic Forecasting Project. 2016 represents our estimate and 2017 represents our forecast.

TABLE 3

**GROWTH IN EMPLOYMENT AND TOTAL COMPENSATION (WAGES, SALARIES AND FRINGE BENEFITS)
FOR MILITARY, FEDERAL CIVILIAN GOVERNMENT, AND PRIVATE NONFARM SECTORS IN HAMPTON ROADS,
1991-2000, 2001-2010 AND 2010-2015**

	Percent Change 1991-2000	Percent Change 2001-2010	Percent Change 2010-2015	Percent Change 2014-2015
Military Employment	-21.3%	-13.6%	-9.9%	0.1%
Military Compensation	5.9%	61.6%	-6.7%	-0.2%
Federal Civilian Government Employment	-20.6%	13.3%	12.5%	6.5%
Federal Civilian Government Compensation	11.0%	68.6%	27.8%	10.6%
Private Nonfarm Employment	22.3%	5.1%	6.3%	1.9%
Private Nonfarm Compensation	69.3%	36.4%	17.4%	4.1%

Sources: U.S. Bureau of Economic Analysis (BEA) and the Old Dominion University Economic Forecasting Project
*BEA chooses to label compensation as earnings.

TABLE 4

**ESTIMATED AVERAGE COMPENSATION (WAGES, SALARIES AND FRINGE BENEFITS)
IN SELECTED CATEGORIES: HAMPTON ROADS, 2014 AND 2015**

	Earnings in 2014	Earnings in 2015	Percent Change 2014 to 2015
Military	\$91,531	\$91,283	-0.27%
Federal Civilian Government Employees	\$103,583	\$107,521	3.80%
State and Local Government Employees	\$59,150	\$61,088	3.28%
Private Nonfarm	\$41,279	\$42,185	2.19%

Sources: U.S. Bureau of Economic Analysis (BEA) and the Old Dominion University Economic Forecasting Project
*BEA chooses to label compensation as earnings.
Data updated on Nov. 17, 2016.

A Closer Look At Defense Spending

The data we have presented thus far concerning DOD spending in Hampton Roads signal that this spending no longer is the powerful economic growth engine for us that it used to be. Even so, Graph 9, which portrays discretionary defense spending caps for fiscal years 2012 through 2021 as amended, suggests that defense spending could increase in the future. There are significant hurdles, however, to overcome before we see increases in defense spending in Hampton Roads.

As Graph 9 illustrates, there have been several major “budget deals” done by Congress to diminish the impact of sequestration spending limits on favorite Congressional programs, one of which is national defense. The Budget Control Act (BCA) of 2011 set the original spending caps. The Bipartisan Budget Act (BBA) of 2013 provided \$63 billion in sequestration relief in FY 2014 and FY 2015, split evenly among defense and nondefense discretionary accounts. Specifically, this act increased the defense discretionary spending cap from \$498 billion to \$520 billion for FY 2014 and from \$512 billion to \$521 billion for FY 2015. In addition, nondefense discretionary spending increased from \$469 billion to \$491 billion for FY 2014 and from \$483 billion to \$492 billion for FY 2015.

Congress came back to the trough once again via the Bipartisan Budget Act of 2015 and agreed to pass sequester financial relief for FY 2016 and FY 2017. This relaxation raised the discretionary defense-spending cap from \$521 billion in FY 2015 to \$548 billion (5.18 percent) for FY 2016 and by another \$3 billion for FY 2017. Current law extends these caps through FY 2025.

It does not take a Nobel Prize winner to observe that in the current political milieu, it is difficult to determine the outcome of the budget debate. Congress must not only approve an increase in the debt ceiling and pass a budget law (which will set the table for any tax reform efforts), but must also reconcile competing defense authorization and appropriation bills. The numbers involved are not trivial. There may not be enough time in the legislative

calendar to reconcile the significant differences in policy and spending between the House and the Senate.

Comparing the authorization and appropriation bills sheds light on these differences. The BCA’s cap on national defense discretionary budget authority for FY 2018 is \$549 billion (see Graph 10).⁴ The president’s request for national defense in the FY 2018 budget was \$603 billion, \$54 billion above the BCA’s cap. The House’s version of the National Defense Authorization Act (NDAA) proposes national defense spending of \$624 billion. While the full Senate has yet to act, the Senate Armed Services Committee’s NDAA proposes to authorize a base national defense budget of \$632 billion. Regardless of the proposal, these levels are clearly well above the existing BCA caps.

Turning to the Department of Defense’s appropriations process, the president’s base budget request for FY 2018 was \$574 billion, exceeding the BCA’s caps by \$52 billion (see Graph 11). The House passed a defense appropriations bill in July 2017, setting the DOD’s base budget at \$584 billion. On the other hand, the Senate Appropriations Subcommittee on Defense has set the DOD’s base budget at \$513.1 billion. Senate Appropriations Chairman Thad Cochran noted that negotiations between the president and Congress may produce a new budget agreement, but added, “Until such time, however, it is reasonable that we move forward using fiscal year 2017 funding levels.”⁵

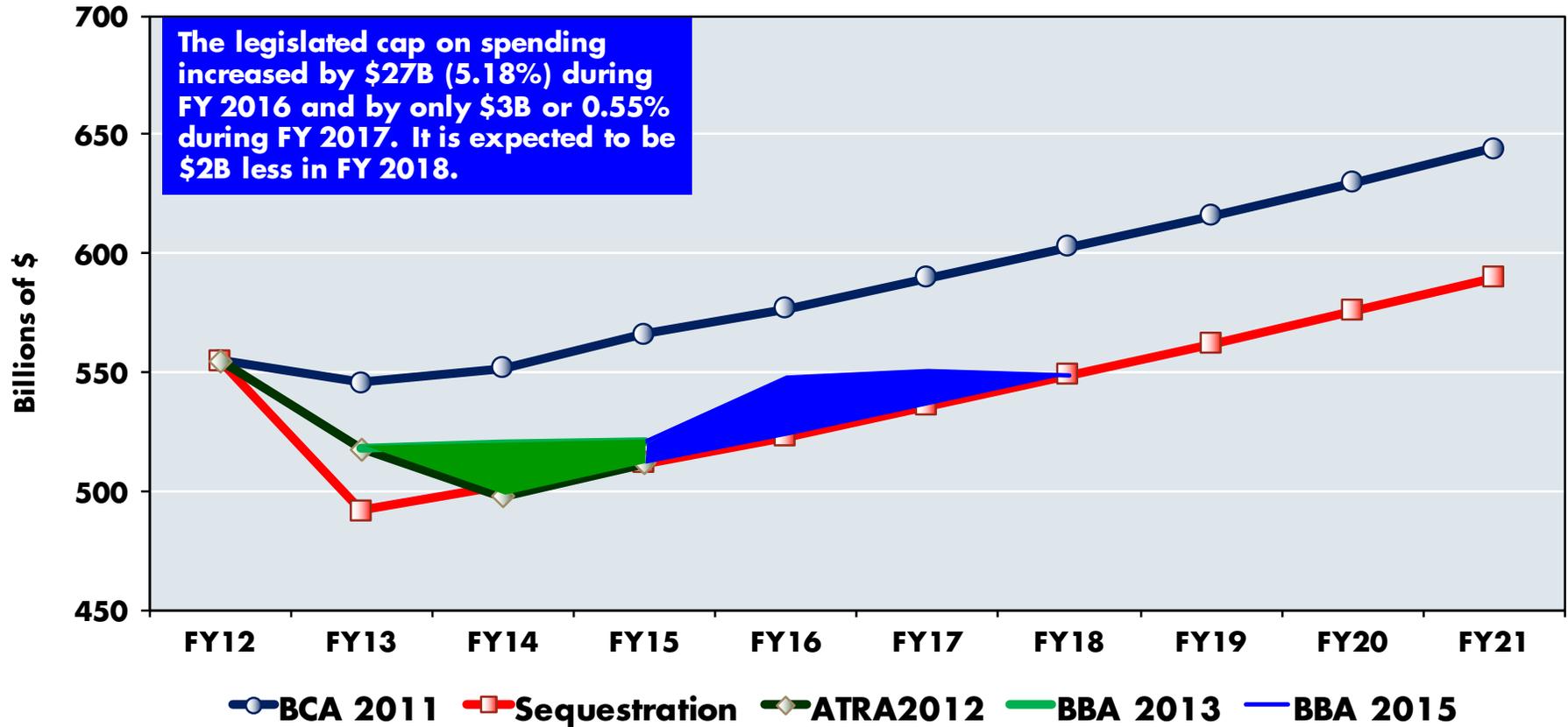
Given the significant legislative hurdles that must be cleared to fund the government, it is likely the federal government will enter the new fiscal year under a Continuing Resolution (CR). Over the last decade, the DOD has entered all but one fiscal year under a CR (see Graph 12). The most recent delay, for example, between the start of FY 2017 and the passage of a defense appropriations bill was 217 days, a delay only exceeded once since 1970. CRs adversely affect the DOD, as the spending rate is typically limited to that previous fiscal year and, with few exceptions, new program starts are prohibited. CRs also result in the delay of maintenance programs (including ship repair) and reductions in training and readiness.

⁴ The National Defense budget function (050) consists of the DOD military (subfunction 051), defense-related programs in the Department of Energy (subfunction 053) and Department of Justice (subfunction 054). DOD activities have typically been 95 percent of the national defense budget request.

⁵ <http://www.rollcall.com/news/policy/analysis-senators-writing-placeholder-defense-money-bill>.

GRAPH 9

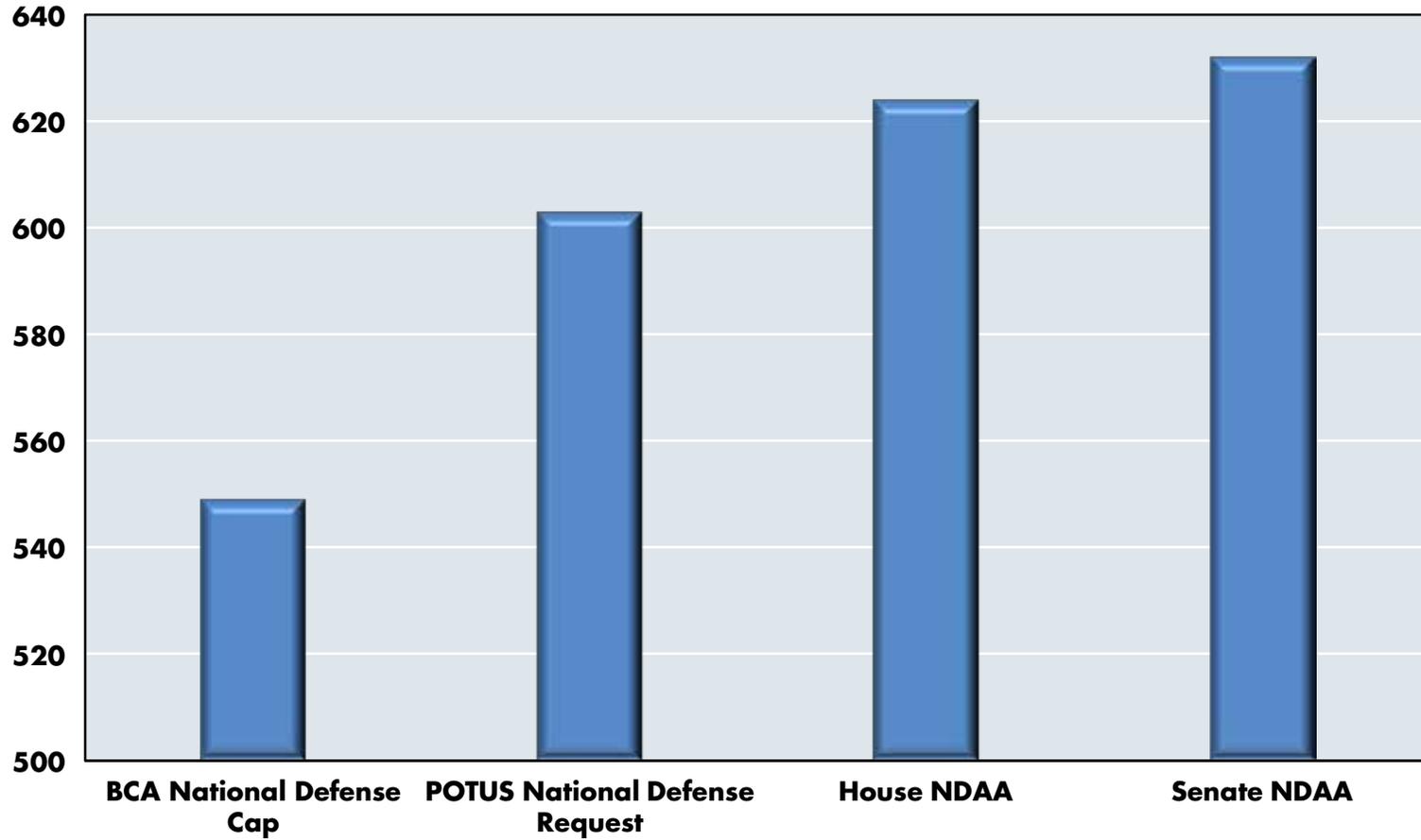
CAPS ON NATIONAL DEFENSE DISCRETIONARY SPENDING, FY 2012 TO FY 2021



Sources: BCA2011, Budget Requests for FY14, CBO Sequestration Update Report and the Old Dominion University Economic Forecasting Project

GRAPH 10

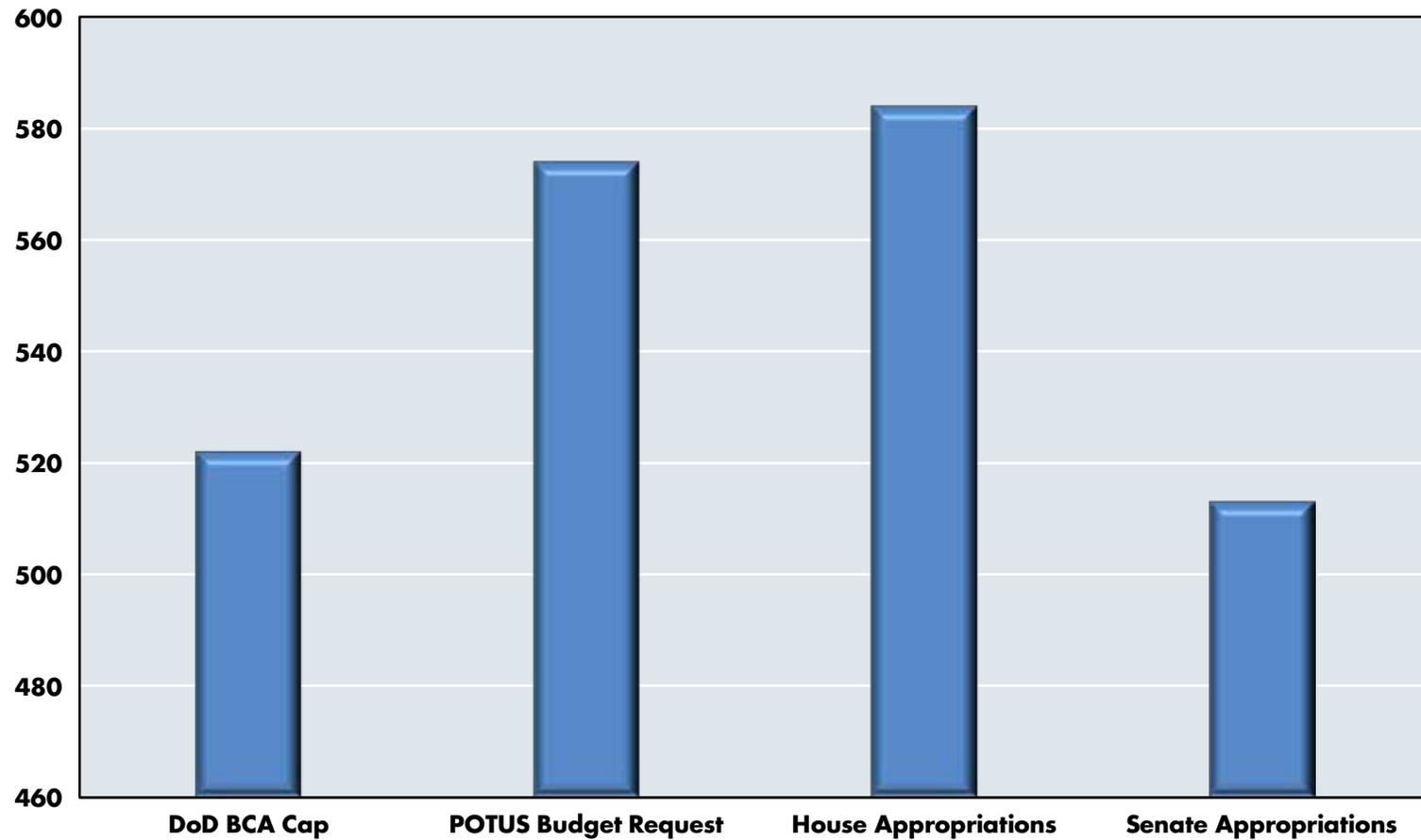
**FY 2018 – NATIONAL DEFENSE CAPS, REQUESTS AND AUTHORIZATION BILLS
(BILLIONS OF DOLLARS)**



Sources: Budget Control Act of 2011, FY 2018 Presidential Budget Request, U.S. House of Representatives and U.S. Senate

GRAPH 11

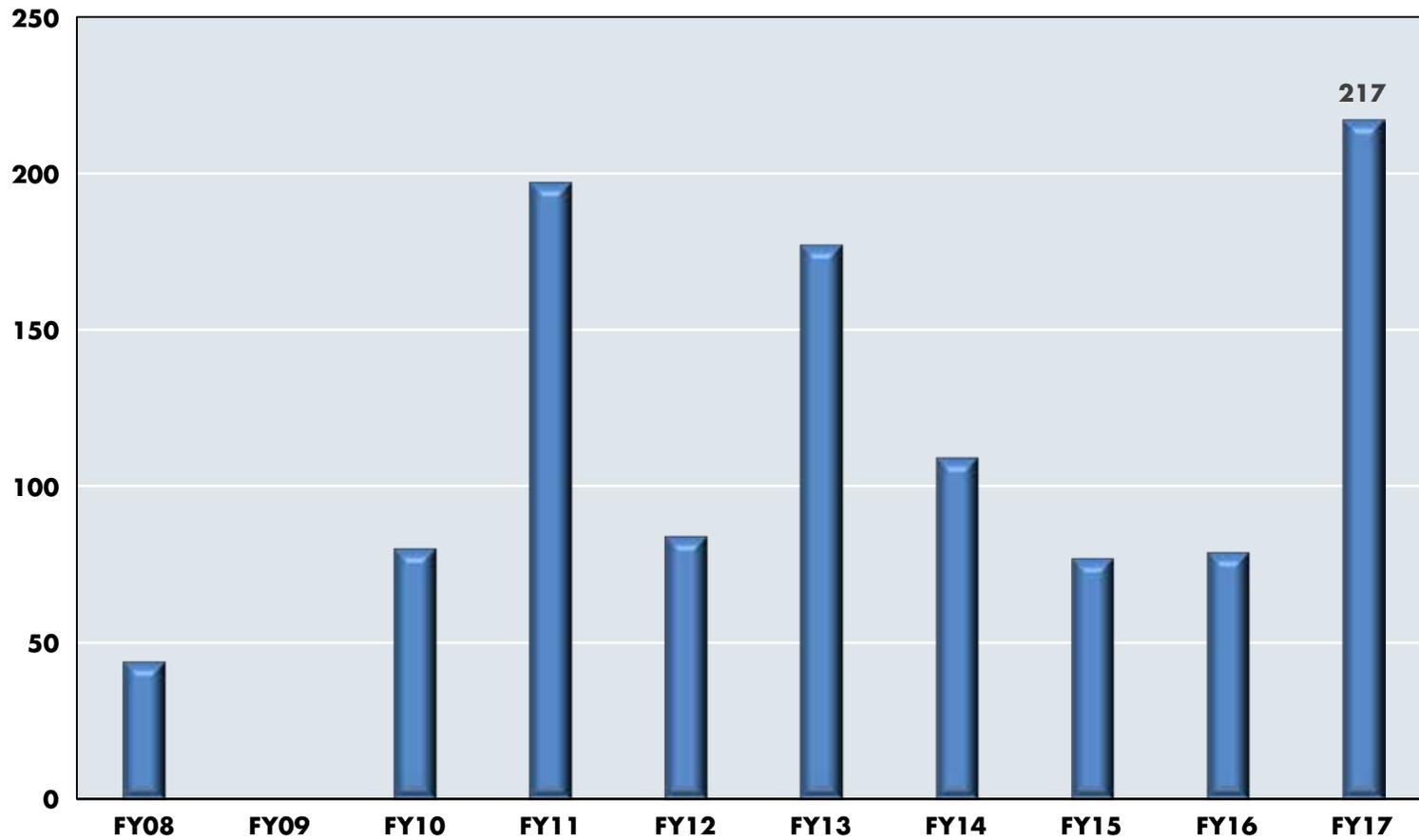
**COMPETING VERSIONS OF THE FY 2018 DOD BASE BUDGET
(BILLIONS OF DOLLARS)**



Sources: Budget Control Act of 2011, FY 2018 Presidential Budget Request, U.S. House of Representatives and U.S. Senate

GRAPH 12

LENGTH OF CONTINUING RESOLUTION FOR DOD APPROPRIATIONS (DAYS FROM OCT. 1)



Sources: Center for Strategic and International Studies and Todd Harrison (2017)

Looming over the debate on the appropriate amount of defense spending is the BCA. While members of the House and Senate have publicly acknowledged that the BCA's limits on discretionary spending are well below Congress' proposed levels, no action has been taken to amend or repeal the BCA caps. This means that even if Congress agrees to higher levels of FY 2018 defense spending, the president will be required to implement a sequester to reduce spending to the FY 2018 caps. Using the House appropriations bill as a reference point, for example, the president would be required under the BCA to order the DOD to implement an across-the-board 13 percent sequester, twice the amount of the FY 2013 sequester. To say that such a sequester would significantly harm the DOD's operations is an understatement.

While the political climate remains tense and forecasting the actions of Congress and the president is fraught with uncertainty, we can draw on previous history for a bit of good news. The genesis of the BCA was the debt ceiling debate of 2011. Congress may tie a new debt ceiling deal in 2017 to a modification of the BCA caps that would result in increased defense spending. Those hoping for a large increase in defense spending, however, may be disappointed in 2017, as the proposed increases may not materialize until well into 2018.

Additional military spending may not translate to higher personnel levels, however. Military employment in Hampton Roads during the 1980s and 1990s approximated 140,000. By 1998, it had declined to 106,000 and currently is 85,900 (see Graph 13). The DOD progressively has substituted equipment and technology for people. For example, the personnel complement of the new fleet carrier Gerald R. Ford is about 600 fewer than the older-generation carrier it is replacing.

The military services have also continued to express support for the DOD request for authorization to conduct a Base Realignment and Closure (BRAC) round in 2021. While Congress so far has not shown an appetite for another BRAC round, if other policies result in significant increases in the federal deficit, then we may see Congress authorize the DOD to close and realign bases to generate savings that then can be invested in force structure or readiness requirements. We remain cautiously optimistic about the role of Hampton

Roads in national defense and continue to urge policymakers to be proactive in preparing for the next (and we believe, inevitable) round of BRAC.

The DOD is behaving very much like a private-sector business in this regard. **Confronted with rapidly escalating personnel costs (especially related to health care and pensions), the DOD is automating and substituting technology for people. Faced with an abundance of infrastructure, the DOD is seeking to reduce its footprint to reduce costs.** One should not lose sight of the economic ramifications of this behavior for our region. Falling numbers of active-duty military personnel will translate into lower expenditures on a wide range of regional items, from pizzas to new homes. True, increased DOD expenditures will be made on equipment and technology, but not necessarily in Hampton Roads. The change in the DOD's mixture of expenditures does not bode well for us unless it is counteracted by an expansion of the fleet, or added emphasis upon special forces such as those trained at the Joint Expeditionary Base Little Creek-Fort Story.

Taking a longer view, however, it is not a certainty that defense spending will increase significantly in Hampton Roads over the next decade. Graph 14 models some of the possibilities (with the solid red line representing the current sequestration world).

- First, Congress and the president could agree on rapid and sustained increases in defense spending that raise national defense expenditures by 5 percent annually (the blue dashed line in Graph 14). This could include a massive shipbuilding program to reach a fleet size of 350 ships; increased production of the F-35A and movement of the F-35B and F-35C into full-rate production; Army and Marine Corps growth to match 2007 personnel levels; and new procurement to replace aging armor, helicopters and other weapons systems.
- Second (and what one might label a Hades scenario), Congress and the president agree on significant cuts to corporate and personal taxes coupled with large expenditures on infrastructure investment and defense expenditures. All of this occurs within two years. This results in significant increases in the federal deficit and stirs the fires of price inflation. The Federal Reserve reacts by increasing interest rates to dampen the price inflation. Bond yields spike upward and interest rates generally rise. (Do you remember the prime rate exceeding 15 percent early in the 1980s?) Over time, required federal government debt service payments crowd out discretionary expenditures, including defense. The end result? DOD expenditures eventually flatten and we enter a new round of base closings (BRAC). This dystopian world is represented by the dotted red line in Graph 14.
- Third, tax reform, infrastructure spending and defense spending compete for attention and resources in this future. Faced with this pressure, Congress modifies the Budget Control Act spending caps on a two-year cycle. The Navy remains at 300 ships and shelves expensive shipbuilding plans. The Air Force continues to buy the F-35A, while the F-35B and F-35C remain in low-rate initial production. While the downsizing of the Army and Marine Corps halts at current levels, no significant increases in active-duty military personnel occur through 2022. Once again, increasing fiscal pressure results in a new BRAC round that significantly cuts the DOD footprint. Facilities such as Oceana Naval Air Station go on the chopping block. The dotted green line in Graph 14 depicts this view of the world.

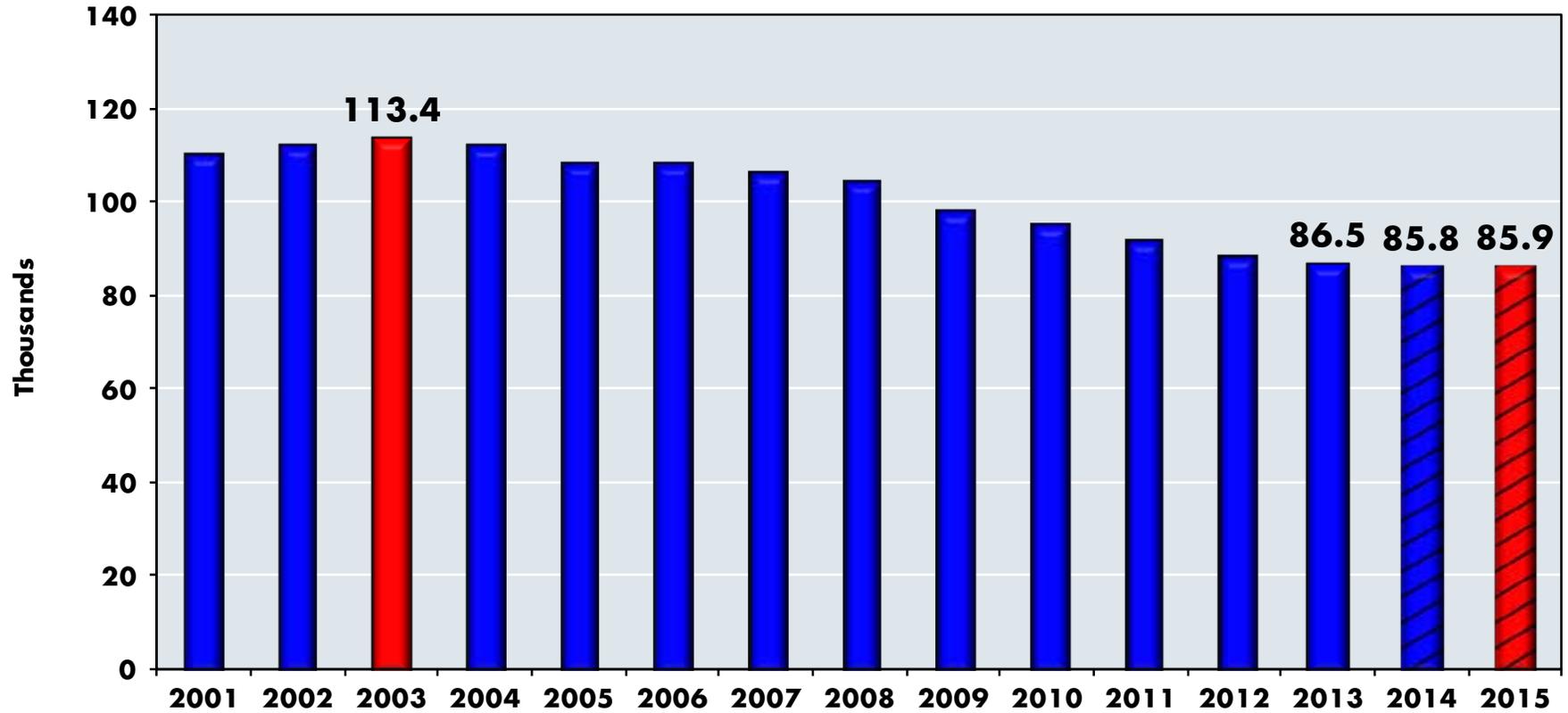
In the short run, however, potential increases in DOD funding are good news. For example, the FY 2018 budget for ship maintenance and repair may be as

much as 12 percent higher than that for FY 2017. This will stimulate activity at locations such as the Norfolk Naval Shipyard (which is located in Portsmouth and one of the largest shipyards in the world), BAE and Huntington-Ingalls. The proposed increases in operational readiness, which include increases in the procurement of parts, supplies and maintenance contracts, will lead to increased regional spending. Looking forward, a new defense strategy and proposals for increasing the force structure will likely also increase shipbuilding and ship repair and maintenance, though we caution that these effects are not likely to appear until well into 2018 and 2019.



GRAPH 13

MILITARY EMPLOYMENT IN HAMPTON ROADS, 2001-2015



Sources: Bureau of Economic Analysis and the Old Dominion University Economic Forecasting Project

GRAPH 14

POSSIBILITIES OF A CHANGE IN CAPS ON DOD DISCRETIONARY SPENDING, FY 2012 TO FY 2021



Sources: BCA2011, Budget Requests for FY14, CBO Sequestration Update Report and the Old Dominion University Economic Forecasting Project

Employment And Unemployment

Since the Great Recession, Hampton Roads has recorded unemployment rates higher than our historical average. Nevertheless, our unemployment rate has been lower than that of the nation (see Graph 15). However, the gap between the national and Hampton Roads unemployment rates has been shrinking and in April 2017 our rate was the same as the national rate.

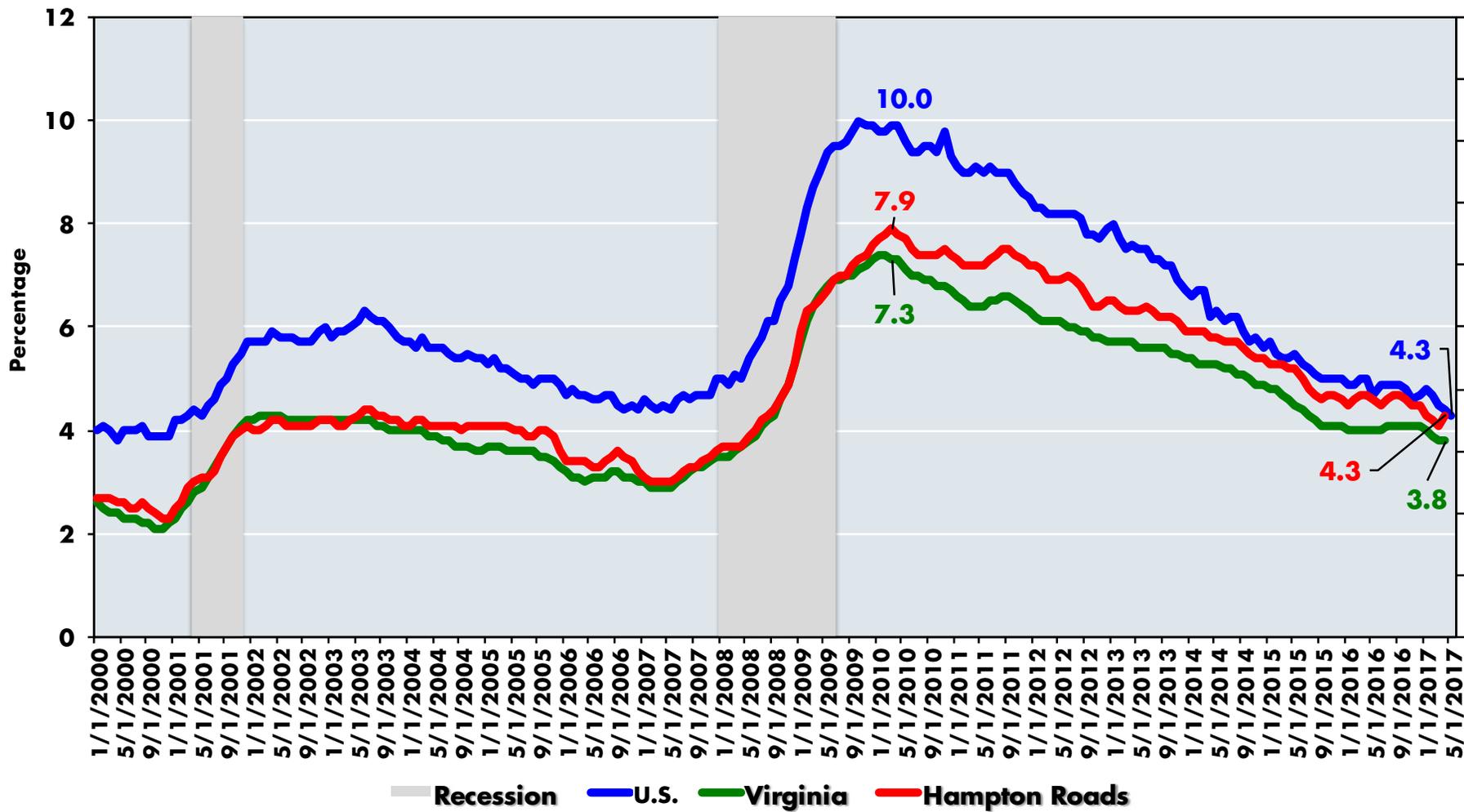
While the unemployment rate has fallen year-over-year in Hampton Roads and the labor force has expanded, the region continues to struggle to generate job growth. Recently released data from the BEA show that nonfarm employment has fallen over the last several months. The preliminary data for July 2017 suggest that nonfarm employment has fallen back to levels last seen in June 2015 .

Let's dig deeper. Graph 16 tells us that initial monthly unemployment claims have declined considerably since their peak in 2010 and now are smaller than the prerecession low observed in December 2007. **Most of the people looking for jobs in our region have found them. If there is a problem with this rosy scene, it is that the proportion of people of prime working age who have stopped looking for jobs has increased, both in Hampton Roads and nationally.** These individuals are not counted as unemployed because they are not looking for a job. The net result is a curious combination of a falling unemployment rate even while we have a rising number of people not working.



GRAPH 15

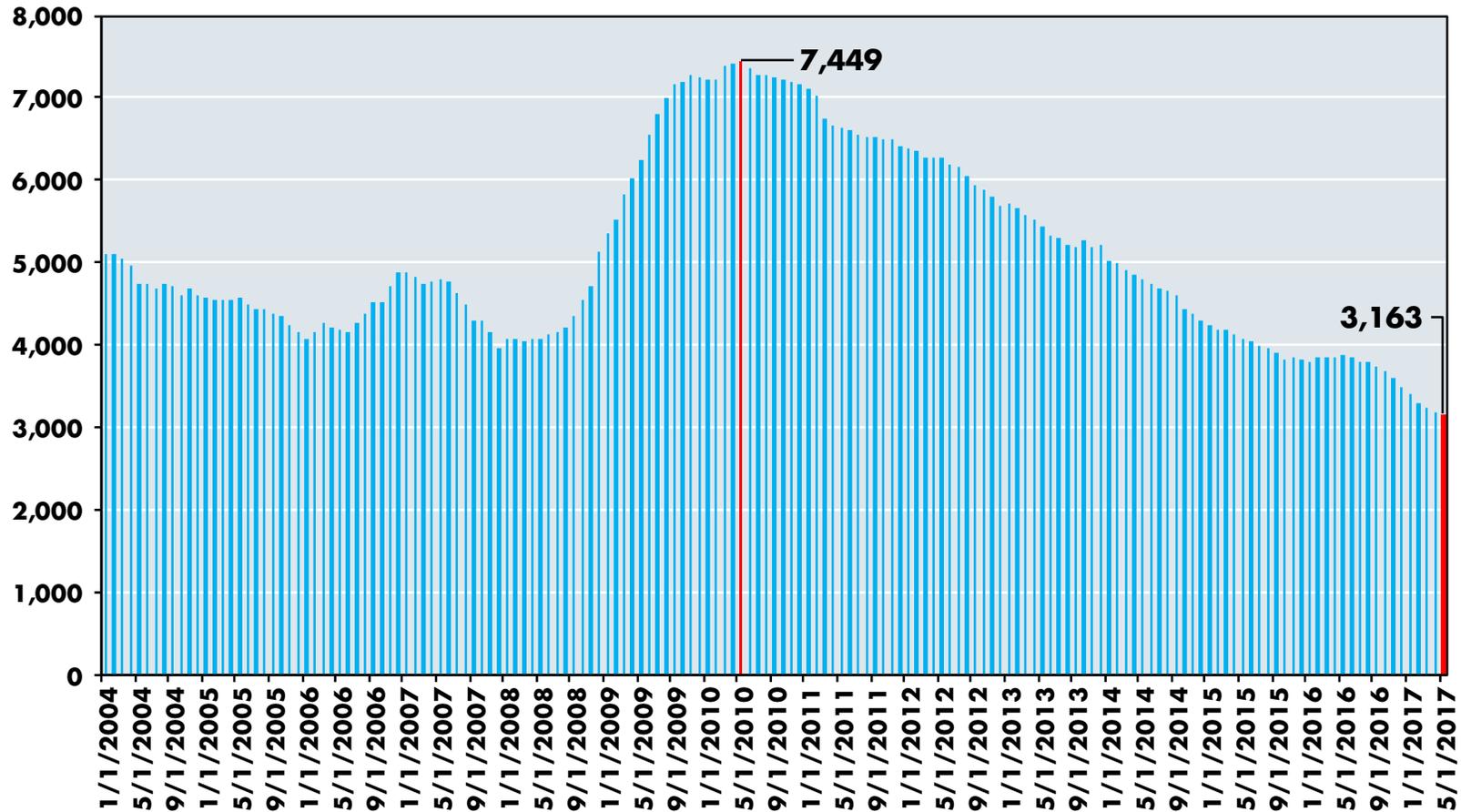
UNEMPLOYMENT RATES: U.S., VIRGINIA, HAMPTON ROADS, 2000-2017



Sources: Bureau of Labor Statistics and the Old Dominion University Economic Forecasting Project

GRAPH 16

MONTHLY NEW UNEMPLOYMENT CLAIMS: HAMPTON ROADS, JANUARY 2004 - MAY 2017 (12-MONTH MOVING AVERAGE)



Sources: Virginia Employment Commission and the Old Dominion University Economic Forecasting Project

The Port

The Port of Virginia has continued to excel. Activity and volumes at the Port rebounded smartly from Great Recession lows and the Port itself now is being managed more efficiently. It has improved its handling of cargoes, is pricing its services more prudently than in the past and is welcoming capacious new ships that carry more than 13,000 20-foot equivalent units (TEUs).

Graphs 17 (general cargo tonnage) and 18 (20-foot equivalent units) track port activity. Recovery from the Great Recession began to occur in 2011 and 2012, and general cargo tonnage increased by 4.5 percent in 2016. Twenty-foot equivalent containers increased 4.8 percent. Note that Port activity now consistently expands at an annual rate that exceeds the economic growth of the United States, Virginia and Hampton Roads.

The Port has become one of the region's more productive economic engines and a variety of studies attribute tens of thousands of jobs throughout Virginia to its activities. However, we need to note that its TEU market share in 2017 is slightly lower than it was in 2013 and that the Port appears to have lost market share to competitor ports such as Charleston and Savannah (see Graph 19).

Graph 20 contains good news, however, in the form of the Port's increasing ability to serve its customers via rail. Such customers are far enough away from the Port that it usually is uneconomic to serve them via trucks. These "middle of the country" customers can be served by several different ports. The fact that the Port of Virginia is winning more of this discretionary business is good news.

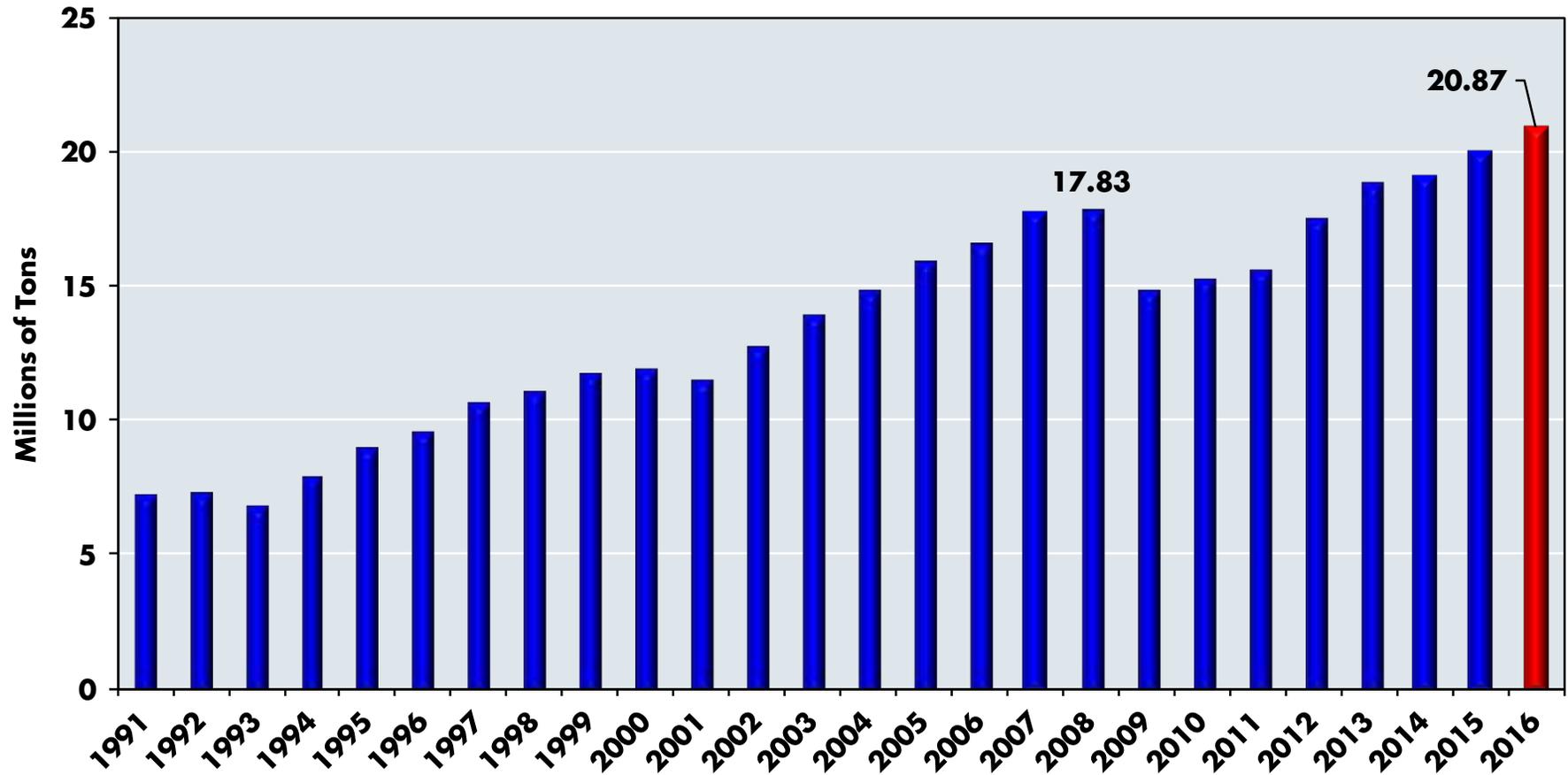
Ultimately, the ability of the Port to expand and excel critically depends upon the Commonwealth's transportation infrastructure (for example, the completion of an interstate-grade highway between Hampton Roads and Raleigh-Durham); the continued dredging of the Port so that it can handle larger ships, and the modernization of its equipment and operational procedures, to name only several of the Port's needs. None of these can be accomplished without significant investments.

Reality is that the Port (and Hampton Roads) operates in a highly competitive economic world that does not stand still. More than most institutions in our region, the Port stands on the front lines of the competition. Either we move forward with the Port, or we will soon find ourselves moving backward.

The Port of Virginia announced a major expansion project that will provide momentum for continued growth and progress at its Norfolk International Terminal (NIT) South Optimization and Virginia International Gateway (VIG) II. The two projects attracted \$670 million in support from the General Assembly. Therefore, by 2020, the Port will have the capacity to process 1 million additional container units, a 40 percent increase overall.

GRAPH 17

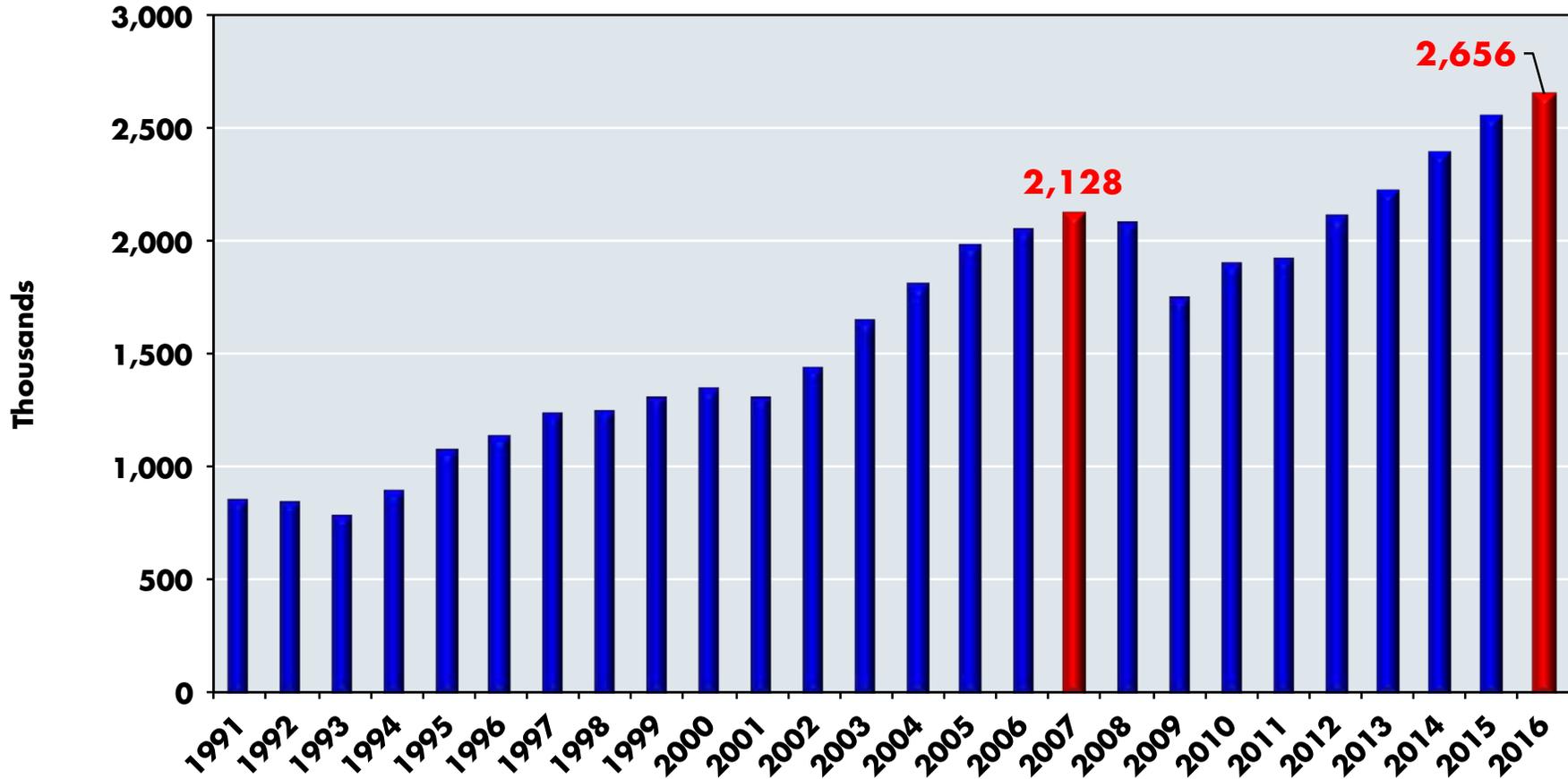
GENERAL CARGO TONNAGE: PORT OF VIRGINIA, 1991-2016



Sources: Port of Virginia and the Old Dominion University Economic Forecasting Project

GRAPH 18

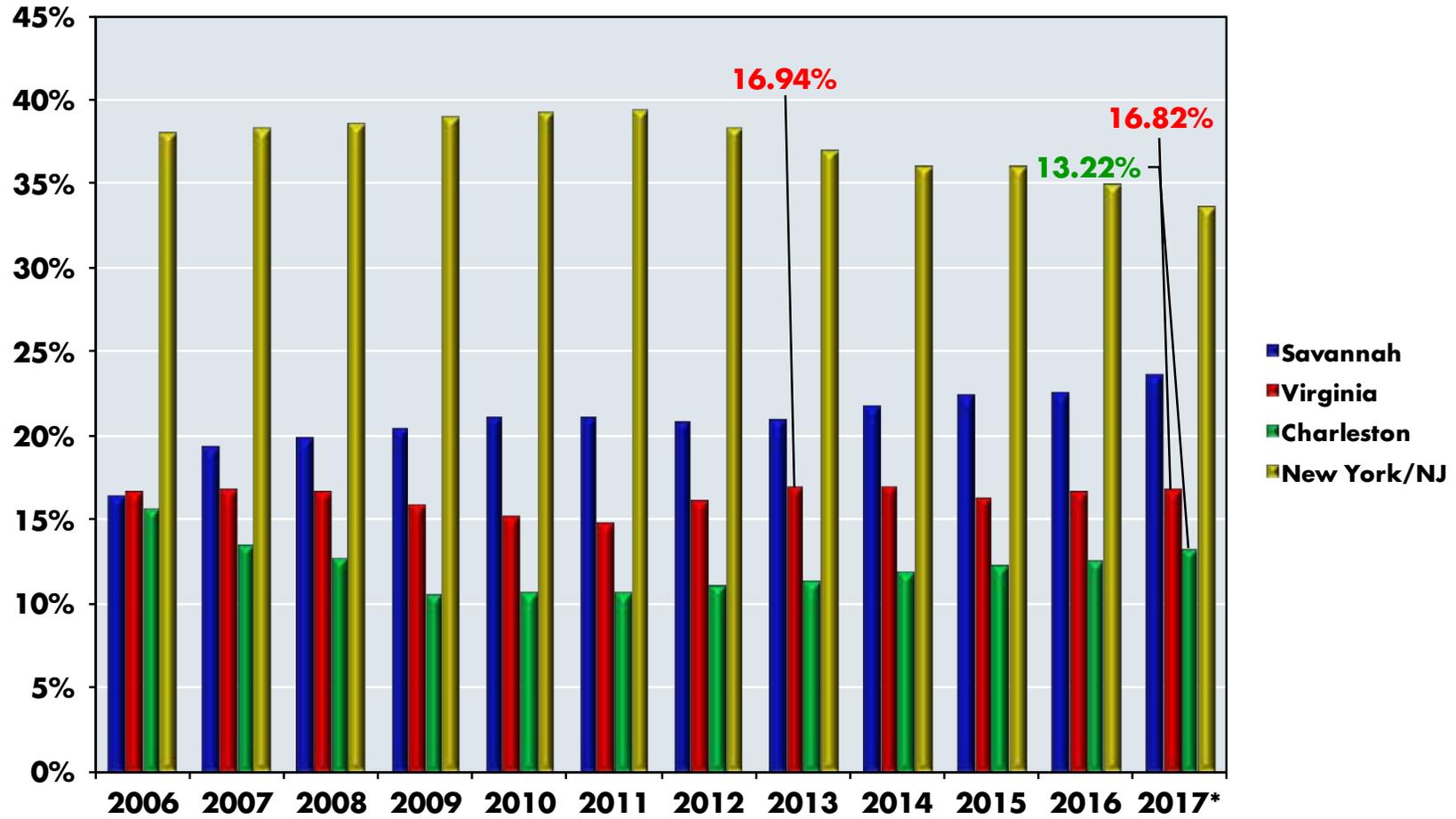
PORT OF VIRGINIA HISTORICAL 20-FOOT EQUIVALENT UNITS, 1991-2016 (000S)



Sources: Port of Virginia and the Old Dominion University Economic Forecasting Project

GRAPH 19

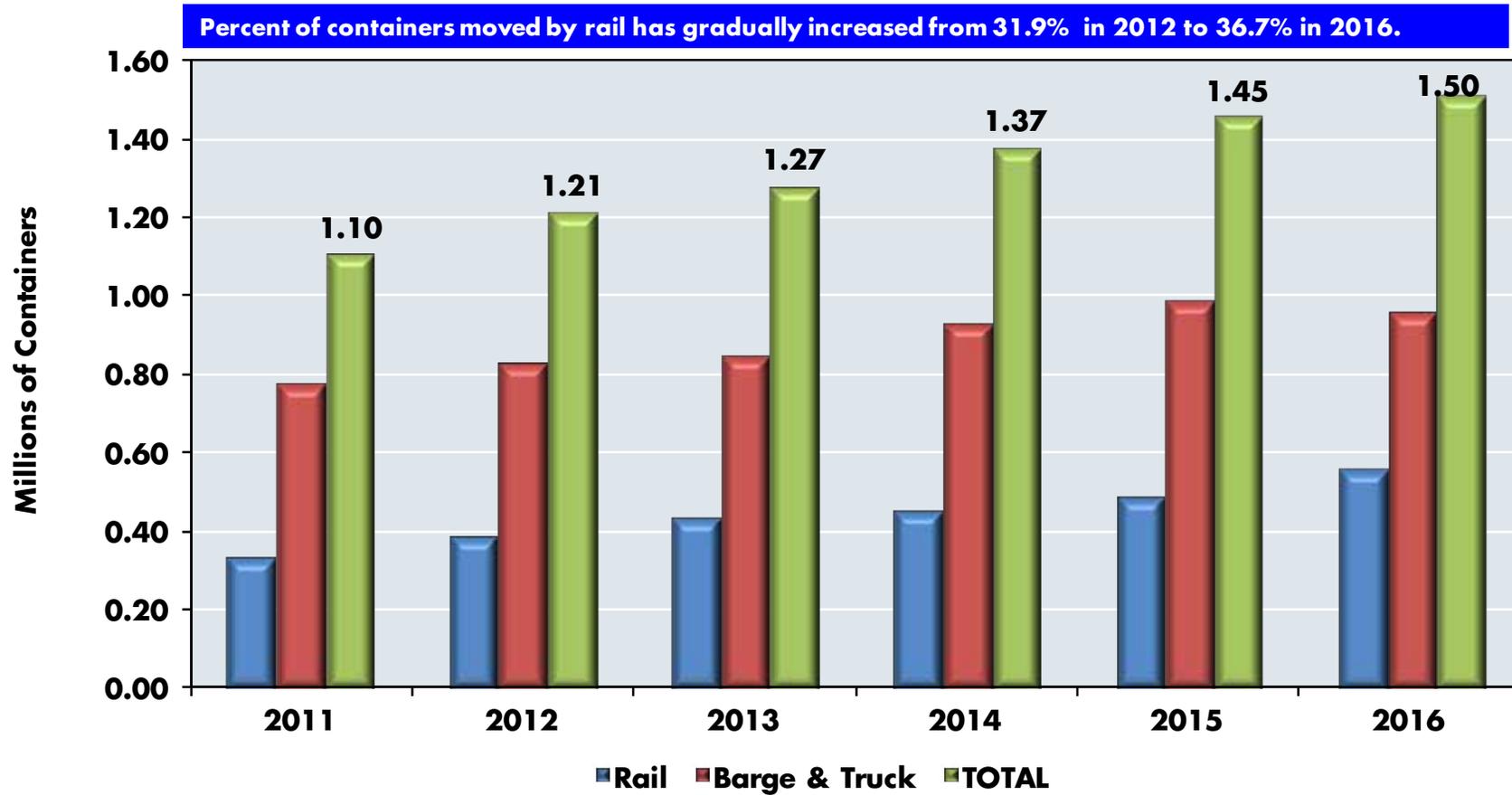
EAST COAST PORT MARKET SHARES OF LOADED TEU CONTAINERS, 2006-2017



Sources: American Association of Port Authorities and the Old Dominion University Economic Forecasting Project. Market shares exclude TEUs for Philadelphia, Miami, Palm Beach and Port Everglades. *2017 data are through April 2017.

GRAPH 20

MOVEMENT OF CONTAINERS AT THE PORT OF VIRGINIA BY TYPE OF TRANSPORTATION, 2011-2016



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

The Hotel Industry

Three factors punished the hotel industry in Hampton Roads between 2008 and 2012. First, hotel patronage is sensitive to the general state of the economy and declined with the downturn in economic activity. Second, the number of hotel rooms demanded is visibly affected by the willingness of governmental units to pay for travel and, simply put, they stopped paying for as many employee trips. Third, both public and private bodies increasingly have been utilizing technology such as Skype to substitute electronic connections for in-person meetings.

The confluence of these three factors can be seen in operation in Graph 21. Real, after-inflation hotel revenues fell in Hampton Roads by \$58.77 million between 2007 and 2013 (17.2 percent). The industry has recovered admirably since then, but in 2016, real revenues still trailed their previous high in 2007 by more than \$7 million. Further, the sudden emergence of firms like Airbnb as a competing factor could dampen further revenue increases.

Another factor affecting the hotel scene has been the shrinking supply of hotel rooms in our region since 2010 (see Graph 22). To generate additional revenue from a smaller cohort of rooms, hotels must charge higher prices. By and large, the regional lodging industry recently has been able to push its prices upward, but further action in this regard is likely to be disciplined by new rivals such as Airbnb.

The emerging prosperity of the hotel industry has not been shared equally across Hampton Roads. One can see in Graph 23 that since the turn of the century, relative to other cities, Virginia Beach and Chesapeake/Suffolk have gained market share, while Williamsburg (the Historic Triangle) has lost significant market share. The good news for Williamsburg is that the long-term decline may have halted.

Perhaps the single most informative indicator of the health of hotels and motels is revenue earned per available room (REVPAR) because it incorporates both supply and demand influences. Table 5 reports REVPAR in several important regional markets, as well as for Virginia and the United States, in 2007 and

2016. REVPAR in several of these markets (adjusted for inflation) remained lower in 2016 than it was in 2007. Virginia Beach and Williamsburg are exceptions. This could be construed as good news for Williamsburg because it is earning more “real” REVPAR on its reduced patronage. As Graph 24 reveals, Williamsburg’s rising real REVPAR is the result of this submarket supplying fewer hotel rooms (down 16.3 percent since 2001) rather than a significant change in the number of rooms occupied (down, but only 1.3 percent since 2009). Supply and demand is in much closer balance in the Williamsburg submarket currently than it has been for many years.

Graph 25 focuses on the Chesapeake/Suffolk hotel submarket, which has gone through some particularly challenging times, primarily because hoteliers overbuilt capacity from 2004 through 2009. Only now is the demand for rooms in this submarket rebounding (43.8 percent since 2008) to utilize what otherwise have been large numbers of empty rooms. It will take several more years, however, before this adjustment is complete.

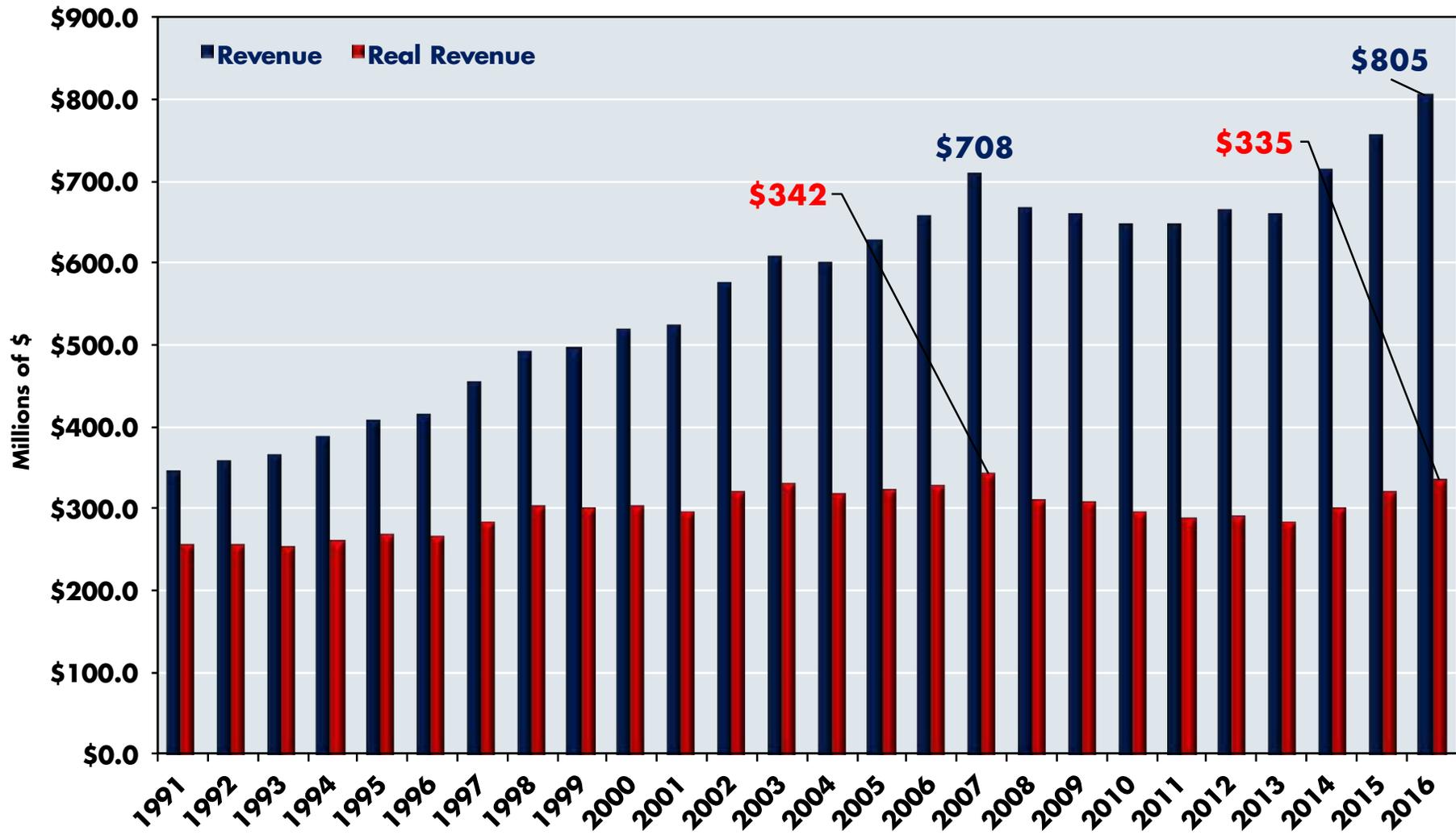
TABLE 5
REVPAR IN SELECTED HOTEL MARKETS, 2007 AND 2016

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

Sources: STR Trend Report, Jan. 24, 2017, the Old Dominion University Economic Forecasting Project and the Bureau of Labor Statistics

GRAPH 21

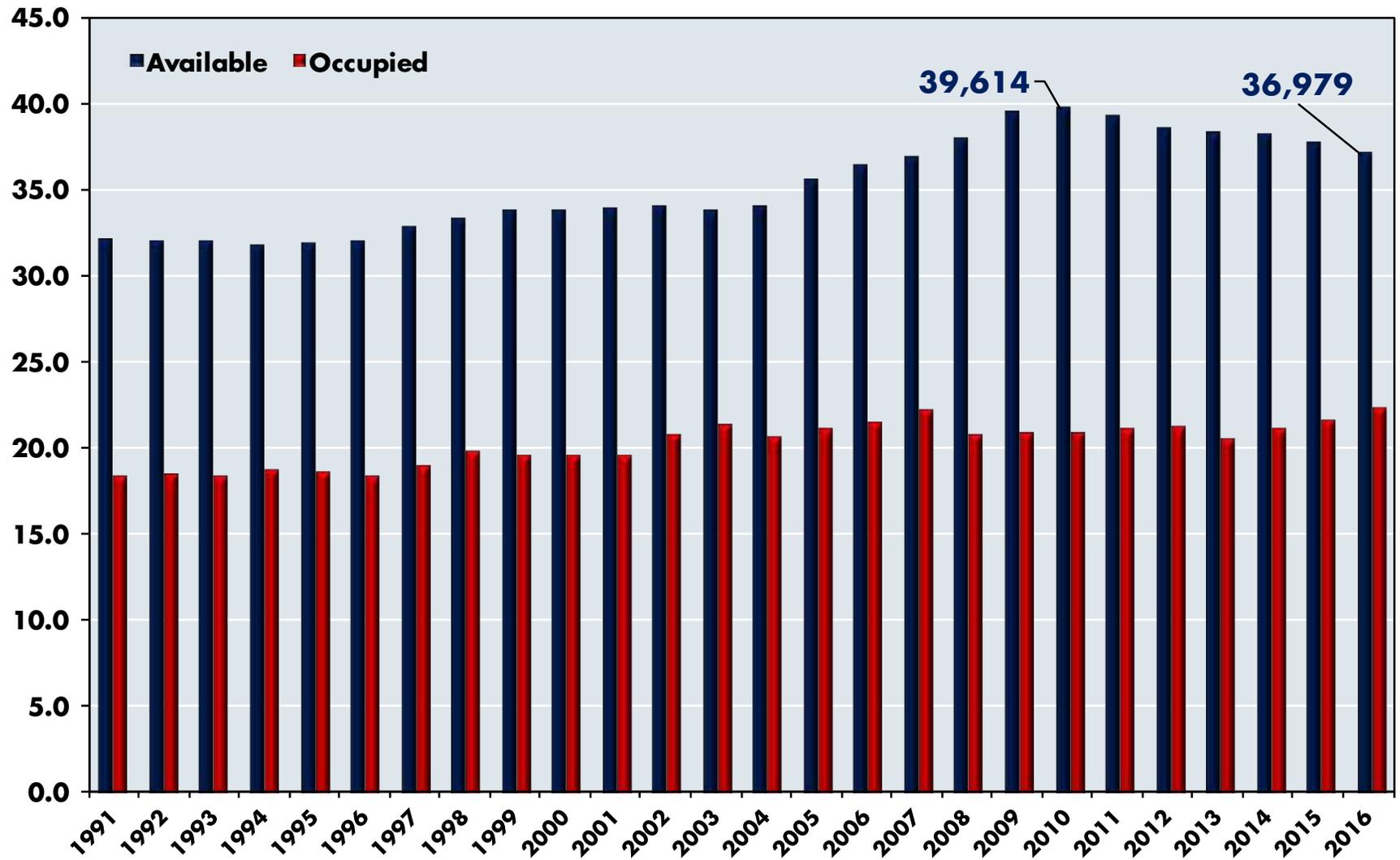
MONEY AND REAL HOTEL REVENUE IN HAMPTON ROADS, 1991-2016



Sources: STR Trend Report, Jan. 24, 2017, and the Old Dominion University Economic Forecasting Project

GRAPH 22

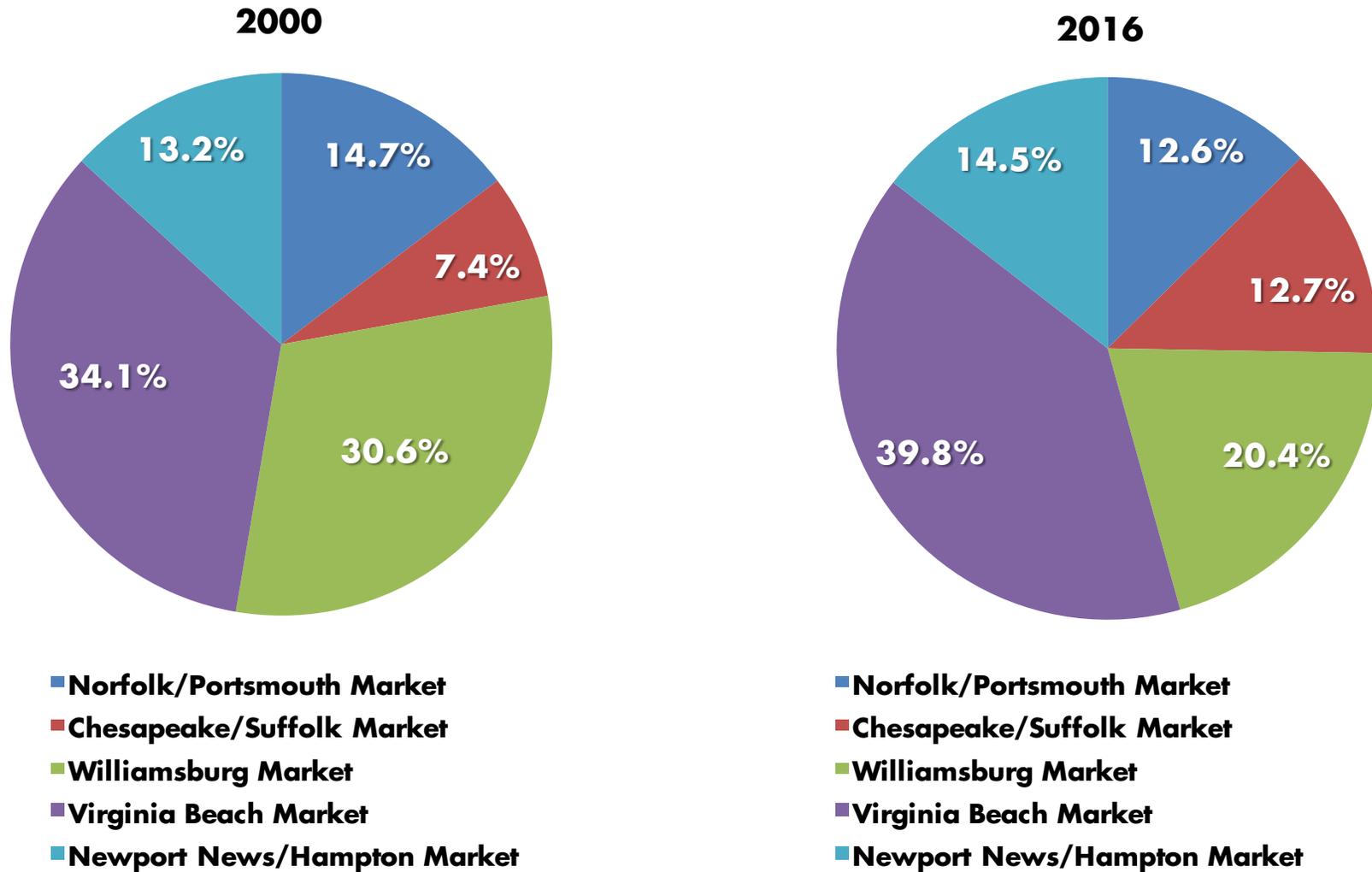
AVERAGE AVAILABLE ROOMS AND AVERAGE ROOMS OCCUPIED: HAMPTON ROADS, 1991-2016



Sources: STR Trend Report, Jan. 24, 2017, and the Old Dominion University Economic Forecasting Project

GRAPH 23

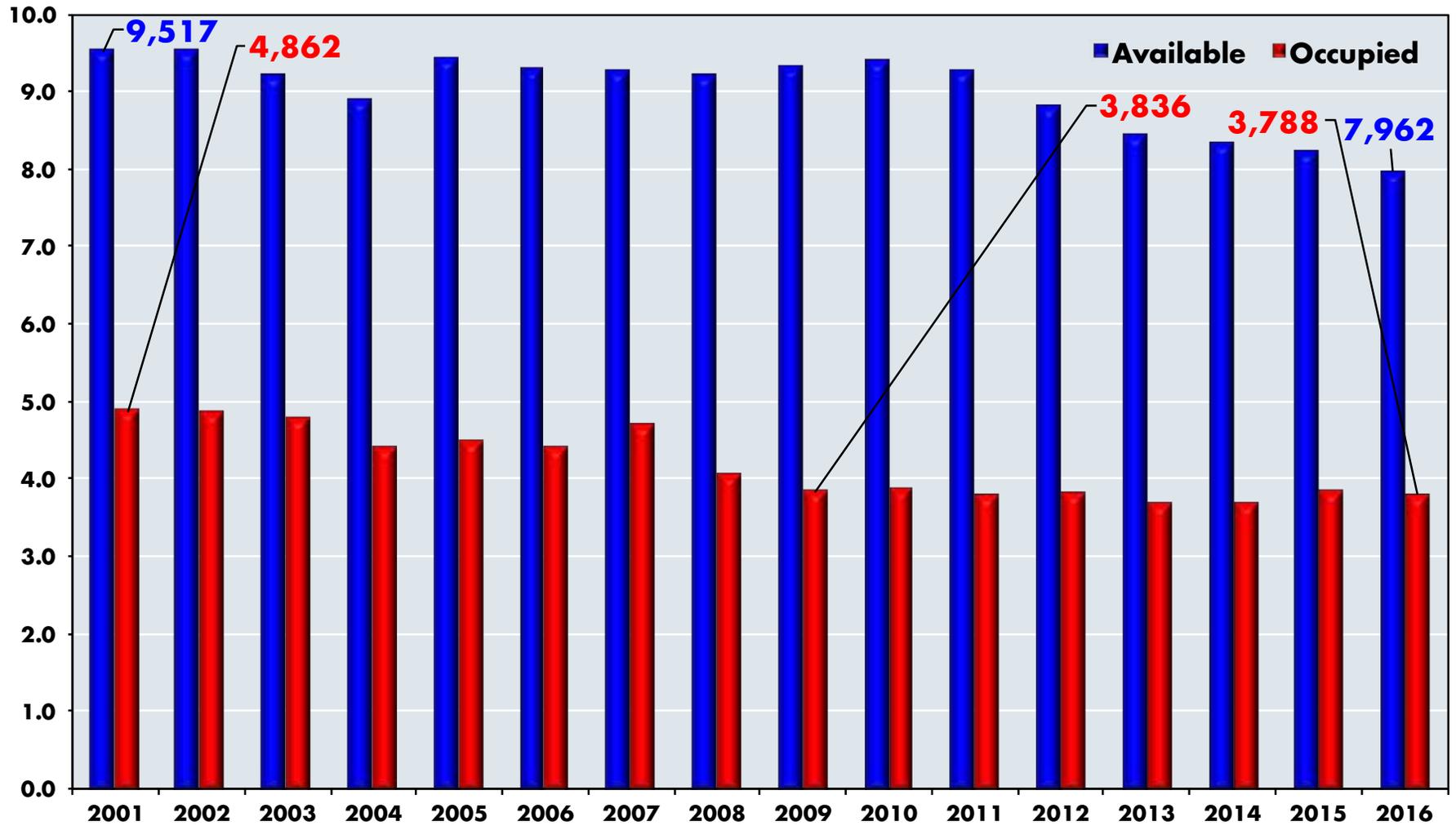
**ESTIMATED HOTEL INDUSTRY MARKET SHARES IN HAMPTON ROADS
(MEASURED BY HOTEL ROOM REVENUE, 2000 AND 2016)**



Sources: STR Trend Report, Jan. 24, 2017, and the Old Dominion University Economic Forecasting Project

GRAPH 24

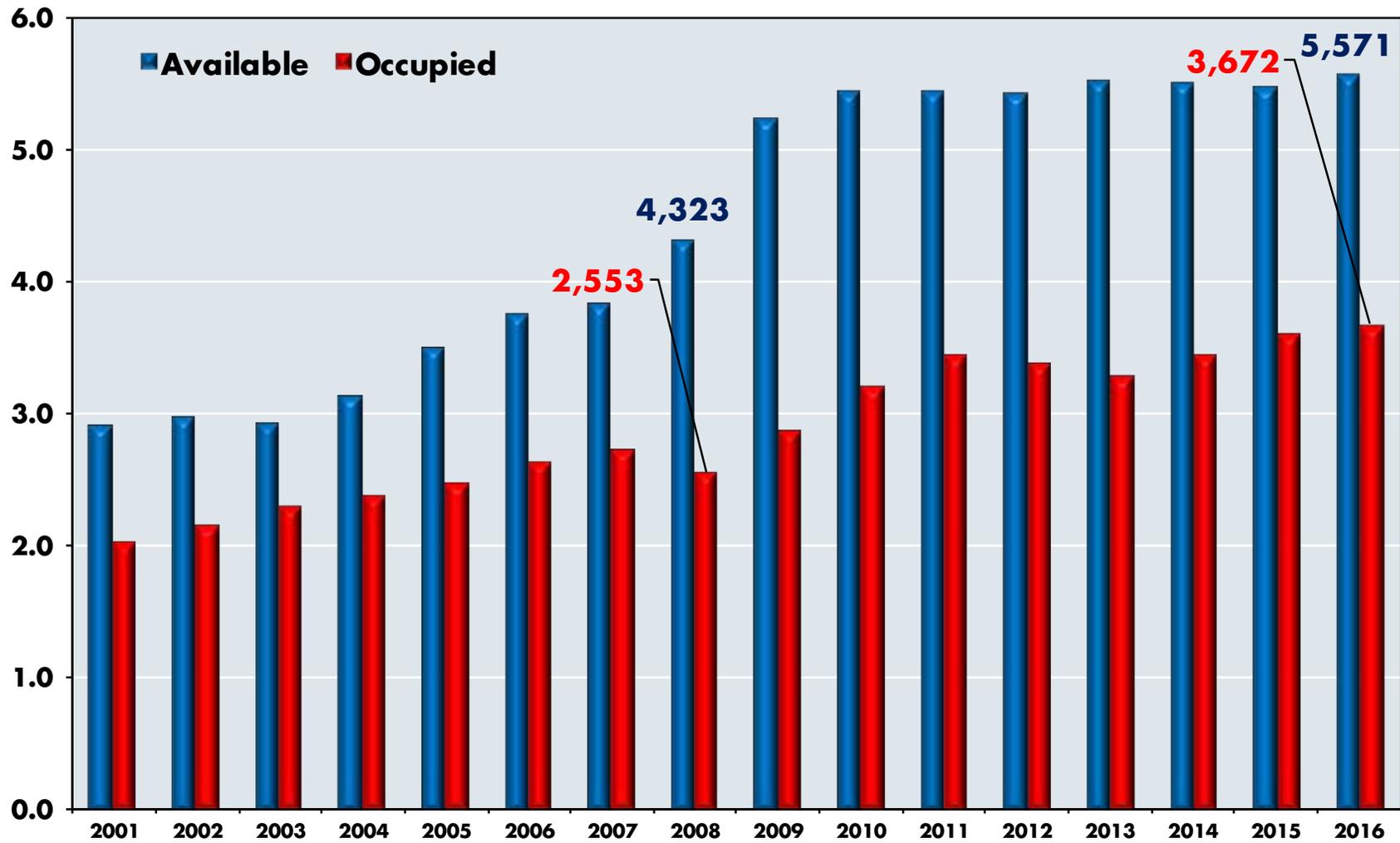
AVERAGE SUPPLY OF HOTEL ROOMS AND AVERAGE NUMBER OF ROOMS OCCUPIED: WILLIAMSBURG SUBMARKET, 2001-2016



Sources: STR Trend Report, Jan. 25, 2017, and the Center for Economic Analysis and Policy at Old Dominion University

GRAPH 25

AVERAGE SUPPLY OF HOTEL ROOMS AND AVERAGE NUMBER OF ROOMS OCCUPIED: CHESAPEAKE/SUFFOLK SUBMARKET, 2001-2016



Sources: STR Trend Report, Jan. 25, 2017, and the Center for Economic Analysis and Policy at Old Dominion University

Housing

If one focuses on indicators such as the number of sales, sales prices and inventories, then the Hampton Roads housing market is exhibiting visible signs of recovery from the dual impact of the Great Recession and federal government spending sequestration. Even so, it is fair to note that our recovery typically has not been as robust as that experienced in the rest of the country.

SALES PRICES OF EXISTING HOMES

Let's begin our analysis by looking at sales prices, which have increased moderately every year since 2011 (see Table 6). **Nevertheless, by the first quarter of 2017, our region's median sales price for existing single-family homes still was 13 percent below the peak observed in the third quarter of 2007.** At the end of the day, home purchases are tightly tied to jobs and the mediocre job creation of our region in recent years has put a serious damper on the demand for homes.

MORE HOMES ARE BEING SOLD – AND MORE QUICKLY

Nevertheless, more homes are being sold and newly listed homes do not remain on the market as long as in past years (see Graph 26). Additionally, the average number of months a newly listed home remains on the market before being sold has declined to 4.77, well below our long-term average of 5.64 (Graph 27). No one close to the housing market, however, is mistaking our current situation for the “go-go” real estate boom of 2004 to 2006.

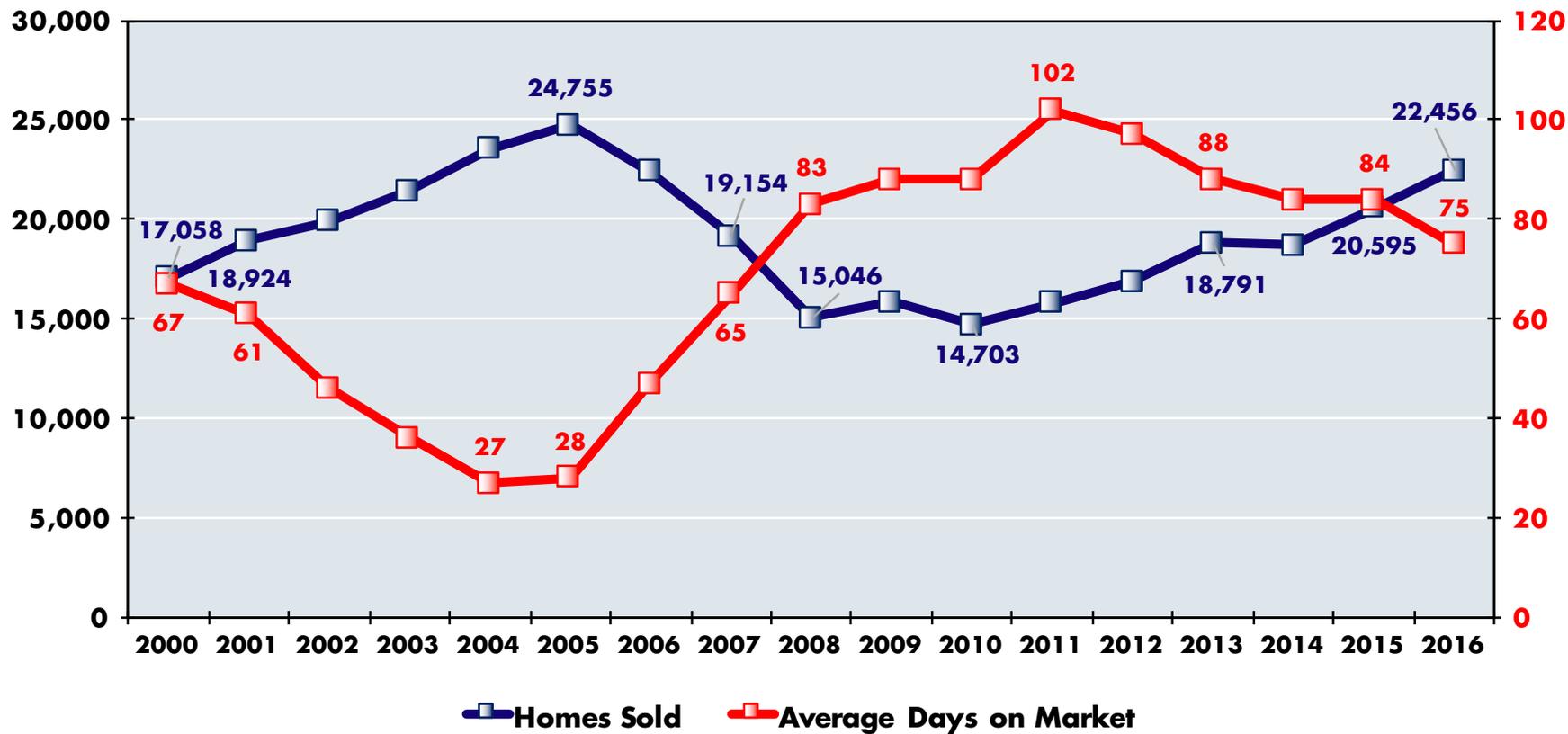
TABLE 6
MEDIAN SALES PRICE OF EXISTING RESIDENTIAL HOMES:
HAMPTON ROADS, 2002-2016

Year	Median Sales 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	2.8%
2013	\$190,000	2.7%
2014	\$193,205	1.7%
2015	\$203,000	5.1%
2016	\$210,000	3.4%

Sources: Real Estate Information Network and the Old Dominion University Economic Forecasting Project (information deemed reliable but not guaranteed)

GRAPH 26

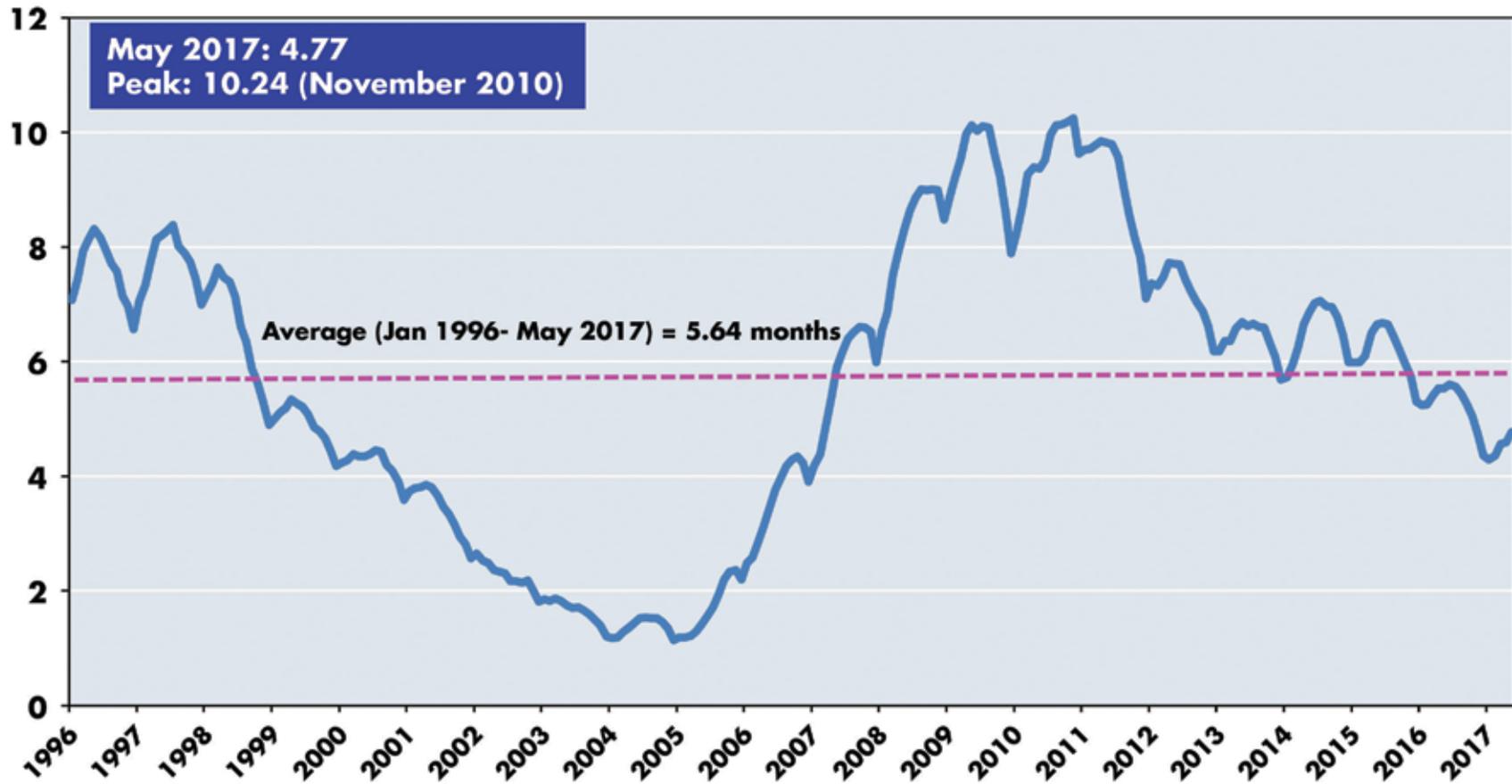
EXISTING RESIDENTIAL HOMES SOLD AND AVERAGE NUMBER OF DAYS ON THE MARKET: HAMPTON ROADS, 2000-2016



Sources: Real Estate Information Network and the Old Dominion University Economic Forecasting Project (information deemed reliable but not guaranteed)

GRAPH 27

ESTIMATED MONTHS OF SUPPLY OF EXISTING HOMES: HAMPTON ROADS, JANUARY 1996 – MAY 2017



Sources: Real Estate Information Network and the Old Dominion University Economic Forecasting Project (information deemed reliable but not guaranteed)

THE ISSUE OF DISTRESSED HOMES

Lurking in the housing market background is the continuing presence of a significant number of bank-owned and short sale homes, which often are labeled “distressed” homes. These are homes that financial institutions have foreclosed upon, or where for a variety of reasons owners have had to sell their properties under distressed circumstances. Not infrequently, the unhappy homeowners found themselves “underwater” – that is, they owed more on their mortgages than their properties were worth. The relevant point is that when these properties are placed on the market, they tend to depress housing prices, both because their sellers are anxious to get rid of them and some of these homes are not in tip-top shape.

The good news is that the number of housing foreclosures in Hampton Roads has declined significantly (see Graph 28) and that the total number of distressed homes listed for sale also has fallen noticeably (Graph 29). What is unknown, however, is how much “hidden” inventory of these “distressed” homes banks, financial institutions and individuals still are holding that they have not fed into the market because of the still modest recovery in housing prices.

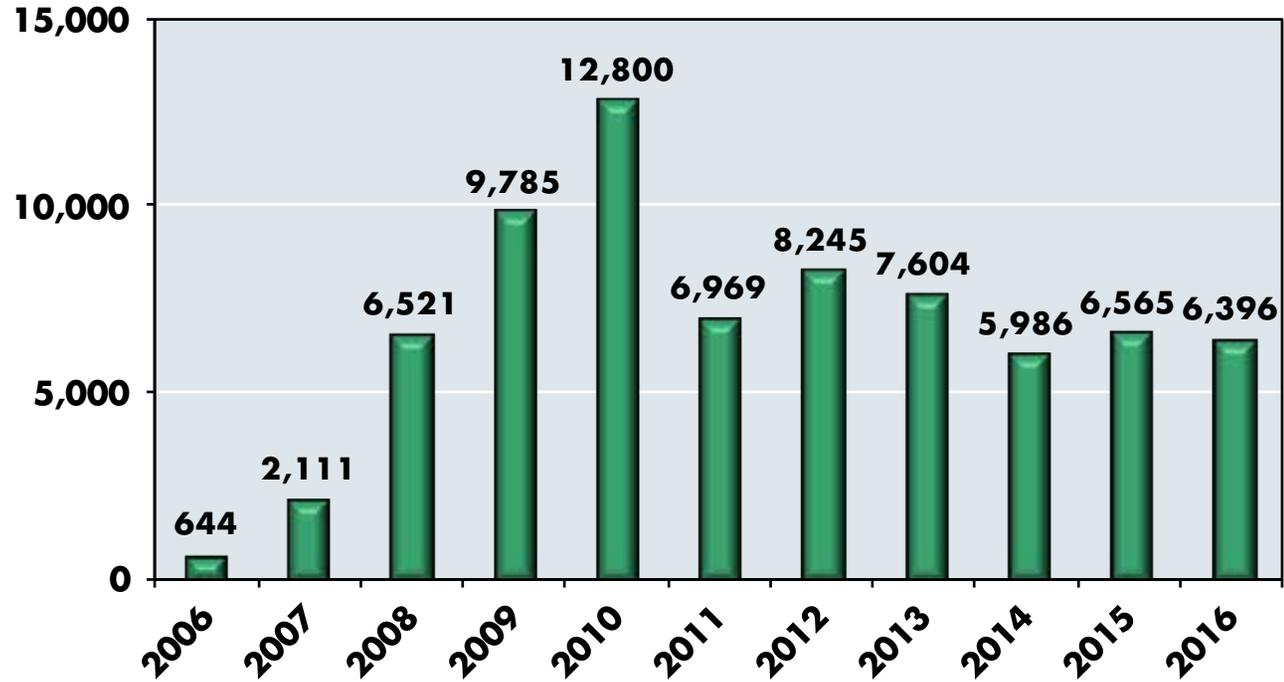
What we can say with confidence, however, is that when distressed homes are sold, their sales prices are well below those of other homes. Hence, they constitute a visible drag on the housing market and are an important reason why housing prices have not recovered more energetically. Table 7 provides some detail. In 2016, the average sales price of a bank-owned home was only 51.5 percent of non-distressed home sales prices, while the average sales price of a short sale home was only 67.3 percent of non-distressed home prices.



GRAPH 28

HAMPTON ROADS RESIDENTIAL FORECLOSURE FILINGS, 2006-2016

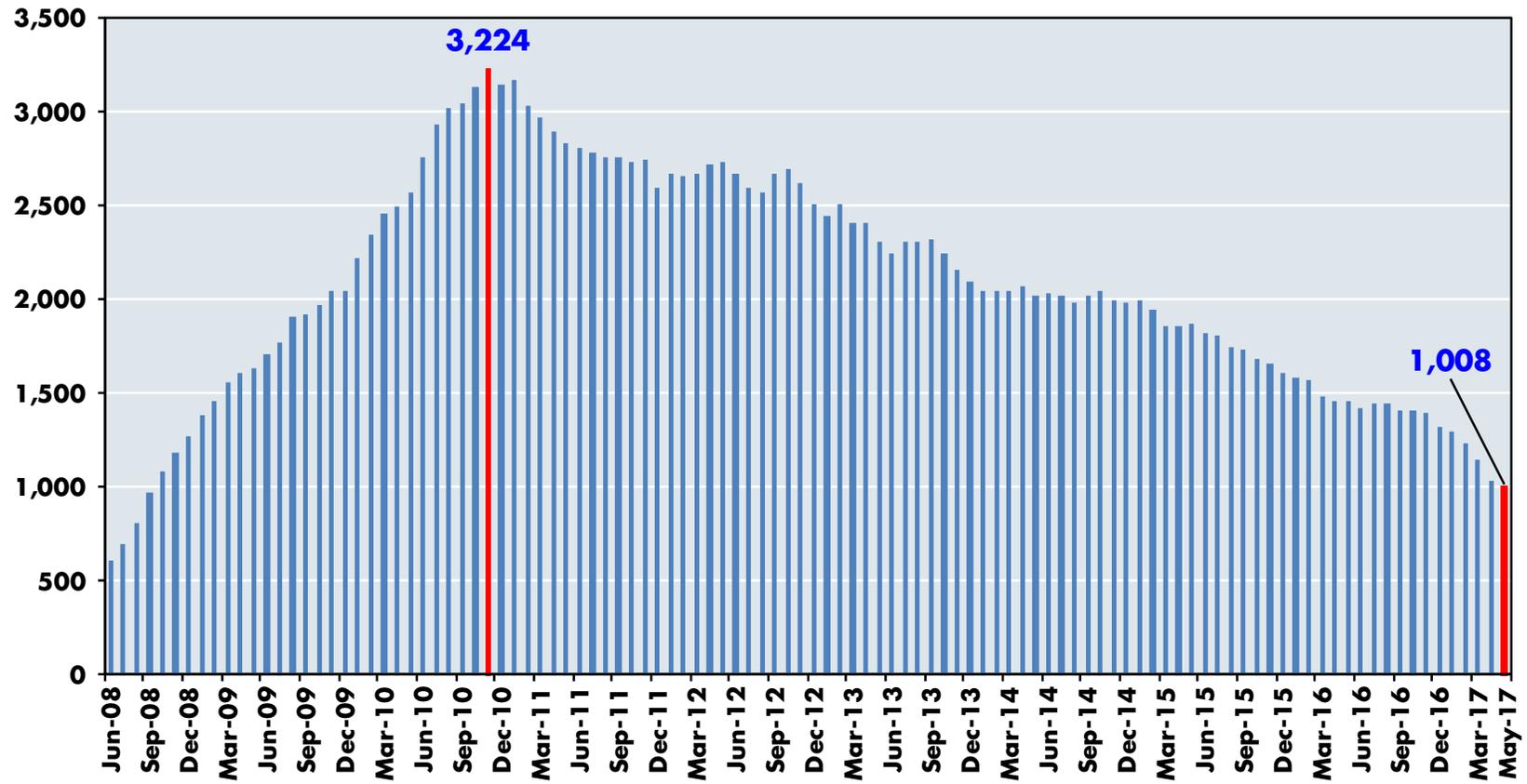
Foreclosure filings in Hampton Roads decreased by 2.6% in 2016, compared to an increase of 5.9 % for the Commonwealth. Filings in Hampton Roads in 2016 were 50% below their peak in 2010.



Sources: ATTOM Data Solutions, formerly known as RealtyTrac, and the Old Dominion University Economic Forecasting Project

GRAPH 29

TOTAL NUMBER OF DISTRESSED HOMES (BANK-OWNED AND SHORT SALE)
ON THE MARKET: HAMPTON ROADS, JUNE 2008 - MAY 2017



Sources: Real Estate Information Network and the Old Dominion University Economic Forecasting Project

TABLE 7

**AVERAGE PRICE OF EXISTING NON-DISTRESSED, SHORT SALE, AND REO
RESIDENTIAL HOMES SOLD IN HAMPTON ROADS, 2006-2016**

Year	Non-Distressed Sales	Short Sales	Short Sales Price % Non-Distressed Price	REO Sales	REO Price % Non-Distressed Sales
2006	\$250,254	\$241,666	96.6	\$120,817	48.3
2007	\$261,723	\$237,897	90.9	\$163,421	62.4
2008	\$255,852	\$239,110	93.5	\$184,462	72.1
2009	\$243,902	\$239,913	98.4	\$164,229	67.3
2010	\$251,572	\$231,211	91.9	\$151,612	60.3
2011	\$236,358	\$212,967	90.1	\$135,304	57.3
2012	\$237,215	\$187,527	79.1	\$134,535	56.7
2013	\$245,344	\$180,001	73.4	\$131,644	53.7
2014	\$244,940	\$171,745	70.1	\$128,242	52.4
2015	\$251,941	\$174,577	69.3	\$130,959	52.0
2016	\$254,815	\$171,432	67.3	\$131,143	51.5

Sources: Real Estate Information Network and the Old Dominion University Economic Forecasting Project (information deemed reliable but not guaranteed). REOs represent bank-owned homes.

IS PURCHASING A HOME A GOOD DEAL?

The answer to this question is yes. If a prospective buyer does not intend to move immediately and can obtain a conventional mortgage at currently offered terms and rates, then owning a home typically makes more financial sense than renting. Let's look at the mathematics that leads to this conclusion.

Table 8 compares the cost of owning to the cost of renting a three-bedroom home in Hampton Roads, and Graph 30 compares Hampton Roads to the United States in this regard. We include as ownership cost the monthly principal, interest and taxes paid for the median-priced three-bedroom and compare this total to the cost of renting the same. The ratio of ownership costs to rental costs is recorded in the last column of Table 8. One can see that the 2016 ratio was 1.38, indicating that renting was approximately 38 percent more expensive than owning. While this ratio is not quite as high as it was in 2013, it still represents a historically favorable circumstance for owning rather than renting.

Of course, the fact that owning is superior to renting does not matter if one cannot afford to purchase a home. The further good news is that existing homes in Hampton Roads have been quite affordable, at least since 2013. The monthly principal/interest/taxes payment for the median-priced existing home in Hampton Roads has constituted less than 20 percent of median household income in our region for several years and is now much more affordable than a decade ago during the housing boom. The continuing availability of relatively low mortgage interest rates is an important contributing factor.



TABLE 8

ESTIMATED HOUSE RENTAL AND PRINCIPAL, INTEREST AND TAXES FOR A HOUSE PAYMENT IN HAMPTON ROADS, 2002-2016

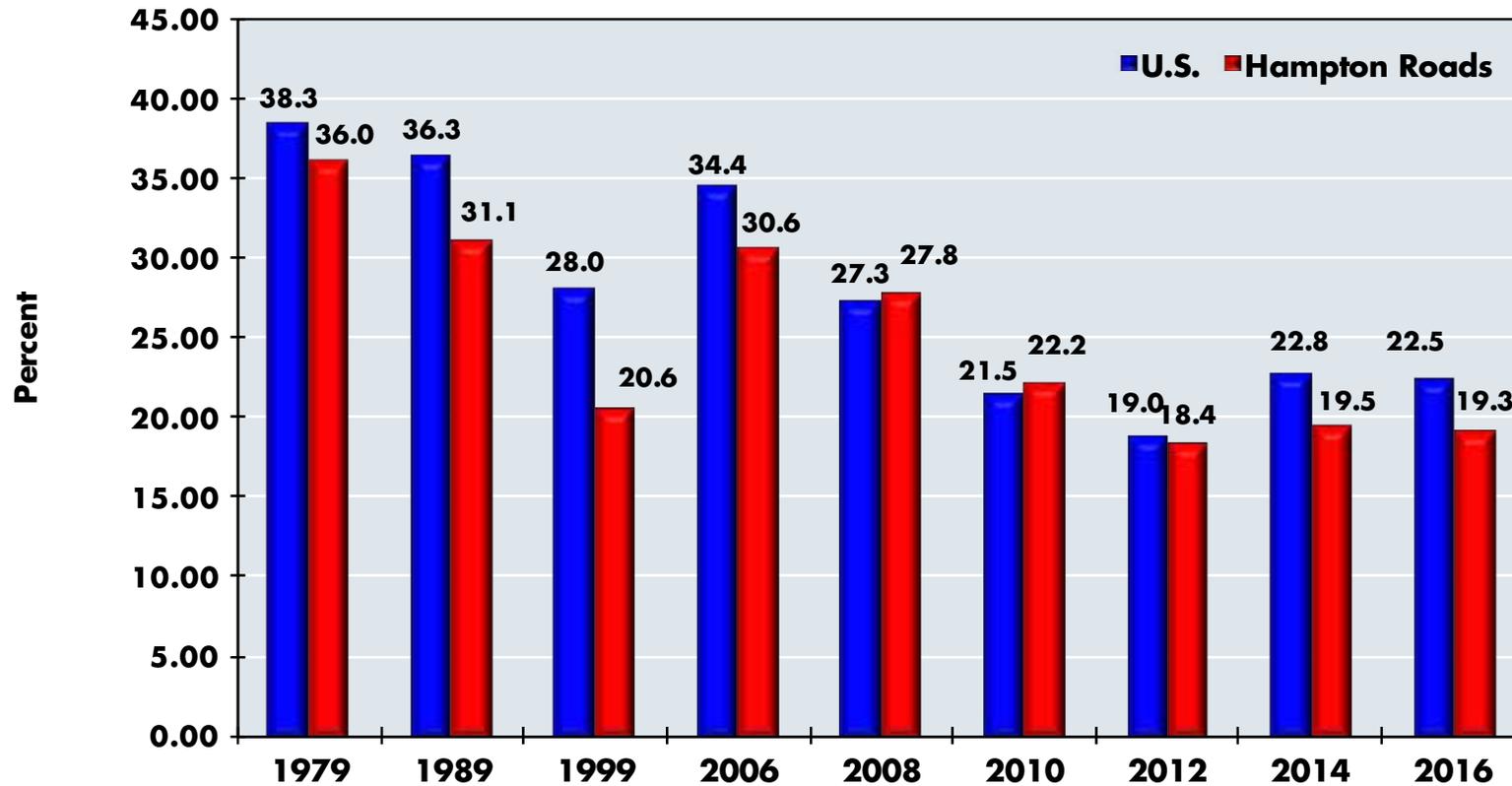
Year	Median Monthly Rent for a Three-Bedroom House	PI&T Monthly for a Median-Priced Existing House	Ratio of Monthly Rent to PI&T
2002	911	861	1.06
2003	1,037	890	1.16
2004	1,044	1,073	0.97
2005	1,087	1,315	0.83
2006	1,118	1,533	0.73
2007	1,164	1,598	0.73
2008	1,247	1,507	0.83
2009	1,236	1,307	0.95
2010	1,277	1,233	1.04
2011	1,319	1,071	1.23
2012	1,454	1,015	1.43
2013	1,570	1,080	1.45
2014	1,562	1,118	1.40
2015	1,530	1,154	1.33
2016	1,601	1,163	1.38

Sources: U.S. Department of Housing and Urban Development and the Old Dominion University Economic Forecasting Project

Notes: A real estate tax rate of 1 percent was assumed and also that the mortgage tax benefit received by homeowners compensates them for their insurance and maintenance expenditures. The prevailing 30-year average mortgage rate was used for each year.

GRAPH 30

HOUSING AFFORDABILITY: MONTHLY PAYMENT FOR A MEDIAN PRICE RESALE HOUSE AS A PERCENT OF MEDIAN HOUSEHOLD MONTHLY INCOME IN HAMPTON ROADS AND THE U.S., 1979-2016

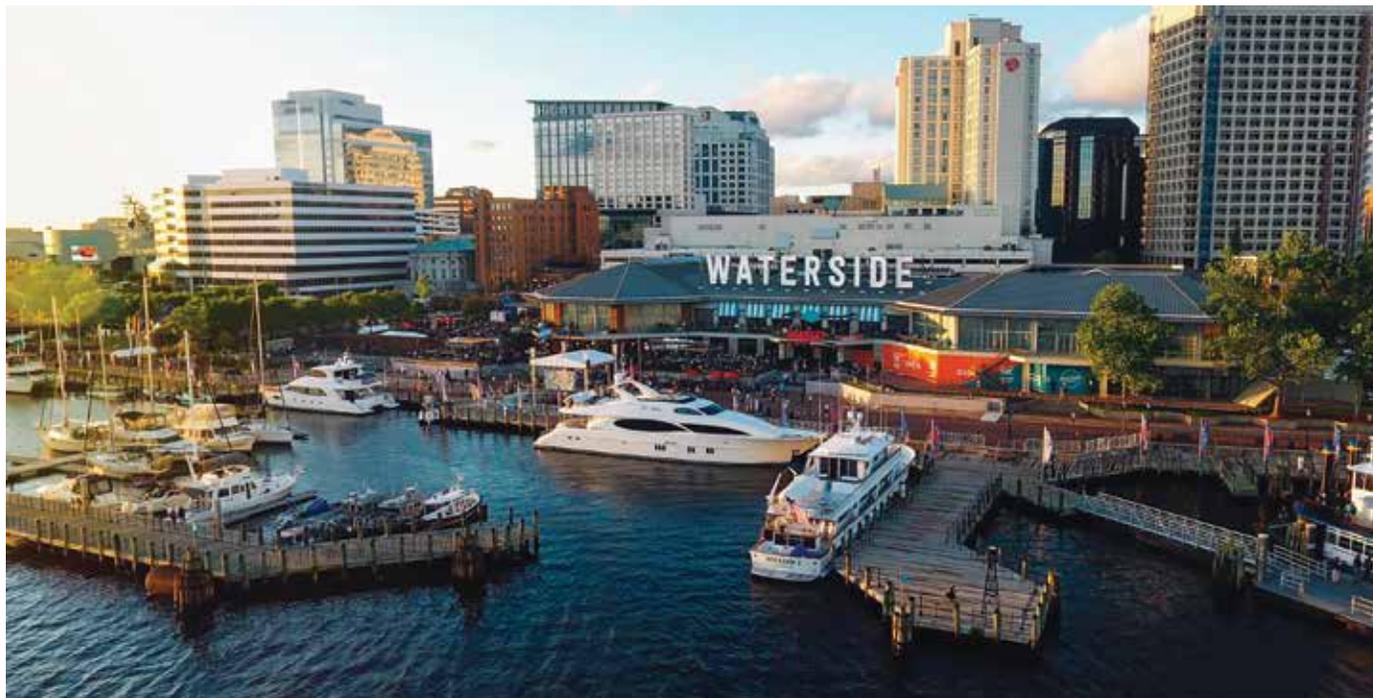


Source: Old Dominion University Economic Forecasting Project. The prevailing 30-year average mortgage rate is used for each year. For example, the rate used for 2015 is 3.85 percent and for 2016 it is 3.65 percent.

Final Thoughts

Independent of defense spending, our regional economy is beginning to show signs of life. We have three major economic drivers in Hampton Roads – defense spending, tourism and the Port. Collectively, they account for about 55 percent of the value of our regional economic output annually. Two of these three (tourism and the Port) are expanding and the third (defense spending) might be on the cusp of an expansion as well, depending, of course, on congressional action.

Consequently, we forecast modestly increased economic growth for Hampton Roads in 2018 and 2019. Yes, we attach all the usual caveats to this forecast: Events ranging from trade wars and terrorism to hurricanes and a collapse of the stock market could derail our expectations. Nevertheless, for the first time in several years, our primary regional economic building blocks are starting to fall into place and better times appear to be on the horizon.



Airbnb In Virginia Beach



AIRBNB IN VIRGINIA BEACH

Airbnb is an international, internet-based firm that connects owners of rental properties (“hosts”) with prospective short-term renters (“guests”). Founded in 2008, Airbnb asserts that it is active in more than 65,000 cities and 191 countries and that it has hosted more than 150 million guests. Its market value exceeded \$30 billion last year.¹ Airbnb claimed to have more than 3 million rental listings worldwide in early 2017², and in January 2017, 454 of those listings (mostly involving residential homes) were in Virginia Beach.³

Virtually every new economic phenomenon that upends customary ways of doing business stimulates concerns and the rise of Airbnb is no exception. Conventional hotels and motels question whether Airbnb is “playing by the rules” and the city of Virginia Beach worries that it is not collecting all taxes due.

This chapter analyzes the development of Airbnb in our midst, but places this phenomenon in the broader context of the rise of the “gig economy” – a world in which occasional contractors, part-time workers and temporary economic arrangements increasingly hold sway. What we observe is Joseph Schumpeter’s “creative destruction” in action – yet another example of the never-ending churn in the economic system that drives out the old and brings in the new.⁴

Airbnb In Virginia Beach And Hampton Roads

To track Airbnb’s activities in Virginia Beach, one must rely upon data produced by Airdna, a separate and independent organization that generates numbers and analytics focusing on vacation rental entrepreneurs and investors. Per Airdna

¹ Matt Rossoff, “Airbnb Is Now Worth \$30 Billion,” *Business Insider* (Aug. 6, 2016), www.businessinsider.com.

² www.airbnb.com.

³ Airdna market reports.

⁴ Joseph Schumpeter (1883-1950) was an Austrian-born economist who spent much of his career at Harvard. His *Capitalism, Socialism and Democracy* (1942) is considered a classic in the literature of economic development.

(whose data we use throughout this report), “active” Airbnb listings in Virginia Beach grew from only one in 2011 to 392 in 2016, more than doubling each year since 2011. Airdna classifies a listing as active if it has a confirmed booking in a month, if it is currently live on Airbnb, if the host has updated the calendar for the listing or if the host actively responds to inquiries about the property. The number of available properties (active and inactive) listed at the end of each month increased steadily from 109 in January 2015 to 464 in December 2016.

From January 2015 to December 2016, even though December is a low point in the tourism season in Virginia Beach, the number of available Airbnb properties increased by 325 percent.⁵ Over the same period, according to Smith Travel Research, the supply of conventional hotel rooms increased by only 1.2 percent.

Airbnb frequently talks in term of “listings.” An Airbnb listing may consist of a shared room, a private room, studio apartment or several rooms within a house that are available for rent. The number of listings understates the number of rooms available through Airbnb. This is a very important point to consider when one attempts to estimate Airbnb’s share of the overall hotel market in Virginia Beach.

In January 2017, 358 of the 454 Airbnb listings in Virginia Beach were active and we estimate that these 358 listings offered 655 rooms for rent daily. Only

⁵ This is consistent with the reported national Airbnb growth rate in revenues in 2016 of 138 percent. During this time, Airbnb’s revenues grew from an estimated \$2.4 billion in 2015 to \$5.7 billion in 2016. Chris Kirkham and Greg Bensinger, “Hotel Group Assails Airbnb Model,” *The Wall Street Journal*, 269 (March 20, 2017), B4.

33 percent of these listings were for one room (which could be shared, private or studio). For each active listing, on average, there were 1.8 rooms on the Airbnb website (compared to an average of 1.6 for the entire United States in fourth quarter 2015).⁶ This means that many of the most active listings for Virginia Beach for the period in question were for multiple rooms, confirming that listings understate the number of rooms Airbnb offers for rent daily.

Our “more Airbnb rooms than listings” conclusion is consistent with a recent study performed for the American Hotel and Lodging Association by CBRE, a well-known national real estate firm. While the association is hardly a neutral party in terms of its attitudes toward Airbnb, its commissioned study concluded that one-third of Airbnb’s revenues now come from individuals and investors who own or control multiple units (see Graph 1).

The American Hotel and Lodging Association fervently argues (perhaps correctly) that the parties that function in this fashion in essence are hotels, albeit operating without having to comply with all the rules and regulations confronting standard hotels. Not surprisingly, the association advocates a legal and enforcement crackdown on Airbnb operators, who increasingly have become viable competitors to the association’s members. The association’s reaction in this regard is similar to that observed when any established industry is confronted with a new viable competitor that appears to be upending previously well-established rules. Witness the reactions of taxicab companies to Uber and Lyft, established commercial banks to internet competitors such as Synchrony and Quicken, some universities to online learning sites and, of course, dozens of competitors across many industries to Amazon, Facebook and Google.

DAILY ROOMS AVAILABLE

One can use end-of-month Airbnb data (which actually come from Airdna) to estimate the daily number of rooms available in Virginia Beach via Airbnb. In December 2016, for example, there were 464 properties listed for rent on Airbnb. This translates to an estimated $464 * 31 \text{ days} = 14,384$ Airbnb room nights available during the entire month of December 2016. **However, if**

⁶ Airdna and CBRE data quoted in Jason Clampet, “Airbnb’s Real Threat to U.S. Hotels Using Industry Metrics,” *Skift* (Feb. 13, 2016), <https://skift.com/2016/02/03/measuring-airbnbs-real-threat-to-u-s-hotels-using-industry-metrics>.

the typical listing really involved 1.8 rooms, then there were $14,384 * 1.8 = 25,891$ room nights potentially available through Airbnb in Virginia Beach in December 2016. This was approximately 4 percent of rooms available in the overall lodging market in Virginia Beach.⁷

One can quibble about the precise number of rooms actually available via Airbnb in Virginia Beach and one should remember that Airbnb is not the only such rental firm in operation. Even so, it is clear that Airbnb has grown steadily since 2014 and, while still relatively small, is becoming an increasingly important part of the lodging market in Virginia Beach. Interestingly, a 2015 analysis of Airbnb growth rates ranked neighboring Norfolk No. 2 in the United States in terms of its year-over-year growth rate in Airbnb listings as of third quarter 2015.

OCCUPANCY RATES

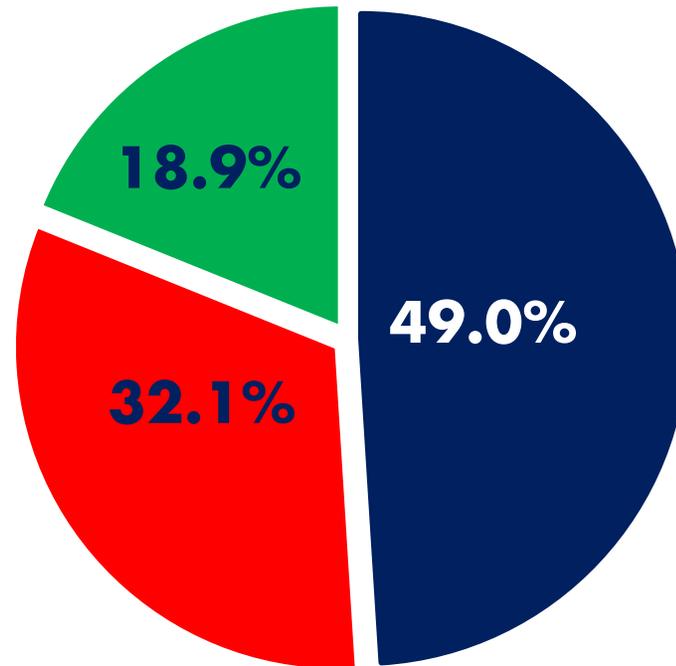
Occupancy data for traditional hotels, available from Smith Travel Research (STR), are not strictly comparable to the data supplied by Airdna for Airbnb because of the “listings not equal to rooms” situation previously noted.

Between February 2015 and December 2016, however, Airbnb’s occupancy rates per listing were below those of the traditional lodging sector every single month. On average, the traditional lodging sector recorded an occupancy rate of 61.7 percent for 2016 – significantly higher than Airbnb’s 43.7 percent (see Graph 2). Occupancy rates for both segments of the market are highly seasonal and predictably increase after New Year’s Day until peaking in the summer months. As the summer tourist season winds down, occupancy rates of both segments decline. In this regard, there is little difference in Airbnb’s behavior and that of the traditional sector: the simple correlation coefficient between the occupancy rates of the two is 0.93.

⁷ Compare this to an approximate 1.8 percent market share for Airbnb in New York, San Francisco and Los Angeles in September 2015, according to Airdna and CBRE (as cited in Jason Clampet, footnote 3).

GRAPH 1

AIRBNB REVENUE SOURCES: UNITED STATES, 2016

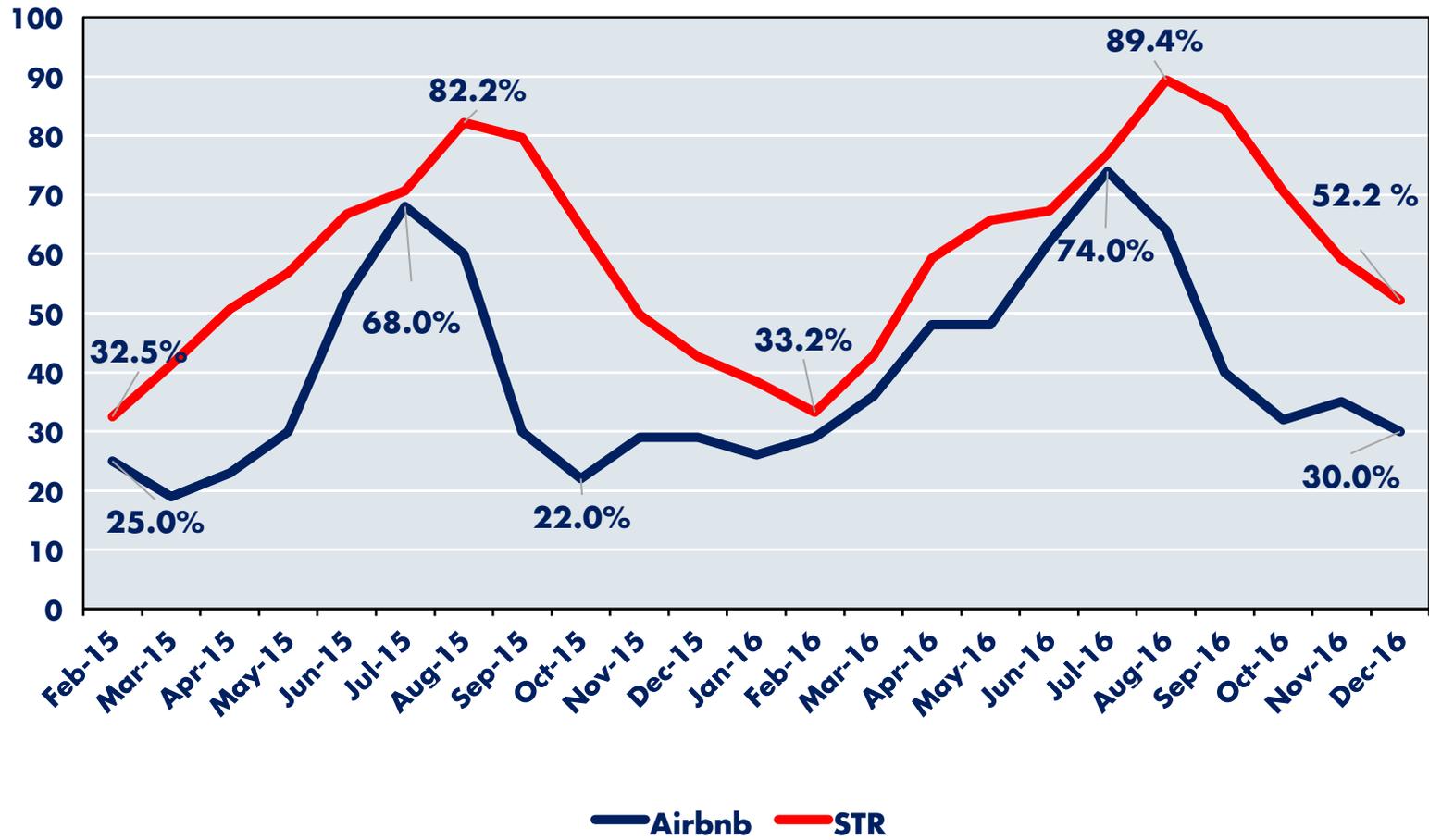


■ **One Entire Property** ■ **Two or More Properties** ■ **Others (Rooms)**

Source: Chris Kirkham and Greg Bensinger, "Hotel Group Assails Airbnb Model," The Wall Street Journal, 269 (March 20, 2017), B4

GRAPH 2

OCCUPANCY RATES FOR TRADITIONAL AND AIRBNB LODGING FOR VIRGINIA BEACH



Sources: Airdna market report and Smith Travel Research

AVERAGE DAILY RATE (ADR)

Average Daily Rate (ADR) is a standard metric used in the hotel industry because it captures the price guests actually pay as opposed to advertised prices. The Airbnb ADR for a four-plus room rental (around \$533) is nine times that of its ADR for a single private room (around \$60). Unless adjusted for such differences, comparing the ADRs of Airbnb versus the traditional lodging sector is not very useful.

Airbnb's ADR per listing consistently has been higher than that of traditional hotels and motels. However, if we deflate the Airbnb ADR by 1.8, which is our estimate of the ratio of rooms to listings for Airbnb in Virginia Beach, then the two series look rather similar. The dotted line in Graph 3 depicts the adjusted ADR value for Airbnb after we have accounted for the average number of rooms per listing. The prevailing wisdom is that Airbnb's rooms often are superior to typical conventional hotel rooms,⁸ but Airbnb does not appear to be earning more revenue per rented room than the traditional lodging sector. Hence, the hypothesis that Airbnb frequently skims demand for the most expensive rooms in the market may not always hold water.

REVENUE PER AVAILABLE ROOM (REVPAR)

Revenue per Available Room (REVPAR) is an important performance metric for the lodging industry because it incorporates both supply and demand influences. REVPAR gives the average revenue earned per available room, not the average revenue earned per room eventually rented, which is ADR. ADR can be deceptive if many rooms sit unrented.

REVPAR looks virtually the same for Airbnb and the traditional hotels (see Graph 4), but recall again that Airbnb's REVPAR is per listing, not per room. **After we again perform the 1.8 rooms per listing adjustment (the dotted line in Graph 4), it is immediately apparent that Airbnb hosts on average are reaping far less REVPAR than the conventional lodging-sector hotels.**

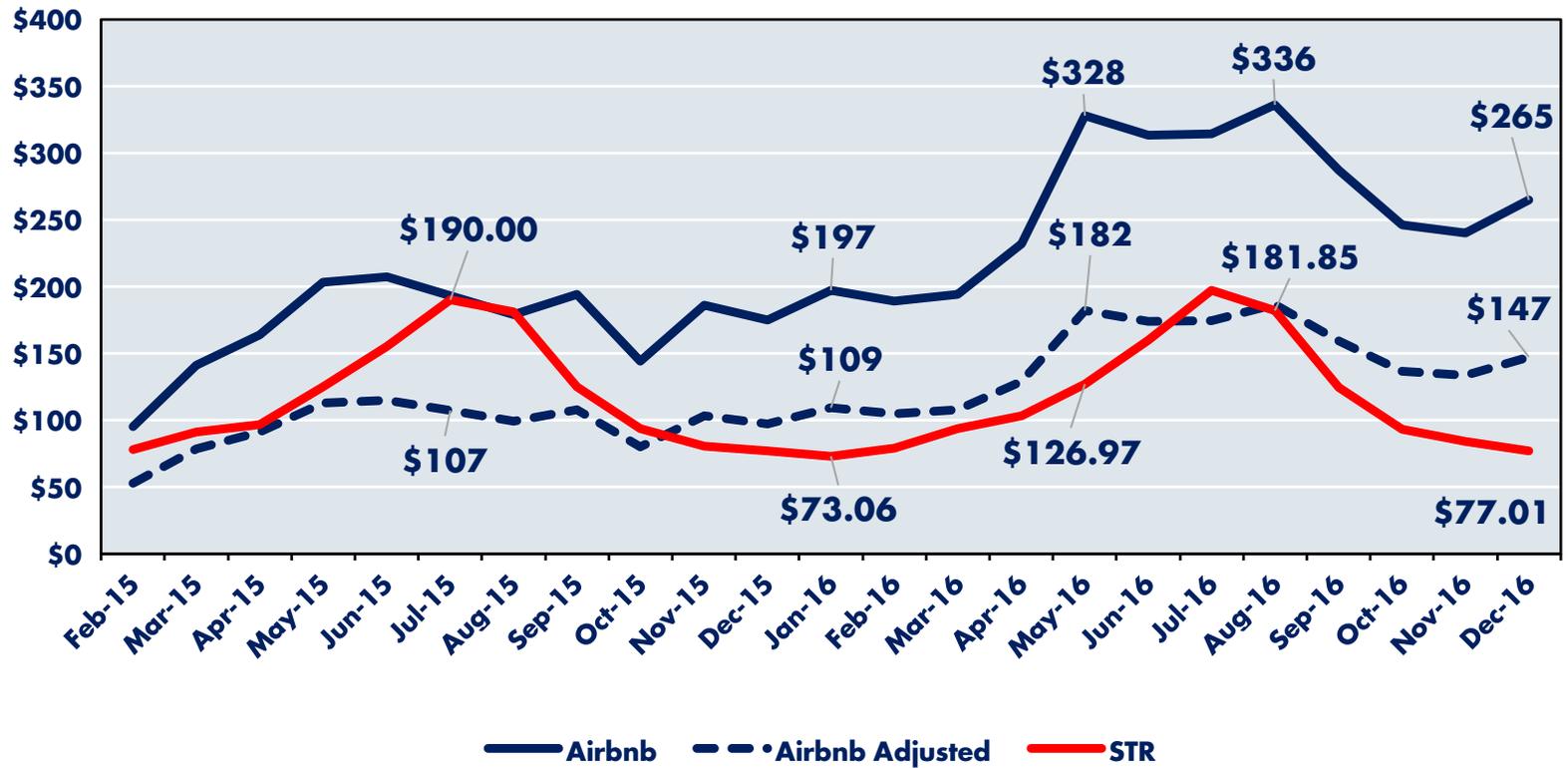
⁸ See among several, Jason Clampet (footnote 6), who assumes that Airbnb rooms typically "have more services and features than a hotel room, including kitchens, additional bedrooms, and parking..."

Does this mean that Airbnb is uneconomic? Far from it. The virtue of being an Airbnb host is that one can decide not to rent any rooms at any time, especially if the rooms are in one's own home. To the extent that Airbnb and similar competitors are merely an add-on activity that earns additional revenue for a family, this is an entirely tenable, even desirable, situation.

The traditional hotel sector does not enjoy the same luxury. Either hotels fill their rooms, or they suffer financially. At the limit, they go broke. The same might be said of Airbnb investors in multiple-room homes, some of which almost approach the size of small apartment houses. Such investors appear to be a more important part of the Airbnb world than Airbnb officials tend to admit. Nevertheless, the predominant Airbnb host remains someone who usually is not aggrieved if he/she does not rent a room on a specific day. Therefore, one would expect the average Airbnb host to earn lower REVPAR because the host is only a part-time supplier of rooms (perhaps during tourist season) and simply may not care too much when those rooms are not rented.

GRAPH 3

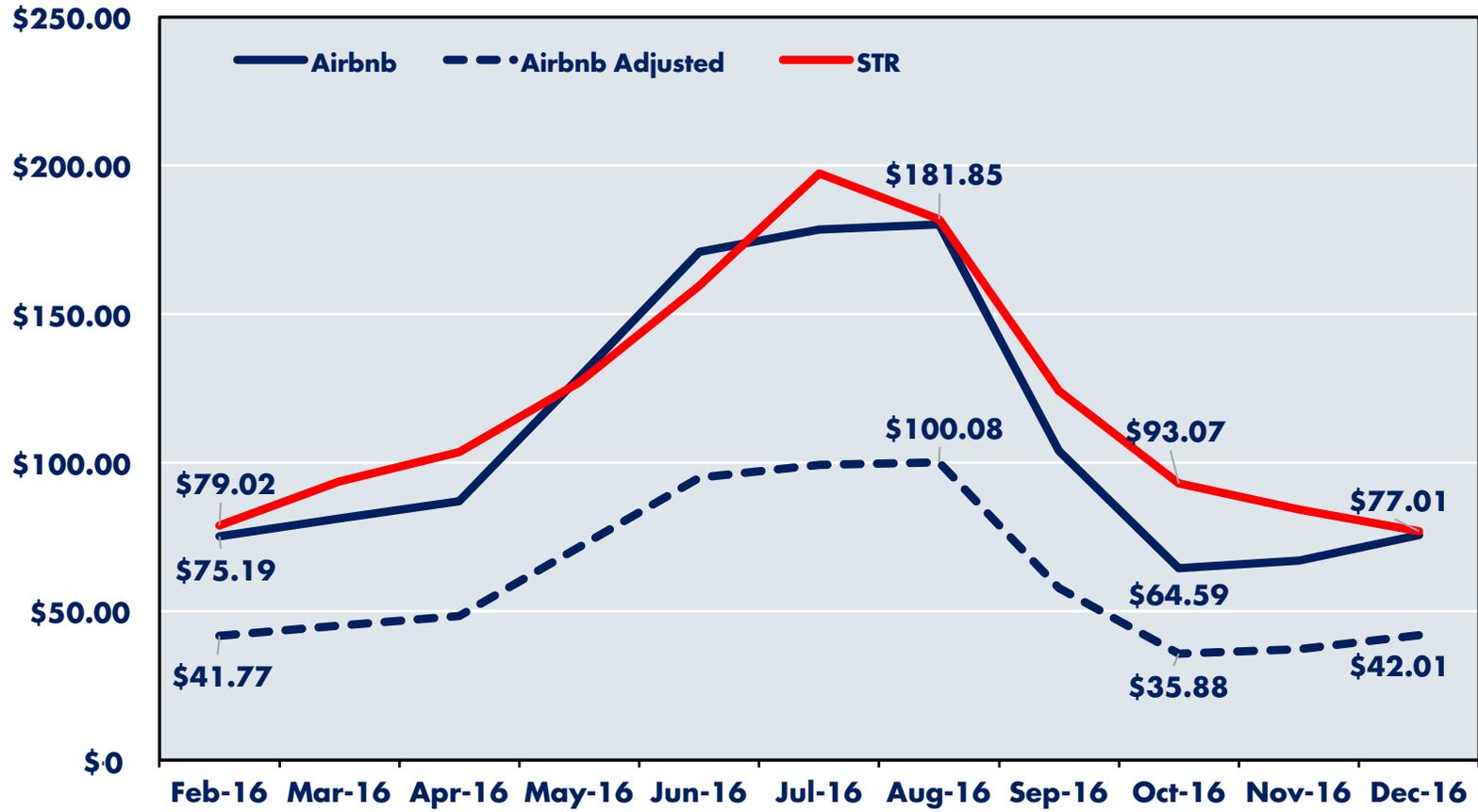
AVERAGE DAILY RATE PER AIRBNB LISTING AND STR TRADITIONAL LODGING SECTOR ROOMS: VIRGINIA BEACH, 2015-2016



Sources: Airdna market report and Smith Travel Research

GRAPH 4

REVPAR PER LISTING OR ROOM: VIRGINIA BEACH, 2016



Sources: Airdna market report and Smith Travel Research

COMPARING VIRGINIA BEACH TO OTHER MARKETS

How does Virginia Beach compare to other markets? We have selected 11 similar cities in the South and other mature Airbnb markets in the United States for comparison. In all these cities, Airbnb listings grew rapidly from 2011 through 2016 (see Table 1). While some of the rapid growth can be attributed to the initially small number of the overall listings, even those markets with relatively large Airbnb listing pools saw double- and triple-digit growth over this period. Compared to other markets of similar size, the Airbnb market segment in Virginia Beach grew the fastest from 2015 to 2016.

Virginia Beach is also markedly different with regard to the distribution of rentals. Using active listing data from March 2017, we can see in Table 2 that over one-quarter of listings in Virginia Beach were for four-plus bedroom listings, 10 percentage points higher than the next city, Nashville. This may

reflect what one local termed “The Sandbridge Effect,” whereby many large, four-plus bedroom buildings exist in Sandbridge and elsewhere along the oceanfront that are rented to large groups for weekends or entire weeks. Parenthetically, these also tend to be the Airbnb properties that generate the most complaints concerning unruly behavior, illegal parking, trash and the like.

With respect to occupancy, the seasonality of Airbnb occupancy in Virginia Beach is the predominant factor to consider. Data in Table 3 reveal that Airbnb occupancy in the first quarter of 2016 in Virginia Beach was the lowest among all but one of the selected cities. Occupancy rates increased across all but one of the sample cities in the second quarter and in half of the cities in the third quarter. While occupancy declined for all but one of the cities in the fourth quarter of 2016, the declines were steepest in Virginia Beach. This suggests a rather obvious conclusion: Airbnb in Virginia Beach (compared to a city such as Arlington) is tied closely to the ebb and flow of the tourism market.

TABLE 1

CURRENTLY ACTIVE AIRBNB LISTINGS: SELECTED CITIES, 2011-2016

	2011	2012	2013	2014	2015	2016	Growth 2015-2016
Arlington	30	53	94	178	448	982	119.20%
Charleston	10	28	74	156	395	906	129.37%
Jacksonville	4	8	18	45	132	311	135.61%
Lynchburg	5	14	74	172	132.43%
Nashville	18	50	147	525	1,600	3,400	112.50%
New Orleans	65	200	545	1,100	2,400	4,600	91.67%
Norfolk	2	6	8	14	63	153	142.86%
Portland	82	226	527	1,100	2,200	3,800	72.73%
Richmond	4	9	25	71	459	642	39.87%
Roanoke	..	1	3	9	38	90	136.84%
Savannah	17	35	106	166	283	619	118.73%
Virginia Beach	1	9	20	47	156	392	151.28%

Source: Airdna market reports

TABLE 2

DISTRIBUTION OF ACTIVE AIRBNB LISTINGS: SELECTED CITIES, MARCH 2017

	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4+ Bedroom
Arlington	6.45%	45.66%	32.37%	9.83%	5.68%
Charleston	4.26%	28.61%	32.60%	23.52%	11.00%
Jacksonville	4.38%	32.50%	34.38%	19.38%	9.38%
Lynchburg	11.84%	28.95%	31.58%	15.79%	11.84%
Nashville	4.50%	22.44%	31.48%	25.80%	15.79%
New Orleans	6.51%	37.22%	34.57%	14.04%	7.66%
Norfolk	5.75%	25.29%	43.68%	14.94%	10.34%
Portland	15.42%	41.59%	27.66%	9.86%	5.48%
Richmond	6.19%	37.61%	28.76%	19.47%	7.96%
Roanoke	8.16%	34.69%	24.49%	24.49%	8.16%
Savannah	4.43%	35.82%	34.75%	15.60%	9.40%
Virginia Beach	6.86%	23.53%	27.45%	16.18%	25.98%

Source: Airdna market reports

While Airbnb rentals in Virginia Beach may have lower REVPAR in 2015 than comparable tourist destinations such as Charleston and New Orleans, the growth in Virginia Beach’s Airbnb REVPAR was higher than most of the surveyed cities (Table 4). Comparing similar months in 2015 and 2016, Virginia Beach’s Airbnb REVPAR grew almost 64 percent from May 2015 to May 2016 and about 50 percent from October 2015 to October 2016. The May 2015 to May 2016 increase for Virginia Beach was only behind that of Lynchburg, an Airbnb market that is one-quarter the size of Virginia Beach. Comparing October 2015 to October 2016, Virginia Beach’s Airbnb REVPAR was only behind Norfolk.

Turning next to Airbnb revenues, we examine total earnings of Airbnb hosts from various rentals in 2016. **Virginia Beach stands out from the other cities in this regard because it has the highest percentage of revenue earned through listings for four bedrooms or more (see Table 5).** Virginia Beach’s share of revenue from four bedrooms or more rentals (36.6 percent of revenue earned) eclipsed that of New Orleans (36.2 percent), Savannah (34.1 percent) and Charleston (30.2 percent).

If tax revenue collections are a major concern for the city of Virginia Beach, then the data in Table 6 strongly suggest that the city’s focus should be upon the multiple-bedroom Airbnb properties. Almost three-quarters of all revenue earned by Airbnb hosts in Virginia Beach is derived from multiple-bedroom properties.

TABLE 3

AVERAGE AIRBNB OCCUPANCY RATES: SELECTED CITIES, 2016

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Arlington	57.67%	70.67%	66.33%	57.67%
Charleston	43.33%	63.67%	55.00%	44.67%
Jacksonville	64.00%	61.33%	58.33%	58.00%
Lynchburg	30.67%	39.00%	45.00%	44.33%
Nashville	44.00%	59.33%	55.67%	46.67%
New Orleans	47.33%	52.67%	38.00%	43.00%
Norfolk	34.00%	49.33%	53.33%	42.67%
Portland	56.00%	74.00%	84.67%	60.33%
Richmond	38.33%	51.00%	55.33%	51.67%
Roanoke	32.00%	53.67%	58.67%	47.67%
Savannah	48.33%	56.33%	51.67%	44.00%
Virginia Beach	30.33%	52.67%	59.33%	32.33%
Source: Airdna market reports				

Table 6 provides additional detail based upon our estimates of Airbnb activity in Virginia Beach between September 2014 and February 2017. We estimate that 79.9 percent of the lodging taxes for which Airbnb hosts are liable in Virginia Beach would be paid by hosts who rent full houses, apartments or condos. The same is true for the Commonwealth’s sales tax collections. The percentage paid by full houses, apartments or condos for the city’s occupancy tax is smaller, 55.9 percent, but it is far less lucrative to the city than the lodging tax.

TABLE 4

NOMINAL AIRBNB REVPAR PER LISTING: SELECTED CITIES, 2015 AND 2016

	May-15	Oct-15	May-16	Oct-16	Growth May-May	Growth Oct-Oct
Arlington	\$ 83.43	\$ 77.00	\$ 99.82	\$ 86.86	19.65%	12.80%
Charleston	\$ 97.71	\$ 92.29	\$ 134.11	\$ 111.86	37.24%	21.21%
Jacksonville	\$ 42.86	\$ 51.29	\$ 54.11	\$ 47.00	26.25%	-8.36%
Nashville	\$ 81.43	\$ 100.43	\$ 128.93	\$ 133.14	58.33%	32.57%
New Orleans	\$ 95.14	\$ 90.71	\$ 106.79	\$ 86.57	12.24%	-4.57%
Norfolk	\$ 58.29	\$ 35.86	\$ 69.82	\$ 54.57	19.79%	52.19%
Portland	\$ 70.71	\$ 79.14	\$ 84.11	\$ 77.43	18.94%	-2.17%
Richmond	\$ 54.14	\$ 52.71	\$ 67.32	\$ 70.00	24.34%	32.79%
Roanoke	\$ 56.86	\$ 50.57	\$ 48.75	\$ 54.14	-14.26%	7.06%
Savannah	\$ 81.57	\$ 74.57	\$ 114.11	\$ 111.00	39.89%	48.85%
Lynchburg	\$ 38.00	\$ 37.00	\$ 63.93	\$ 50.14	68.23%	35.52%
Virginia Beach	\$ 59.71	\$ 39.14	\$ 97.68	\$ 58.86	63.58%	50.36%

Source: Airdna market reports

TABLE 5

DISTRIBUTION OF AIRBNB EARNINGS BY RENTAL TYPE: SELECTED CITIES, 2016

	Shared Revenue	Private Revenue	Studio Revenue	1-Bedroom Revenue	2-Bedrooms Revenue	3-Bedrooms Revenue	4-Bedrooms Revenue
Arlington	3.06%	8.79%	9.78%	15.60%	19.90%	17.08%	25.80%
Charleston	1.09%	7.50%	10.93%	15.48%	16.37%	18.40%	30.22%
Jacksonville	2.41%	9.84%	12.11%	14.77%	17.23%	17.90%	25.73%
Lynchburg	0.00%	10.76%	12.57%	15.98%	20.45%	11.93%	28.30%
Nashville	2.60%	6.74%	11.90%	13.16%	14.17%	20.78%	30.66%
New Orleans	3.05%	6.31%	10.29%	11.18%	14.82%	18.14%	36.22%
Norfolk	0.56%	11.28%	11.62%	16.17%	20.96%	18.78%	20.62%
Portland	3.78%	7.23%	12.28%	12.65%	16.04%	21.03%	26.98%
Richmond	2.85%	6.95%	9.05%	14.49%	14.77%	19.49%	32.39%
Roanoke	0.00%	10.35%	15.09%	14.71%	17.80%	19.74%	22.30%
Savannah	1.76%	9.37%	11.42%	11.96%	15.72%	15.67%	34.11%
Virginia Beach	1.04%	9.66%	2.26%	12.12%	17.65%	20.67%	36.59%

Source: Airdna market reports

TABLE 6

ESTIMATED AIRBNB ACTIVITY IN VIRGINIA BEACH, SEPTEMBER 2014-FEBRUARY 2017

Dates	Estimated Virginia Beach Airbnb Revenues	Estimated Number of Nights	Estimated Revenue Per Night	Estimated Associated Lodging Taxes	Estimated Associated Occupancy Taxes	Estimated Associated Virginia Sales Tax Collections
Full House/Apt/Condo						
Sept. 2014 to Dec. 2014	\$65,834	528	\$124.68	\$5,267	\$528	\$3,950
Jan. 2015 to Dec. 2015	\$771,011	4,556	\$169.23	\$61,681	\$4,556	\$46,261
Jan. 2016 to Dec. 2016	\$4,831,689	18,840	\$256.46	\$386,535	\$18,840	\$289,901
Jan. 2017 to Feb. 2017	\$644,233	1,976	\$326.03	\$51,539	\$3,952	\$38,654
Totals	\$6,312,767	25,900	\$243.74	\$505,021	\$27,876	\$378,766
Private Rooms						
Sept. 2014 to Dec. 2014	\$19,041	224	\$85.01	\$1,523	\$224	\$1,142
Jan. 2015 to Dec. 2015	\$327,159	3,835	\$85.31	\$26,173	\$3,835	\$19,630
Jan. 2016 to Dec. 2016	\$1,143,958	14,637	\$78.16	\$91,517	\$14,637	\$68,637
Jan. 2017 to Feb. 2017	\$86,462	1,419	\$60.93	\$6,917	\$2,838	\$5,188
Totals	\$1,576,621	20,115	\$78.38	\$126,130	\$21,534	\$94,597
Shared Rooms						
Sept. 2014 to Dec. 2014	\$0	0	\$0	\$0	\$0	\$0
Jan. 2015 to Dec. 2015	\$1,240	34	\$36.47	\$99	\$34	\$74
Jan. 2016 to Dec. 2016	\$12,990	364	\$35.69	\$1,039	\$364	\$779
Jan. 2017 to Feb. 2017	\$974	32	\$30.42	\$78	\$64	\$58
Totals	\$15,203	430	\$35.36	\$1,216	\$462	\$912
Grand Totals	\$7,904,590	\$46,445	\$357	\$632,367	\$49,872	\$474,275
Assumptions: lodging tax 8%, occupancy tax = \$1 until December 2016, occupancy tax = \$2 thereafter, state sales tax = 6%						
Source: Airdna market reports						

The moral to the story told by the data in Tables 5 and 6 is that if the city were to devote many resources to forcing compliance from hosts renting studio rooms or single bedrooms, it seems likely that the costs of doing so would exceed the incremental revenues received. This is not where the revenue is. The hundreds of small Airbnb hosts who come and go from the market are difficult to track and would present significant challenges to enforcement personnel. **Further, we predict that specialized Airbnb imitators will rise in importance as they address the specific circumstances of populations ranging from gay people and Catholics to women and military veterans. The point is that the more of these hosting organizations there are, the more difficult it will be for the city of Virginia Beach to enforce any ordinances that putatively apply to such operations.**

There is another fundamental conclusion to be drawn from our analysis. Given the sometimes, almost casual nature of the Airbnb phenomenon, it is not an easy task for the city of Virginia Beach to collect taxes due from Airbnb hosts. **Any tax based upon revenues or sales will be challenged by problems connected to tracking and identifying both Airbnb hosts and their activities. This dictum applies both to the city's lodging and occupancy taxes and to the Commonwealth's sales tax.**

Identification and collection problems may diminish, however, if it is income rather than sales that is subject to taxation.

Airbnb and related hosts may believe they can thumb their noses at the city of Virginia Beach, but they are less likely to hold that attitude with respect to the federal government's Internal Revenue Service, which possesses a variety of digitized tools to identify scofflaws and some impressive penalties to inspire cooperation.

Perish the thought: a city income tax, perhaps piggybacked on the state or federal income taxes, may be the wave of the future for Virginia Beach – if it is serious about collecting taxes due from Airbnb hosts and the multitude of other gig-economy entrepreneurs who increasingly will inhabit the city's

economic environment. We make this observation not because we are advocates of income taxes, but rather as dispassionate observers of economic trends. Sales-related taxes may become increasingly difficult to collect.

IS THERE A CONNECTION BETWEEN ADR, REVPAR AND THE GROWTH OF AIRBNB IN VIRGINIA BEACH?

Costs and prices make a difference, or so at least academic economists tell their students. With this in mind, **it should not escape readers that Airbnb has grown more rapidly in Virginia Beach than in any of our 11 comparison cities and that this meteoric growth occurred when the price of a typical hotel room (measured by either ADR or REVPAR) was rising much more rapidly in Virginia Beach than either in Hampton Roads or Virginia. REVPAR in Virginia Beach, for example, rose 34.6 percent between 2011 and 2016, but only 25.6 percent in Virginia.**

Supply-side adjustments contributed to this. The absolute number of hotel rooms available in Hampton Roads declined almost 2,500 between 2009 and 2016, falling a little bit more than 300 rooms in Virginia Beach itself.

While a more rigorous analysis would be required to render a definitive judgment, *prima facie* it appears that the pricing behavior of Virginia Beach hotels is partially responsible for the rapid growth of Airbnb in the city. Alert consumers look for opportunities to substitute less-expensive goods for those that are more expensive, and rental rooms are no exception. Rising hotel room prices stimulate tourists and business travelers to contemplate alternatives, including Airbnb, which may result in hotels losing market share to competitors such as Airbnb.

Unless truly revolutionary action is taken by the Virginia Beach City Council, it is safe to say that Airbnb and similar rental contractors are not going to disappear. Nevertheless, traditional hotels in Virginia Beach have three major avenues

open to enable them to become more competitive with respect to Airbnb and similar hosts. First, they can be more modest in terms of future price increases and perhaps even adjust their current prices by means of special sales or offerings. Second, they can make their properties and offerings more enticing, such that accommodations at their properties are more personal, engaging and memorable (qualities many Airbnb customers say attract them to Airbnb accommodations). Third, the city can make the oceanfront more attractive by addressing issues such as traffic control, parking availability and cost, and perceived safety. If such developments do not occur, then simple, but straightforward economic analysis suggests that Airbnb’s growth in Virginia Beach will continue apace.

Policy Alternatives

It is not blindingly obvious where the public interest resides in the debates concerning the activities of Airbnb and similar firms in Virginia Beach because there are competing points of view, each of which is supported by some favorable evidence. A rough definition of the public interest is that it coincides with activities that do the most good for the most people.

Nonetheless, if we adopt the “most good for the most people” view, then we can observe that it is not the job of government to protect existing firms and industries from new, more efficient or more attractive competitors that would serve consumers better and do so at lower prices. If it were, then horse-and-buggy manufacturers and producers of 8-track and cassette tapes still would be dominant because both would have been protected from new competition.

Enabling citizen consumers to spend their dollars where they wish is a welfare-maximizing stance for government to adopt, provided this consumption does not generate undesirable side effects such as pollution, noise, traffic congestion, crime, unsanitary conditions that impact public health, and the like.

As a general rule, challenging competing firms to meet “the market test” – that is, offer goods and services at prices and levels of quality that are attractive to consumers and do not generate the side effects just noted – not only is an equitable approach that treats all citizens and firms the same, but also generates the best overall results for the citizenry. “Best overall” here means presenting consumers with a larger selection of goods and services at lower prices.

An important question relating to Airbnb in Virginia Beach is whether all parties are being treated the same – literally, whether all participants (Airbnb and traditional hotels alike) have had to meet the same market test under the same rules. We believe the answer is no and that some Airbnb hosts have consciously evaded (and been able to avoid) city regulations and taxes.

This said, it is not clear to us that it would be wise for Virginia Beach to devote substantial resources to ensuring that every Airbnb-type host complies with all of the city’s ordinances. By our calculations, Airbnb hosts who rent single or shared single rooms accounted for no more than about 1 percent of the total number of rooms available in Virginia Beach during the past year. Further, they account for only about one-fifth of the city’s potential tax revenues from Airbnb-like activities. And, these hosts do not often appear to be the sources of behavioral problems (noise, trash, crime, etc.).

The city of Virginia Beach would be wise to devote its scarce enforcement resources to identifying and obtaining compliance from Airbnb hosts who rent a full house, apartment or condominium. Plainly speaking, this is where the revenue is and evidence suggests that any behavioral problems that Airbnb generates are concentrated among these properties as well. This is not the same as saying that the city should ignore ordinances that apply to the Airbnb small fry. Instead, it is a rational economic calculation that expending resources on such does not make much sense, just as members of

the city's police force do not issue citations to every motorist who is traveling 32 MPH in a 30 MPH zone.

At the limit, Virginia Beach might consider amending its ordinances so that they apply only partially, or not at all in some cases, to property owners who rent nothing more than single rooms. These Airbnb hosts have relatively little impact on traditional hotels or city revenues.

The city usefully could imitate San Francisco in terms of its relationship with Airbnb. San Francisco negotiated an agreement with Airbnb that, among other things, uses the Airbnb administrative structure to collect taxes due from Airbnb hosts. If Virginia Beach is able to replicate this, then the revenues it receives from small Airbnb-like hosts plausibly could exceed the costs required to collect them.

In any case, compliance with certain ordinances always presents challenges to cities. **If Virginia Beach is serious about its ordinances that relate to larger Airbnb-like hosts, then it must consider issuing citations to and prosecuting exemplary large Airbnb hosts who clearly have been flouting its ordinances. It should not be difficult to identify the most egregious violators. This would send a message to Airbnb hosts concerning their collective and individual obligations to obey the law, pay requisite taxes and monitor their properties.**

Finally, to return to a theme developed above, traditional hotel operators would be well advised to re-evaluate their pricing and quality strategies. Airbnb and similar rental hosting firms are not going to go away. In contrast to Uber, which is losing several billion dollars per year and has yet to demonstrate a viable business model, Airbnb is a profitable enterprise that already in August 2016 was valued at \$30 billion when it raised \$850 million in a private offering.⁹ To place this in perspective, this is about 25 percent higher than the value of the entire Hilton Hotel chain.

⁹ Matt Rosoff, "Airbnb Is Now Worth \$30 Billion," *Business Insider* (Aug. 6, 2016), www.businessinsider.com.

The notion that the meteoric growth of Airbnb and similar hosts could be choked off by punitive law enforcement is naive. Nor would this be a good idea. Airbnb and similar rental hosting firms appear to be meeting the market test, and traditional hotels need to ensure that they do so as well.

The Implications Of The Gig Economy For Virginia Beach

It would be short-sighted for anyone to view the Airbnb phenomenon as an isolated development. Instead, Airbnb is one part of a much larger socioeconomic trend that some have chosen to term the “gig economy.” In the gig world, employees are not permanent; rather, they are temporary contractors who accomplish a task and then move on to something else (or nothing at all) with another employer, or even the same employer, but for a different, delimited task.

More gig activity has occurred in 2017 than in years previous, and more occupations and tasks are being filled or satisfied by gig workers than ever before. Intuit, the software company that produces products such as Quicken and TurboTax, predicts that 40 percent of all workers will be gig employees by 2020.¹⁰ Graph 5 illustrates the dramatic growth in contract and temporary employees in the U.S. economy.

These are among the major implications for the city of Virginia Beach.

- The city will be dealing with many more workers (including Airbnb hosts) who don't fit traditional categories, are not accustomed to applying for things such as business licenses, may or may not be willing to pay established taxes (or even be aware they exist), can be difficult to track down, and who actually may be located thousands of miles away from Virginia Beach.
- The city itself, seeking to economize and do the best for its citizen taxpayers, likely will choose to hire more temporary workers. Does the city wish to place limits on its employment of contractual workers even if this turns out to cost more money?
- The city must decide what levels of fringe benefits (if any) it will provide contractual employees, particularly when their employment period is lengthy, or when the individual is employed repetitively. That is, how long or often

must someone be employed in order for the city's obligations to such employees change?

- The city will find that the gig economy workers who actually reside in Virginia Beach (though perhaps only for a period of time) will place larger demands upon the city's schools and social services, and perhaps on other agencies such as law enforcement and the judicial system. For better or worse, permanence of residence and permanence of employment are significant predictors of positive social behavior.
- Virginia Beach K-12 schools will find that increasing proportions of their students will come and go because their parents or guardians literally are footloose, or their financial circumstances have changed.
- The city may conclude that many conventional measures of achievement, such as college degrees, do not fit the gig world as well as certificates and certifications. Thus, being certified as a project manager, court reporter, EMT, internet network specialist, massage therapist or licensed nurse often is more important than having earned a baccalaureate degree.
- If we put aside seasonable agricultural work, then the gig economy currently is proportionately overrepresented with Caucasians, many of whom are well educated and even wealthy. To the extent that the city employs gig economy workers, it may find that these workers are not representative either of Virginia demographics or the population of Virginia Beach. The city must be proactive if it wishes a different outcome. Further, reputable recent evidence suggests that many Airbnb hosts engage in racial discrimination based upon the names of prospective renters.¹¹ Virginia Beach should be alert to the possibility that conventional means of enforcing nondiscrimination ordinances in housing and accommodations, as well as policies monitoring its short-term rental market and overall revenue sources, may have been rendered less effective by gig economy developments.

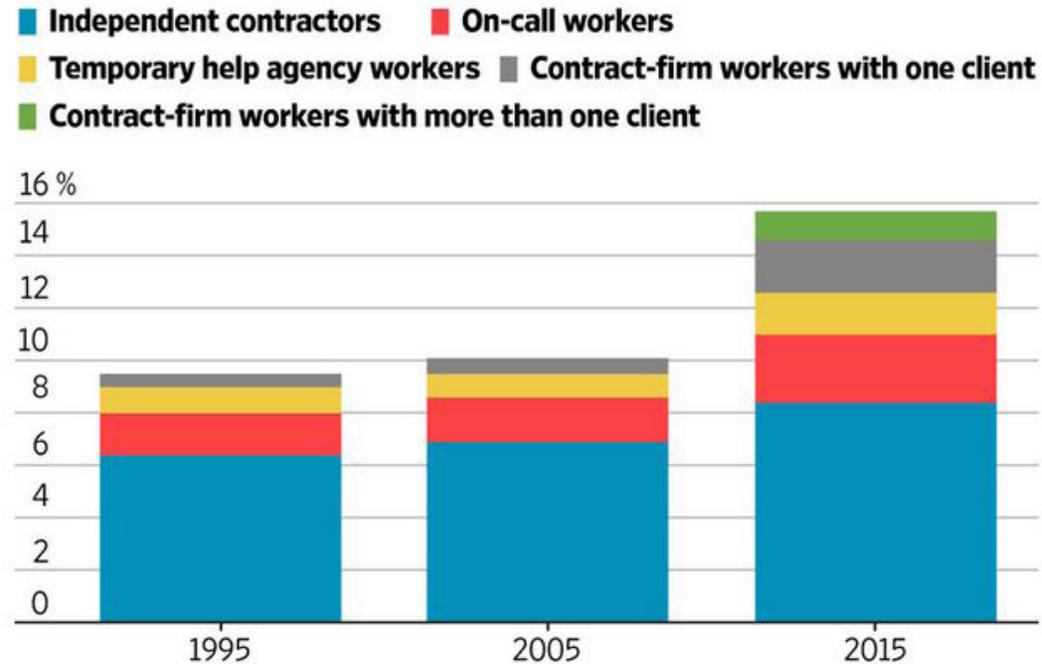
¹⁰ Intuit 2020 Report. *Ten Trends That Will Shape the Next Decade*. https://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf.

¹¹ Benjamin Edelman, Michael Luca and Dan Svirsky, “Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment,” *American Journal of Applied Economics*, 9 (April 2017), 1-22.

GRAPH 5

THE INCREASING NUMBER OF PART-TIME AND GIG EMPLOYEES IN THE UNITED STATES

Estimates suggest a sharp increase in the percentage of the U.S. workforce that isn't employed directly by the company where they work.



Note: A janitor who is employed by a contract firm and cleans five unrelated offices a week is counted as working for more than one client. Data for 1995 and 2005 don't include exact comparisons for that group.

Source: Lawrence Katz (Harvard University) and Alan Krueger (Princeton University)

Source: The Wall Street Journal, 269 (Feb. 3, 2017), A10

Who Delivers Health Care In Hampton Roads Today? The Rise Of Nonphysician Professionals



WHO DELIVERS HEALTH CARE IN HAMPTON ROADS TODAY? THE RISE OF NONPHYSICIAN PROFESSIONALS

The most effective way to maximize the complementary skill sets of all health care professionals is to work as a team. Depending on the specific practice needs, a team-based approach can include various combinations of physicians, nurses, physician assistants, pharmacists, social workers, case managers and other health care professionals. The unique strengths and perspectives of each clinician are an asset when providing the safest, best possible care to patients.
– American Medical Association, 2017

Long gone are the days when family doctors carrying little black bags and stethoscopes made house calls. **Not only have home visits by physicians become a rarity, but also health care increasingly has become more of a “team sport” that involves a variety of players in addition to physicians.**

More and more, medical care is being provided by nonphysician, non-M.D. health care professionals such as physician assistants, nurses and medical technicians. Why? First, the absolute number of elderly people has been growing and they are demanding more health care services. Second, the rising cost of physician-only health care has stimulated health care customers to shop for alternatives. Third, medical schools are not producing enough physicians to maintain a physician-only health care delivery model.

In this chapter, we document the shifts that have been occurring in the personnel who now deliver health care and compare Hampton Roads to other regions in this regard. These shifts are further magnified when evaluating the impact from demographics, health care expenditures, reimbursement methodologies, technological advancements and policy implications. Whether or not you believe that a team is truly necessary to deliver health care services, it is safe to assume that the American Medical Association’s (AMA) recommendation is mildly conservative, given the growing complexities in the system and need for a diverse set of skills to survive.

We’ll also look at the prescient efforts of Eastern Virginia Medical School (EVMS) to anticipate these changes and supply the differentiated health care personnel that have become staples of this new model.

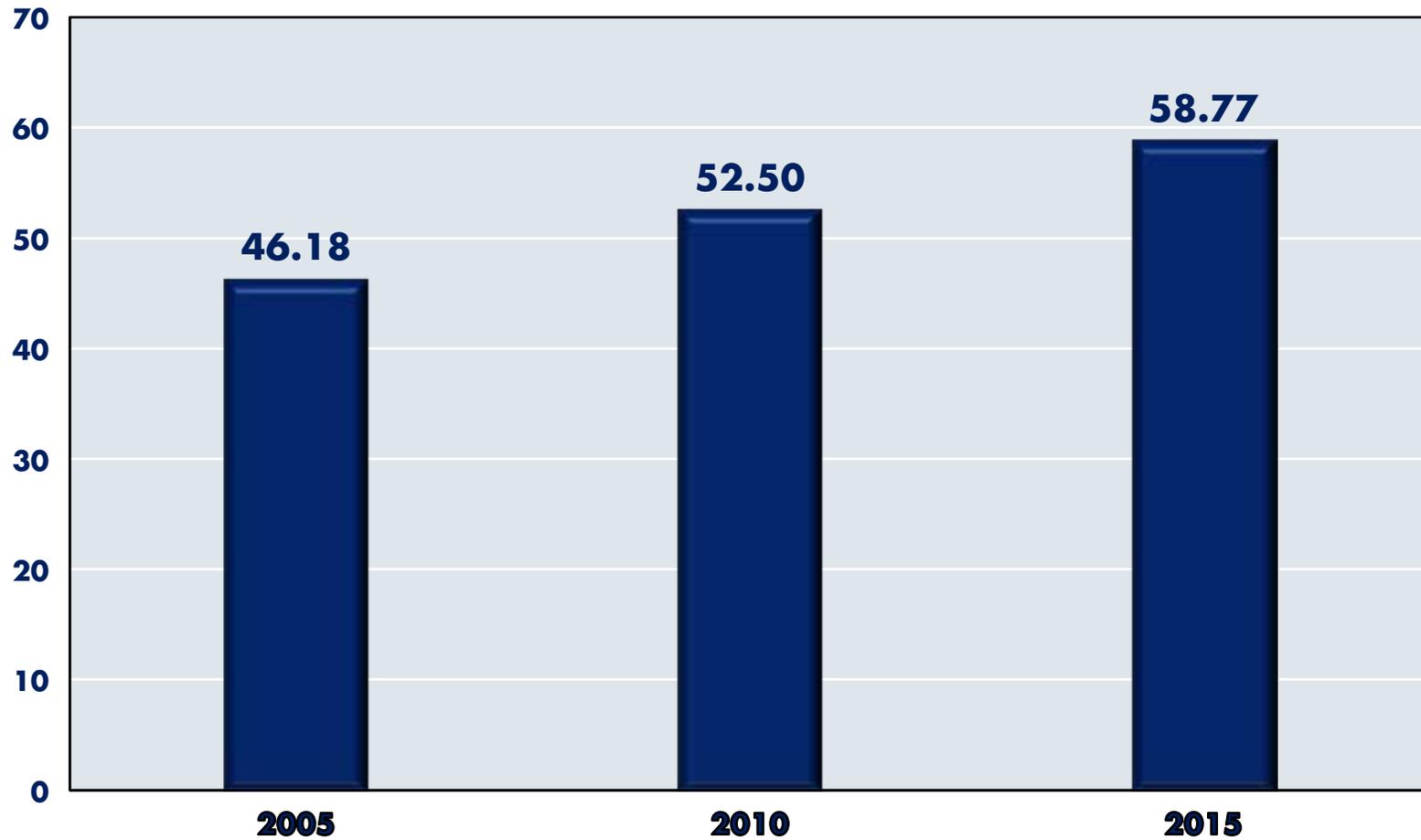
The Rise Of Nonphysician Health Care Professionals

The Bureau of Labor Statistics (BLS) keeps track of where Americans work and how much they are paid. In health care, the BLS keeps tabs on more than 60 specific occupations that range from surgeons to pharmacy aides. Graph 1 reveals that the relative importance of the practitioners and technical health care providers grew from 46.18 per 1,000 workers in Hampton Roads in 2005 to 58.77 in 2015. Clearly, health care workers now account for a considerably larger slice of our workforce than they did a decade ago.

In absolute numbers, there were 42,900 health care practitioners and technical workers in our region in 2015. They earned an average annual salary of \$73,460 – which was 61.6 percent higher than the regional average of \$45,460 for all workers.

GRAPH 1

**THE INCREASING NUMBER OF HEALTH CARE PROFESSIONALS
PER 1,000 EMPLOYEES IN THE LABOR FORCE OF HAMPTON ROADS**



Source: Bureau of Labor Statistics, Metropolitan and Nonmetropolitan Area Occupational Employment and Wages Estimates, 2005, 2010 and 2015, www.bls.gov

Health Care Occupational Trends

Though they are reluctant to discuss such matters, the health care providers who hire health care professionals in Hampton Roads increasingly have exhibited a bias in favor of employing less-expensive nonphysician employees. Graph 2 indexes at 100 the relative employment level of a variety of health care professionals to illustrate longer-term trends. The dotted red line reflects the overall employment of health care professionals and related technical personnel in Hampton Roads between 2005 and 2015.

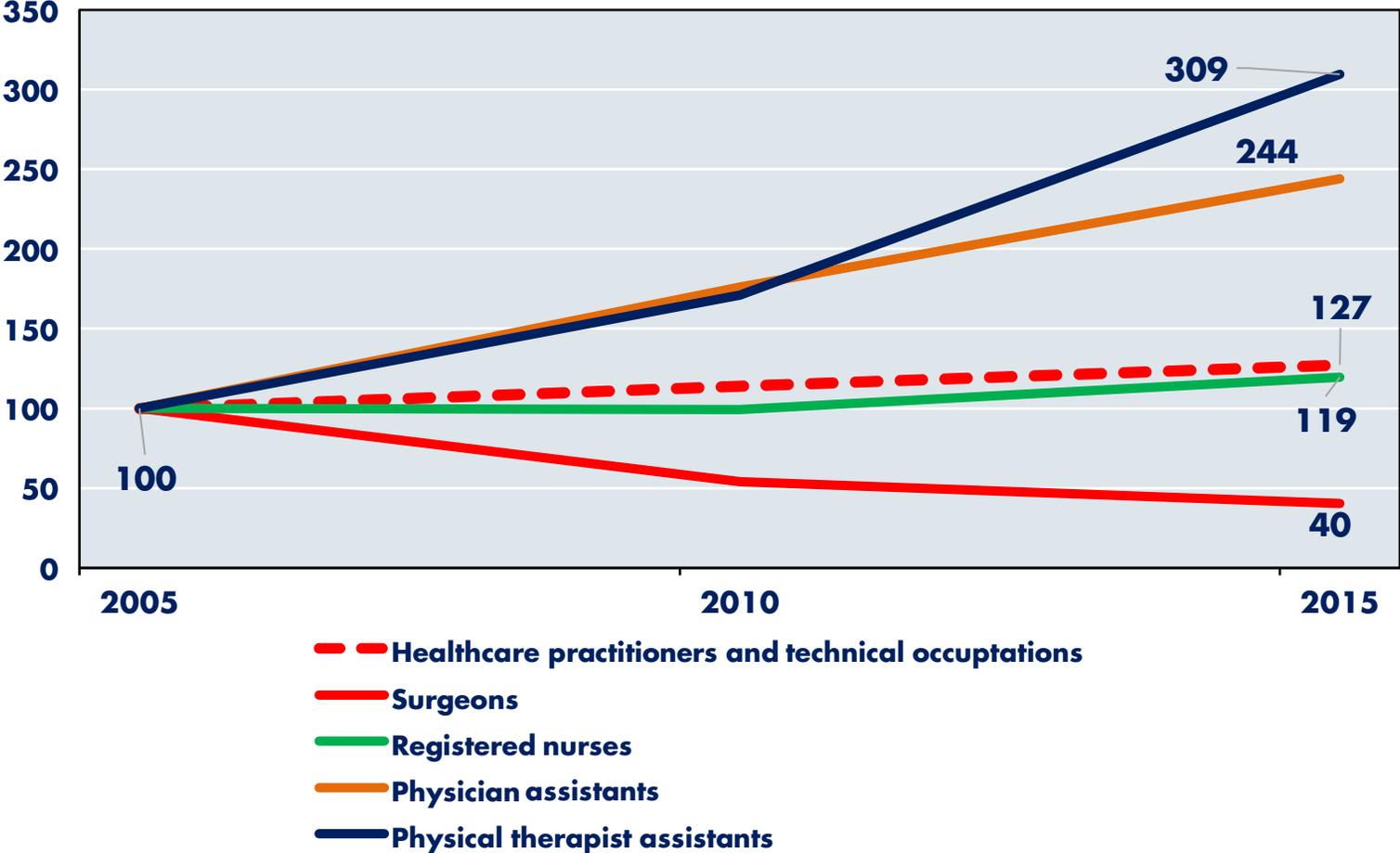
One can see that the most rapid employment growth occurred among physical therapist assistants (who often implement the work of physical therapists) and physician assistants (who often directly substitute for physicians). While the number of physicians working in Hampton Roads has increased over time, note that there has been a decline in the relative importance of surgeons.

In general, the employment of physicians has lagged that of less-expensive health care professionals. The less-expensive health care professionals can be divided into two groups – those who occupy positions that require earned degrees and substantial training (such as physician assistants and radiological technicians) and those who usually assist these professionals (nursing and pharmacy aides, and medical and physical therapist assistants). Therefore, in effect, the world of health care personnel has trifurcated into physicians, health care professionals other than physicians, and those who assist physicians and health care professionals.

Rising health care costs have provided ample incentive for health care providers such as hospitals to substitute less-expensive health care professionals and their assistants for physicians. By no means does this suggest that physicians no longer occupy the central role in the provision of medical care. They continue to do so. Nevertheless, an increasing amount of physicians' time now is devoted to managing and supervising other health professionals and their assistants.



GRAPH 2
COMPARATIVE CHANGE IN EMPLOYMENT OF
HEALTH CARE PROFESSIONALS: HAMPTON ROADS, 2005-2015



Source: Bureau of Labor Statistics, Metropolitan and Nonmetropolitan Area Occupational Employment and Wages Estimates, 2005, 2010 and 2015, www.bls.gov

Rising Costs

Rising costs are the primary driver of the health care employment trends just noted. **Between 1960 and 2015, per capita health care expenditures in the United States grew from \$152 to \$9,973 – a stratospheric 6,464 percent. Meanwhile, the consumer price index (CPI) grew 727 percent.** Per capita health care expenditures grew more than 100 percent per decade, an enormous increase by any standard. Between 1980 and 1990, for example, expenditures on health care rose 157 percent. Graph 3 summarizes this evolution.

DEMOGRAPHIC CHANGES DRIVE COSTS

Rising health care costs are sensitive to demographics. Between 1940 and 2015, the Census Bureau tells us that the percentage of Americans 65 years or older rose from 6.8 percent to 14.7 percent (13.8 percent in Hampton Roads). Here's the connection: Elderly people account for a disproportionate amount of expenditures on health care. **The Center for Medicare and Medicaid Services reported that in 2012, 34.5 percent of all health care expenditures were made by or for individuals age 65 or older. Approximately one-third to two-fifths of the dramatic increase in health care expenditures that we have observed over the past half-century can be attributed to increased health care provided to this population.**

The “graying” of Hampton Roads (see Graph 4) carries with it one additional implication. The optimal individuals to address the health care needs of our elderly citizens may not be physicians, but instead nonphysician professionals and their assistants. This reflects the higher cost of utilizing physicians, which in turn is indicative of the reality that the supply of physicians has not been keeping pace with population growth.

DISAGGREGATING THE COST INCREASES

Graph 5 provides internal details concerning our increased expenditures on health care. Hospitals account for about half of health care expenditures, followed by physicians and clinical experiences at 30.5 percent. Home health

care and prescription drugs together account for the remaining 20 percent of expenditures. Home health care, while still accounting for only 4.3 percent of total health care expenditures, has become relatively more important over time, while expenditures for physicians became somewhat less important.

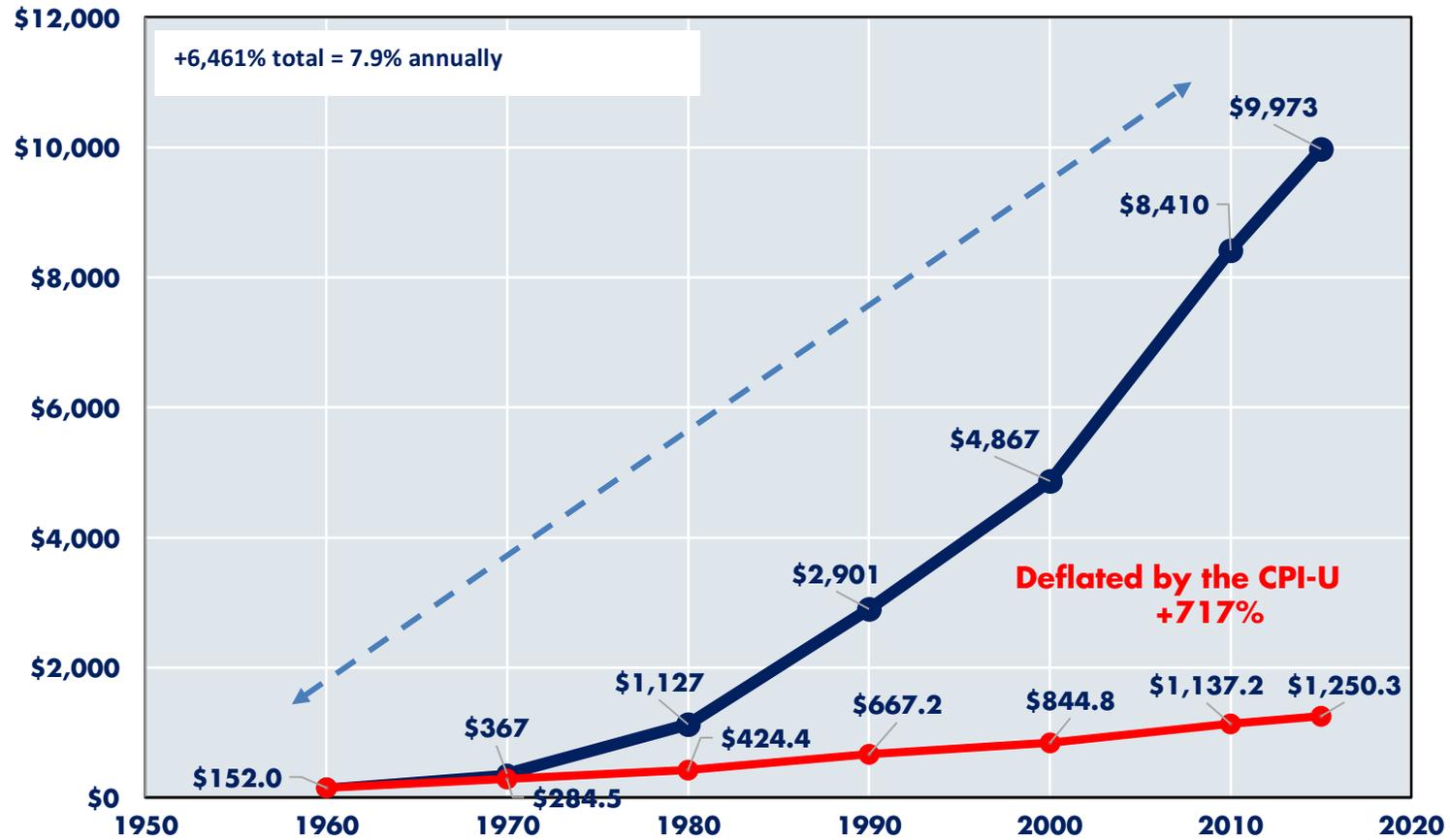
Since 2010, the upward surge of health care expenditures in the United States has moderated and price increases in all of the four expenditure segments identified in Graph 5 have ranged around 25 percent. Many observers credit the Affordable Care Act (the ACA, or “Obamacare” to some) for some of this deceleration. The ACA invoked cost-inhibiting procedures and regulations on providers and insurers. In addition, ACA or not, there has been more emphasis upon employee wellness by employers that some believe has reduced health care costs. Further, there now are more “pay for performance” reimbursement arrangements that attempt to provide financial awards to effective health care providers.

If current price trends continue through the remainder of this decade, then the total increase in health care expenditures between 2010 and 2020 will be approximately 50 percent higher – still substantial, but far below the price inflation of previous decades, though still well above the anticipated increase in the consumer price index.

Virginians spent \$6,286 per person on health care in 2009, while the national average was \$6,815 (according to the Kaiser Family Foundation). Virginians spend less for health care than the national average even though Virginia's overall cost of living is about 5 percent above the national average.

GRAPH 3

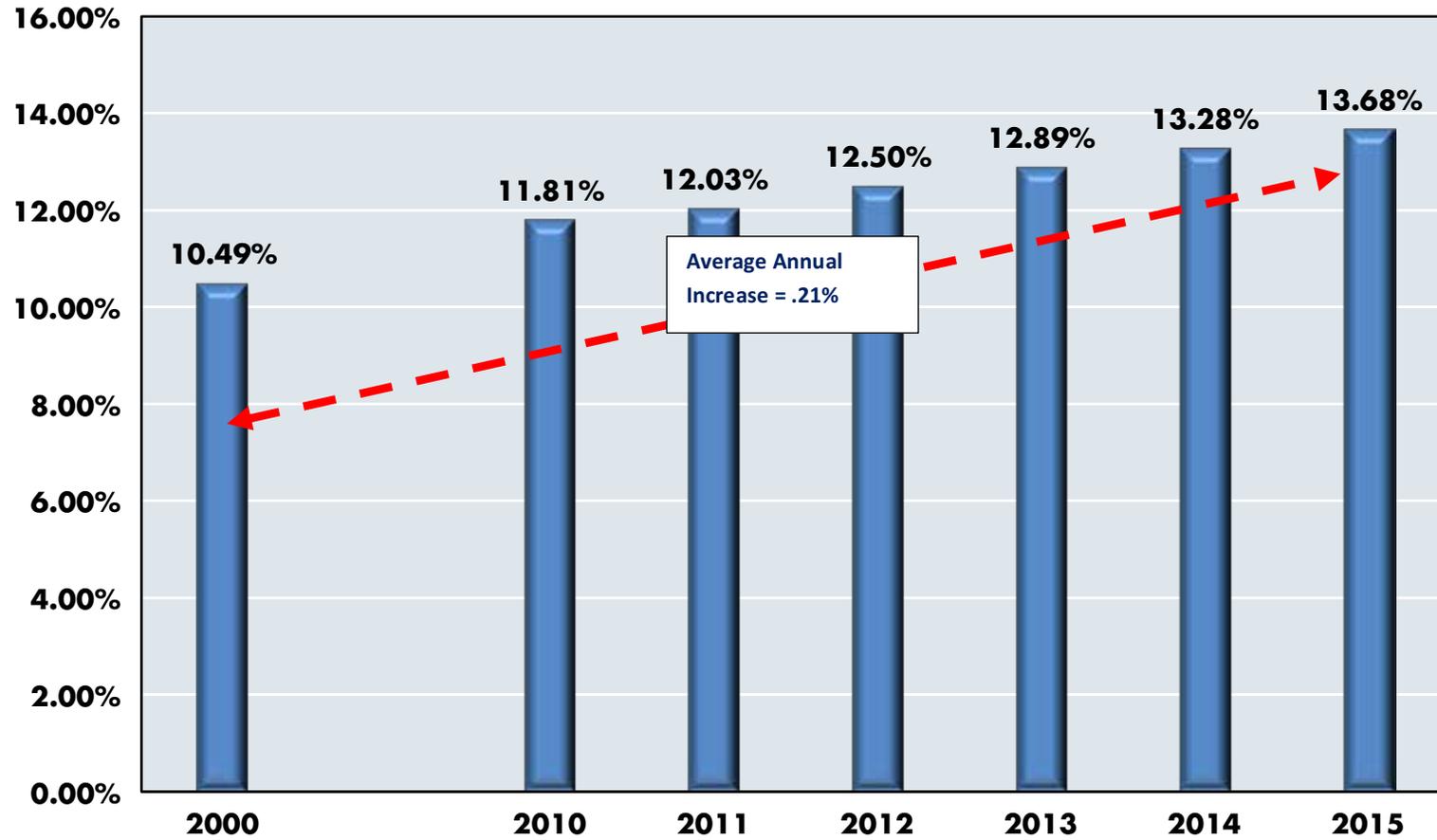
PER CAPITA EXPENDITURES ON HEALTH CARE DEFLATED BY THE CONSUMER PRICE INDEX: UNITED STATES, 1960-2015



Sources: Bureau of Labor Statistics, CUUR0000A0, www.bls.gov; U.S. Census Bureau; Center for Medicare and Medicaid Services, www.cms.gov

GRAPH 4

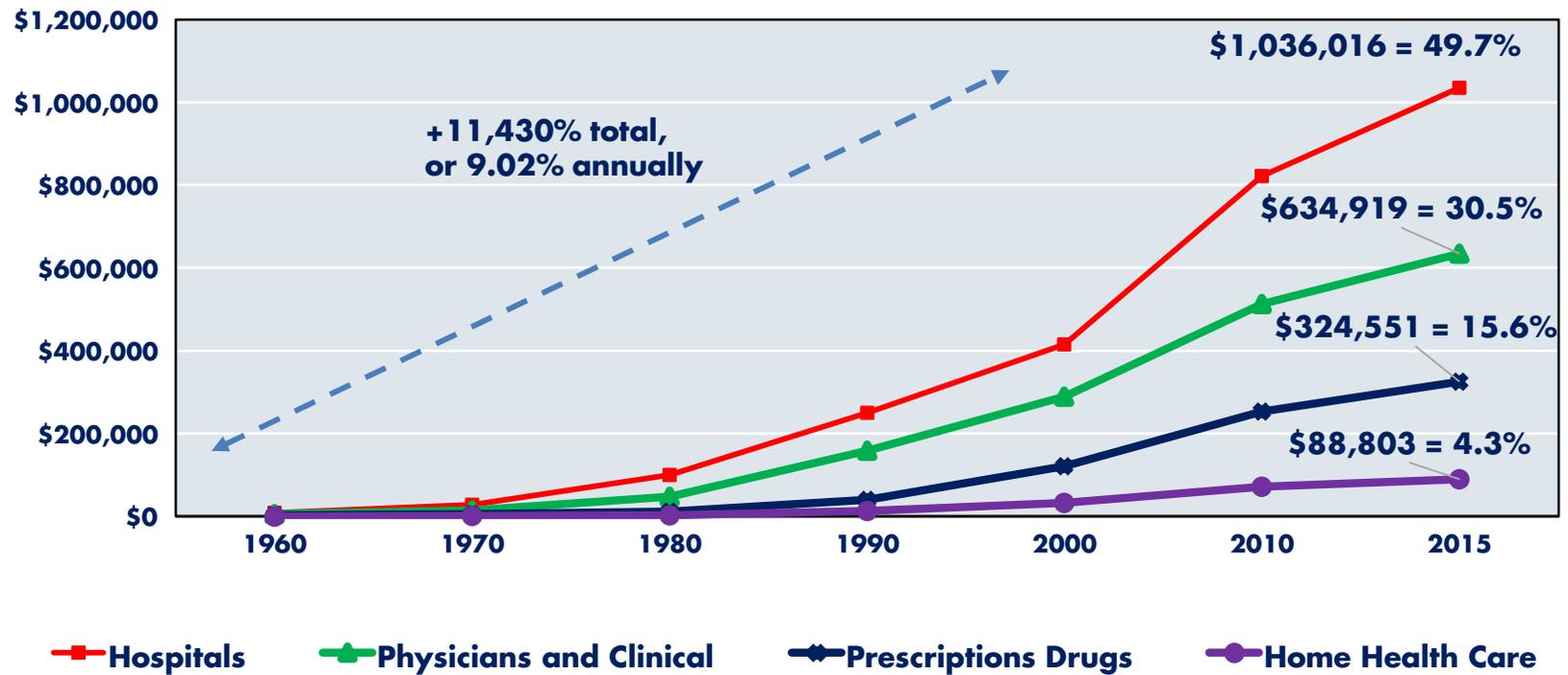
PERCENTAGE OF HAMPTON ROADS RESIDENTS AGE 65 OR OLDER, 2000-2015



Source: U.S. Census Bureau

GRAPH 5

FOUR MAJOR CATEGORIES OF EXPENDITURES ON HEALTH CARE IN THE UNITED STATES, 1960-2015
(MILLIONS OF DOLLARS)



Sources: U.S. Census Bureau and Center for Medicare and Medicaid Services, www.cms.gov

THE INFLUENCE OF THE AFFORDABLE CARE ACT

In addition to demographic changes, the demand for health care services has been influenced by the Affordable Care Act. The ACA expanded health care insurance to millions of additional people, attempted to control health care costs and sought to improve the health care delivery system.

In net terms, the ACA increased the demand for, and use of, health care in the United States. **It has become clear that the available supply of physicians is insufficient to handle this new surge of health care users. This has stimulated, perhaps required, health care providers to turn to nonphysician professionals to deliver many aspects of health care.**

The Physician Supply Bottleneck

In thoroughly competitive markets, extended periods of rising prices like those we have observed in health care attract new competitors who seek to profit from the rising prices. New firms enter such markets and existing firms expand their output because it is profitable. This phenomenon usually is accompanied by increasing flows of people into the occupations connected to these profitable markets. Witness the flow of personnel into “hot” economic activities such as cybersecurity, or into the oil industry when oil was \$100 per barrel. Rising real wages attract workers.

Why hasn't this happened for physicians, who are the traditional centerpiece of medical care in the United States? The supply of physicians has not been, and is not likely to become, very responsive to income signals. Already in 2015, the Association of American Medical Colleges (AAMC) asserted that there was a shortage of between 46,100 and 90,400 physicians and predicted that this shortage would expand to between 61,700 and 125,200 by 2025.¹ These shortages exist despite the fact that the national average

¹ IHS Inc., “The Complexities of Physician Supply and Demand: Projections from 2014 to 2025,” prepared for the Association of American Medical Colleges (2016).

income for a physician in May 2015 was \$202,450, more than quadruple the national average of \$48,320 for all occupations. As just noted, the usual economic reaction in such an environment is a flow of people into the higher-earning occupations. This has not occurred in the case of physicians, nor is it likely to occur.

The primary reason why we are not producing more physicians is that the number of residencies for prospective physicians is limited. Graduates of medical schools must successfully complete a residency to practice. This is the major bottleneck.

The U.S. government's Medicare system funds much of the costs that teaching hospitals incur for physician residencies. Further, the Balanced Budget Act of 1997 capped the number of residencies that the federal government funds. Any residencies established beyond this level must be paid for by hospitals, which already face significant financial burdens that flow from the unfunded medical care they provide many people who appear in their emergency rooms and from those who do not pay their bills. Hence, the total number of residencies has increased only modestly in recent years. This has curtailed production of physicians in the United States.

The political and economic issues related to the restrictions on the number of residencies are fascinating and ultimately involve considerable finger-pointing between and among the AMA, the federal government, hospitals and, of course, physicians. We will not delve into those arguments here, but instead simply note that **the number of physicians has not and will not keep pace with future growth in demand for health care services. This means that the United States will need to rely increasingly upon nonphysician health care professionals to deliver health care services.**

A Conundrum: Health Care Salaries In Hampton Roads

Between 2005 and 2015, the salaries of health care professionals in Hampton Roads grew 2.21 percent annually. This was higher than the national average for all workers (about 1.7 percent), but somewhat below the regional average growth rate (2.47 percent) for all workers.

Here is the puzzler: If there is a shortage of health care professionals in Hampton Roads (as many health care providers contend), why haven't the incomes of health care professionals been rising more rapidly? This is an odd economic circumstance – the number of health care jobs has been expanding, but the incomes of those workers have been increasing less rapidly than those of other workers. Meanwhile, in the non-health care segments of our regional economy, there has been precious little job creation, but more generous growth in salaries.

How do we explain the lethargic growth of the salaries of health care professionals in our region? It could reflect a changing mix of jobs in the non-health care sector. Perhaps we now have an increasing proportion of higher-paying STEM-related jobs in fields such as computer science and information technology. If true, this would drive up average incomes in non-health care occupations, especially if they replace jobs that compensate relatively poorly. However, evidence of this is limited.

Or, lagging health care salaries might tell us that despite the complaints of major health care providers such as hospitals and medical practices, they are not, after all, having great difficulty attracting and retaining the health care professionals they need. Hence, they simply don't need to pay more to meet their employment needs. The expanding supply of health care professionals in our region, coupled with modest population growth, could contribute to this condition. We will see below that Eastern Virginia Medical School, among other providers, clearly has increased the size of most of its programs that produce individuals who complement or substitute for physicians.

The relevant point is that in the last decade, it does not appear to have been necessary for health care employers in Hampton Roads to change this situation by significantly increasing the salaries they offer prospective workers. Apparently, they have been able to attract the personnel they desire without doing so.

Changing Payment Criteria Influence Care

A variety of ways exist for physicians, hospitals and other health care practitioners to be paid for the services they provide. *Fee-for-Service (FFS)* has been the traditional mode of payment used by private health insurers and government programs such as Medicare and Medicaid. Under FFS, which is one of the founding elements of managed care, private or public health insurers pay practitioners for services rendered. These payments were typically pre-negotiated within certain guidelines or contractual agreements with providers within a network.

The actual economic value of preventive health care is not always clear. Several reputable studies have found only small long-term differences in health costs among individuals when preventive measures are actively pursued. See Joshua Cohen, *The New England Journal of Medicine* (Feb. 14, 2008); Maciosek et al., *Health Affairs* (September 2010); and Sharon Begley for Reuters (Jan. 20, 2013). Much seems to depend upon which preventive measures are utilized and the economic value one places on lives. Child immunizations appear to be highly cost effective, but annual physical examinations for adults and certain cancer screenings are not.

Things have changed. Enter *Capitation, Pay-for-Performance* and *Value-Based Arrangements*. Each of these arrangements attempts to tie payments to providers to the performance of those providers. This may involve flat monthly fees paid to health care providers by employers or managed care organizations with the expectation that the provider assumes the responsibility and risk for all aspects of a patient's health care needs and services. Ideally, such an approach stimulates the provider to undertake preventive health care measures that not only help the patient, but also enable the provider to incur continuously rising costs. In theory, such arrangements also supply the provider with a large pool of members so that high-end and low-end users balance each other.

Preventive care usually involves activities such as annual eye screenings, mammograms, hemoglobin A1c testing, primary care checkups and immunizations. Many employers mandate such health-related activities and some, such as Caterpillar, assess financial penalties upon employees who fail to take part. Further, these employers encourage or require their employees to rely less on physicians and more on other health care professionals to deliver preventive services.

Both carrots and sticks can be effective in stimulating preventive care, especially when they are part of an employer/employee situation. A recurring problem is that some health care users are not easily tracked and perhaps are transients. Consequently, many health care providers now employ staff whose primary duty is to locate, track and engage those they serve.

NONMEDICAL EMPLOYEES HAVE PROLIFERATED AT HEALTH CARE PROVIDERS

Health care providers now employ numerous assistants, nurses, technologists and individuals who take care of the business, accounting and legal aspects of being a health care provider. Increasingly complicated laws have virtually required the employment of a set of new, nonphysician employees in medical practices. A typical physician today would be severely disadvantaged without staff who understand electronic medical record systems and how to code and bill for services.

Add to this those employees who schedule and interact with health care users. They may not at first glance seem to be health care providers, but very little health care would be provided without them.

Ultimately, physicians use nonphysician health care professionals to stretch their coverage and allow them to see more patients. Exemplary is a registered nurse taking the vitals (height, weight, blood pressure) of a patient and sharing that information with the physician in advance of an appointment with a patient so that the physician is fully informed and can focus on administering care.

Patient-Centered Medical Homes

One of the most well-known and practiced models of care is a *Patient-Centered Medical Home (PCMH)*. "Home" is a somewhat deceptive label because hardly ever does a PCMH operate in a residential home. PCMHs represent a comprehensive approach to improving health care by transforming how primary care is organized and delivered. The Agency for Healthcare Research and Quality (AHRQ) says a medical home is more than a place, "but a model of the organization of primary care that delivers the core functions of primary health care." At the center of the medical home may be a primary care physician, but a bevy of other professionals personalize care and coordinate efforts to meet patient needs more effectively and efficiently.

The essence of the medical home is a team approach to serving users. The team of care providers may include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, educators and care coordinators. "Although some medical home practices may bring together large and diverse teams of care providers to meet the needs of their patients, many others, including smaller practices, will build virtual teams linking themselves and their patients to providers and services in their communities" (the Patient Centered Medical Home, <https://pcmh.ahrq.gov/page/defining-pcmh>).

PCMH demonstration projects are also supported by legislative measures such as the Affordable Care Act. Through the ACA, nationwide medical home demonstration projects are administered by the Center for Medicare and Medicaid Innovation (CMMI) because of the value they bring to the patient and overall system through cost savings, effectiveness and efficiencies.

The Influence Of Technology

Waves of technological change have been splashing over medical care for some time. These changes have transformed health care in terms of how it is delivered and who is delivering the care. In addition to new drugs and treatments, examples of medically based technological change include the accessing of patient medical records by clicking a button, using robots to perform surgeries, telemedicine visits by means of smartphones or iPads, and monitoring blood pressure and heart rhythms through use of an app that alerts a nurse when there are dangerous spikes.

The digitalization of communication has influenced the way physicians share information with patients. Appointments can be scheduled online and reminders sent via text to smartphones, though this requires medical practices to establish and maintain information technology systems and digitized records. Physicians and other medical professionals now must provide different communication techniques such as texting, use of an app, live video chat or more traditionally by phone. The hallmark is flexibility.

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 provided the U.S. Department of Health and Human Services with the authority to establish programs to improve health care quality, safety and efficiency through the promotion of health information technology, including electronic health records and private and secure electronic health information exchange. The act included mandates that placed significant pressure on physicians and other health care practitioners to re-evaluate the way in which medical records are managed, documented, protected, accessed by patients, accessed by other health care providers and for administrative needs, and ultimately digitized. It mandates that virtually every physician employ staff to

support the act's administrative requirements. Once again, this has added to the number of nonphysician personnel who are involved in providing health care.

Who Are The Nonphysician Health Care Professionals?

Table 1 presents May 2015 Virginia numbers for the “Big Three” of nonphysician health care professionals: nurse practitioners, registered nurses and physician assistants. Their percentage presence in the population is included in parentheses, though we caution that these density numbers should only be taken as approximations because the residences and work locations of individuals may differ and they may work at multiple locations. Not surprisingly, Hampton Roads, which has the largest population in the sample, has the lowest densities of these individuals.

Nurse practitioners, registered nurses and physician assistants can complement or support physicians by performing certain procedures on their behalf, or by assuming some of the physicians' responsibilities. These include the pre-examination of patients, review of medical histories, prescribing of certain medications, the recommending of certain medication regimens and the like.

Physicians and medical associations often argue that nonphysician health care professionals are not perfect substitutes for physicians. However, for a wide range of medical tasks, including routine evaluations and preventive care, it is not clear that physicians are cost-effective in comparison to the individuals in these three occupations. Nor is it apparent that the quality of care patients receive declines in most situations when the nonphysician health care professionals are the ones providing the care.

There exists something economists label “the market test.” As applied to medical care, it asks this question: When free to choose, whom do medical customers and providers decide to utilize? Increasingly, the answer is – individuals trained in these three nonphysician specialties. Just as most drivers may prefer a Mercedes sedan to a Honda Civic, those seeking medical

care may well prefer physicians to nonphysician health care professionals. Nevertheless, relatively few individuals end up driving Mercedes automobiles and decreasing proportions of those seeking medical care are being served by physicians. Rhetoric aside, the market has spoken.

TABLE 1

NUMBER AND DENSITY IN THE LABOR FORCE OF SELECTED NONPHYSICIAN PROFESSIONALS IN THE LABOR FORCE IN VIRGINIA METROPOLITAN REGIONS, 2015

	Nurse Practitioners	Registered Nurses	Physician Assistants	Totals
Hampton Roads	920 (.05%)	13,700 (.79%)	480 (.03%)	15,100 (.87%)
Lynchburg	120 (.05%)	2,250 (.87%)	70 (.03%)	2,440 (.94%)
Richmond	760 (.06%)	14,220 (1.13%)	360 (.03%)	15,340 (1.22%)
Roanoke	170 (.06%)	4,090 (1.32%)	210 (.07%)	4,470 (1.45%)

Source: https://www.bls.gov/oes/current/oes_47260.htm#31-0000 for May 2015

“Nurse practitioners and physician assistants have skill sets similar to those of physicians. Nurse practitioners can perform approximately 85 percent of the tasks that primary care physicians do, while physician assistants can replicate around 80 percent of a physician’s tasks.”
 – Victoria Garment, “Nurse Practitioners and Physician Assistants: Why You Should Hire One (or the Other),” *The Profitable Practice* (May 31, 2013). However, we should note there is some evidence that physicians perform the same tasks better.

Eastern Virginia Medical School Anticipates And Reacts

Eastern Virginia Medical School (EVMS) not only has adapted to the increased use of nonphysician health care professionals, but also believes this trend will continue. EVMS offers a growing number of nonphysician programs via its School of Medicine and its School of Health Professions, often in collaboration with other community partners.

The current stable of EVMS programs includes:

Medical Programs (M.D.+)

- Doctor of Medicine
- Dual M.D. and M.B.A. Program
- Dual M.D. and M.P.H. Program

Doctoral Programs (Ph.D.)

- Biomedical Sciences
- Clinical Psychology (joint consortium with ODU and NSU)
- Doctor of Health Sciences
- Reproductive Clinical Sciences

Master’s Programs

- Art Therapy and Counseling
- Biomedical Sciences Research
- Biotechnology
- Clinical Embryology and Andrology
- Contemporary Human Anatomy
- Healthcare Delivery Science
- Laboratory Animal Science
- Medical and Health Professions Education
- Medical Master’s
- Pathologists’ Assistant
- Physician Assistant
- Graduate Program in Public Health
- Surgical Assisting (the only master’s program in the country)

Table 2 describes the 2014-15 enrollment in each of these programs, as well as related information. Applications to EVMS overall increased 17.8 percent between 2013-14 and 2015-16, with particularly notable increases in the medical doctor (M.D.), medical master's and physician assistant programs

(which also are the medical school's three largest programs). The physician assistant program now receives more than 1,800 applications annually, but has only 80 available slots.

TABLE 2					
NEW STUDENTS AND TOTAL ENROLLMENT: EVMS, 2015-16 AND PERCENTAGE CHANGES FROM 2013-14 TO 2015-16					
Program	New Student GPA	Applicants	New Students	Total Students	2015-16 Graduates
Art Therapy and Counseling, M.S.	3.29	42	13	30	12
Biomedical Sciences Research, M.S.	3.52	18	4	10	6
Biomedical Sciences, Ph.D.	3.26	15	3	12	1
Biotechnology, M.S.	3.22	7	4	9	5
Clinical Psychology, Ph.D. (joint program with ODU and NSU)	3.46	101	6	37	0
Contemporary Human Anatomy	3.21	17	10	10	0
Medical Doctor, M.D.	3.60	7,319 (+11.1%)	151 (.7%)	584 (+5.2%)	133 (9.9%)
Medical Master's, M.S. (1- and 2-Year)	3.24	467 (+50.2%)	67 (+28.8.7%)	105 (+59.1%)	59 (-6.3%)
Medical and Health Prof. Educ.	3.34	21	17	17	0
Laboratory Animal Science, M.S.	3.26	18	6	19	9
P.A. Fellowship in Emergency Medicine	3.42	10	3	3	3
Physician Assistant, M.P.A.	3.64	1,848 (+50.9%)	80 (-5.9%)	255 (+8.5%)	86 (+34.4%)
Public Health, M.P.H. (joint program with ODU)	3.12	135	53	105	45
Reproductive Clinical Science, M.S.	3.18	40	24	53	
Surgical Assisting, M.S.A.	3.17	32	20	41	18
Surgical Assisting, Bridge Program	3.59	3	2	2	0
Totals		10,093 (+17.8%)	481 (+3.4%)	1,292 (+7.2%)	417 (+3.1%)

Sources: EVMS Annual Report and C. Donald Combs

Enrollment growth at EVMS has generated at least three beneficial effects for the medical school. First, it is clear there is a demand for the graduates. EVMS has been meeting the market test (noted earlier) in impressive fashion.

Second, the programs listed in Table 2 have become a profit center for EVMS, a notable and important achievement for an institution that in the past has encountered financial struggles. Table 3 reports the net financial contribution of the School of Health Professions to the bottom line of EVMS in recent years. This does, however, raise an interesting question. Should some educational programs (and students) at EVMS be used to subsidize other programs and students? This is commonplace, though sometimes controversial, behavior at colleges and universities.

Third, these programs have tied EVMS more closely to the community because most involve interactive activities and placements with the region’s health care professionals and providers.

President Richard V. Homan, Dean C. Donald Combs and EVMS were swifter to the mark in recognizing the fundamental changes that were occurring in the provision of medical care than were the leaders of many other medical schools. Theirs was not a casual decision because the financial resources, space, equipment and administrative attention required to mount these programs were quite significant in the context of a smaller medical school such as EVMS. While they may not have been gambling the medical school’s future, they nonetheless were making a rather large wager. If their analyses did not prove to be on target, then it would likely lead to the beginning of very difficult times for EVMS.

TABLE 3	
NET FINANCIAL CONTRIBUTION OF THE EVMS SCHOOL OF HEALTH PROFESSIONS TO THE INSTITUTION’S BOTTOM LINE	
Fiscal Year	SHP Net Contribution (Millions of \$)
2013	\$.8
2014	\$1.9
2015	\$3.0

Source: 2014-2015 EVMS School of Health Professions Annual Report; created by Kelly Brown

One of the gratifying results of the School of Health Professions programs at EVMS has been the substantial proportion of Virginians (61 percent) enrolled. Table 4 reports these data. Noteworthy as well for Hampton Roads is that 37.5 percent of the programs’ graduates currently practice in Hampton Roads.

TABLE 4			
PROPORTIONS OF VIRGINIANS IN SELECTED EVMS ACADEMIC PROGRAMS, 2014-15			
Program	Virginia	Out-of-State	Total
Art Therapy and Counseling, M.S.	468	186	654
Biomedical Sciences, Ph.D.	63	33	96
Biomedical Sciences Research, M.S.	36	22	58
Biotechnology, M.S.	5	0	5
Clinical Embryology and Andrology, M.S.	8	149	157
Clinical Psychology, Ph.D.	87	116	203
Medical Master’s, M.S.	183	157	340
Ophthalmic Technology	34	11	45
PA Fellowship in Emergency Medicine	11	4	15
Physician Assistant, M.P.A.	394	277	671
Public Health, M.P.H.	352	127	479
Surgical Assisting, M.S.A.	163	75	238
Totals	1,804 (61%)	1,157 (39%)	2,904

Source: 2014-2015 EVMS School of Health Professions Annual Report; created by Kelly Brown

Final Thoughts

Physicians historically have dominated the provision of health care in the United States and appropriately so because of their training. Nevertheless, a powerful mixture of demographic changes, new health care laws such as the Affordable Care Act, restrictions on the number of medical residencies that have constrained the growth in the supply of doctors, and newly deployed technologies and medicines have pushed up health care prices significantly.

Consequently, physicians have become increasingly scarce, expensive inputs, relatively speaking, and this has provided the impetus for many health care providers to move in the direction of substituting less-expensive, more available nonphysician health care professionals for physicians. One can debate whether this trend has affected the quality of health care, but it appears that those who purchase health care and employ those who provide health care have moved beyond this consideration. Nonphysician health care professionals such as physician assistants, nurse practitioners, registered nurses, technologists and their assistants increasingly are the individuals who actually administer health care. Teams of individuals, many of whom are not medical professionals per se because they deal with the business aspects of health care, now serve patients. Physicians are only one part of that team, albeit they remain the central part.

Eastern Virginia Medical School has made a major commitment to supplying the burgeoning demand for nonphysician health care personnel. EVMS committed early to addressing the need for nonphysician health care professionals and this was an auspicious decision both for Hampton Roads and the medical school itself. This has directly contributed to the well-being of our region's citizenry.



Affordability And Access In Virginia Public Higher Education



AFFORDABILITY AND ACCESS IN VIRGINIA PUBLIC HIGHER EDUCATION

Mind numbing.

– Chris Jones, chairman of the Virginia House of Delegates Appropriations Committee, after learning of the College of William & Mary's substantial increase in tuition and fees, May 16, 2016

The precise causes of this increase are not yet well understood.

– The President's Council of Economic Advisors, referring to spikes in tuition and fees, July 2016

If you were to ask a random sample of the 388,000 students currently attending one of Virginia's many fine public colleges and universities questions about the cost of their education, you should be prepared to listen to tales of woe. These students, 78,000 of whom attend public institutions in Hampton Roads, likely will tell you that the price of attendance has gone up too rapidly and that as a consequence, too many of them have been forced to go deep into debt. They will tell you that the cost of attending Virginia's colleges and universities has leaped far ahead of the growth in family income, or in the consumer price index (CPI).¹

These are not unsubstantiated claims. Between 2001-02 and 2016-17, total increases in the published "sticker prices" of tuition and fees at Virginia's four-year institutions ranged from a low of 149.8 percent at Old Dominion University to a high of 344.2 percent at the College of William & Mary.² Increases in the Virginia Community College System ranged from Richard Bland Community College's 246 percent to Northern Virginia Community College's 349 percent. Graphs 1 and 2 report these data plus information for selected Virginia public institutions of higher education. These tuition and fee data come from the Chronicle of Higher Education, which maintains a large database containing this information on the nation's colleges and universities.

As we shall see, there are real-world consequences associated with these cost increases. They include the inability of many Virginians to attend a public college, or to have to do so on a part-time basis; increasing levels of student and family debt; increasing social and economic stratification of student bodies; and a drag on Virginia's economic growth because indebted current or former students don't buy homes or automobiles and don't start new businesses. This is one reason among several why Virginia's economy has grown more slowly than that of the United States for six consecutive years.³ It also is one of the reasons why enrollment in Virginia's public institutions of higher education has crept downward every year since 2011. Simply put, increasing numbers of individuals have decided that our public colleges have become too expensive compared to the benefits they generate in return.

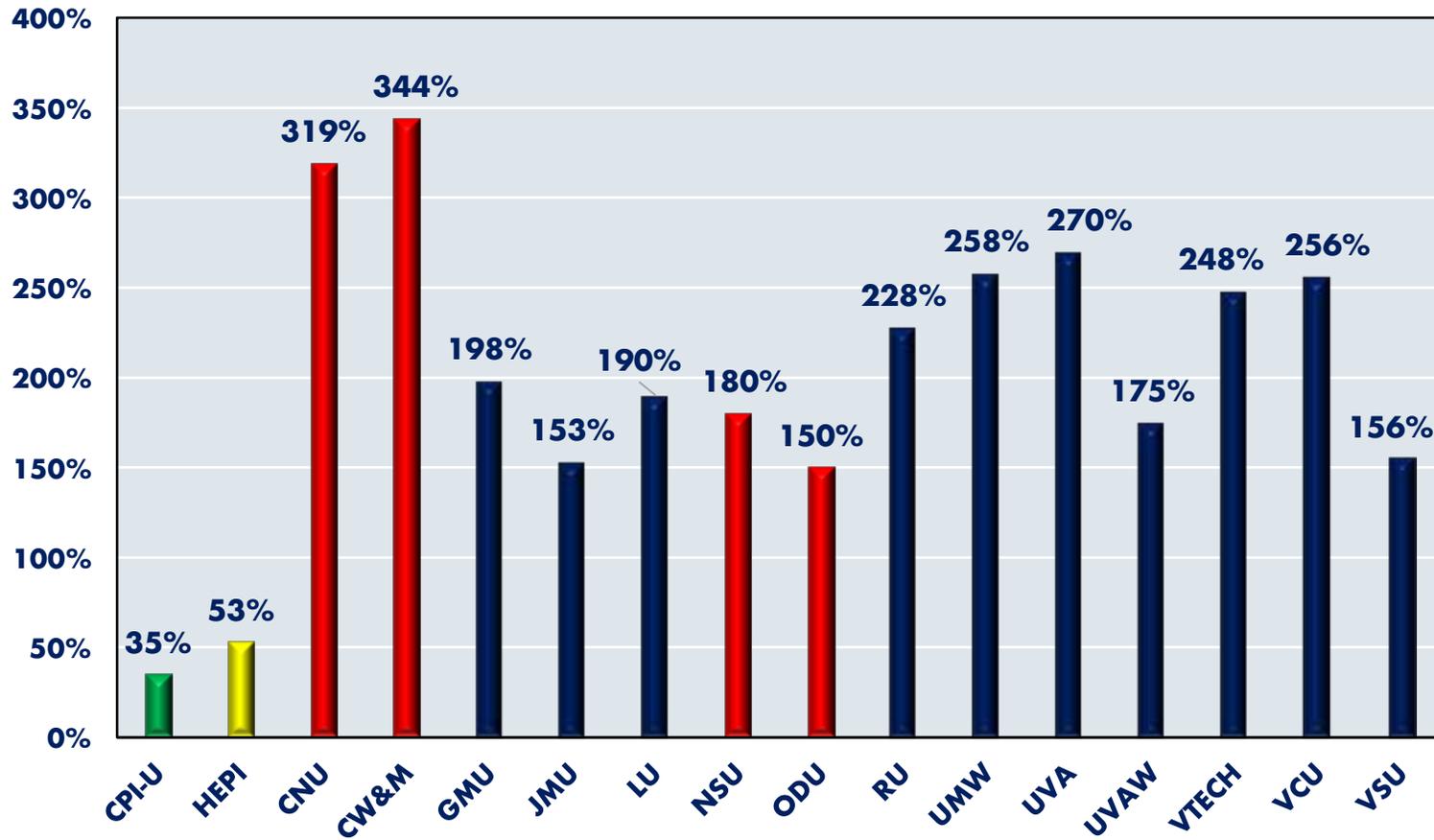
¹ Partners 4 Affordable Excellence @EDU commissioned a public opinion poll in late 2016 that was mounted by two highly reputable polling organizations of differing political leanings. Among the results: 85 percent of respondents believe that Virginia public higher education is not affordable; 90 percent do not believe their incomes are keeping up with the rising price of higher education; 77 percent believe that policymakers should find ways to lower the cost of attending a public college.

² "Sticker prices" are the prices approved by boards of visitors and published in catalogs. They differ from the actual prices that students end up paying because of financial grants they may receive. These latter prices are labeled "net prices."

³ State Council of Higher Education for Virginia, Report E02, www.schev.edu.

GRAPH 1

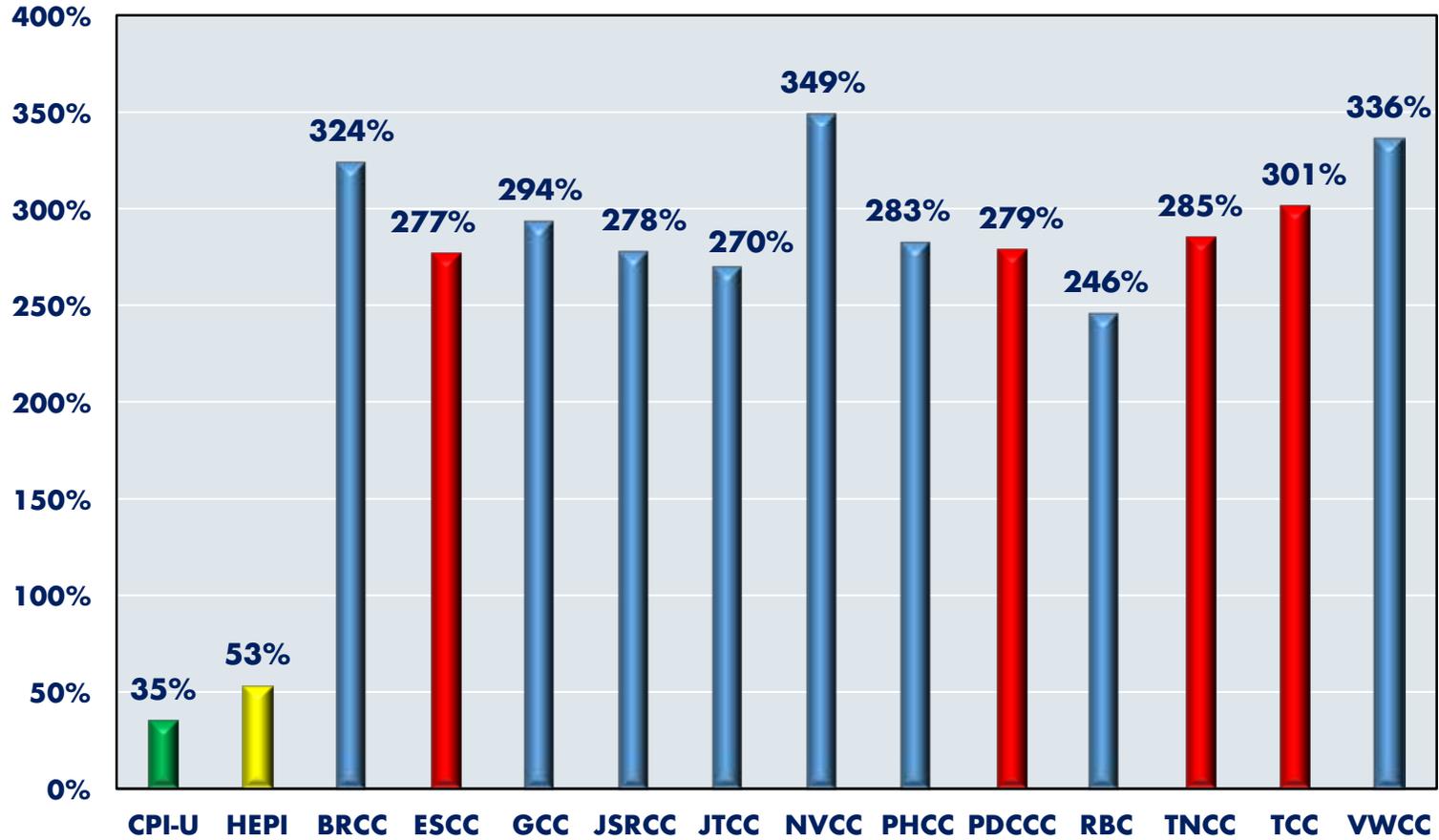
**PERCENT CHANGE IN IN-STATE TUITION AND FEES:
VIRGINIA FOUR-YEAR PUBLIC INSTITUTIONS, 2001-02 – 2016-17**



Source: Chronicle of Higher Education, www.che.edu. HEPI is the higher education price index published by the Commonfund and is designed to reflect higher education's distinctive costs.

GRAPH 2

**TOTAL PERCENT INCREASE IN IN-STATE TUITION AND FEES:
SELECTED VIRGINIA TWO-YEAR PUBLIC INSTITUTIONS, 2001-02 – 2016-17**



Source: Chronicle of Higher Education, www.che.edu. HEPI is the higher education price index published by the Commonfund and is designed to reflect higher education's distinctive costs.

Comparing Tuition And Fee Increases To Changes In Other Prices And Incomes

Published tuition and fee charges at Virginia's public institutions have far outpaced both CPI-U (the consumer price index for all urban consumers)⁴ and changes in the median household incomes of Virginians. Further, tuition and fee increases have dwarfed those that have occurred in other segments of the U.S. economy. Graph 3 reports changes in a variety of prices and incomes between 2006-07 and 2016-17. Note that the average total tuition and fee increase at a Virginia four-year public college or university during this time period was 74 percent, compared to a 40.7 percent increase in the costs of medical care services (doctors, insurance payments, pharmaceuticals, etc.).

Meanwhile, the CPI-U increased only 35.6 percent during these years. Graph 4 shows the relationship between the average tuition and fee increase at four-year public institutions in Virginia and the CPI-U. Tuition and fee increases have exceeded the growth of the CPI-U 15 years in a row, with the average increase in tuition and fees being 2.08 times the average increase in the CPI-U.

During the same time span, median household income rose by a total of 22.4 percent but in real, price-adjusted terms, actually declined by 8.6 percent. **The upshot is that tuition and fees have been spiraling upward at the very time when the ability of the typical Virginia household to pay such prices has been in decline. The average published tuition and fee charge at a Virginia four-year public institution increased 3.31 times as fast as Virginia median household income between 2001 and 2016.**

Another way to assess the ability of Virginians to pay for Virginia public higher education is to ask the following question: "How many hours of work would it take for a Virginia worker earning the Commonwealth's median (50th percentile) wage rate to pay the average tuition and fee charge at a Virginia

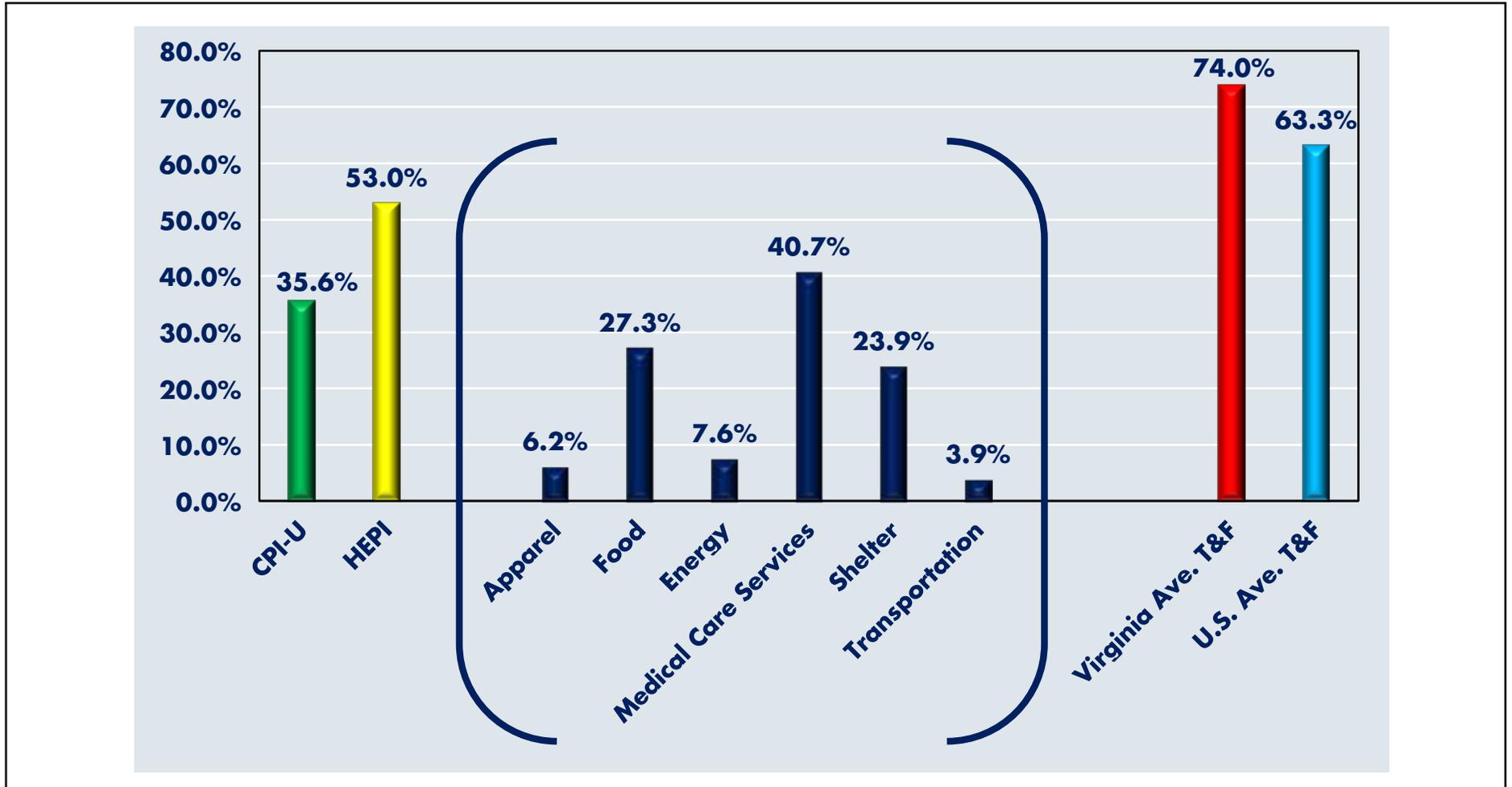
four-year or two-year public college or university?" Graph 5 provides this information, which is eye-opening. **In 2001, it took 227.7 hours of work for a Virginian earning the median hourly wage to pay for tuition and fees at the typical four-year public Virginia institution. By 2016, the number of hours of work required had grown to 438.** For the Virginia Community College System, the comparable numbers were 140.2 and 234.2.

Absent increased financial aid (which we discuss later), it is difficult to avoid concluding that the typical Virginian is being priced out of access to public higher education. The financial barriers to public higher education that confront prospective Virginia students and their families progressively have grown larger.

⁴ The CPI-U is the Consumer Price Index for all urban consumers and covers approximately 80 percent of all Americans.

GRAPH 3

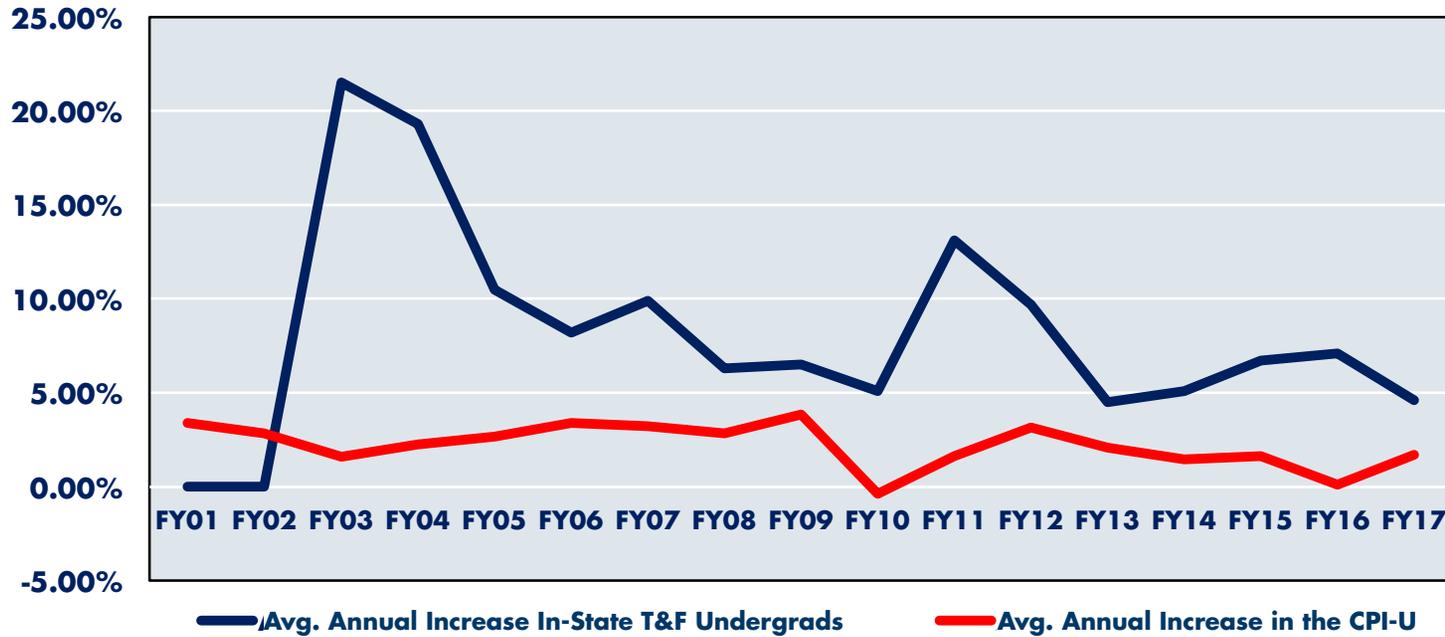
**COMPARING TUITION AND FEE INCREASES AT VIRGINIA'S PUBLIC FOUR-YEAR INSTITUTIONS
TO CHANGES IN OTHER PRICES, 2006-07 – 2016-17**



Sources: Chronicle of Higher Education for Virginia tuition and fees; College Board for average tuition and fees nationally; Bureau of Labor Statistics for the CPI; Federal Reserve Bank of St. Louis for median household income. Note that 2015 is the most recent household income data for Virginia.

GRAPH 4

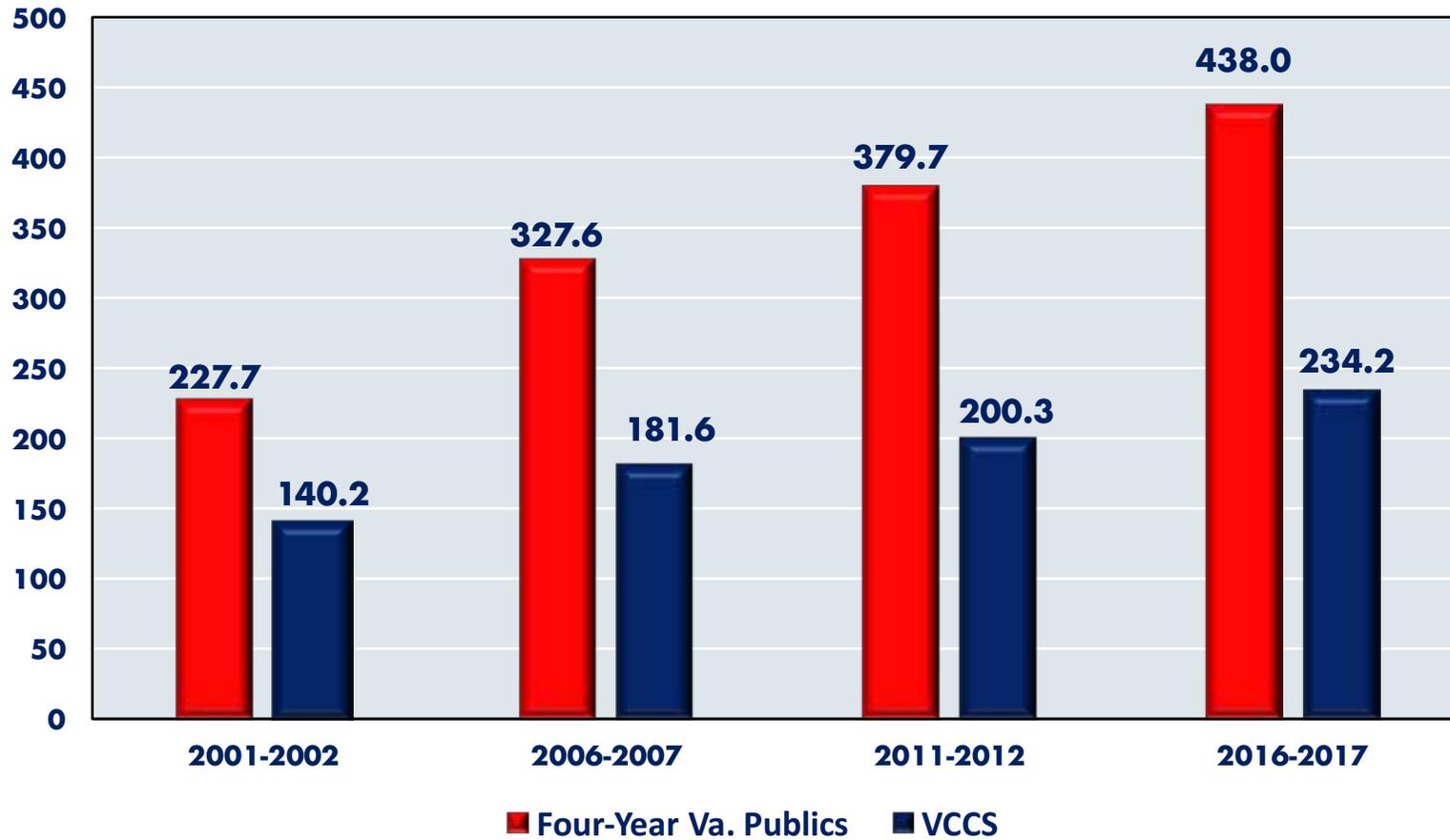
**COMPARING AVERAGE FOUR-YEAR PUBLIC TUITION AND FEE INCREASES
AT VIRGINIA PUBLIC INSTITUTIONS TO THE CONSUMER PRICE INDEX, FY 2001–FY 2016**



Sources: State Council of Higher Education for Virginia for tuition and fees; Bureau of Labor Statistics for the CPI

GRAPH 5

**NUMBER OF WORK HOURS REQUIRED ANNUALLY FOR A VIRGINIA WORKER
EARNING THE MEDIAN HOURLY WAGE TO PAY AVERAGE VIRGINIA IN-STATE TUITION AND FEES**



Sources: Bureau of Labor Statistics for wages; SCHEV for tuition and fees

However, Net Prices Are Very Important

The tuition and fee numbers presented thus far are usually referred to as “sticker prices” in higher education – the prices approved by each institution’s board of visitors and subsequently published in their catalogs. At some colleges and universities, only very small proportions of the student bodies actually pay these sticker prices and the massive remainder pay lower prices because they receive financial grants that either are need-based or merit-based, perhaps reflecting superior grades and standardized test scores, or a particular expertise such as athletic prowess, acting ability or musical talent.

The most common grant received by financially needy students is a federal Pell Grant, which currently cannot exceed \$5,815 annually. Institutions may, instead of or in addition to Pell Grants, provide students with other financial grants that do not need to be repaid. Institutional endowments commonly are thought to be the major source of such funds, but the reality is that internally redistributed tuition and fee monies are the major source of such grants. Out-of-state students are charged premium prices and these funds then are allocated throughout the institutions for a variety of purposes, including financial grants to students. Students coming from families with higher incomes effectively are charged higher prices when they do not receive financial aid grants, but other students coming from lower-income families do receive such grants.

In effect, the pricing policies of most colleges and universities today (including both public and independent institutions in Virginia, two-year and four-year alike) are a collegiate version of a steeply progressive income tax, taking from the wealthier and giving to the less wealthy by means of the net prices they ultimately charge each.⁵ “Net price” here is the effective price each student ends up paying after financial grants (but not loans that have to be repaid) are deducted from the published sticker prices.

Graph 6 presents the average net price paid by undergraduate students at Virginia’s four-year public colleges and universities in 2014-15, the latest

⁵ Critics point out that this pseudo-tax never has been approved by the Virginia General Assembly.

year for which comparable data are available. The data in Graph 6 shine a somewhat different light on tuition and fees. The lowest-cost institution in the Commonwealth is the University of Virginia’s College at Wise, followed by Norfolk State University and Radford University; the highest-cost institution is Christopher Newport University, followed by Virginia Commonwealth University and the University of Mary Washington. Despite having the highest sticker price of any public institution in the country, William & Mary, on average, charges a net price that places it well below the group average of \$16,312.

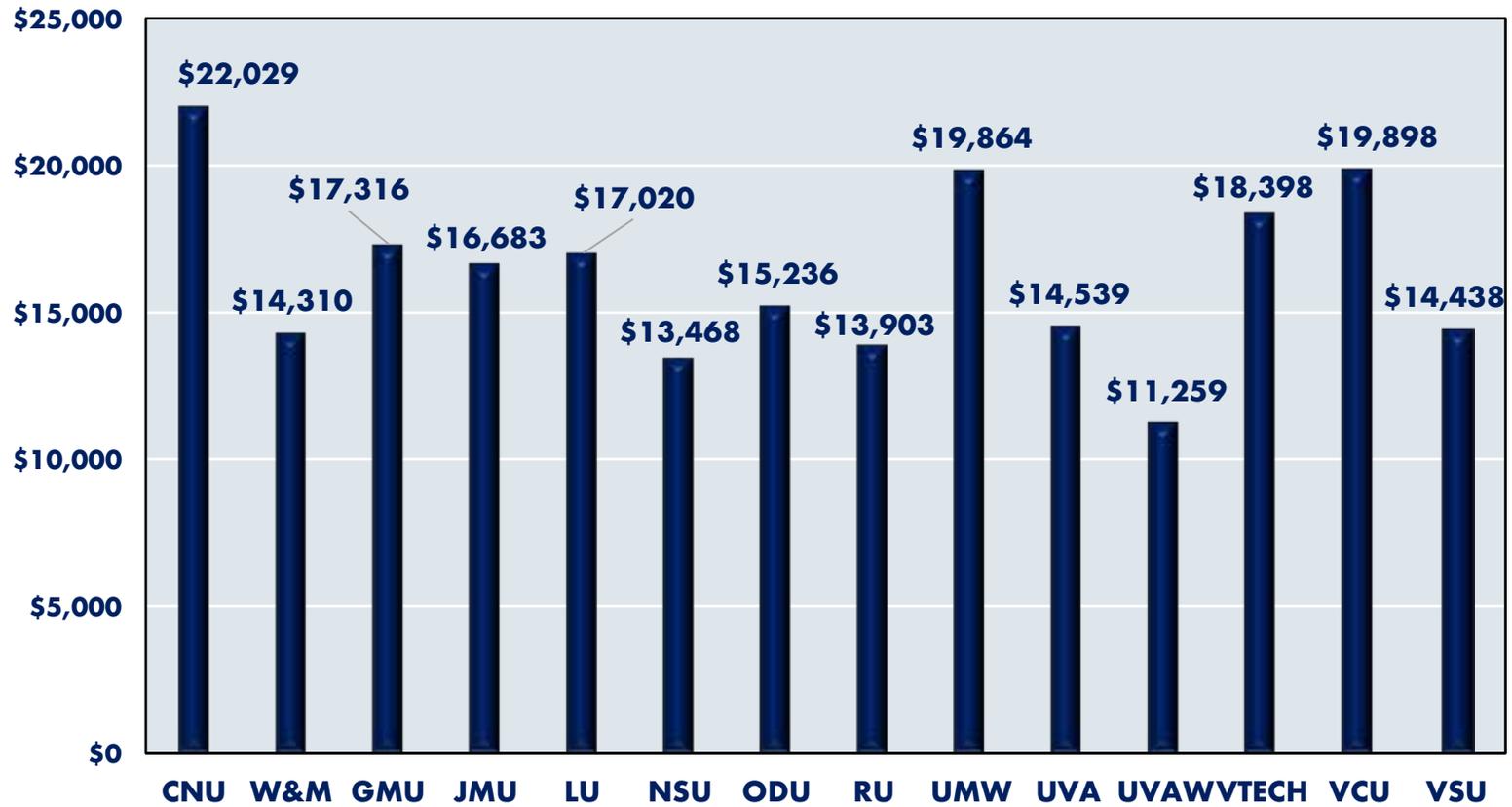
The net price data provided in Graph 6 make it clear that every institution is providing significant need-based grants to its students. Has this aid been sufficient to compensate students and their families for the tuition and fee increases that have been imposed? The simple answer is no, and this is not a disputed judgment, either in Virginia or nationally. **The Virginia House of Delegates Appropriations Committee found that the state-funded financial aid grant per student increased by 75 percent at the Commonwealth’s four-year public institutions between 2003 and 2015, while tuition and fees increased an average of 170 percent.**

Nationally, the College Board, a nonprofit organization representing more than 6,000 colleges and universities, reported that even after accounting for all financial grants received by students at public colleges and universities, the real, price-adjusted costs paid by these students rose by a total of 65.4 percent between 2000-01 and 2016-17. This translates to a compound growth rate of 3.2 percent annually.

Nevertheless, as we note in a section that follows, there is considerable variation among institutions in this regard. Institutions with larger endowments typically provide larger financial grants that do not need to be repaid, though the impact of this is reduced because their tuition and fee charges are higher as well. Also, some institutions are much more aggressive price discriminators – they charge their students very different net prices, usually based upon their residence (in-state versus out-of-state) and their family incomes (upper-income students pay much higher net prices than lower-income students).

GRAPH 6

AVERAGE NET PRICE OF ATTENDANCE AT VIRGINIA'S FOUR-YEAR PUBLIC INSTITUTIONS, 2014-15



Source: National Center for Education Statistics, College Navigator

The Economic And Social Stratification Of Student Bodies

An institution cannot charge premium prices to out-of-state students or to wealthier in-state students unless it has the brand magnetism that enables it to do so. Ultimately, the student body begins to reflect its institution’s pricing strategies and especially the ability of each student body to pay.

In January 2017, The New York Times published revealing data disclosing the percentage of the student bodies at more than 2,000 institutions that came from the upper 1 percent and the lower 60 percent of the income distribution of the United States. Table 1 reports these data for a selection of colleges and universities in Virginia. The stratification of Virginia institutions on the basis of family incomes (and presumably wealth as well) is immediately apparent. Almost one in every five undergraduate students at Washington and Lee University came from a family in the upper 1 percent of the national income distribution, whereas at Old Dominion University and Thomas Nelson Community College (to name only two), less than 1 percent of the undergraduate student body emanated from such families.

Only one in 12 undergraduate students at W&L came from the bottom 60 percent of the income distribution, but approximately two-thirds did so at Norfolk State. If the denizens of the bottom 60 percent of the income distribution can be fashioned as “common people,” then one might say that at least four Virginia public institutions (University of Virginia, William & Mary, Virginia Tech and Christopher Newport) have relatively few such individuals among their undergraduate student bodies.

One measure of the accessibility of a college or university to students coming from lower-income families is the percentage of Pell Grant students that institution enrolls. One can see in Table 2 that Virginia institutions in general enroll smaller percentages of undergraduates who receive Pell Grants (26 percent) than the national average (approximately 39 percent). This reflects

two major factors: (1) Virginia incomes are higher than the national average⁶ and hence fewer Virginians qualify for Pell Grants, and (2) tuition and fees at Virginia institutions are higher than the national average and the \$5,810 annual cap on Pell Grants means that the student bodies composed of those students who can afford to attend are weighted a bit more heavily toward upper-income students and families.

Institution	Pct. Students From Families Upper 1%	Pct. Students From Families Bottom 60%
Washington and Lee	19.1%	8.4%
U. Richmond	15.1%	20.6%
U. of Virginia	8.5%	15.0%
C. of William & Mary	6.5%	12.1%
Va. Tech	2.8%	15.0%
Christopher Newport U.	1.7%	18.1%
George Mason U.	1.5%	26.2%
Va. Commonwealth U.	< 1%	31.0%
Old Dominion U.	< 1%	33.2%
Thomas Nelson CC	< 1%	52.4%
Tidewater CC	< 1%	53.3%
Norfolk State U.	< 1%	66.0%
Paul D. Camp CC	< 1%	66.0%
Eastern Shore CC	< 1%	77.8%

Source: The Upshot, The New York Times (Jan. 18, 2017)

⁶ The Federal Reserve Bank of St. Louis reports that the 2015 national median household income was \$56,516, while the comparable Virginia number was \$61,086.

TABLE 2

PERCENTAGE OF UNDERGRADUATES RECEIVING PELL GRANTS AT SELECTED VIRGINIA INSTITUTIONS, 2014-15

C. of William & Mary	12.0%
U. of Virginia	12.4%
James Madison U.	14.8%
Virginia Tech	16.1%
Christopher Newport U.	16.2%
U. of Mary Washington	18.5%
Longwood U.	24.7%
Virginia Average	26.0%
Virginia Commonwealth U.	28.2%
George Mason U.	29.8%
Radford U.	32.5%
National Average	39.0%
Old Dominion U.	39.6%
Paul D. Camp CC	39.8%
U. of Virginia Wise	40.9%
Eastern Shore CC	49.9%
Tidewater CC	50.3%
Thomas Nelson CC	50.9%
Norfolk State U.	67.3%
Virginia State U.	69.7%

Source: SCHEV, Report FA09T

William & Mary’s 12 percent Pell Grant percentage for its undergraduate student body is the lowest of any public college or university in the United States, and the University of Virginia’s 12.4 percent is not far behind. *Prima facie*, neither institution is very accessible to student applicants from lower-income families. One could add James Madison, Christopher Newport,

Virginia Tech and Mary Washington to this list. Query if this is consistent with their status as public institutions serving the entire citizenry.

In defense of several of these institutions, however (and especially William & Mary), they do provide generous need-based financial grants to students who come to them from lower-income families. Table 3 provides the average net price paid by students who came to these institutions from households with incomes that were \$30,000 or below. These students nearly always qualified for a Pell Grant, but typically required substantial additional financial aid to be able to attend. Consider Old Dominion as an example. In 2015-16, the estimated total expense for an in-state student living on the ODU campus was \$24,099. A \$5,815 Pell Grant would still leave an \$18,000 gap that a lower-income student would have to fill in some manner, including going into debt.

TABLE 3

NET PRICES PAID BY STUDENTS COMING TO CAMPUSES FROM FAMILIES WITH INCOMES \$30,000 OR BELOW, 2014-15

C. of William & Mary	\$4,049
U. of Virginia Wise	\$8,264
U. of Virginia	\$10,119
Old Dominion U.	\$11,678
Radford U.	\$11,815
Norfolk State U.	\$11,974
Virginia State U.	\$11,986
U. of Mary Washington	\$12,263
James Madison U.	\$12,926
Virginia Tech	\$12,735
Longwood U.	\$13,953
George Mason U.	\$14,769
Virginia Commonwealth U.	\$14,890
Christopher Newport U.	\$15,970

Source: National Center for Educational Statistics, College Navigator

William & Mary's generously low \$4,049 net price for students who came to it from households with incomes of \$30,000 or less stands out. Clearly, W&M has made the provision of grant-based financial aid to its lowest-income students a very high priority. We know of only one other institution, the University of Michigan, which offers its lowest-income students a lower price (\$3,414).

The problem is that very few lower-income students end up being able to take advantage of William & Mary's generosity. This is true for a variety of reasons, including of course W&M's impressively high admission standards. Much the same story might be recited for the University of Virginia, though it is not as liberal in providing grant-based financial aid to its lowest-income students.

These episodes inspire intriguing public policy questions. Should Virginia subsidize public colleges and universities that, in terms of their pricing of undergraduate education, behave very much like private institutions? Is it appropriate for the citizenry to subsidize institutions that increase social and economic inequality rather than provide ladders of opportunity that diminish differences? These are knotty questions because, *inter alia*, the Top 25 rankings of W&M and UVA depend in part on their ability to structure their operations and prices in the fashion just outlined. Programs designed to increase the presence of lower-income students at these institutions might endanger their coveted rankings if they ended up reducing SAT and ACT scores and other metrics, such as graduation rates.⁷

There are undeniable financial considerations attached to institutional admission strategies. Pell Grant students can be expensive because they require more institutionally based financial aid and often augmented campus services. Enrolling additional Pell Grant students might reduce the number of slots available for full-price out-of-state students, who pay more than \$40,000 in annual tuition at W&M and UVA. Who wants to be the president or the board that presides over a noticeable decline in their institution's rankings, however laudable the intent might be?

**Are there other reputable models available for consideration?
Yes. The University of California at Berkeley, for example,**

⁷ With respect to graduation rates, see Sarah Butrymowicz, "Billions in Pell Dollars Go to Students Who Never Graduate," *Hechinger Report* (Aug. 17, 2015).

enrolled 31 percent undergraduate Pell Grant recipients in 2014-15, while UCLA enrolled 35 percent. Indeed, five University of California campuses are ranked among U.S. News & World Report's Top 25 public institutions and each enrolls more Pell Grant students than virtually every one of Virginia's four-year public institutions. Further, these institutions offer rather low net prices to their lowest-income students – \$7,338 at Berkeley and \$7,602 at UCLA in 2014-15.⁸

Ultimately, even though institutions often argue otherwise, they are not prisoners of history and circumstance. As time passes, colleges and universities retain the ability to reshape their financial models and student profiles. The contrast between the UC campuses and those in Virginia is instructive in this regard. This did not occur overnight in California, but it did happen.

We will not weigh in on the provocative and complex discussions concerning the \$2.3 billion discretionary fund that UVA accumulated except to observe that some of these dollars might have been used either to reduce tuition and fees for in-state undergraduates, or to provide more generous financial aid offers to lower-income students. Ultimately, whether such decisions are made reflects the values held by the senior officers of institutions and their board members.

Our analysis should not overlook other institutions, such as James Madison, Christopher Newport, Virginia Tech and Mary Washington, each of which appears to have made strategic decisions that ultimately restrict the access of lower-income Virginians. How many such campuses should taxpayers and citizens support? We do not have the answer to this question, but easily can observe that what is good for an individual institution's national rankings may not be synonymous with what is good for Virginians.

⁸ These and all other net price data come from the National Center for Education Statistics, College Navigator.

Student Debt

When students and their families cannot afford to attend a Virginia public college or university, one of three things happens. They may choose not to attend college at all; they may switch from full-time to part-time attendance; or they may go into debt by borrowing money to pay their educational costs.

The State Council of Higher Education for Virginia (SCHEV) collects data concerning student debt in the Commonwealth. **In 2016, SCHEV looked at the debt status of 49,065 students who had earned bachelor's degrees five years earlier (see Table 4). Sixty-one percent of these graduates borrowed money, an average of \$26,407, to pay for their education.** The 61 percent debtor number for 2011-12 graduates was up from 56 percent for 2006-07 graduates. SCHEV labels these debts "known" and cautions that its report may not capture all debt these graduates incurred.

Student debt changes lives and alters behavior. Table 5 summarizes a variety of unhappy aftereffects attached to student debt. **It will suffice for us to observe that rising levels of student debt do not constitute a recipe for bringing Virginia out of its economic growth doldrums.**

Student debt owed to the U.S. government (more than 80 percent of all student debt) is nondischargeable in a personal bankruptcy proceeding. This means that federal student debt follows former students for the remainder of their lives and cannot be avoided unless they qualify for a limited number of federal debt forgiveness programs. In 2016, no payments were being made on almost half of all federal student debt accounts and 11 percent were in serious default (Forbes, April 10, 2016).

The bottom line is that it is in the best interests of Virginia to graduate students who are debt-free, or whose debt obligations are small. Rapidly rising higher education prices (both "sticker" and "net") push the Commonwealth in the opposite direction.

TABLE 4

THE GROWTH OF KNOWN STUDENT DEBT INCURRED BY 2011-12 BACCALAUREATE DEGREE GRADUATES OF VIRGINIA FOUR-YEAR PUBLIC INSTITUTIONS

Year	Percent of Known Debtors	Average Level of Debt
2007-08	56%	\$20,039
2008-09	57%	\$21,510
2009-10	57%	\$23,601
2010-11	59%	\$25,242
2011-12	61%	\$26,407

Source: State Council of Higher Education for Virginia, "Who Borrows and How Much Do They Borrow?" <http://research.schev.edu/apps/info/Articles.Student-Debt-A-First-Look-at-Graduate-Debt.ashx>

TABLE 5

THE ECONOMIC CONSEQUENCES OF COLLEGE STUDENT DEBT

Those who have significant student debt are:

- **Less likely to buy a home (New York Fed, 2013)**
- **Less likely to start a new business (Philadelphia Fed, 2015)**
- **More likely to live with their parents (Fed's Board of Governors, 2015)**
- **Less likely to save for their retirements (Brookings, 2014)**
- **More likely to have negative household wealth (Armantier, 2016)**
- **More likely to have an inferior credit rating score (New York Fed, 2013)**

Sources: Noted above

Why Have Tuition And Fees Increased So Rapidly?

Virginia's higher education institutions argue that their tuition and fee increases have been necessary because of reductions in state general fund tax support. This assertion is true – but only to a certain point. Between 1996 and 2015, Virginia cut its real, enrollment-adjusted appropriations to its institutions of higher education by about 26 percent.⁹ Hence, it is understandable that the colleges and universities moved to replace this revenue with tuition and fee dollars.

However, a fall 2016 analysis by the staff of the House of Delegates Appropriations Committee concluded that institutions raised tuition \$2 for every \$1 they lost in state appropriations between 1996 and 2015 (see Graph 7, which addresses the statistical background).¹⁰ Thus, Virginia's public colleges and universities have been increasing tuition for other reasons as well. This conclusion is consistent with recent national studies.¹¹

What are those other reasons? They include:

- The aforementioned institutional concern with national rankings is epitomized by U.S. News & World Report rankings. This fixation can lead to a variety of decisions divorced from the needs of taxpayers, students and families.
- Inter-institutional amenities competition stimulates institutions to offer such things as recreational spas and climbing walls as well as upscale (and expensive) food services.
- Institutions often construct new, spacious buildings even though it is costly to maintain this space, and their use of existing space is surprisingly low. A 2014 study by the State Council of Higher Education for Virginia disclosed that no residential four-year campus in the Commonwealth utilized its

⁹ "Higher Education Affordability," House Appropriations Committee Retreat Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>.

¹⁰ "Higher Education Affordability," House Appropriations Committee Retreat, Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>.

¹¹ One example is Neal McCluskey, "Not Just Treading Water," *Policy Analysis* (Cato Institute, Feb. 15, 2017).

classrooms more than 76 percent of reasonably available hours, and three campuses ranged below 60 percent usage. Parenthetically, it is not clear that adding significant new space is an intelligent public policy when internet-based instruction is expanding. Modernization and rehabilitation of existing space may make more sense and be less expensive.

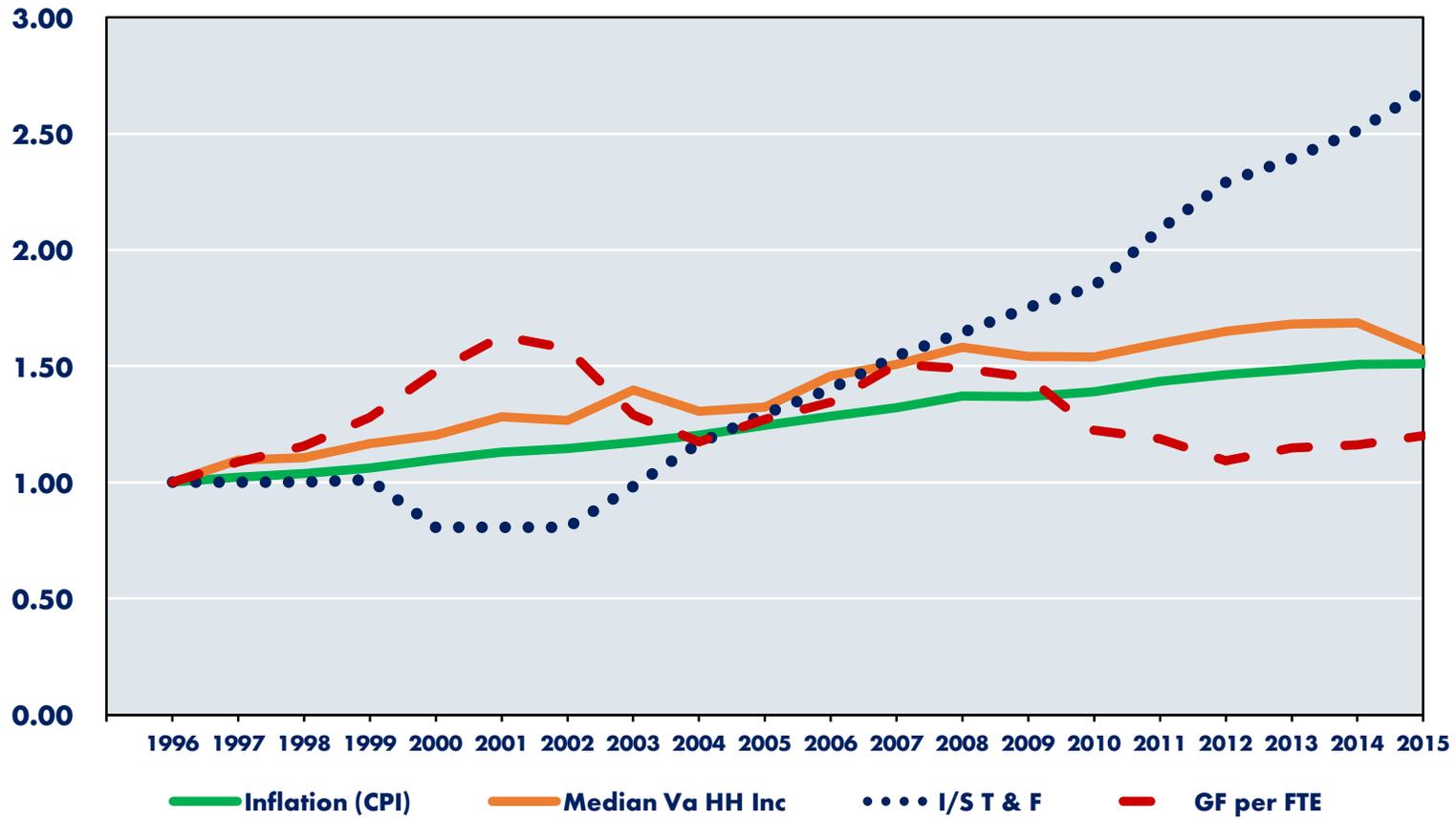
- Related to the above, institutions increasingly have assessed mandatory fees to support items ranging from student centers to athletic teams. In 2016-17, eight Virginia four-year public institutions assessed their full-time undergraduate students athletic fees that exceeded \$1,538. Consider Christopher Newport's \$1,886 annual fee. This corresponds to a charge of \$188.60 per three-hour course. Doubtless CNU's Captains are well regarded, but they also are expensive and students bear a substantial portion of that cost.
- The growth of institutional room and board charges at most Virginia institutions easily has exceeded the growth of the consumer price index (see Graph 8). First-rate residence halls and excellent food are pleasing, but costly.
- Administrative proliferation (as measured by the number of administrators per faculty member or student) exists on most campuses. Further, these administrators tend to be paid well.
- Institutions have reduced the proportion of their budgets they spend on instruction (see Graph 9).
- Disproportionate growth in spending on employee fringe benefits (which sometimes has substituted for pay raises during difficult years) has pushed tuition and fees upward.
- Federal government financial aid policies are based upon institutional costs. Hence, when institutional costs increase, the "feds" supply more money. A July 2015 study by the Federal Reserve Bank of New York found that up to 60 percent of additional federal financial aid is siphoned off by institutions for other purposes.

- Institutions are reluctant to take advantage of new teaching and learning technologies, flipped classrooms and other innovations that have the potential to scale higher education.
- Institutions are disinclined to share resources and programs with other institutions, even in low-enrollment areas such as foreign languages and literatures.
- Institutions are averse to pricing the resources they use internally, thus leading to suboptimal behavior and hoarding. Space provides an obvious example.
- Institutional mission creep has propelled many institutions into offering new, low-enrollment programs, often at the graduate level.
- Faculty productivity, as measured by their contact hours with students and on many campuses by their credit hours generated, has declined.
- Subsidies from undergraduate students often are required to support faculty research activity, even in cases where the research is supported by outside grants.

This is an extensive list and one should understand that the application of these factors often varies substantially from one campus to another. Nowhere is this truer than Virginia, where institutional independence is relatively high compared to many other states, not the least because each institution has its own board of visitors. Even so, these are among the primary reasons why tuition and fee increases at Virginia's public colleges and universities not only have vastly exceeded the growth in the consumer price index and median household income, but also why they have been substantially higher than the national average.

GRAPH 7

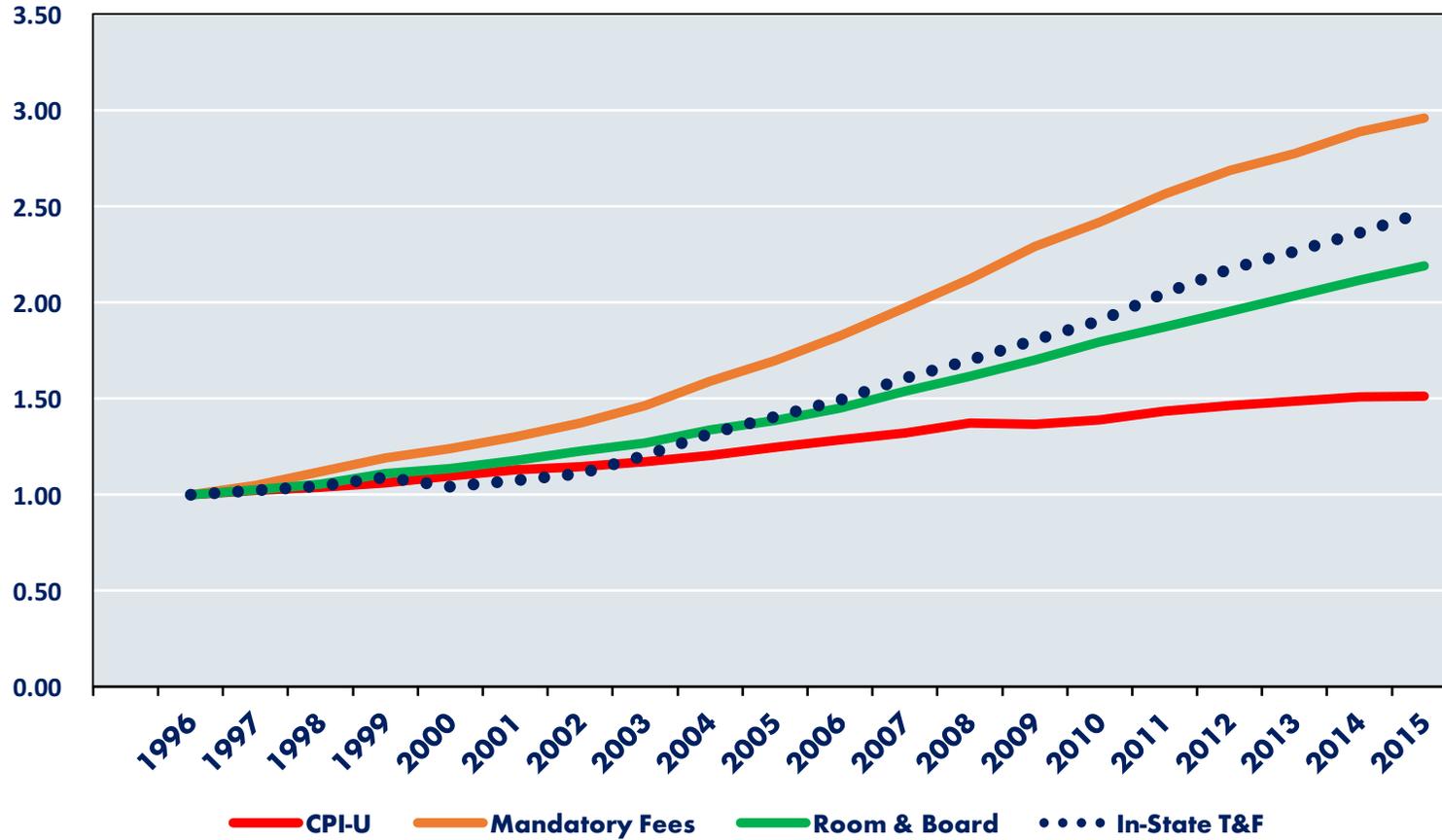
STATE GENERAL FUND APPROPRIATIONS TO PUBLIC HIGHER EDUCATION IN VIRGINIA PER IN-STATE FULL-TIME EQUIVALENT STUDENT COMPARED TO TUITION AND FEES AND THE CONSUMER PRICE INDEX, 1996-2015



Source: "Higher Education Affordability," House Appropriations Committee Retreat, Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>

GRAPH 8

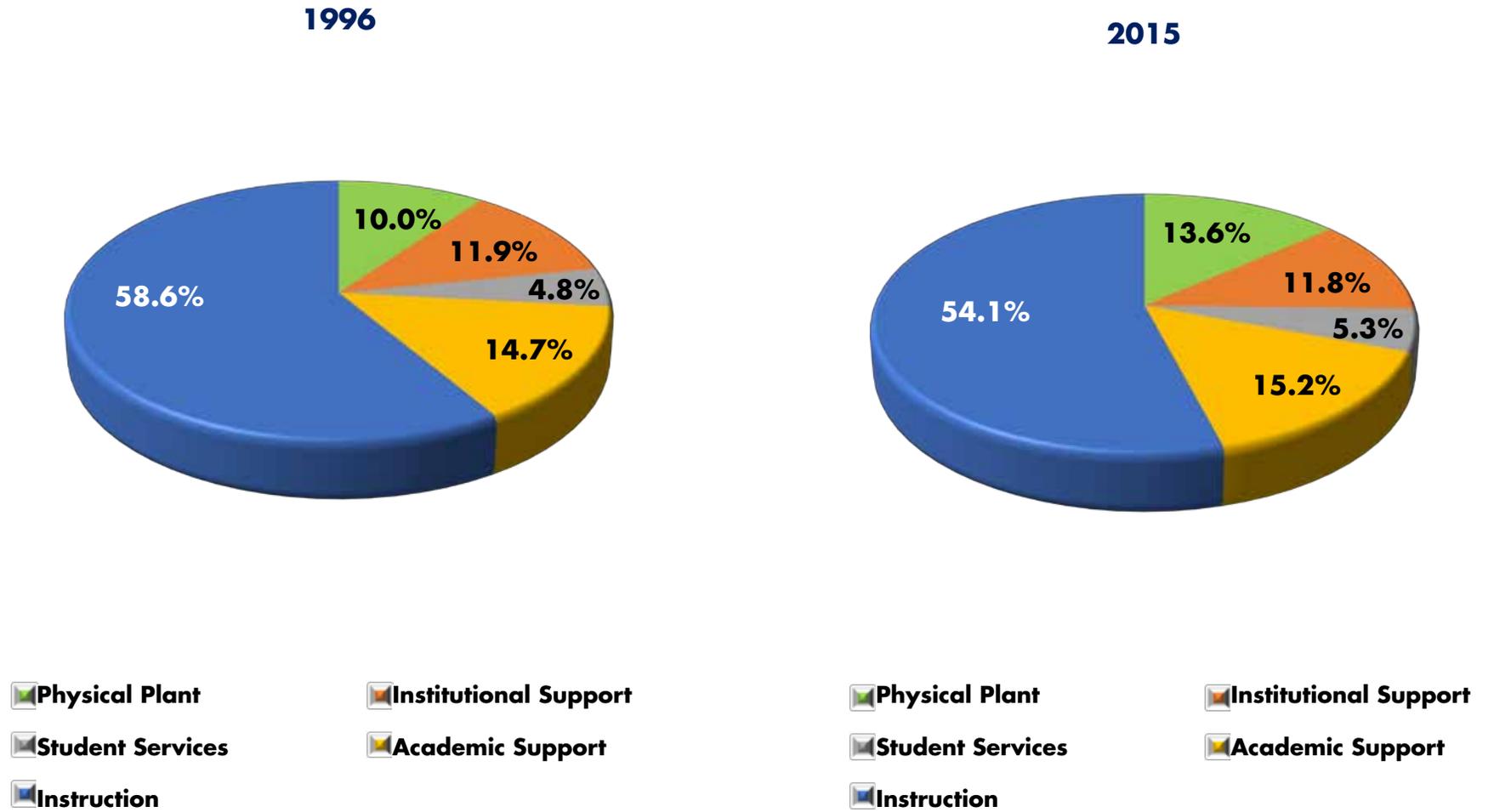
COMPARING CHANGES IN THE MAJOR ELEMENTS OF THE COST OF ATTENDANCE AT VIRGINIA PUBLIC INSTITUTIONS TO CHANGES IN THE CONSUMER PRICE INDEX, 1996-2015



Source: "Higher Education Affordability," House Appropriations Committee Retreat, Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>

GRAPH 9

COMPARING MAJOR EXPENSE CATEGORY SPENDING AT VIRGINIA PUBLIC INSTITUTIONS, 1996 AND 2015



Source: "Higher Education Affordability," House Appropriations Committee Retreat, Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>

Would Legislative Rules Constraining Tuition And Fee Increases Make A Difference?

If tuition and fee increases have been too large, then would rules imposed either by the Virginia General Assembly and administered by the State Council of Higher Education for Virginia that constrain increases improve the situation? Perhaps.

Let's utilize an example to clarify the situation. Graph 10 compares the University of Virginia's (UVA's) annual tuition and fee increases to three-year rolling averages of changes in the consumer price index (CPI) and median Virginia household income. After recording zero or even negative tuition and fee increases in the first years of this century, in 14 of 15 years thereafter, UVA's tuition and fee increases exceeded the three-year rolling average rates of growth in both the CPI and Virginia median household income.

If UVA had been restricted to tuition and fee increases that were equal to the rolling three-year average growth of the CPI, then this would have cut approximately 61 percent from its per-student in-state tuition and fee charge in 2016-17. Specifically, UVA's published tuition and fee price in that year was \$15,714. If instead, between 2001-02 and 2016-17, UVA had increased its tuition and fees only at the rolling three-year average rate of growth in the CPI¹², then in 2016-17 its tuition and fee charge would have been only \$6,047 – 38.5 percent of the actual cost.

We can approximate the total cost of this higher tuition strategy to Virginia undergraduates. SCHEV reports that UVA enrolled 16,631 undergraduate students in fall 2016, of which approximately 66 percent, or 10,976, were Virginians. If these 10,976 Virginians had paid \$6,047 in tuition and fees rather than the actual \$15,714 in 2016-17, then collectively in that year alone the students would have saved \$106.11 million – a rather tidy sum. In effect,

¹² July to July of each year.

by assessing tuition and fee increases in excess of the growth in the CPI, UVA reallocated an estimated \$106.11 million from Virginia students and their families to whatever alternative purposes the university valued more highly.¹³

Cumulatively, over the 15-year period 2001-02 through 2016-17, the tuition and fees UVA charged its in-state undergraduates totaled \$721.38 million more than what those charges would have been had their increases been limited to the previous year's growth in the CPI.

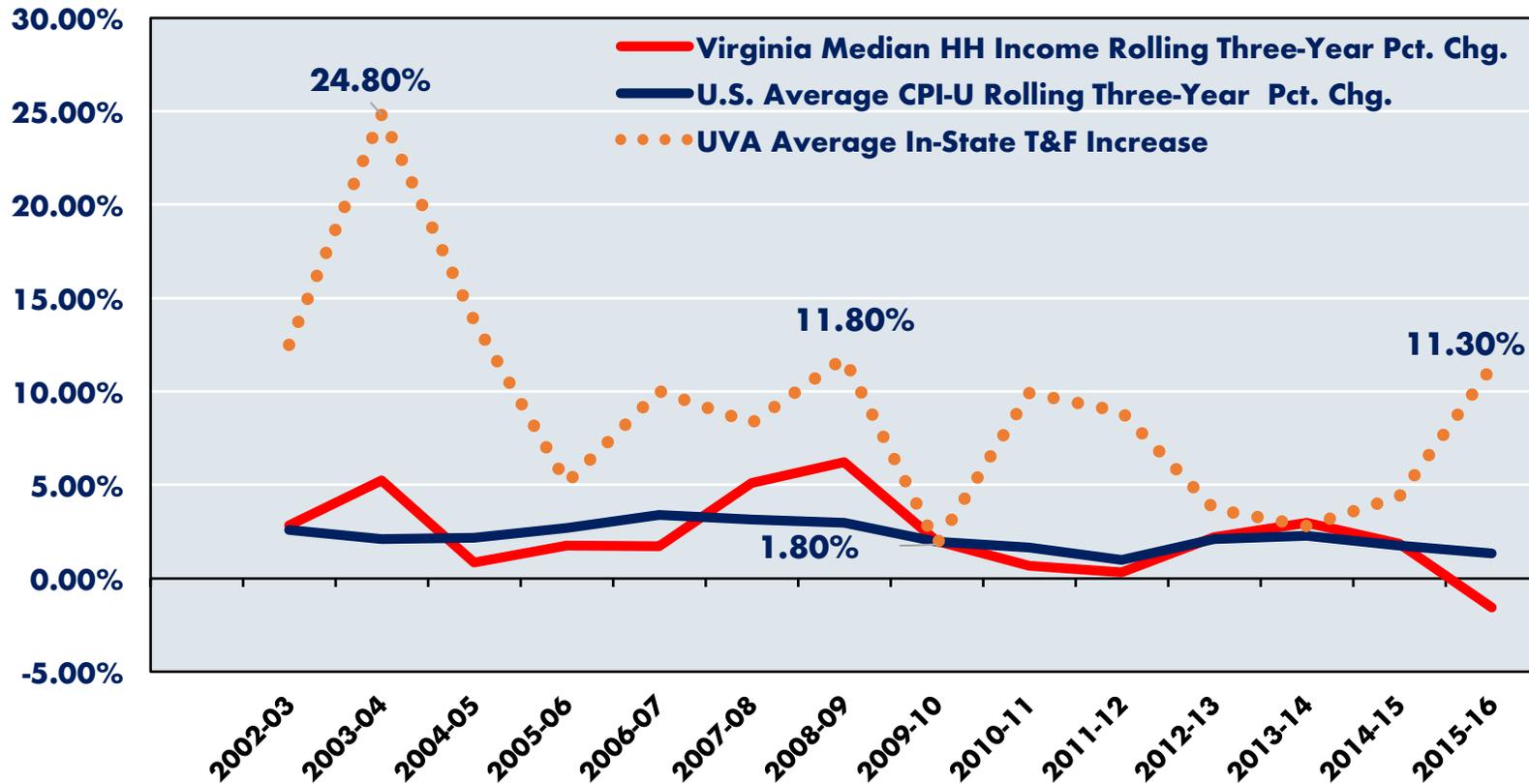
Many readers are aware that even while these tuition increases were being imposed, UVA was accumulating a \$2.3 billion discretionary fund. The university did so legally. Choice-making, however, is an intrinsic, unavoidable part of the exercise of leadership. This particular set of choices invites questions. Might not UVA have used some of the \$2.3 billion it accumulated to lower the tuition and fees assessed Virginia students at the university? Could not more modest tuition and fee increases have been imposed on in-state undergraduates that would have reduced the \$721.38 million estimate above?



¹³ We assume that 66 percent of the undergraduate students in each year would qualify for in-state tuition and fees. Note that one use of the \$106.11 million by UVA was to provide additional financial aid to its undergraduates. Hence, some students received back some of the proceeds of the putative excise tax that all paid.

GRAPH 10

ANNUAL TUITION AND FEE INCREASES AT THE UNIVERSITY OF VIRGINIA VERSUS THREE-YEAR ROLLING AVERAGES OF CHANGES IN THE CONSUMER PRICE INDEX AND MEDIAN VIRGINIA HOUSEHOLD INCOME, 1996-2015



Sources: Federal Reserve Bank of St. Louis for Virginia median household income; Bureau of Labor Statistics for the Consumer Price Index; Chronicle of Higher Education for UVA tuition and fees

The point here is not that UVA misused the \$721.38 million but instead, as economists point out, that there were real opportunity costs – foregone alternatives – associated with this approach to tuition and fees. Other, perhaps more Spartan, ways to operate the institution existed instead of UVA choosing to impose the equivalent of a 61 percent excise tax on Virginia students and families.

Would an alternative, low-tuition policy have done damage to UVA's rankings and its ability to accomplish its stated institutional goals? Perhaps. This is an important reason why our discussion here will not lead to a definitive conclusion. Our goal in this chapter is to highlight affordability and access issues and the costs associated with current tuition and fee regimens, not to prescribe an operating plan for any Virginia public institution, including UVA.

Lest anyone view tuition and fee rules such as the one we have just illustrated for the CPI as a panacea, we will point out that skillful administrators likely could find a variety of ways around any restrictive rule legislators might devise. For example, they might choose instead to impose discipline-specific surcharges (for example, charging engineering students higher tuition). Or, they might impose user fees on many campus services previously free or low-priced. They might also raise room and board charges and then assess a larger administrative fee to the residence halls (or any other auxiliary enterprise) for central services provided.

We could go on, but the implication is clear: Regulatory authorities nearly always must struggle to impose their wills on those they regulate. Human imagination seemingly is infinite and those regulated are adept at finding new ways to circumvent seemingly ironclad behavioral rules. The law of unintended consequences has not yet been revoked.

The Crucial Role Of Governors, Boards Of Visitors And The General Assembly

University administrators cannot increase published tuition and fee charges on their own. Their recommendations in this arena must be approved by their boards of visitors, whose members are appointed by the governor. We will cut to the chase and observe that many, perhaps most, members of the boards of Virginia colleges and universities believe their primary responsibility is to their institution (and by extension, perhaps its president) rather than to taxpayers, citizens and students.

Gradually, significant numbers of board members end up being co-opted by their university's president and senior administrators, who treat them well, shower them with attention and present them with almost uniformly good news about their institution. If basic institutional "dashboard" variables (enrollment, fundraising, rankings) appear to be in order, then most board members tend to defer to their president and senior administrators when they receive proposals from them (including tuition and fee increases). Discussions concerning accessibility and affordability do arise at some meetings, but they are matters that nearly always receive less attention than items relating to new buildings and academic programs.

Lunches and dinners during board meetings are filled with the likes of Fulbright Scholar faculty members, those who have garnered large research grants, string quartets and jazz groups, students who have been admitted to prestigious graduate schools, and members of the campus community who are local incarnations of Mother Teresa. When combined with tickets to an enticing football or basketball game, these amenities form a seductive mixture that subtly discourages probing questions that might disrupt the flow. Indeed, board members who delve too deeply, or who venture into uncomfortable affordability and access territory, may find themselves being counseled by

senior board members and advised to stick to the agenda and to avoid being contentious.

Given this environment, what if future Virginia governors were to appoint to boards of visitors only those individuals who view citizens, taxpayers and students as their primary constituency and concern? What if future Virginia public college and university presidents were evaluated on the basis of the access and affordability of their institutions in addition to the usual dashboard metrics? What if future administrative salary increments were to reflect this reorientation?

The answers are that we would soon observe different behavior by administrators and see more modest tuition and fee increases. The current system is fixable, but it will take definitive action by future governors of the Commonwealth and the board members they appoint for this to occur.

The General Assembly has a significant role to play in terms of the incentives it implants in the budgets it passes. Why should institutions that have been circumspect in their tuition and fee increases receive the same budgetary treatment as those that have implemented large increases? Legislators can and should ask significant questions of prospective board of visitor nominees concerning their approach to their duties. Future board members, as a condition of their service, should be required to undertake significant orientation activities that address many of the issues covered in this chapter as a condition of their appointments.

The accumulated evidence suggests that it is time to move in different directions in public higher education in Virginia. If we opt to do so, the rewards will be higher economic growth and (some might argue) a more equitable society that places emphasis on increasing economic opportunity rather than closing doors.



The Scourge Of Opioids



THE SCOURGE OF OPIOIDS

It was a heartrending and unforgettable picture that quickly went viral – a confused child could be seen in the back seat of an automobile staring at two unconscious adults, each with mouth agape, in the front seat. Published in September 2016 and reprinted here, this picture opened the eyes of many Americans to an emerging public health crisis. This raw and searing photograph not only captured the personal impact of the epidemic but came to represent a call for action to combat the epidemic of opioid abuse and addiction.

Who was the young boy in the picture? Were those his parents slumped in the front? Did these two adults ultimately die of an opioid overdose (as 33,000 did in 2015)?¹ Did a physician prescribe the opioids that proved problematic in this instance? What happens to children whose parents or guardians fall into the grips of opioid abuse or addiction? What are the financial consequences generated by improper opioid usage?

Alas, often there are more questions than answers when opiate addiction is the subject of discussion. One thing that we do know for certain, however, is that the misuse and abuse of opioids has led to a national crisis, one that has left a destructive imprint on Hampton Roads. We provide the outlines of the crisis in this chapter and suggest a plan of action.

Opioids: A Primer

Opioids are painkillers and therefore fulfill many legitimate medical purposes. They can be natural substances such as opium, which is derived from poppy plants, or morphine, a key alkaloid in opium. Alternatively, they can be synthesized from opium and morphine into other forms such as heroin, amalgamated by a Bayer chemist in 1897. Opium and morphine can be synthesized into a wide variety of legitimate products that may be prescribed by physicians, purchased over the counter or acquired illegally.

¹ Centers for Disease Control and Prevention, www.cdc.gov/mmwr/volumes/65/wr/mm655051e1.htm#F1_down.



Source: Alice Park, "The Story Behind the Viral Photo of an Opioid Overdose," Time (Jan. 24, 2017)

A powerful synthesized opioid known as fentanyl is 50 to 100 times more potent than morphine and is a contributor to the opioid crisis.² Like most opioids, fentanyl has legitimate uses. It is used to combat pain during surgeries and fentanyl patches provide localized pain relief. It also can be taken by means of a nasal spray or injected. Used recreationally and abusively, however, it can be fatal.

Most fentanyl consumed in the United States is manufactured in China, shipped either to Canada or Mexico, and then smuggled across the border. The Economist magazine (May 20, 2017) reports that one kilogram of fentanyl

² www.everydayhealth.com/drugs/fentanyl/.

purchased from a Chinese dealer for \$4,000 has a street value of \$1.6 million in the United States. China's role in this trade route constitutes yet another sore point between the two countries.

However, it is neither difficult nor terribly expensive to set up a functioning opioid factory in the United States. The television series "Breaking Bad" was on target in this respect. Hence, if one's approach to opioid abuse is an attempt to crack down on and eliminate opioid suppliers, then this is likely to be a very difficult task indeed. Encrypted internet browsers such as Tor accentuate detection difficulties.

Consistent opioid use, even when that use has been prescribed legitimately by a physician, can lead to physical dependence. Habitual use or abuse of opioids, such as heroin and fentanyl, often results in death. Tragically, however, the withdrawal of an opioid from an addict similarly can result in subsequent medical complications that end in death.

As is true for common and legitimate drugs, opioids come in five major forms: tablets, capsules, nasal sprays, patches and liquids. Table 1 reports the most common opioid varieties.

TABLE 1 THE MOST COMMON OPIOIDS		
Methadone	Vicodin, Lorcet, Lortab (hydrocodone)	Dilaudid (hydromorphone)
Percocet, Percodan, OxyContin (oxycodone)	Demerol (pethidine)	Duragesic (fentanyl)

Source: Opioids, National Institute on Drug Abuse, www.drugabuse.gov

OPIOID-RELATED FATALITIES

Deaths attributable to opioid misuse or abuse have been rising rapidly. In the United States, opioids (including prescription opioids, fentanyl and heroin) were directly responsible for the deaths of 33,000 people in 2015, almost 10,000 more than in 2014. In Virginia, more than 600 people are reported

to have died from fentanyl overdoses in 2016, and Norfolk accounted for 55 of those deaths.³ More Virginians die from opioid overdose than from car accidents each year.

Graph 1 illustrates the rapid growth in overdose deaths involving opioids between 2000 and 2015 in the United States. These data are presented in the form of overdose deaths per 100,000 people. Note that deaths attributable to commonly prescribed opioids exceed those from heroin.

Physicians reportedly wrote more than 300 million prescriptions in 2016.⁴ Opioid deaths frequently begin with a legitimate prescription from a physician that was intended to reduce a patient's pain. Four out of five heroin abusers started their opioid use with a legitimate prescription from a physician.⁵ Even so, only 27 percent of those taking opioids today are using their own prescription; the majority obtain their supply of opioids from other sources. A recent report issued by the U.S. surgeon general estimated that more than 27 million Americans used illegal drugs or violated the terms of their prescriptions in 2015.⁶ These are grim statistics.

Monica Beaudry, the 23-year-old daughter of a retired Hampton Roads naval officer, died from a heroin overdose in December 2016. She became addicted, tried rehabilitation programs, but ultimately was unable to overcome her addiction. Her story is discouragingly typical. See Scott Daugherty, "Forever Changed: Family Wants Justice for Daughter Who Overdosed 9 Months After Trying Heroin," *The Virginian-Pilot* (May 18, 2016).

³ Chris Horne, "Opioid Addiction: Pathway of a Potent Killer," WAVY-TV (May 3, 2017).

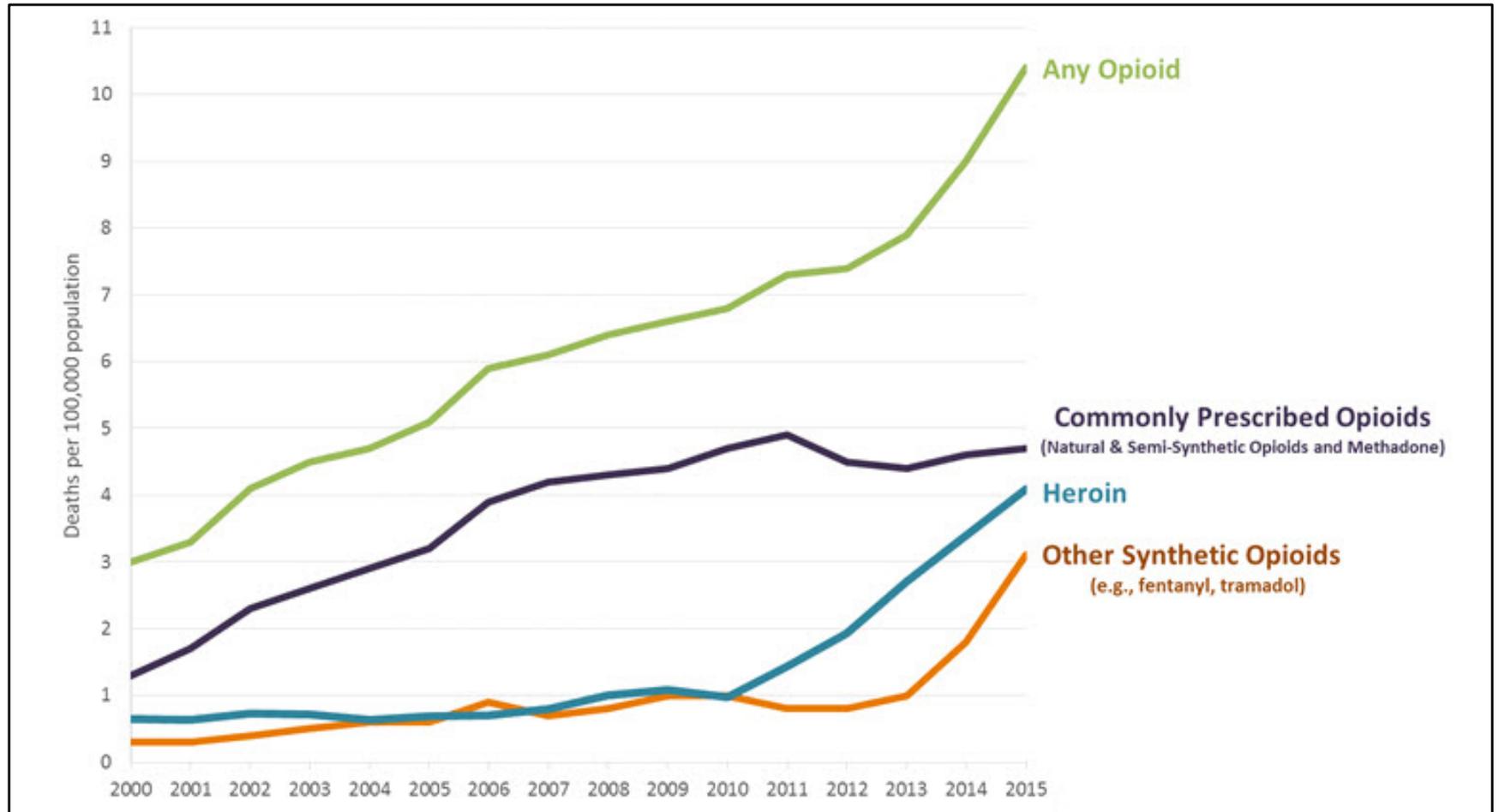
⁴ Scott Daugherty, "Forever Changed: Family Wants Justice for Daughter Who Overdosed 9 Months After Trying Heroin," *The Virginian-Pilot* (May 18, 2016).

⁵ Marc Siegel, "Opioids Shouldn't Be a Doctor's First Resort," *The Wall Street Journal* (March 28, 2017).

⁶ *Addiction in America*. Surgeon General's Report. Department of Health and Human Services (2016).

GRAPH 1

OVERDOSE DEATHS INVOLVING OPIOIDS: UNITED STATES, 2000-2015



Source: National Vital Statistics System, Mortality, CDC/NCHS, <https://wonder.cdc.gov>

In many American cities, identifiable illicit street markets exist where opiates are bought and sold.⁷ The flourishing nature of these illegal opioid street markets means not only that they constitute the major source of income for some participants, but also are responsible for their abandoning searches for legitimate employment. Not infrequently, one of the sources of the illegal opioid supply is the multiple prescriptions individuals have obtained from multiple physicians.

On occasion, unethical doctors operate “pill mills,”⁸ writing substantial numbers of prescriptions either for addicts or middlemen who sell them to drug dealers. Ironically, the U.S. Postal Service often is the means by which opioids are shipped inside the United States.

WHEN IS OPIOID USE ILLEGAL?

Opioids typically are prescribed by licensed medical practitioners to individuals who complain of acute or chronic pain resulting from disease, surgery or injury. Opioids also are prescribed to people with moderate to severe coughs and diarrhea.

Methadone and buprenorphine are “substitute” opioids prescribed to treat addiction to other opioids, such as heroin or oxycodone. In essence, addicts are provided with a consistent, legal supply of these drug substitutes, with the aim of gradually weaning them off an uncontrolled opioid, such as heroin. Success in this regard has been mixed.

The use of prescription opioids for other than their medical purpose is illegal. Much attention is given to the abuse of illegal opioid drugs such as heroin, but the reality is that some of the most commonly abused opioids are prescription drugs, including fentanyl, Tylenol containing codeine, hydromorphone (Dilaudid), oxycodone (OxyContin, Percocet and Percodan) and morphine.⁹

Opioids are sold legally under many different brand names, including those just named. At the same time, they exist under different street names. Some of the well-known brand and street names for opioids are listed in Table 2.

Street Names (Non-Prescribed and Illegal)		Brand names (Prescribed)
Captain Cody	Goodfella	Fiorional with Codeine
Cody	Murder 8	Robitussin A-C
Schoolboy	Tango and Cash	Tylenol with Codeine
Doors & Fours	China White	Empirin with Codeine
Pancakes & Syrup	Friend	Roxanol
Loads	Jackpot	Duramorph
M	TNT	Demerol
Miss Emma	Oxy 80	Actiq
Monkey	Oxycat	Duragesic
White Stuff	Hillbilly Heroin	Sublimaze
Demmies	Percs	OxyContin
Pain Killer	Perks	Percodan
Apache	Juice	Percocet
China Girl	Dillies	Tylox
Dance Fever		Dilaudid

Source: Opioids and Morphine Derivatives, Foundation for a Drug Free World, www.drugfreeworld.org

⁷ Harriet Ryan et al., “How black-market OxyContin spurred a town’s descent into crime, addiction and heartbreak,” *Los Angeles Times* (July 10, 2016).

⁸ David Armstrong, “Illegal Street Drugs, Not Prescriptions, Now Powering Opioid Abuse, Study Finds,” published on Aug. 25, 2016, www.statnews.com/2016/08/25/fentanyl-street-drugs-cdc.

⁹ Centre for Addiction and Mental Health (CAMH), www.camh.ca/en/hospital/health_information/a_z_mental_health_and_addiction_information/oxycontin/Pages/opioids_dyk.aspx.

WHERE DO OPIOIDS COME FROM?

The key contents of most opioids used in the United States come either from South America or Mexico. Even though perhaps 90 percent of the world's heroin is cultivated in Afghanistan, only about 4 percent of heroin in the United States came from Afghanistan in 2013.¹⁰

Synthetic opioids such as oxycodone (OxyContin), hydromorphone (Dilaudid) or hydrocodone (Tussionex) are made by changing the chemical structure of naturally occurring opioids.¹¹ The starting point, however, is a naturally occurring opioid such as opium or morphine.

THE MEDICAL CONSEQUENCES OF OPIOID USE

Opioid abuse often has devastating consequences. To the surprise of some, during the past decade, even while the death rates associated with heart disease and cancer declined substantially, the death rate associated with opioid pain medication increased markedly.

Opioid abuse and addiction nearly always have negative mental and physical effects, including nausea, vomiting, a weakened immune system, slower breathing rates, comas, increased risk of HIV, infectious diseases, hepatitis, hallucinations, collapsed veins and clogged blood vessels, and choking.¹²

Unfortunately, symptoms associated with the withdrawal from opioids can be almost as terrifying. When someone who is addicted to opioids stops using the drugs, they likely will exhibit withdrawal symptoms, including anxiety, sweating, insomnia, agitation, tremors, muscle aches, nausea, vomiting, diarrhea, and extreme mental and physical discomfort. These can lead to death.

The cure is not worse than the disease in the case of opioids. However, Angee Baldini et al. (2012) found that even positive, well-intentioned opioid therapy can adversely affect respiratory, gastrointestinal, musculoskeletal,

cardiovascular, immune, endocrine and central nervous systems.¹³ Further, the higher the daily dose of a prescribed opioid, the higher the risk of overdose and accompanying problems, such as fractures, addiction, intestinal blockages and sedation. Hence, physicians and patients must weigh the full spectrum of medical risks against a realistic assessment of observed benefits related to pain reduction. It is not clear that some physicians understand this responsibility fully.

It is possible to reverse the immediate deadly impact of an opioid overdose. Naxolone (also known as Narcan) is a drug that can be used to treat narcotic overdoses in emergency situations. Since March 13, 2017, when Gov. Terry McAuliffe approved the Virginia Board of Medicine's declaration of an opioid emergency, naxolone has been much easier to obtain in the Commonwealth. Amazingly, it can restore breathing to a comatose, headed-for-death individual within two to eight minutes after being administered. Now, a wide variety of individuals, including families and friends of abusers, can obtain a prescription for it and have it ready when needed. While naxolone addresses the results of opioid abuse and not the causes, its greater availability is a positive step forward that undoubtedly will save lives.

WHAT DOES THE LAW HAVE TO SAY?

Federal laws delimit the possession and distribution of nearly all opioids and substantial penalties attach to their illegal use. Additionally, every state has adopted laws proscribing opioid activity. Prescription opioids are legal only when prescribed by a licensed medical practitioner and used by the person to whom they are prescribed. Even so, "double doctoring" – obtaining a prescription from more than one doctor without telling the prescribing doctor about other prescriptions – is both illegal and common.¹⁴

¹⁰ "The Drug Addiction Pipeline: Who Supplies Drugs to America?" The Recovery Village, <https://www.therecoveryvillage.com/drug-addiction/who-supplies-drugs-america>.

¹¹ Centre for Addiction and Mental Health (CAMH). www.camh.ca/en/hospital/health_information/a_z_mental_health_and_addiction_information/oxycotin/Pages/opioids_dyk.aspx.

¹² Opioid (Opiates) Abuse and Addiction, <http://www.healthline.com/health/opioids-and-related-disorders#overview1>.

¹³ Angee Baldini, et al., A Review of Potential Adverse Effects of Long-Term Opioid Therapy. The Primary Care Companion for CNS Disorders, 2012, doi:10.4088/pcc.11m01326.

¹⁴ Dina Gusovsky, "Americans Consume Vast Majority of The World's Opioids," CNBC (April 27, 2016), www.cnbc.com/2016/04/27/americans-consume-almost-all-of-the-global-opioid-supply.html.

A Look At Virginia And Hampton Roads Data

Since 2010, the rate of opioid-connected deaths has increased nearly five-fold in Virginia. The Virginia Department of Health reported a 38 percent increase in deaths from prescription opioid and heroin overdoses between 2012 and 2014.¹⁵ A more recent report found a 175 percent increase in deaths from several varieties of fentanyl during the same period.¹⁶

Graph 2 reveals that opioid-related deaths in Hampton Roads have recently overtaken statewide levels. While opioid deaths per 100,000 individuals were initially lower in 2011 and 2012, Hampton Roads endured a rapid increase in opioid fatalities in 2015. Graph 3 shows that these tragic deaths have been unequally distributed across the region's major cities.

Looking at fatal fentanyl deaths only in Table 3, it is apparent that these incidents have risen rapidly in recent years, with the 2016 regional total about five times as large as the comparable number for 2014.

Location	2012	2013	2014	2015	2016
Chesapeake	0	5	4	15	13
Hampton	1	1	0	2	6
Newport News	1	0	8	6	10
Norfolk	0	13	2	23	28
Portsmouth	0	3	0	9	9
Suffolk	0	1	1	4	2
Virginia Beach	2	6	3	23	23
Hampton Roads	4	29	18	82	91
Virginia	50	102	134	224	288

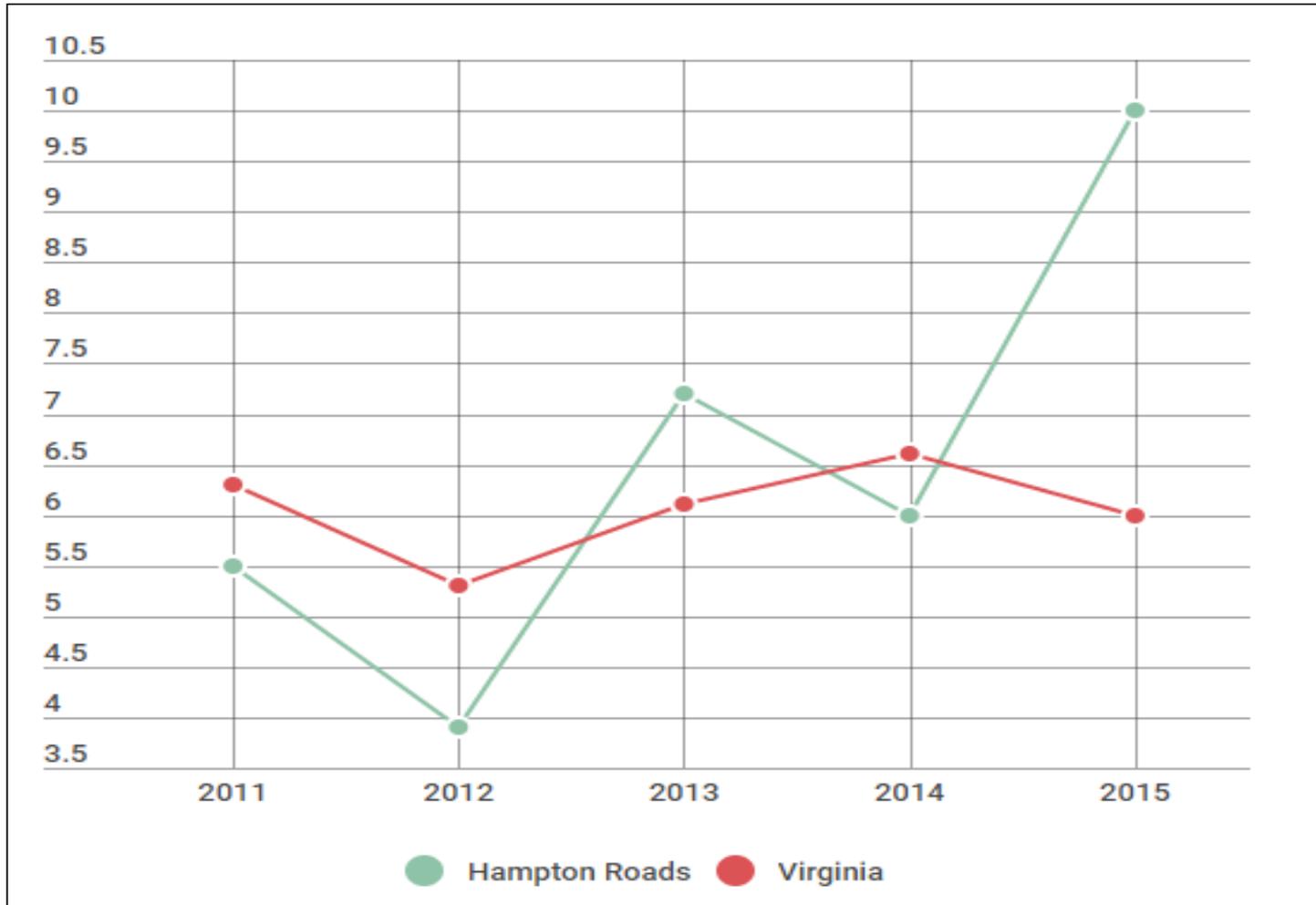
Source: Amir Vera, "Fentanyl: The Drug You've Never Heard of That's Killing More and More People in Hampton Roads," *The Virginian-Pilot* (Oct. 17, 2016)

¹⁵ "Increases in Drug and Opioid-Involved Overdose Deaths – United States, 2010–2015," www.cdc.gov/mmwr/volumes/65/wr/mm65051e1.htm.

¹⁶ Patricia Sullivan, "Drug Overdose Deaths Top 1,400 in Virginia in 2016," *The Washington Post* (April 13, 2017).

GRAPH 2

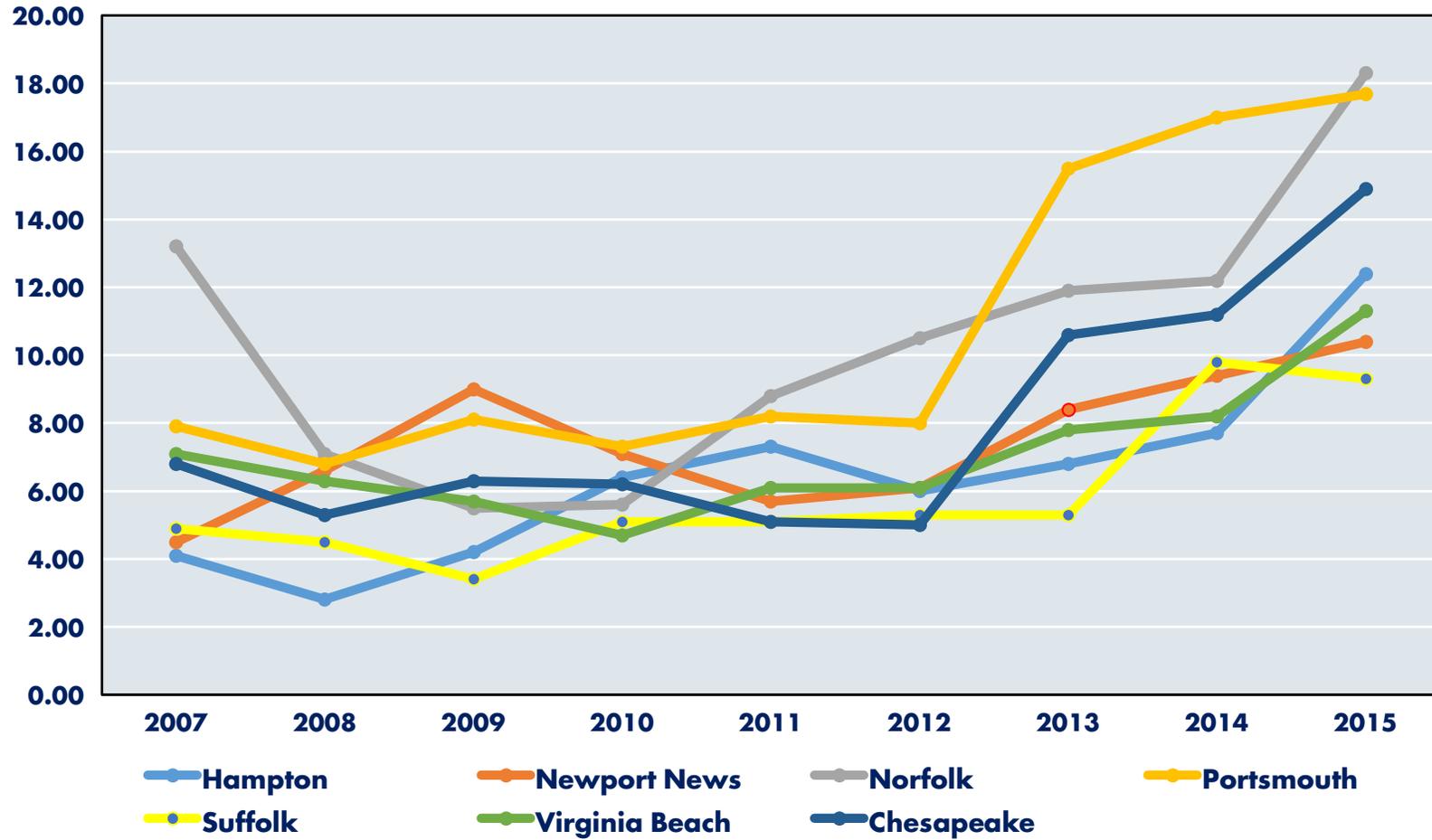
OPIOID DEATHS IN HAMPTON ROADS AND VIRGINIA, 2011-2015 (DEATHS PER 100,000)



Source: Gary A. Harki, "Virginia's Drug Problem: Heroin and Opioid Deaths Continue to Rise," The Virginian-Pilot (Dec. 25, 2015)

GRAPH 3

OPIOID-INDUCED DEATHS IN THE MAJOR CITIES OF HAMPTON ROADS, 2007-2015 (DEATHS PER 100,000)



Source: Data taken from graph by Will Houpp, The Virginian-Pilot (May 20, 2016)

Opiate Addiction And Employment

Prima facie, opiate misuse or abuse is antithetical to regular, productive employment. Perhaps, but this is not immediately evident if one were to rely upon aggregate unemployment rates as one's evidence. The Bureau of Labor Statistics tells us that the region's unemployment rate declined from 8.2 percent in January 2010 to 4.2 percent in March 2017, even while opioid usage was accelerating upward.

However, a statistic considerably more relevant to measuring the possible effects of opioid usage on work is the labor force participation rate (LFPR). The LFPR measures whether an individual of prime working age either is employed, or looking for a job. **The relevance of LFPRs to opioid usage is straightforward: The consensus is that opioid addiction causes people to drop out of the labor force by making them less ambitious, more lackadaisical and even unresponsive to ordinary labor market incentives.**

It also is true that unemployment rates can be deceptive because an individual who drops out of the labor force and no longer is looking for a job is not counted as unemployed. LFPRs, however, catch this.

The labor force participation rate in the United States for adults ages 25-54 has been on the decline for many years and reached a near 40-year low in May 2015 (see Graph 4). As of September 2016, 11.4 million men between the ages of 25 and 54 were not in the labor force.

Does the decline in labor force participation reflect increasing opioid usage? Recent work conducted by Alan Krueger of Princeton University, under the aegis of the Federal Reserve Bank of Boston, strongly suggests that this may be so.¹⁷ Krueger found that **44 percent of men not in the labor force said they took painkillers daily, and two-thirds of that subset were on prescription medicines. By contrast, just 20 percent**

¹⁷ Alan B. Krueger, "Where Have All the Workers Gone?" Federal Reserve Bank of Boston Working Paper (Oct. 16, 2016).

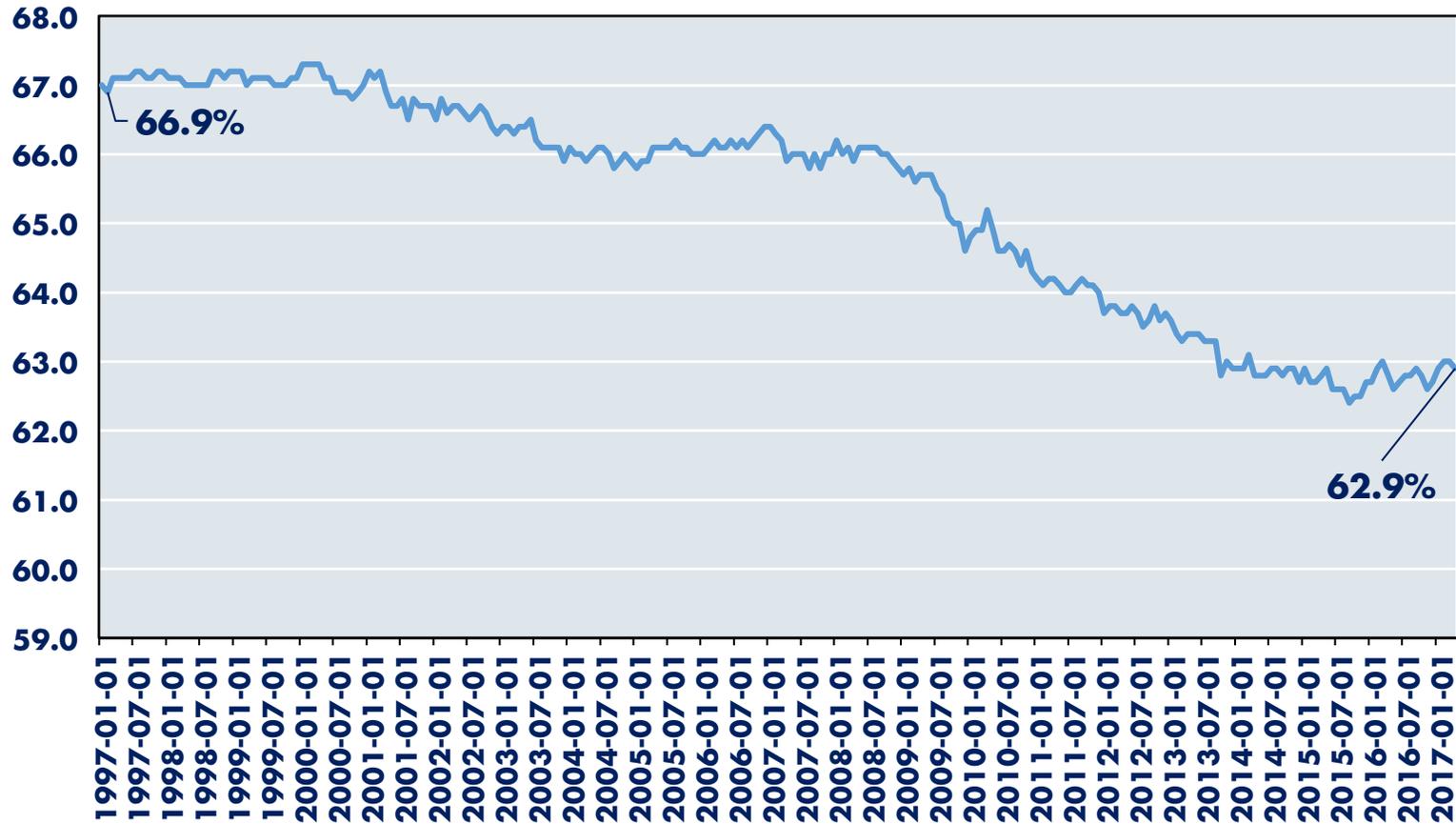
of employed men and 19 percent of unemployed men (but looking for work) in the same age group reported taking any painkillers. Graph 5 presents opioid use data for both men and women.

If, for whatever reason, many people of prime working age are not working, how do they survive? Some successfully claim disability. Disability insurance programs provided benefits to nearly 9 million disabled American workers in 2013, almost six times the 1.5 million disabled workers who received benefits in 1970. An increasing proportion of people who have left the labor force cobble together a combination of sources of support that may include disability payments, but also extended family support, charitable gifts, unemployment insurance, food stamps and perhaps some criminal activity. They may end up standing on the proverbial street corner, or lounging in a park – but not in the labor force except on a part-time, temporary or "gig" basis.

What is the cost of such behavior to the Hampton Roads economy? This is difficult to say. **If, however, labor force participation rate data for Hampton Roads mirror national trends, and the average wage of a labor force dropout averages \$30,000, then \$1.05 billion in lost productivity is a ballpark estimate of the 2016 cost of lower labor force participation to our region.**

GRAPH 4

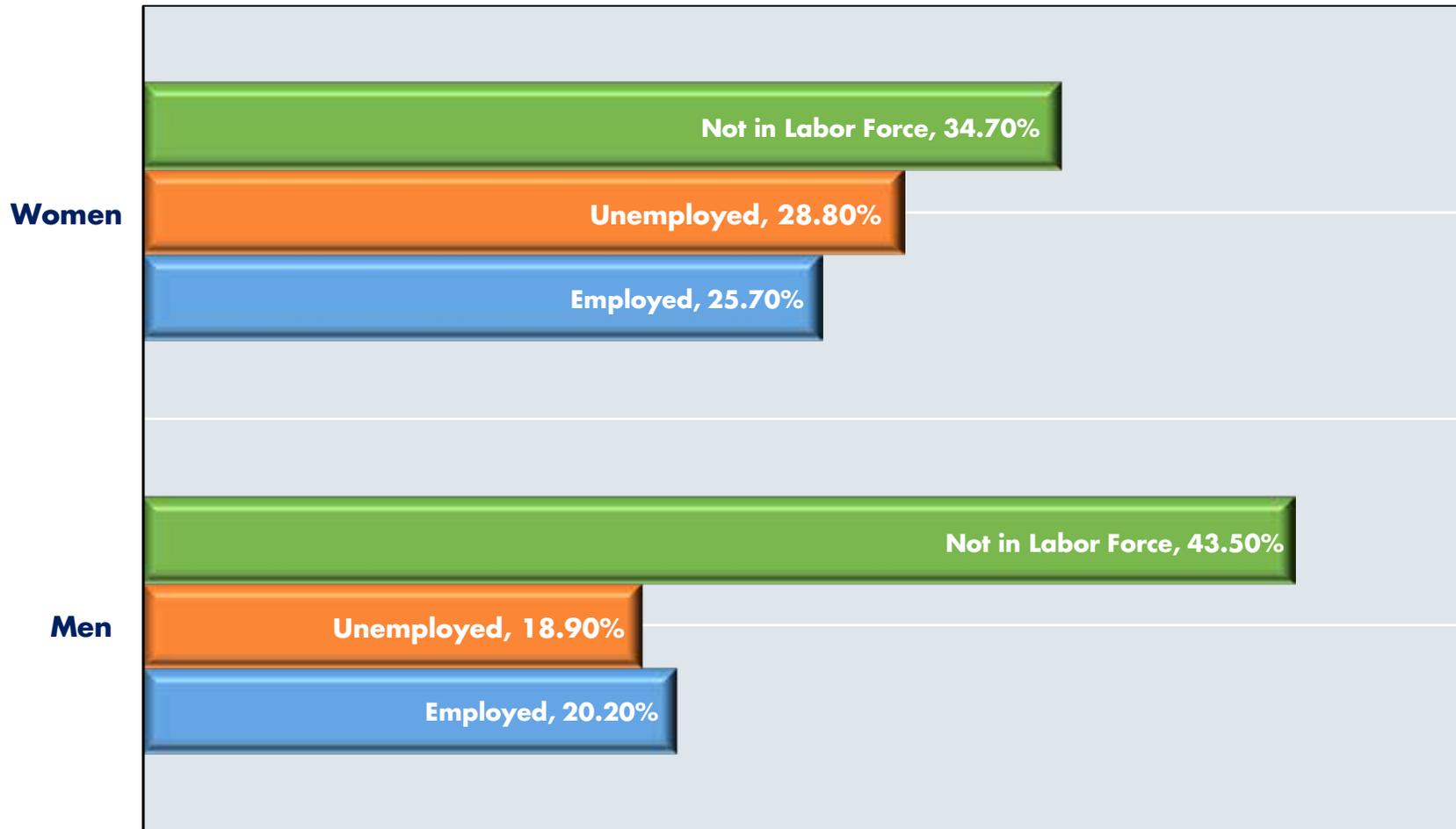
LABOR PARTICIPATION RATE FOR ADULTS, 25-54 YEARS: UNITED STATES, 1997-2017



Source: Bureau of Labor Statistics, www.bls.gov

GRAPH 5

PERCENTAGE OF PEOPLE WHO TOOK PAINKILLERS THE DAY BEFORE (BY EMPLOYMENT STATUS)



Source: Alan B. Krueger, based upon data from the American Time Use Survey of the U.S. Census Bureau

Opiate Addiction And Crime

Does opioid abuse or addiction lead to additional crime? The National Council on Alcoholism and Drug Dependence argues that “drugs and crime are directly and highly correlated and serious drug use can amplify and perpetuate preexisting criminal activity.”¹⁸ Evidence concerning this, however, is limited. Most crime rates in a majority of the areas of the United States have been declining in recent years, and hence it is difficult to make the case that the upward spike in opioid abuse and addiction has had much of an impact on crime rates. This is not the same as saying there has been no effect, but rather that many different factors affect crime rates and it is difficult to extract the precise contribution of opioid abuse to crime rates.

There are two additional observations of import to make with respect to opioid addiction and crime rates. First, opioid addicts typically do not survive for long periods of time and therefore do not remain alive to commit crimes. Second, the nature of opioid addiction is such that it saps energy and vitality. One is unlikely to commit crimes when one is semi-inert.

Other Costs Of Addiction

Drug addicts or abusers frequently end up in hospital emergency rooms and there are costs associated with this. Virginia’s Joint Legislative Audit and Review Commission (JLARC) estimated that already in 2008, untreated substance abuse resulted in \$613 million in public safety expenditures (police, jail, prison) and health care services by local and regional governmental units.¹⁹ The average hospital stay for those who were admitted because of drug abuse was 3.8 days in 2010 and their average treatment cost was \$29,497.²⁰ No doubt these numbers are higher today.

It is interesting to note that one well-regarded national study of the economic cost of opioid abuse concluded that governments bear only about one-quarter

¹⁸ Virginia Performs, <http://vaperforms.virginia.gov/indicators/publicsafety/crime.php>.

¹⁹ Joint Legislative Audit and Review Committee, Report to the Governor and the General Assembly of Virginia, Mitigating the Costs of Substance Abuse in Virginia. <http://jlarc.virginia.gov/dfs/reports/Rpt372.pdf> (2008).

²⁰ www.latimes.com/nation/la-sci-sn-opioid-overdose-prescription-hospital-er-20141026-story.html.

of the national cost of opioid addiction. The lion’s share of the costs are borne by families, employers and charitable organizations. Nearly two-thirds of the total economic burden was due to health care expenses, substance abuse treatment and lost productivity.

We want opioid abusers to seek treatment, but the treatment costs also can prevent them from doing so. In 2015, the average cost to a patient of an uncomplicated emergency room visit was \$746 in eastern Virginia.²¹ Further, the drug substitutes used to move opioid addicts to a controlled status also can be pricey. The two most widely used drug substitutes are methadone and Suboxone (buprenorphine); each costs about \$500 per month per individual. These drug substitutes can be administered in the form of an implant that slowly releases the curative drug over a period of several months, but this costs around \$6,000.²² One of several goals in instituting a drug substitute program is to reduce the size of the clandestine drug market, which often is dominated by organized crime and gangs.

Policy Considerations

1. The foremost need of citizens, physicians and elected officials is more and better information concerning opioid addiction. Despite the adverse impact of opioid addiction upon labor force participation and even though this imposes substantial costs on society, many individuals seem unaware of the challenges.
2. It is not disputed that some physicians remain uninformed about the risks of opioids and are insufficiently trained to prescribe them while managing chronic patient pain. A Boston Medical Center study examined nearly 3,000 patients who survived an opioid-related overdose between 2000 and 2012.²³ The study found that over 90 percent of these patients continued

²¹ Virginia Health Information, <http://www.vhi.org/healthcarepricing/procedure.asp?id=ERM22>.

²² Matt Gregory, “Drug Addiction: The Cost of a Second Chance,” (Feb. 16, 2017), <http://drugfreeva.org/drug-addiction-the-cost-of-a-second-chance>.

²³ Marc R. Larochelle, Jane M. Liebschutz, Fang Zhang, Dennis Ross-Degnan, and J. Frank Wharam. “Opioid Prescribing After Nonfatal Overdose and Association With Repeated Overdose: A Cohort Study of Opioid Prescribing After Nonfatal Overdose.” *Annals of Internal Medicine*. American College of Physicians (Jan. 5, 2016).

to receive opioid medications from doctors, even after their overdose. Physician education is in order.

3. Additional financial support should be provided for research into nonaddictive, “selective” painkillers such as PZM21 and BU00028 (both experimental drugs). They offer hope that long-term use of opioids need not result in addiction.
4. We should create a national prescription registry. A recurring problem in opiate addiction is the ability of an individual to obtain multiple opiate prescriptions from multiple physicians. While there are privacy downsides to a national prescription registry, the nature of the current crisis suggests that the benefits accruing from such a registry probably would outweigh the costs by eliminating the ability of individuals to obtain repeated prescriptions.
5. The medical community should continue to utilize opiate substitute drugs such as methadone to move opiate addicts away from their addiction. Moving opiate-blocking drugs such as Naloxone (branded as Narcan and Evzio) from prescription to over-the-counter could lead to wider availability and the saving of lives. Almost needless to say, such interventions will not only require legislative action but also funding if they are to make a difference.
6. Opiate addiction should be regarded as a medical problem. Another “war on drugs” is not going to improve the opiate situation we face today.

Finally, it should be apparent that opiate misuse and abuse ultimately reflect our society – the values, attitudes, laws, geography and range of economic opportunities that together make us who we are. Hence, one cannot press a single button and eliminate the scourge of opiate addiction because this wave of abuse represents the conjunction of a set of complex phenomena deep within us. It would take a decade or more of attention, education and funding to reverse our current dismal situation, and even this may be too ambitious a goal.



Foreign Language Instruction In The Region's Public Schools: Where Do We Stand?



FOREIGN LANGUAGE INSTRUCTION IN THE REGION'S PUBLIC SCHOOLS: WHERE DO WE STAND?

The benefits of knowing how to speak, read and write a second language are well known. Being able to communicate in more than one language provides empathy and insight into other cultures and is a key economic asset in a globalizing world. Public- and private-sector employers actively seek workers who are fluent in languages other than English; demand is particularly high right now for Mandarin Chinese, Spanish and Arabic. There is a growing need for bilingual workers in numerous sectors of the economy, across all levels of the skill spectrum¹ (see Table 1), and workers who are fluent in a second language will typically earn more money over the course of their lifetimes than their monolingual counterparts.²

The benefits of bilingualism are cognitive as well as social and economic. A growing body of research suggests that bilingual children are particularly agile learners, tending to outperform other children their age in a variety of cognitive tasks. The benefits of this mental flexibility extend into adulthood, and bilingual seniors have proven to be more resistant to the onset of dementia. (There are multiple sources for this finding, including an article in the Feb. 18, 2011, edition of *The Guardian*, "Being bilingual may delay Alzheimer's and boost brain power," <https://www.theguardian.com/science/2011/feb/18/bilingual-alzheimers-brain-power-multitasking>.)

It is also well known that the United States suffers from a "foreign language deficit." Just 25 percent of American adults can speak a language other than English, and of this small group, only 43 percent claim to speak the other language "very well."³ By contrast, 54 percent of all Europeans can hold a conversation in a language other than their native tongue, with 25 percent able to converse in at least two additional languages and 10 percent in at least three.⁴ Most schoolchildren in Europe and Asia begin to learn their first foreign language (usually English) in the primary grades. The U.S. has benefited from

the rise of English as a global *lingua franca*, but we have also fallen behind much of the rest of the world in learning languages other than our own.

According to a three-year study by the American Council on the Teaching of Foreign Languages, just 18 percent of all K-12 public school students in the U.S. were enrolled in a foreign language course in the 2004-05 school year. This percentage increased to 19.7 percent in 2014-15.⁵ In most states, including Virginia, these figures ranged between 10 to 30 percent for the same school year.⁶ To graduate with an advanced diploma (required for admission to most four-year colleges and universities), Virginia high school students must take at least three years of one foreign language, or two years of two foreign languages. On the other hand, the requirements for a standard diploma include two years of foreign language, or two years of fine arts, or two years of career and technical education. Nearly 45 percent of Virginia's high school graduates may receive little or no foreign language instruction (see Tables 2 and 3).

Even students who attend a college or university are unlikely to deepen their foreign language skills beyond the basics they learned in high school. The Modern Language Association determined that just 8.1 percent of college students studied a foreign language in 2013, down from 8.7 percent four years earlier. Growing interest in the study of Korean, American Sign

¹ New American Economy, "Not Lost in Translation: The Growing Importance of Foreign Language Skills in the U.S. Job Market" (March 2017), at: http://www.newamericaneconomy.org/wp-content/uploads/2017/03/NAE_Bilingual_V8.pdf.

² Johnson: "What is a Foreign Language Worth?", *The Economist* (March 11, 2014), at: <http://www.economist.com/blogs/prospero/2014/03/language-study>.

³ Pew Research Center, "Learning a foreign language a 'must' in Europe, not so in America" (July 13, 2015), at: <http://www.pewresearch.org/fact-tank/2015/07/13/learning-a-foreign-language-a-must-in-europe-not-so-in-america/>.

⁴ Eurobarometer 386, "Europeans and Their Languages" (June 2012), at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_386_en.pdf.

⁵ "The National K-12 Foreign Language Enrollment Survey Report" (June 2017), at: <https://www.americancouncils.org/sites/default/files/FLE-report-June17.pdf>.

⁶ "Foreign Language Enrollments in K-12 Public Schools: Are Students Prepared for a Global Society?", Executive Summary, at: <https://www.ced.org/pdf/actfl-k12-foreign-language-for-global-society.pdf>.

Language, Portuguese and Chinese has been offset by larger declines in traditionally well-attended language courses like Spanish, French, German and Italian.⁷

There is, however, a growing consensus that the United States must reverse its longstanding indifference toward languages other than English if it hopes to meet the challenges of globalization and a multicultural society. Financial Times columnist Simon Kuper bluntly states that dependence on the English language has become a critical security weakness for the U.S. and the U.K.: “English-speaking countries are particularly easy to hack because their enemies understand what they are saying. Being an English-speaking society is like living in a glass house: it makes you transparent. Conversely, foreign countries are opaque to mostly monolingual Britons and Americans. Foreigners know us much better than we know them.”⁸

In 2014, four members of the U.S. Senate and four members of the U.S. House of Representatives (both Democrats and Republicans) requested that the American Academy of Arts and Sciences undertake a comprehensive study to examine the nation’s current capacity in languages. The academy released the study, “America’s Languages: Investing in Language Education for the 21st Century,” earlier this year.⁹ It offers five key recommendations for language education in the U.S.:

- Increase the number of language teachers at all levels of education so that every child in every state has the opportunity to learn a language in addition to English.
- Supplement language instruction across the education system through public-private partnerships among schools, government, philanthropies, businesses and local community members.
- Support heritage languages already spoken in the United States, and help these languages persist from one generation to the next.

⁷ “Enrollments in Languages Other than English in United States Institutions of Higher Education, Fall 2013,” at: https://www.mla.org/content/download/31180/1452509/EMB_enrllmnts_nonEngl_2013.pdf.

⁸ Simon Kuper, “The problem with English,” *Financial Times* (Jan. 12, 2017), at: <https://www.ft.com/content/223af71a-d853-11e6-944b-e7eb37a6aa8e>.

⁹ America’s Languages: Investing in Language Education for the 21st Century (2017), at: http://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/language/Commission-on-Language-Learning_Americas-Languages.pdf.

- Provide targeted support and programming for Native American languages as defined in the Native American Languages Act.
- Promote opportunities for students to learn languages in other countries by experiencing other cultures and immersing themselves in multilingual environments.

With these recommendations in mind, this chapter reviews the state of foreign language instruction in the public school divisions of Hampton Roads’ seven cities. The chapter draws upon our conversations with school administrators in Hampton, Newport News, Norfolk, Portsmouth, Suffolk and Virginia Beach, and the information about their language programming that they generously provided. Although we are not in the position to evaluate some of the essential elements of a successful language program – including the quality and effectiveness of instruction, as well as student outcomes and enthusiasm – we can provide an overview of current offerings in our region’s school divisions and identify relevant trends. We conclude with some observations about the strengths of our divisions’ foreign language programming, as well as opportunities for growth.

TABLE 1

TOP 15 OCCUPATIONS ADVERTISED ONLINE FOR BILINGUAL WORKERS (2015)

Occupation	Number of Total Bilingual Job Listings	Share of Total Bilingual Job Listings	Skill Level
Customer Service Representatives	46,948	7.80%	Less
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	38,164	6.30%	Less
Retail Salespersons	37,115	6.10%	Less
Registered Nurses	19,211	3.20%	High
Sales Agents, Financial Services	19,012	3.20%	High
Tellers	16,346	2.70%	Less
First-Line Supervisors of Retail Sales Workers	15,058	2.50%	Less
Managers, All Other	13,992	2.30%	High
Secretaries and Administrative Assistants, Except Legal, Medical and Executive	13,009	2.20%	Less
Human Resources Specialists	11,966	2.00%	High
Medical Assistants	9,351	1.60%	Middle
Receptionists and Information Clerks	8,735	1.50%	Less
Financial Managers, Branch or Department	8,009	1.30%	High
Medical and Health Services Managers	7,498	1.20%	High
Loan Officers	6,763	1.10%	High

Source: New American Economy, "Not Lost in Translation," at: http://www.newamericaneconomy.org/wp-content/uploads/2017/03/NAE_Bilingual_V8.pdf

TABLE 2

VIRGINIA GRADUATION REQUIREMENTS FOR A HIGH SCHOOL DIPLOMA

Advanced Studies Diploma Course Requirements		Standard Diploma Course Requirements		Modified Standard Diploma Course Requirements**	
Discipline Area	Standard Credits	Discipline Area	Standard Credits	Discipline Area	Standard Credits
English	4	English	4	English	4
Mathematics	4	Mathematics	3	Mathematics	3
Laboratory Science	4	Laboratory Science	3	Laboratory Science	2
History & Social Sciences	4	History & Social Sciences	3	History & Social Sciences	2
Health & Physical Education	2	Health & Physical Education	2	Health & Physical Education	2
Foreign Languages*	3	Foreign Language, Fine Arts, or Career & Technical Education	2	Fine Arts or Career & Technical Education	1
Fine Arts or Career & Technical Education	1				
Economics & Personal Finance	1	Economics & Personal Finance	1	Electives	6
Electives	3	Electives	4		
Total	26	Total	22	Total	20

* Courses to fulfill this requirement may include three years of one language, or two years of two languages.
** Modified Standard Diploma: For certain students with disabilities who entered the ninth grade before 2013-2014. Credit accommodations now allow these students to earn a Standard Diploma.

Source: Virginia Department of Education, at: <http://www.doe.virginia.gov/instruction/graduation/index.shtml>

TABLE 3

DIPLOMAS EARNED ANNUALLY BY DIVISION, 2015-2016

Division	Advanced	Standard	Modified	Special	Total Diploma Graduates	Advanced Diplomas as % of Total Graduates
Chesapeake	1,795	1,043	72	108	3,018	59.48%
Hampton	579	767	13	54	1,413	40.98%
Newport News	698	936		53	1,695	41.18%
Norfolk	626	971	16	65	1,678	37.31%
Portsmouth	333	533		60	929	35.84%
Suffolk	403	495	12	30	940	42.87%
Virginia Beach	2,857	1,831	13	173	4,874	58.62%
Virginia	49,324	35,783	1,339	2,402	88,848	55.52%

Source: http://bi.vita.virginia.gov/doe_bi/rdPage.aspx?rdReport=Main&subRptName=Graduation

Foreign Language Instruction In Hampton Roads

The Hampton Roads Economic Development Alliance touts our region as “engineered for the future of global business,” pointing to technical innovation, a friendly business climate and a skilled workforce as important regional assets.¹⁰ But how many Hampton Roads workers can claim proficiency in a language other than English as one of their essential skills?

Our region’s military presence suggests that many families have gained valuable experience living and working abroad, yet only 9 percent of the regional population 5 years and older speaks a language other than (or in addition to) English at home.¹¹ The highest proportion of foreign language

speakers (nearly 12 percent of the population 5 and older) can be found in Virginia Beach, most likely because of its substantial Filipino-American community, whose members may speak Tagalog or another Philippine language.¹² Hampton Roads’ proportion of foreign language speakers is lower than in the Commonwealth of Virginia as a whole (15.4 percent), as well as in nearby metropolitan areas like Charlotte (13.1 percent) and Raleigh-Durham (15.4 percent), most likely because our immigrant, or “foreign-born,” population is comparatively low as well¹³ (see Table 4). The U.S. Census question about languages spoken at home tends to reflect “heritage speakers,” rather than those who have learned a second language at school. However, a comparatively low proportion of heritage speakers means that Hampton Roads is particularly dependent on its schools to promote competence in languages other than English.

¹⁰ Hampton Roads Economic Development Alliance, “Navigate the Region,” at: <http://www.hreda.com/navigate-the-region/>.

¹¹ U.S. Census Bureau, “Table 98. Detailed Languages Spoken at Home and Ability to Speak English for the Population 5 Years and Over for Virginia Beach-Norfolk-Newport News, VA-NC: 2009-2013 (October 2015), at: <https://www.census.gov/data/tables/2013/demo/2009-2013-lang-tables.html>.

¹² U.S. Census Bureau, “Table 149. Detailed Languages Spoken at Home and Ability to Speak English for the Population 5 Years and Over for Virginia Beach City, VA: 2009-2013” (October 2015), at: <https://www.census.gov/data/tables/2013/demo/2009-2013-lang-tables.html>.

¹³ U.S. Census Bureau, “Table 47. Detailed Languages Spoken at Home and Ability to Speak English for the Population 5 Years and Over for Virginia: 2009-2013” (October 2015), at: <https://www.census.gov/data/tables/2013/demo/2009-2013-lang-tables.html>.

TABLE 4

LANGUAGE SPOKEN AT HOME (POPULATION 5 YEARS AND OLDER, 2015)

	Hampton Roads (7 cities)		Chesapeake		Hampton		Newport News		Norfolk		Portsmouth		Suffolk		Virginia Beach	
Population 5 years and older	1,329,116		216,096		128,378		168,083		228,614		88,879		80,549		418,517	
English only	1,204,450	90.6%	200,400	92.7%	119,075	92.8%	149,765	89.1%	205,006	89.7%	84,615	95.2%	76,943	95.5%	368,646	88.1%
Language other than English	124,666	9.4%	15,696	7.3%	9,303	7.2%	18,318	10.9%	23,608	10.3%	4,264	4.8%	3,606	4.5%	49,871	11.9%
Spanish	55,184		7,160		4,642		9,680		11,524		2,201		1,723		18,254	
Other Indo-European languages	26,058		3,486		1,445		4,014		4,560		1,155		958		10,440	
Asian and Pacific Islander languages	36,614		4,197		2,044		3,766		5,827		817		661		19,302	
Other languages	6,810		853		1,172		858		1,697		91		264		1,875	
	Hampton Roads (MSA)		Richmond (MSA)		Raleigh, NC (MSA)		Charlotte, NC (MSA)		Charleston, SC (MSA)		Virginia		United States			
Population 5 years and older	1,597,129		1,171,968		1,135,941		2,186,103		666,057		7,744,352		296,603,003			
English only	1,454,690	91.1%	1,056,241	90.1%	960,817	84.6%	1,899,010	86.9%	619,000	92.9%	6,551,019	84.6%	234,171,556	79.0%		
Language other than English	142,439	8.9%	115,727	9.9%	175,124	15.4%	287,093	13.1%	47,057	7.1%	1,193,333	15.4%	62,431,447	21.0%		
Spanish	62,065	3.9%	52,138		98,359		181,588		27,805		526,043	6.8%	38,694,150	13.0%		
Other Indo-European languages	31,760		28,980		33,147		53,022		9,465		274,379		10,884,070			
Asian and Pacific Islander languages	40,914		24,941		30,603		39,798		8,233		281,914		10,027,065			
Other languages	7,700		9,668		13,015		12,685		1,554		110,997		2,826,162			
	142,439		115,727		175,124		287,093		47,057							

Source: 2011-2015 American Community Survey Five-Year Estimates (Selected Social Characteristics in the United States), at: <http://factfinder.census.gov>

WHICH LANGUAGES?

¿Hablas español? “Sí” is the response that you’ll hear from a majority of the students who are learning a language in one of our region’s public schools. The data that some local school divisions shared with us indicate that around 6 to 7 of every 10 students enrolled in a world language course are currently learning Spanish. The strong interest in Spanish undoubtedly reflects its prominence in our country today; more than 38 million U.S. residents (13 percent of the population 5 years and older) speak Spanish at home, and there are abundant opportunities for U.S. workers with Spanish language skills.¹⁴ Other factors likely contribute to the prevalence of Spanish in Hampton Roads classrooms – including the availability of qualified teachers, the longstanding status of Spanish (next to French, and to a lesser degree, German and Latin) as a fixture of high school curricula, as well as a perception that Spanish may be easier to learn than other languages.

Students at every public high school in Hampton Roads have the opportunity to take at least four years of Spanish (and with very few exceptions, French). German and Latin are offered in many, but not all, of our region’s high schools. Japanese, Chinese, Arabic, Russian and American Sign Language are taught in a much smaller group of schools (see Table 5).

The Virginia Department of Education formulates the Standards of Learning (SOL) to provide clear guidelines for first-, second-, third- and fourth-year language instruction, although SOL exams (a requirement for other disciplines) are not given in foreign language.¹⁵ Virginia’s foreign language standards are informed by these broad goals:

- Effective communication
- Enhanced cultural understanding
- Expanded access to information
- Increased global perspective.

¹⁴ U.S. Census Bureau, “Table 1. Detailed Languages Spoken at Home and Ability to Speak English for the Population 5 Years and Over for United States: 2009-2013” (October 2015), at: <https://www.census.gov/data/tables/2013/demo/2009-2013-lang-tables.html>.

¹⁵ Foreign Language Standards of Learning for Virginia Public Schools (May 2014), at: http://www.doe.virginia.gov/testing/sol/standards_docs/foreign_language/2014/stds_foreignlanguage.pdf.

In nearly all Hampton Roads divisions, students may enroll in first- and second-year language study while still in middle school. Some Virginia Beach middle schools offer three full years of language study. Hampton Roads students who continue with the same language into high school can typically graduate with five or six years of language study, including AP coursework that is geared toward earning early college credit. In practice, however, there seems to be a significant decline in course enrollments after the third year of language study (not coincidentally, three years of language study is the minimum requirement for the advanced studies diploma). The Newport News schools shared with us, for example, that the continuation rate after the first and second years of language study ranged between 81 to 85 percent in the 2016-17 school year. These percentages dropped to between 31 to 33 percent after the third and fourth years of language study.

Virginia Beach schools stand out for their particularly diverse language offerings – including Japanese, Russian, Chinese and Arabic, as well as American Sign Language. The breadth of language courses can be attributed in part to the division’s large size, but also to innovative programming. Although every high school does not employ teachers in all these different languages, students in the division may nevertheless enroll in less frequently offered courses through a distance learning option. All distance learning courses are taught in real time by a Virginia Beach teacher, and a teaching assistant is always present on-site to supervise students who are learning remotely. Although distance learning may not be the best fit for all students, Jennifer Carson, world languages coordinator for Virginia Beach City Public Schools, tells us that those who choose this option tend to be motivated and independent learners, with a specific interest in a given language.

TABLE 5

LANGUAGE COURSES OFFERED AND SCHOOL MEMBERSHIP (2016-2017)

	Fall Membership (2016-2017)	Limited English Proficient (2016-2017)		Elementary School*	Middle School*	High School*	Special Programs
Chesapeake	40,192	1,329	3.3%		Spanish I ; French I; German I; Latin I	Spanish I-V, AP; French I-V, AP; German I-V, AP; Latin I-V, AP	Summer language program for elementary students
Hampton	20,286	448	2.2%		Spanish I-II ; French I-II	Spanish I-V; French I-V; German I-IV; Latin I-IV	IB program
Newport News	28,843	1,652	5.7%	Spanish, French, German, Latin, Spanish immersion	Spanish I ; French I; German I	Spanish I-IV, AP; French I-IV, AP; German I-IV, AP; Latin I-III, AP	IB program; dual language (Spanish + English) immersion program at 2 elementary schools; Global Studies elementary school; Communication Arts elementary school
Norfolk	31,425	1,226	3.9%	Chinese	Spanish I-II; French I-II ; Latin I-II; Chinese I-II; Japanese I-II	Spanish I-IV, AP; French I-IV, AP; Latin I-IV, AP; German I-II; Chinese I-II; Japanese I-IV	IB program; international studies middle school; French American School
Portsmouth	14,611	100	0.7%		Spanish I	Spanish I-V, French I-V, Latin I-V	Summer language camp for gifted elementary students
Suffolk	14,284	67	0.5%		Spanish, French	Spanish, French, Latin, American Sign Language	
Virginia Beach	69,085	1,544	2.2%	Spanish immersion	Spanish I-II, III; French I-II, III; German I-II; Latin I-II, III; Japanese I-II, III; Spanish immersion	Spanish I-V, AP, AP literature; French I-V, AP; German I-V, AP; Latin I-V, AP; Japanese I-IV, AP; Russian I-IV; Chinese I-IV; Arabic I-IV; American Sign Language I-III	IB program; Spanish partial immersion program at 3 elementary schools and 1 middle school; Global Studies and World Languages high school; STARTALK summer academy for elementary students in Chinese and Russian

* Entries in boldface are available to students at all schools in the division; entries in non-boldface are available to students at one or more (but not all) sites.
 Source for language courses: Hampton Roads school divisions
 Source for fall membership figures: Virginia Department of Education, at: http://bi.vita.virginia.gov/doe_bi/rdPage.aspx?rdReport=Main&subRptName=Fallmembership

HOW EARLY?

The authors of the “America’s Languages” report note that because young children are especially receptive to language acquisition, “it is critical that language education begin at the earliest possible moment in the educational continuum.”¹⁶ The authors also acknowledge that significant barriers stand in the way of realizing this vision. Elementary school curricula are already full, with tightly scheduled days for even the youngest children. Virginia public schools must ensure that their students meet strictly prescribed Standards of Learning in multiple disciplines, leaving little time for additional learning activities that are deemed “nonessential.” Full-time language teaching positions in the early grades are few and far between. With the notable exception of language immersion programs (discussed in the next section), few school systems have been able to incorporate foreign language instruction in the early grades in a consistent and meaningful way.

Hampton Roads is no exception, although several divisions have introduced elementary and middle school language programs that we would like to recognize here. Most of these programs follow the “exploratory” language model, which means that they introduce basic communication skills, as well as learning in a more general way about other countries and cultures. (“Exploratory” or “introductory” language is likewise a standard middle school elective in our region’s school divisions, often intended for the sixth-grade year. Exploratory courses may focus on one language, or they may provide a broad introduction to several different languages. Intended to spark interest in further language study, they are not a prerequisite for high school-level coursework.)

Newport News stands out for its commitment to foreign language education in the early grades. Sixteen of its elementary schools offer introductory world language instruction as part of their programming for gifted students in grades 3–5. Classes meet for 50 minutes once a week, allowing students to learn basic communication skills in French, German, Latin and Spanish, as well as about countries where these languages are spoken. In addition, two Newport News magnet schools have incorporated foreign language instruction into their programming for all students. Introductory French and Spanish are taught through the Global Studies magnet program at Dutrow Elementary, and all

¹⁶ *America’s Languages*, p. 8.

students in grades 1–5 meet once a week for exploratory Spanish through the Communication Arts magnet program at Hilton Elementary.

Through a partnership with Old Dominion University’s Confucius Institute, students at one Norfolk elementary school (Larchmont Elementary) and two middle schools (Academy for Discovery at Lakewood and the Academy of International Studies at Rosemont) participate in classes in Chinese language and culture, taught by native Chinese speakers. (A Confucius Institute instructor also teaches at Granby High School.) One of 100 such institutions across the country, the Confucius Institute at ODU “promotes understanding between the citizens of the United States and the people of China” and maintains a relationship with a Chinese sister institution, Minzu University in Beijing. The institute’s cooperation with Norfolk’s schools – unique among our region’s public school divisions – is one of many cultural outreach and scholarly initiatives that it supports in Hampton Roads.

Both Chesapeake and Portsmouth offer summer language programs for elementary school students. In a two-week summer program in Chesapeake, students explore French, German, Latin and Spanish from a thematic and cultural perspective. In Portsmouth, students who have been identified as gifted may participate in a multiweek camp that introduces several different languages and cultures. Participants work toward creating an original project that brings together language skills with other areas of academic interest. Beverly Jackson, Portsmouth Public Schools’ program supervisor for foreign languages, tells us that the division is currently exploring new options to introduce elementary-level language instruction during the main school year.

Finally, Virginia Beach City Public Schools offers its own summer learning opportunity for elementary school students through STARTALK, a National Security Agency-sponsored program that seeks to increase the numbers of young people learning “critical need foreign languages” such as Chinese, Arabic, Russian, Korean and Hindi. In Virginia Beach and numerous other sites across the country, STARTALK offers “creative and engaging summer experiences” that promote language study. In 2017, the Virginia Beach STARTALK academies gave 45 rising fifth-graders the opportunity to learn about Chinese language and culture in an intensive four-week session, while

30 rising fifth-graders participated in a Russian academy. Students are selected by lottery, and participation is free of charge.

Each of these programs enhances students' global awareness, providing them with valuable exposure to other languages and cultures. However, the programs' success in promoting second-language proficiency is somewhat less clear. Once-weekly meetings or a single summer camp are hardly enough to reinforce the learning of a second language, particularly when the experience may encompass multiple world languages. Another issue is that these language programs are largely self-contained; when students change schools, or move on to the next level of their education, they may not have another opportunity to build upon what they have learned, beyond enrolling in the traditional high school-level courses that are offered to all.

LANGUAGE IMMERSION

Meredith Hobson, Norfolk Public Schools' senior coordinator for foreign language and ESL, told us about an out-of-the-box proposal that she discussed with Jean-François Genay, general delegate of the Mission Laïque Française in North America. If U.S. elementary schools really want to encourage their students to speak a second language, Genay suggested, perhaps they needn't worry about bringing in additional specialists and carving out time each week for language instruction. Instead, why not just hire P.E. teachers who agree to speak a second language only with their students?

We understand why Genay's modest proposal is unlikely to be a realistic solution for Hampton Roads schools. Nevertheless, his suggestion does address many of the key factors that facilitate language learning. Children learn languages best not by participating in vocabulary drills or memorizing grammar rules, but rather through play, and through immersion in a setting where the second language is used in a natural, conversational way. Physical cues and facial gestures can clarify the meaning of initially unfamiliar words or phrases, while reverting to the first language should be avoided wherever possible. Consistently integrating a second language within the course of a typical school day encourages greater fluency than when a second language is taught as a separate subject.

This is, of course, the educational philosophy behind language immersion programs, which have attracted ever-greater interest throughout the U.S. As of the 2012-13 school year, public school language immersion programs had been established in 39 states plus the District of Columbia. Spanish, followed by Chinese, was the most commonly reported partner language. Immersion (or "dual language education") programs take many forms, but their unifying feature is that "a minimum 50 percent of instruction takes place in the partner language through the elementary school grades."¹⁷ Hampton Roads is home to two public school language immersion programs, in Virginia Beach and Newport News.

Virginia Beach's World Language Immersion Program has been in place at Christopher Farms Elementary School since 2002. Two additional elementary schools, Alanton and Trantwood, joined the program more recently. At each site, approximately 50 students in each grade receive half of their daily instruction (math and science) in Spanish, and the other half (language arts, social studies and electives) in English – thus the program's identification as "partial immersion." Participants are chosen by lottery and must live within the schools' attendance zones. After fifth grade, students in the program may elect to continue their immersion experience at Landstown Middle School, with Spanish-language instruction shifting to social studies and civics. Students who successfully complete the middle school program are guaranteed admission to the Global Studies and World Language Academy at Tallwood High School. This academy, which is attended by around 360 students from throughout the division, prepares students "to contribute to the world community through multicultural and international perspectives in languages, geography, history, politics and economics." Among other requirements, students at the academy must study two different languages and complete a long-term project on a global culture and a global issue of concern.

Three years ago, Newport News began its own dual language immersion program at Palmer and Saunders elementary schools, as well as the Watkins Early Childhood Center. These sites were chosen because of their growing population of native Spanish speakers. The two classes in each school that participate in the immersion program are made up of half native English

¹⁷ U.S. Department of Education, *Dual Language Education Programs: Current State Policies and Practices* (December 2015), x, at: https://ncela.ed.gov/files/rcd/TO20_DualLanguageRpt_508.pdf.

speakers and half native Spanish speakers – hence the “dual language” label. As in the Virginia Beach program, students receive half of their instruction in Spanish and half in English, switching between teachers at the midpoint of the day. The program began with kindergarten only in the 2014-15 school year and has added a new cohort of kindergarteners each successive year. Helen Small, instructional supervisor for world languages at Newport News Public Schools, tells us that the goal is to continue to grow the program each year, so that participants will eventually be able to continue their dual language education into middle and high school.

Immersion programs are a highly effective means of teaching a second language. Moreover, dual language education appears to enhance student achievement in a variety of other ways. One recent study has shown that “by the time dual language immersion students reached the fifth grade, they were an average of seven months ahead in English reading skills compared with their peers in nonimmersion classrooms. By the eighth grade, students were a full academic year ahead, whether their first language was English or another world language.”¹⁸ Such findings remain consistent even when controlling for socioeconomic disparity. As Virginia Beach’s world languages coordinator, Jennifer Carson, noted in an interview with WHRV earlier this year, “The brain changes when students acquire a second, or even a third, language, and this magnifies cognitive benefits, not just linguistic benefits” – including improved spatial relations, higher-order thinking and standardized test scores.¹⁹

The Standards of Learning exam pass rate data that Carson shared with us appear to support these assertions. By this measure, students in the Virginia Beach immersion program have generally been as successful, or more successful, than their peers, with the expected variations from grade to grade and year to year. The 2017 math and reading scores of the third- and fourth-grade immersion students at Christopher Farms Elementary were about the same as, or slightly higher than, their nonimmersion counterparts. However, the fifth-grade immersion students outperformed the nonimmersion students by nearly 20 percentage points, in math as well as reading (see Table 6). The Newport News immersion program is still too young to have collected this kind of data; its first cohort of third-graders will take the SOL exams this spring.

¹⁸ *America’s Languages*, p. 15.

¹⁹ “Educationally Speaking: The Science of Smart,” Segment 1, at: <http://whro.org/radio/45744-educationally-speaking-the-science-of-smart>.

Although only Virginia Beach and Newport News have established immersion programs, high-achieving high school sophomores and juniors in all our region’s school divisions can participate in a three-week summer immersion experience at one of five Governor’s Foreign Language Academies. In 2017, French, German and Spanish full-immersion academies were held at Washington and Lee University in Lexington, and Japanese and Latin partial-immersion academies took place at Randolph-Macon College in Ashland. Each public high school in Virginia may nominate a limited number of applicants each year. Admissions are extremely competitive, but nearly all the school divisions we spoke with have recently had students accepted into the academies.

TABLE 6

STANDARDS OF LEARNING PASS RATE DATA AT CHRISTOPHER FARMS ELEMENTARY SCHOOL (SPRING 2017)

Spring 2017 SOL Data	Nonimmersion Students	Immersion Students
3rd Grade Reading	79%	90%
3rd Grade Math	88%	88%
4th Grade Reading	80%	83%
4th Grade Math	81%	77%
5th Grade Reading	79%	97%
5th Grade Math	75%	94%

Source: Virginia Beach City Public Schools

PROMOTING BILITERACY

A newer statewide initiative that reinforces the importance of second-language learning is the Seal of Biliteracy, a distinction that all Virginia public high school graduates can receive on their diplomas to indicate that they

- have passed all required End-of-Course Assessments in English reading and writing at the proficient or higher level; and

- are proficient at the intermediate-mid level or higher in one or more languages other than English.²⁰

Virginia is one of 23 states (plus the District of Columbia) that have adopted the seal, which was first introduced in California in 2008. Each school division is responsible for assessing its students' language proficiency, which is typically determined in the non-English language through an extra written exam. Hampton's curriculum leader for foreign language, Deborah Sommer, notes that the seal is a useful credential that can enhance high school graduates' career prospects.

The Seal of Biliteracy initiative is part of a broader educational movement that emphasizes the importance for all U.S. students to master more than one language, regardless of whether they are native or non-native English speakers. In 2016, California residents voted "yes" to a California ballot initiative (Proposition 58) to overturn a longstanding state policy that students who are learning English as a second language should receive instruction only in English, an outcome that will certainly encourage both dual-language immersion programs (as recently established in Newport News), and advanced Spanish language courses designed for heritage speakers.²¹

Hampton Roads' Spanish-speaking community (almost 4 percent of the population 5 years and older) is smaller than elsewhere in the U.S. and Virginia, but it has grown substantially in recent decades. The student population identified by the Virginia Department of Education as "limited English proficient" has likewise increased, creating new challenges for our region's public schools. The data for the Portsmouth and Suffolk school divisions that can be found on the DOE website appear to be incomplete, but other divisions in our region report a proportion of students who are learning English as a second language that ranges between 2.2 percent (Hampton and Virginia Beach) and 5.7 percent (Newport News). The majority of these students are native Spanish speakers, although numerous other world languages are represented as well.

The complete spectrum of services that our schools provide to English language learners is beyond the scope of this report – but in this context, it is worth noting that some divisions in Hampton Roads have begun to develop Spanish courses for native speakers. The goal of such courses is to enhance native Spanish speakers' reading and writing skills (similar to the function of traditional English courses for the broader student population), as a supplement to these students' ongoing acquisition of English as a second language. There are challenges to this approach, beginning with the scheduling difficulties that inevitably arise when one more item is added to an already full school day. Moreover, the reading and writing capabilities of heritage Spanish speakers vary widely, depending on the level of Spanish language schooling (if any) the students have already completed, making it difficult to design a single program of study. In the 2017-18 school year, Newport News will offer Spanish for Native Speakers I as a pilot program at Denbigh High School, the beginning of a two- to three-year sequence that will lead to an opportunity for native speakers to enroll in AP Spanish with other advanced language learners. In Norfolk, plans are underway to introduce Spanish for native speakers in the 2018-19 school year.

An additional program that promotes biliteracy is the French American School of Norfolk (FASN), established in 2011 through an initiative of the French Joint Staff and the Mission Laïque Française, to serve the needs of military families stationed at NATO's Allied Command Transformation in Norfolk. French students who participate in FASN enroll in either Crossroads School (elementary through eighth grades) or Granby High School, where they attend regular public school classes for most of the day. After school, they receive additional instruction in French, taught by FASN instructors. FASN classes are intended not only to reinforce French language skills, but also to help students meet the academic requirements of elementary and secondary schools in France. The French Ministry of Defense funds FASN, and Norfolk Public Schools provides the use of its facilities at no cost.

²⁰ http://www.doe.virginia.gov/instruction/graduation/diploma_seals/seal_of_biliteracy/index.shtml.

²¹ Ashley Hopkinson, "A new era for bilingual education: explaining California's Proposition 58" (January 2017), at: <https://edsources.org/2017/a-new-era-for-bilingual-education-explaining-californias-proposition-58/574852>.

Conclusion

Hampton Roads' public schools – like those elsewhere around the country – do not require all their students to learn a language other than English. Foreign language is an elective, rather than a core component, of the school curriculum. However, for those students who choose (or are encouraged by parents or counselors) to learn a foreign language, our region's schools offer many outstanding opportunities – including International Baccalaureate, immersion and other specialty programs, as well as courses in less commonly offered but high-demand languages such as Chinese and Arabic. These learning opportunities are not distributed equally. Smaller school divisions, and divisions with a minority of students earning advanced studies diplomas, are less likely to support language programs that go “above and beyond” traditional offerings. However, even divisions that fit this profile can still prioritize language learning through innovative programming; in our region, Newport News stands out as a positive example.

The Commonwealth of Virginia offers an encouraging environment for foreign language instruction. The Governor's Foreign Language Academies and the Seal of Biliteracy program are prominent initiatives supported by the Virginia Department of Education. In addition, the Foreign Language Association of Virginia and the Virginia Foreign Language Supervisors Association provide a helpful resource for language teachers and administrators throughout the Commonwealth. Representatives of Hampton Roads schools participate and serve in leadership roles in all these initiatives.

The administrators we spoke with emphasized how much language instruction has changed in the past generation. The repetition drills and language labs that shaped many baby boomers' and Generation Xers' language-learning experiences are hardly present in today's classrooms. Beginning language classes now tend to emphasize effective oral communication over technical mastery; “teaching to proficiency” is a commonly stated goal. The Virginia Standards of Learning adhere to this approach, recommending that the target language be used within the classroom as exclusively as possible. Moreover, students are increasingly encouraged to draw interdisciplinary connections beyond their language classroom. Finally, the internet has opened a new world

of language resources for students and teachers alike; there are more readily available ways to engage creatively with other languages and cultures than ever before.

Nevertheless, we heard that it can be difficult to maintain enrollments in upper-level language classes, due in part to perceptions (held by students and their advisers alike) that languages are hard to learn, or relevant only for honors students. Smaller divisions sometimes struggle to maintain robust programs in languages other than Spanish and French; we heard from several divisions that had recently discontinued a language program in some or all of their schools. Because there is typically just one teacher per school who is responsible for teaching all levels of a less commonly offered language, like German or Japanese, these programs can suffer if a strong teacher leaves or retires. Attracting and retaining qualified teachers in all world languages is a broader challenge, particularly since the demand for bilingual workers in other, more highly compensated, fields is so strong.

Distance learning (a focus of the 2013 State of the Region report) is a promising option for schools that might not otherwise be able to offer instruction in certain languages. Virginia Beach currently operates its own “in-house” distance learning program that allows classes at one school to be broadcast to other schools in the division; students and teachers interact with one another in real time through two-way videoconferencing. Although this solution might not be feasible for all divisions, all Hampton Roads schools may enroll their students in online courses through the Virginia Department of Education's distance learning initiative, Virtual Virginia. Students in Chesapeake, Hampton, Portsmouth and Suffolk have recently taken languages such as Chinese and Arabic, as well as Advanced Placement courses, through Virtual Virginia. Although there may be some drawbacks to learning a language online, the option is a good one for motivated students who might not otherwise have access to such courses.

Finally, we would like to underscore the observation of the authors of the “America's Languages” report that “urban schools in particular are surrounded by valuable, untapped resources to enhance language and cultural education for all students.”²² In Hampton Roads, these resources include

²² *America's Languages*, p. 20.

ethnic and immigrant communities (particularly from the Philippines and Latin America), several institutions of higher education, NATO's Allied Command Transformation in Norfolk, and more than 150 international companies from 26 different countries. There are rich possibilities for student internships, summer exchange programs, dual-language immersion programs, and other kinds of cooperation with international partners that have not yet been explored. Our school divisions should continue to build relationships within the broader Hampton Roads community as a means of supplementing or enhancing current language programming.



Do We Suffer From Brain Drain In Hampton Roads?



DO WE SUFFER FROM BRAIN DRAIN IN HAMPTON ROADS?

Brain drain, also known as human capital flight, can occur on several levels.
– investopedia.com

The term “brain drain” was first used to describe the loss of English scientists and other experts who moved from the United Kingdom to the United States and Canada more than 50 years ago. When most Americans think of brain drain, they usually focus on international migrants coming from other countries to the U.S. The United States has been a magnet destination for skilled workers from around the world and a significant portion of our economic growth is owed to talented international migrants who, among other things, are much more likely to start a new company than Americans who grew up here.¹

But brain drain also takes place within countries and even within states. Do we suffer from a brain drain of talented people who leave our region for what they perceive to be better prospects? Last year’s State of the Region report noted a conundrum related to this question. On one hand, Hampton Roads has been laggard in terms of job creation, which would spur people to leave. On the other hand, the unemployment rate has continued to decline in our region, and this would seem to indicate a tightening labor market and attractive job prospects.

Let’s sort out what has been going on. Graph 1 reveals that Hampton Roads has yet to regain all the jobs we lost during the Great Recession; at the end of 2016, we remained 0.5 percent below our prerecession high in 2007. Meanwhile, metropolitan regions such as Charlotte grew 12.4 percent and Raleigh 15.2 percent. In the realm of employment, the U.S. Bureau of Labor Statistics tells us that the April 2017 unemployment rate in our region was only 4 percent, down from 4.3 percent in April 2016, and well below the 8.1 percent peak rate we experienced in January 2010 during the Great Recession (see Graph 2).

How is it possible to have our regional rate of unemployment fall six years in a row even though the total number of jobs in our region has declined slightly? There are two primary reasons.

First, to be counted in the labor force, one either must have a job, or be actively seeking a job. Unfortunately, labor force participation rates have been declining for men ages 26-64 for decades. Graph 3 demonstrates that for whatever set of reasons, large proportions of men of conventional working age no longer can be counted as being in the labor force. Since 1945, the labor force participation rate of men ages 25-64 has fallen more than 11 percent, and fell approximately 4 percent in the past decade.²

The declining labor force participation of men has been partially, but not completely compensated for by the increasing labor force participation of women. Further, since the turn of the century, the labor force participation rates of more mature individuals, those 65 and older, has increased noticeably.

The second reason why we have experienced declining unemployment rates even while we have not been creating many new jobs is that we have experienced net out-migration of individuals from our region. We will provide evidence in this regard in the next section. We should note, however, that there is a bit of recent evidence suggesting that this trend might be reversing. Regardless, the combination of declining employment to population ratios and out-migration turned out to be an economically draining combination over the past decade.

¹ Sari Pekkala Kerr and Stephen R. Kerr, “Immigrants Play a Disproportionate Role in American Entrepreneurship,” *Harvard Business Review* (Oct. 3, 2016).

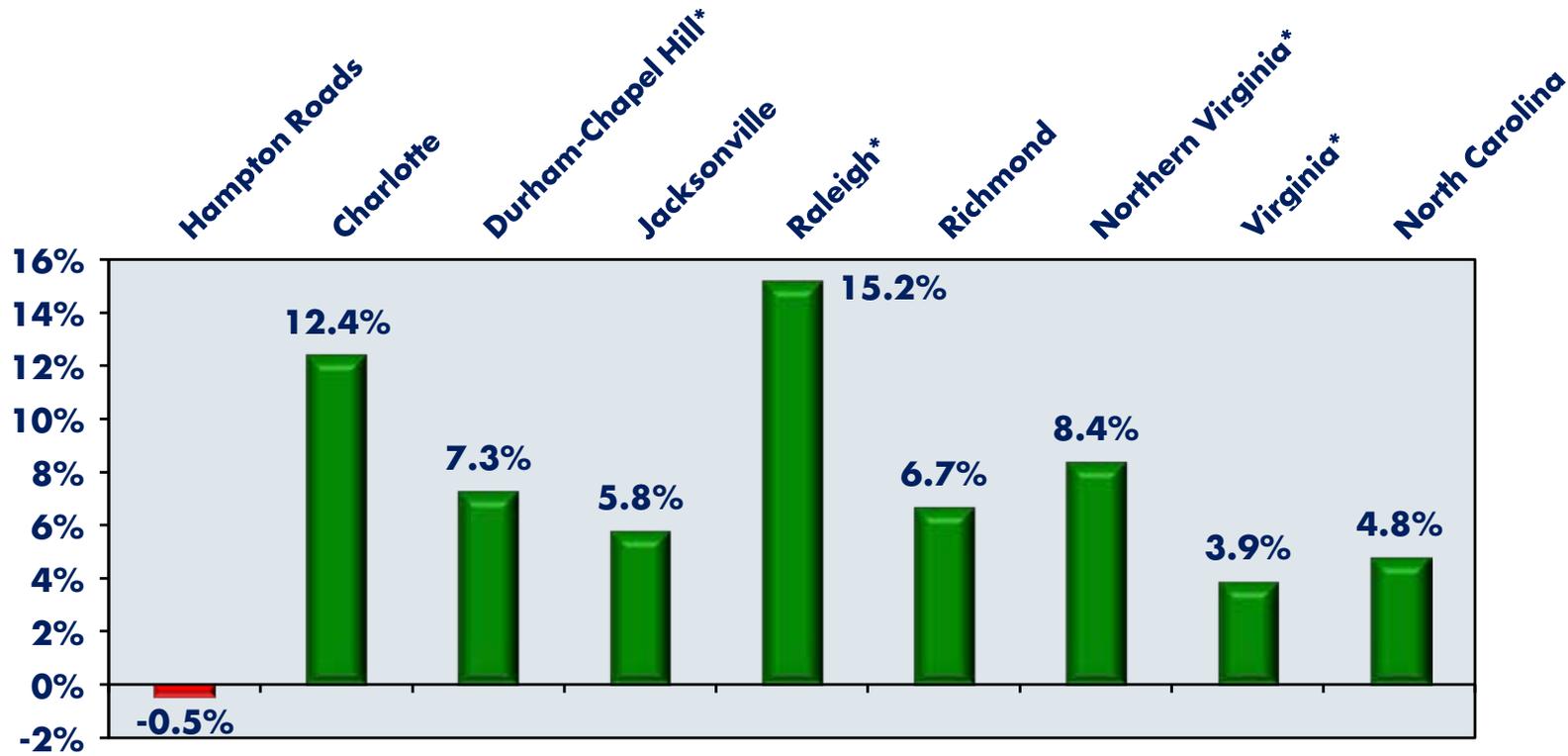
² The Bureau of Labor Statistics does not publish labor force participation rates for regions such as Hampton Roads.



Complicating our region's stagnant growth scenario are the complaints of some employers that they cannot find the workers they wish to hire. This is evidence of "structural unemployment" – round pegs (workers) that don't fit into square holes (jobs available) because the available workers are not qualified to fill the jobs that are open. Apparent occupational examples include welders, machinists and certain health care practitioners, such as occupational therapists.

GRAPH 1

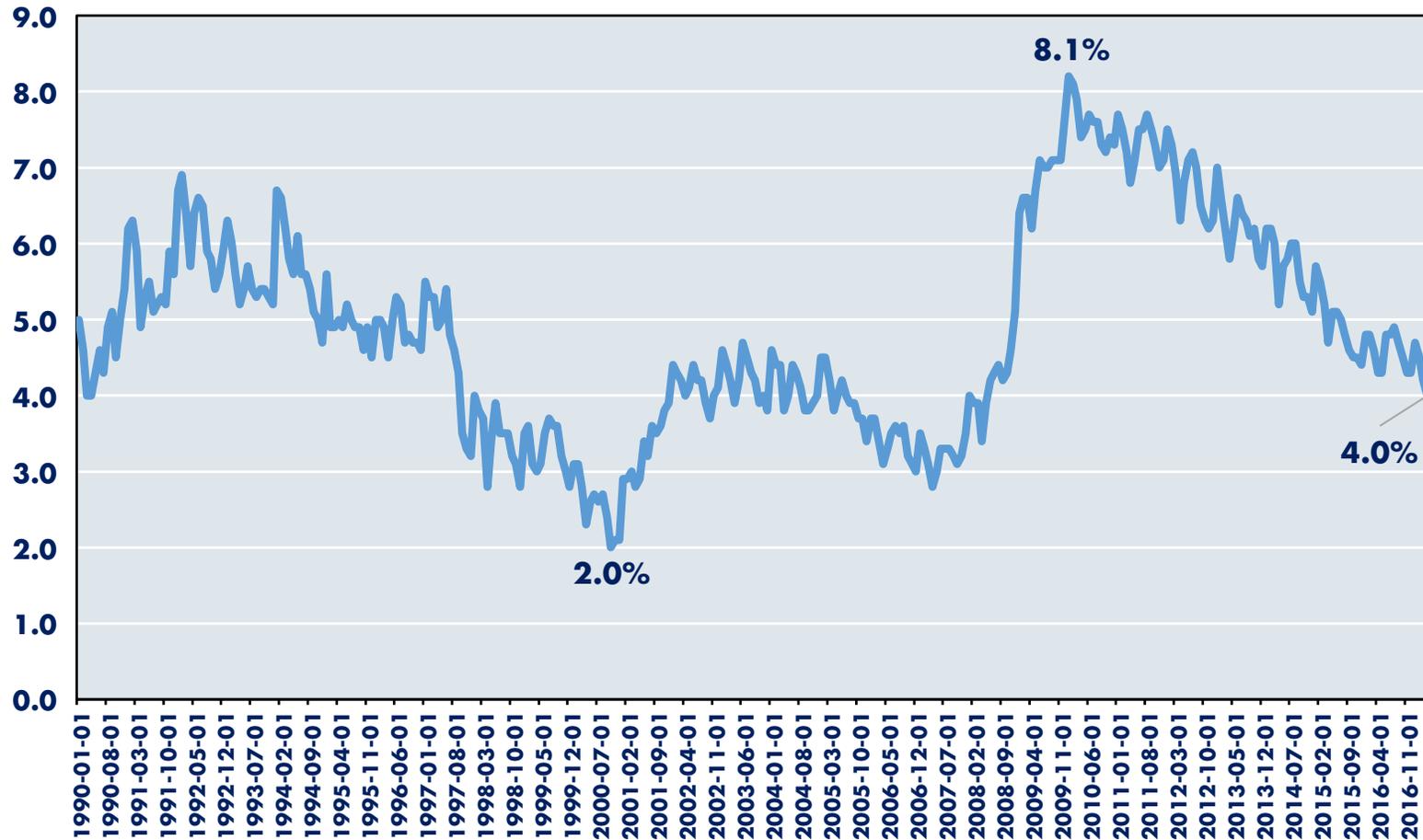
PERCENT NET NEW CIVILIAN JOBS GAINED/LOST IN SELECTED MSAs, VIRGINIA, NORTH CAROLINA, FROM 2007/2008 – 2016



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

GRAPH 2

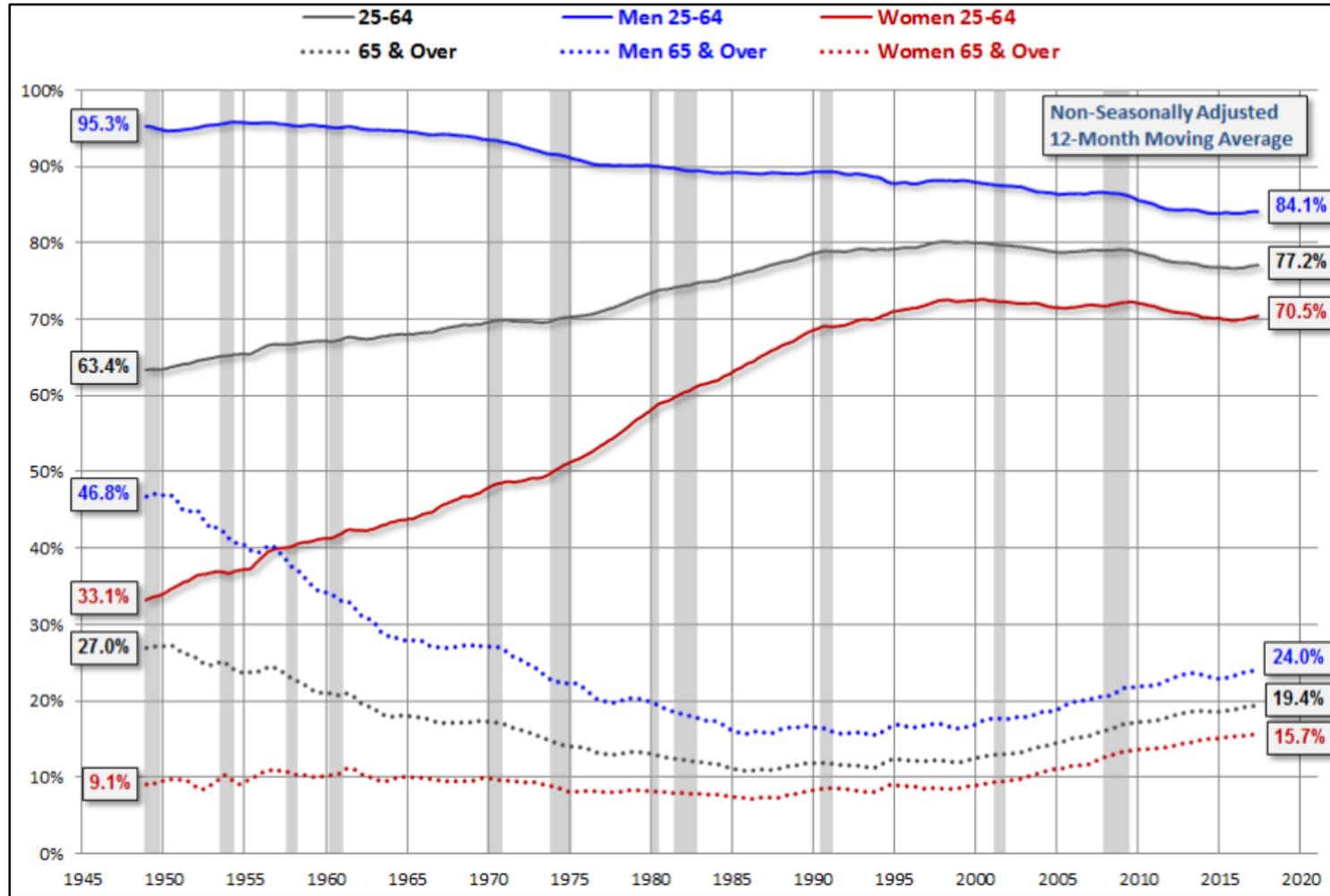
UNEMPLOYMENT RATE IN HAMPTON ROADS, JANUARY 1990-APRIL 2017



Source: FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/VIRG251URN>

GRAPH 3

CIVILIAN LABOR FORCE PARTICIPATION RATES BY AGE AND GENDER: UNITED STATES, 1945-2017



Source: Advisor Perspectives, www.dshort.com (June 13, 2017)

Out-Migration From Hampton Roads

Out-migration from Hampton Roads? People leaving? How can this be when the population of our region has been rising – from 1,676,624 in 2010 to 1,725,777 in 2015?³ The answer is that we have had more births than deaths and this has caused our overall population to increase, even while more people have been leaving the region than arriving here.

As Graph 4 indicates, between 2010 and 2016, there was a net flow of 41,540 domestic individuals out of Hampton Roads. Indeed, Forbes magazine recently ranked Hampton Roads ninth among the 10 metropolitan areas with the largest domestic migrant outflows between 2010 and 2014.⁴

A raft of empirical studies informs us that working-age individuals (and their families) are the primary people who have left our area. Easily the major reason they do so is that they perceive job prospects elsewhere are superior to those in Hampton Roads (see, for example, James V. Koch, “Why Do People Move from One Metropolitan Area to Another?” in R.J. Cebula et al., eds., “Economic Behavior, Economic Freedom and Entrepreneurship,” Edward Elgar, 2015).

To what destinations have Hampton Roads migrants headed? Table 1 discloses that between 2010 and 2014, the Richmond metropolitan area accounted for the largest net outflow of people from Hampton Roads, followed by the Blacksburg metropolitan area centered around Virginia Tech and then the Atlanta metropolitan region. Note, however, that more than 12,000 people left Hampton Roads for nonmetropolitan areas, including energy-rich rural sites in North Dakota, Texas and Montana.

Table 2 reverses the analysis and records the metropolitan regions with which Hampton Roads had the largest net positive inflows. These locations are dominated by blue states with declining industrial bases (for example, the

New York City metropolitan area) and those that have encountered declining defense expenditures and exhibit high living costs (San Diego and Honolulu).

Taking an overall view, however, it remains true that the net flow of migrants in and out of Hampton Roads has been negative.



³ Hampton Roads Planning District Commission, www.hrpdcva.gov/news/article/february/09/2016/2015-population-estimates-show-increase-in-hampton-roads-population.

⁴ www.forbes.com/pictures/56129f0fe4b0ffa7afe573fb/no-9-virginia-beach-norfo/#6bbb3c72121c.

GRAPH 4

2010-2016 DOMESTIC MIGRATION: HAMPTON ROADS AND OTHER METROPOLITAN REGIONS



Source: Estimates of the Components of Resident Population Change: April 1, 2010, to July 1, 2016, U.S. Census Bureau, Population Division (March 2017)

TABLE 1

VIRGINIA BEACH/NORFOLK MSA: TOP 20 MSA MIGRATION LOSSES, 2010-2014

MSA	Residents to VB/ NORFOLK MSA	Residents Out of VB/ NORFOLK MSA	Net Migration
Richmond, VA Metro Area	5,481	7,202	-1,721
Blacksburg-Christiansburg-Radford, VA Metro Area	490	1,570	-1,080
Atlanta-Sandy Springs-Roswell, GA Metro Area	1,108	1,788	-680
Outside of a MSA within U.S. or Puerto Rico	12,133	12,662	-529
Jacksonville, FL Metro Area	1,713	2,142	-429
Boston-Cambridge-Newton, MA-NH Metro Area	389	813	-424
Lynchburg, VA Metro Area	694	1,118	-424
Charlotte-Concord-Gastonia, NC-SC Metro Area	736	1,124	-388
San Juan-Carolina-Caguas, PR Metro Area	139	466	-327
Houston-The Woodlands-Sugar Land, TX Metro	373	697	-324
Greenville-Anderson-Mauldin, SC Metro Area	44	367	-323
Denver-Aurora-Lakewood, CO Metro Area	236	558	-322
Greensboro-High Point, NC Metro Area	36	350	-314
Harrisonburg, VA Metro Area	607	920	-313
Orlando-Kissimmee-Sanford, FL Metro Area	583	889	-306
California-Lexington Park, MD Metro Area	74	358	-284
Kansas City, MO-KS Metro Area	136	386	-250
Greenville, NC Metro Area	215	464	-249
Montgomery, AL Metro Area	127	365	-238
Little Rock-North Little Rock-Conway, AR	44	278	-234

Source: 2010-2014 American Community Survey, www.census.gov/data/tables/2014/demo/geographic-mobility/metro-to-metro-migration.html

TABLE 2

VIRGINIA BEACH/NORFOLK MSA: TOP 20 MSA MIGRATION GAINS, 2010-2014

MSA	Residents Moving from NORFOLK/VB MSA	Residents Moving to NORFOLK/VB MSA	Net Migration
Charleston-North Charleston, SC Metro Area	593	+1,686	-1,093
New York-Newark-Jersey City, NY-NJ-PA Metro Area	2,378	+3,318	-940
Anchorage, AK Metro Area	56	+952	-896
Urban Honolulu, HI Metro Area	773	+1,539	-766
Pensacola-Ferry Pass-Brent, FL Metro Area	494	+965	-471
Pittsburgh, PA Metro Area	282	+729	-447
San Diego-Carlsbad, CA Metro Area	1,519	+1,930	-411
Riverside-San Bernardino-Ontario, CA Metro Area	327	+733	-406
Chicago-Naperville-Elgin, IL-IN-WI Metro Area	1,727	+2,089	-362
Toledo, OH Metro Area	10	+362	-352
Norwich-New London, CT Metro Area	363	+708	-345
Corpus Christi, TX Metro Area	78	+396	-318
Worcester, MA-CT Metro Area	47	+345	-298
Gulfport-Biloxi-Pascagoula, MS Metro Area	154	+437	-283
Daphne-Fairhope-Foley, AL Metro Area	6	+275	-269
Detroit-Warren-Dearborn, MI Metro Area	312	+572	-260
Tampa-St. Petersburg-Clearwater, FL Metro Area	714	+961	-247
Dallas-Fort Worth-Arlington, TX Metro Area	438	+683	-245
Watertown-Fort Drum, NY Metro Area	50	+295	-245
Salisbury, MD-DE Metro Area	73	+301	-228

Source: 2010-2014 American Community Survey, www.census.gov/data/tables/2014/demo/geographic-mobility/metro-to-metro-migration.html

Our Region's Working-Age Population

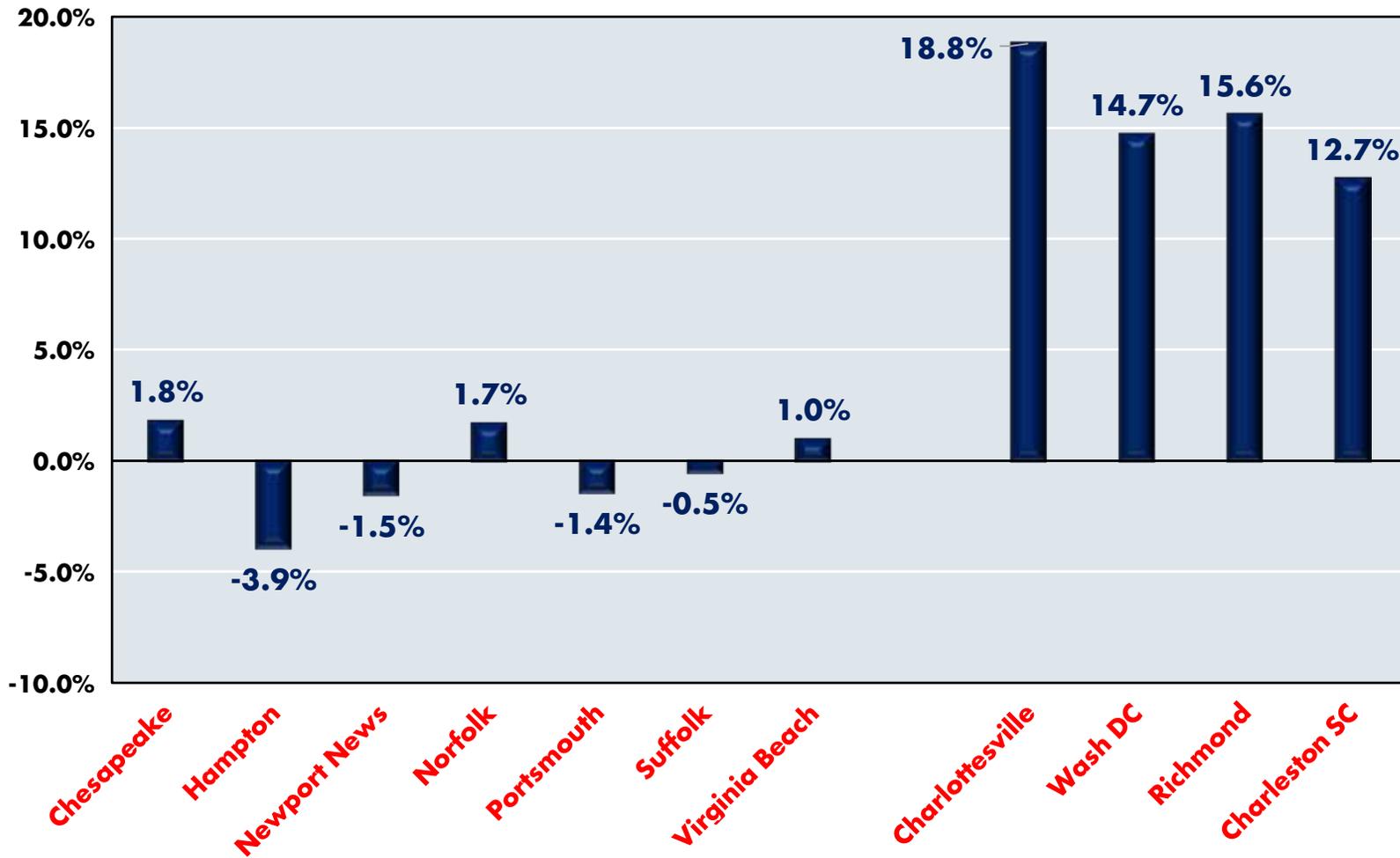
An alternate way to examine the population dynamics associated with a potential outflow of residents from our region is to focus on the number of individuals of prime working age (25-54) who live in Hampton Roads. The presumption is that if this population clearly is growing, then we do not have a brain drain problem. On the other hand, if this population is declining, it signals a probable brain drain.

One can see in Graph 5 that the working-age populations of the seven largest cities in Hampton Roads essentially remained static in size between 2010 and 2015, even while other regions were doing much better. While by themselves these data do not confirm brain drain, one is forced to say that this is an unimpressive, problematic performance that suggests some individuals may be leaving our region for superior prospects elsewhere.



GRAPH 5

PERCENT CHANGE IN POPULATION AGES 25-54: SELECTED CITIES, 2010-2015



Source: U.S. Census Bureau

Thinking About Domestic Migratory Flows Of People

Considerable research has been devoted to understanding domestic migration patterns and why households move. A Pew Research study informs us that in 2010, 37 percent of Americans had never lived outside their hometown, and 57 percent had never lived outside their home state (excluding time spent in the military or college).⁵ Those who stay cite the importance of family and connections, and those who move highlight economic opportunities.

According to the U.S. Census' "Current Population Survey," two-thirds of long-distance moves made between 2014 and 2015 occurred because of jobs and/or more affordable housing. Family reasons, such as getting married, accounted for most of the remainder of the moves.

One might conclude that net migration is a strong indicator of the economic health of a region. However, whether a region or state is "sticky" and retains a high percentage of those born there is not a clear indicator of economic prosperity. Indeed, the relative absence of migration can be a sign of stagnation. For many years the state of Mississippi featured little movement in or out and this was indicative of very slow economic growth and the lowest per capita income in the country. Simply put, too little of economic consequence was going on in Mississippi to attract outsiders. Those already living there did not possess either the education or assets to change this situation. The lesson is that even if migratory flows are positive, if they are small, this probably is not a good economic sign.

Thus, net positive migration is not a clear indicator of economic prosperity. Innovative, growing regional and state economies exhibit flows of people in and out of those jurisdictions. If there is a point to be made about migration flows, then it is that the outward flows should not be greater than the inward flows for an extended period. Continued annual migration deficits such as those experienced by Hampton Roads are problematic because they tell us that we are not generating sufficient jobs to retain enough individuals.

⁵ American Mobility Who Moves? Who Stays Put? Where's Home? Pew Research Center www.pewsocialtrends.org/files/2010/10/Movers-and-Stayers.pdf.

Hampton Roads emerged a loser in terms of domestic migration between 2010 and 2016. However, this is not a new pattern. There has been net domestic out-migration from Hampton Roads every year since 2005, and Gloucester County, Hampton, Newport News, Norfolk, Virginia Beach and York County all have experienced net domestic out-migration losses for a half-decade or more. This is despite the fact that the region's unemployment rate typically has been below that of the United States.

The consensus is that regions able to retain their young people and attract those from other regions have the brightest economic prospects. Young adults start new businesses and purchase homes, automobiles and numerous other goods and services. They usually are among the most mobile in society.⁶ Alas, we do not have detailed data describing the migration of specific age groups in and out of Hampton Roads. Nonetheless, since our overall migration rate is negative and young adults are the most mobile, it is reasonable to assume that we have experienced net out-migration among young adults.

Nevertheless, some recent data produced by the Urban Land Institute (ULI) might mean that Hampton Roads has turned the corner in terms of its ability to attract and retain young adults. Based in some fashion on ULI's data, Time magazine ranked our region (which it referred to as "Virginia Beach") first in the nation in terms of the percentage increase in its population of 25- to 34-year-old residents between 2010 and 2015.⁷ If true, then this is great news.

There are several reasons to be cautious about these data, however. First, the Time analysis hopped back and forth in its discussion about "cities" and "regions." The ULI data appear to refer to regions, but the Time description of these data referred to cities. Second, a month earlier, Time published a similar article by the same author on the same topic that reported very different data.⁸ Further, in the earlier article, the author referred to "suburbs" rather than cities or regions, and the entity he referred to as Virginia Beach was ranked fourth.

A third caveat is that Time's analysis directly assumes that an increase in the percentage of people ages 25 to 34 means that individuals in that age range

⁶ Megan Benetsky, Charlynn Burd and Melanie Rapino, *Young Adult Migration: 2007-2009 to 2010-2012*. American Community Survey. United States Census, March 2015.

⁷ These data are described in David Johnson, "The 25 Cities Where Millennials Are Moving," *Time* (June 2, 2017), <http://time.com/4797956/cities-millennials-moving>.

⁸ David Johnson, "The 25 Suburbs Where Millennials Are Moving," *Time* (May 3, 2017), <http://time.com/4748763/suburbs-millennials-moving-cities>.

have been moving into the area in question. If true, then such an increase could have occurred for a variety of reasons, including declining numbers of individuals in other age groups.

A fourth reason for caution is that one of the most significant drivers of positive net migration into metropolitan regions in recent years has been international migration. The Miami metropolitan area, for example, registered a 28.1 migration rate per 1,000 residents between 2010 and 2013, with many of these individuals coming from Latin America. Since we have observed a much more modest increase in international migration into our region (a 10.1 rate), and our domestic migration rate has been negative, it would not be easy to explain how Hampton Roads could have experienced the increase in 25- to 34-year-olds reported by Time.⁹

Finally, the Time data are discordant with the 2010 to 2015 data already presented in Graph 4. If both sources are correct, then a stupendous reversal in our regional migration patterns must have occurred in 2014 and 2015.

The Influence Of Income, Education And Amenities

The migration of people from one site to another is a complex phenomenon that usually is influenced by many different factors, not all of which are economic. Three of the most important determinants are differentials in income that can be earned, highest level of completed education and amenities (quality of life). We will examine each.

INCOME DIFFERENTIALS

Income differentials may not be the only factor that individuals consider when deciding where to live and work, but they are very important. Hence, we should pay attention to the Bureau of Labor Statistics, which in May 2015

⁹ In the area's largest city, Virginia Beach, international migration between 2010 and 2013 was +5,703, while net domestic migration was -6,248, meaning overall net migration was -545. www.governing.com/news/headlines/international-migration-immigration-driving-population-growth-for-metro-areas.html. Once again, it is difficult to see how this could translate into a dramatic increase in 25- to 34-year-old individuals between 2010 and 2015.

reported that the average hourly wage of an American worker was \$23.86, but only \$22.34 in Hampton Roads – 6.4 percent lower. The reported wage gaps between the nation and our region were especially large in legal occupations (-27 percent); the arts, media and entertainment (-17 percent); and construction (-12 percent). Wages in Hampton Roads trailed national wages in 20 of 22 major occupational categories delineated by the Bureau of Labor Statistics.¹⁰

Thus, if one's desire is to get rich, our region currently appears to offer mediocre prospects to the average person. Graph 6 compares the average hourly wage rate paid employees in a selection of mid-Atlantic and Southern metropolitan areas; Hampton Roads finishes eighth among the 10 areas being compared. Even when we adjust these hourly wage rates for differences in regional living costs (which Graph 7 does), Hampton Roads again finishes eighth.

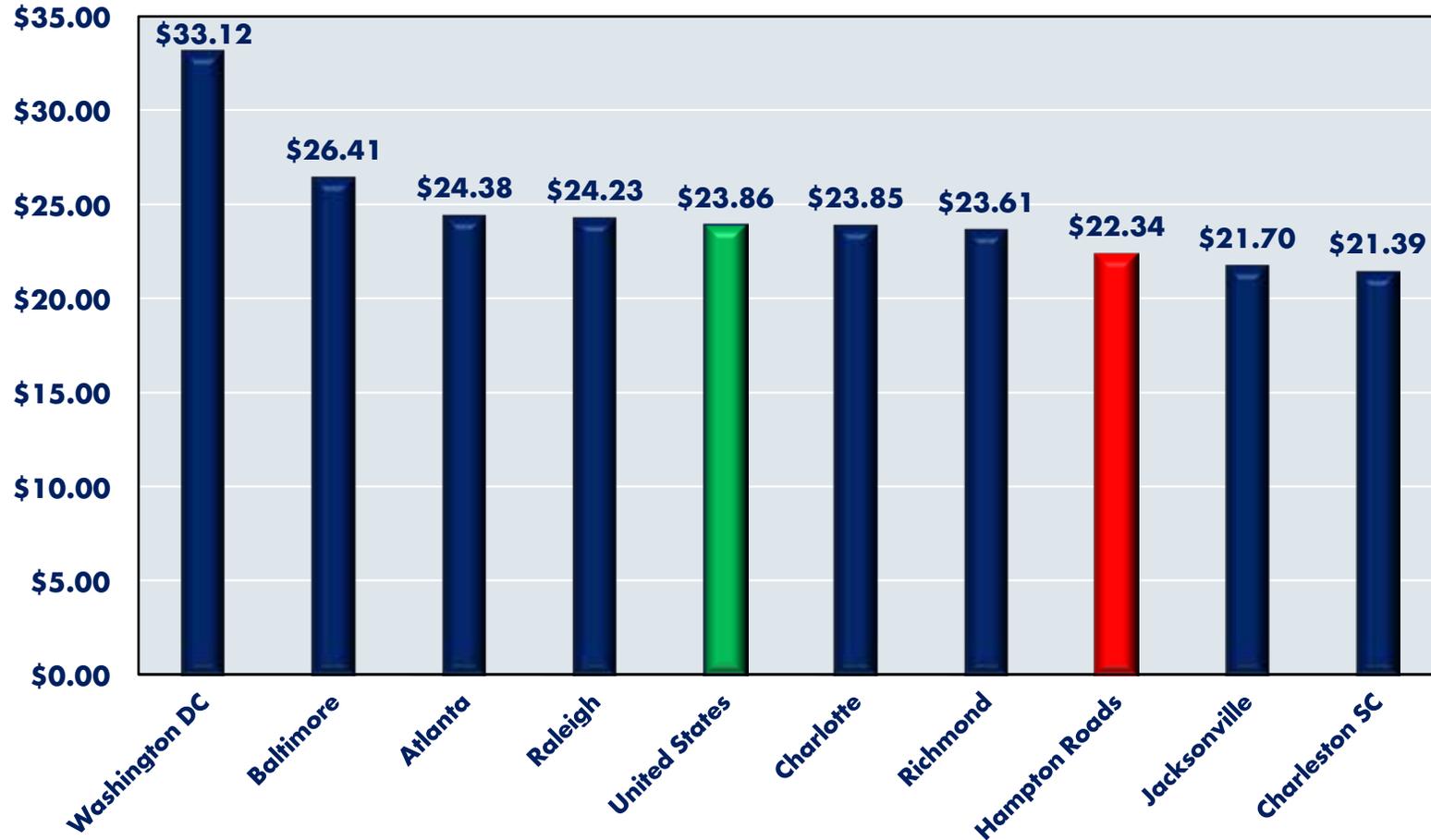
Understand that average wage rates can disguise significant differences in specific occupations and therefore considerable incentive might exist for individuals to move to Hampton Roads (or stay here) in specific occupations and work for certain employers. Even so, the overall message is that for the typical person, Hampton Roads does not offer wages and salaries as attractive as most of its competitor regions.

Hampton Roads is one of several metropolitan regions nationally that is especially dependent upon federal spending. Much of this spending comes in the form of employee salaries and fringe benefits from the federal government to local employees. As Table 3 discloses, the total compensation package (wages plus fringe benefits) offered federal employees (both active-duty military and civilian) in our region is attractive. The problem is not the level of this compensation (which is enticing to employees), but rather that federal budget sequestration has reduced the number of these jobs available. In 2001, Hampton Roads hosted 154,688 active-duty and federal civilian personnel; however, by 2015, this number had declined to 142,372 (-8 percent).

¹⁰ www.bls.gov/regions/mid-atlantic/news-release/occupationalemploymentandwages_virginiabeach.htm.

GRAPH 6

AVERAGE HOURLY WAGE RATES, ALL OCCUPATIONS AGGREGATED: SELECTED METROPOLITAN AREAS, MAY 2016



Source: www.bls.gov/regions/mid-atlantic/news-release/occupationalemploymentandwages_virginiabeach.htm

GRAPH 7

**AVERAGE HOURLY WAGE RATES, ADJUSTED FOR COST OF LIVING, ALL OCCUPATIONS AGGREGATED,
SELECTED METROPOLITAN AREAS, MAY 2016**



Source: Bureau of Labor Statistics

Another message of Table 3 is that the typical private-sector job in Hampton Roads has hardly been a gold mine. In 2015, private, nonfarm employee compensation was less than 40 percent of federal civilian employee compensation in Hampton Roads.

Taken in tandem, the wage and employment numbers presented in Table 3 and Graphs 6 and 7 fail to provide any obvious financial incentive for a typical individual to move to Hampton Roads, or for that matter, to remain here.

TABLE 3	
COMPARING TOTAL COMPENSATION OF EMPLOYEES: HAMPTON ROADS, 2015	
Federal Government Civilians	\$107,521
Full-Time Active Duty	\$ 91,283
State and Local Government	\$ 60,088
Private Nonfarm	\$ 42,185

Sources: Bureau of Economic Analysis and the Old Dominion University Economic Forecasting Project. BEA refers to compensation as earnings.

EDUCATION

The more education individuals have attained, the more mobile they generally are. One reason for this is that additional education increases the pool of jobs for which an educated person is eligible and perhaps as well changes that person's tastes so that he or she does not regard geographic moves as unacceptable. A recent Pew Research Center report found that 77 percent of college graduates have changed their residential community at least once and have lived in multiple states, compared with 56 percent of those with a high school diploma or less.¹¹

Educational attainment presents a two-edged sword insofar as migration is concerned. Mobility of individuals and families is positively correlated with educational attainment: more highly educated people move more often. This can be good or bad for a region, depending primarily on its job prospects and the quality of its amenities. The highly educated move away from regions

that do not offer a combination of good job prospects, competitive wages and attractive amenities, and move into those that do.

Table 4 reveals that women in Hampton Roads ages 18-44 are better educated than the typical Virginian, but regional men are not. The older a resident in our region is, the more likely he or she is to be better educated than the typical Virginian. This is not good because it suggests that the well educated among our younger citizens are leaving Hampton Roads. This has a spiraling negative impact upon our regional economy because it is younger people who most often innovate and start new businesses. Their departure also puts a damper on regional housing, automobile and appliance markets.

¹¹ America. Mobility Who Moves? Who Stays Put? Where's Home? Pew Research Center www.pewsocialtrends.org/files/2010/10/Movers-and-Stayers.pdf.

TABLE 4

EDUCATIONAL ATTAINMENT: UNITED STATES, VIRGINIA AND HAMPTON ROADS

	Virginia	Hampton Roads Males	Hampton Roads Females
18 to 24 Years			
Less Than High School Diploma	9.4%	10.1%	8.6%
High School Graduate	32.8%	37.3%	27.7%
Some College	49.6%	46.7%	53.1%
Bachelor's Degree or Higher	8.1%	5.9%	10.7%
25 to 34 Years			
Less Than High School Diploma	9.8%	10.0%	9.6%
High School Graduate	25.7%	27.0%	24.5%
Some College	35.1%	34.1%	36.0%
Bachelor's Degree or Higher	29.5%	28.9%	30.1%
35 to 44 Years			
High School Graduate or Higher	93.2%	91.6%	94.7%
Bachelor's Degree or Higher	33.1%	29.2%	36.8%
45 to 64 Years			
High School Graduate or Higher	90.9%	90.3%	91.4%
Bachelor's Degree or Higher	30.1%	30.3%	29.9%
65 Years and Older			
High School Graduate or Higher	82.9%	84.4%	81.7%
Bachelor's Degree or Higher	26.4%	32.8%	21.7%

Source: 2011-2015 American Community Survey 5-Year Estimates

AMENITIES

An old adage advises us that the only truly poor people in life are those who have only money, nothing more. Quality of life is important and is a reason why people choose to move (or not move). Our historic region enjoys 28 miles of superb public beaches and 79 miles of scenic waterways, in addition to exceptional cultural amenities, such as the Chrysler Museum, and several outstanding performance venues, including the Ferguson Center.

"Sperling's Best Places" for 2017 rated Hampton Roads eighth among the 50 largest metro areas in its "Most Playful" category – literally, where one can have the most fun. Table 5 reports these "a fun place to live" rankings.

WalletHub is an organization that provides ubiquitous rankings of cities and regions in addition to credit scores and other financial information. Its "Best and Worst Cities for Families" rankings for 2016 included four cities in Hampton Roads. Virginia Beach and Chesapeake scored especially well, as one can see in Table 6.

Especially attractive amenities can overcome economic negatives. Witness people gravitating to Hawaii even though real, inflation-adjusted incomes in the islands are surprisingly low. Individuals and families literally are willing to pay for cultural and recreational amenities, excellent schools and perceived safety. Even so, **there is strong evidence that economic motives and jobs usually reign supreme when individuals weigh moving to a different metropolitan area. This helps explain why our region has experienced out-migration even though we boast some very attractive amenities.**

TABLE 5

SPERLING'S MOST PLAYFUL CITIES

Rank	Metro Area
1	Minneapolis-St. Paul-Bloomington, MN-WI
2	San Diego-Carlsbad-San Marcos, CA
8	Virginia Beach-Norfolk-Newport News, VA-NC
9	Washington-Arlington-Alexandria, DC-VA-MD-WV
12	Baltimore-Towson, MD
17	Atlanta-Sandy Springs-Marietta, GA
23	Richmond, VA
35	Jacksonville, FL
38	Charlotte-Gastonia-Concord, NC-SC

Source: www.bestplaces.net/docs/studies/most_playful_cities.aspx



TABLE 6

WALLETHUB'S BEST AND WORST CITIES FOR FAMILIES, 2016

RANK	CITY	TOTAL SCORE	FAMILY FUN RANK	HEALTH & SAFETY RANK	EDUCATION & CHILD CARE RANK
1	Overland Park, KS	77.16	60	7	24
5	Virginia Beach, VA	68.82	83	3	19
11	Chesapeake, VA	65.06	140	9	19
26	Raleigh, NC	60.27	81	52	29
40	Charlotte, NC	57.72	135	55	38
41	Newport News, VA	57.48	97	35	19
42	Durham, NC	57.19	137	68	26
64	Greensboro, NC	53.76	104	60	30
65	Port St. Lucie, FL	53.74	149	12	95
66	Norfolk, VA	53.47	88	20	19
72	Richmond, VA	52.59	87	74	15

Source: <https://wallethub.com/edu/best-cities-for-families/4435/>

One Area Where The Rubber Meets The Road: The Founding Of New Firms

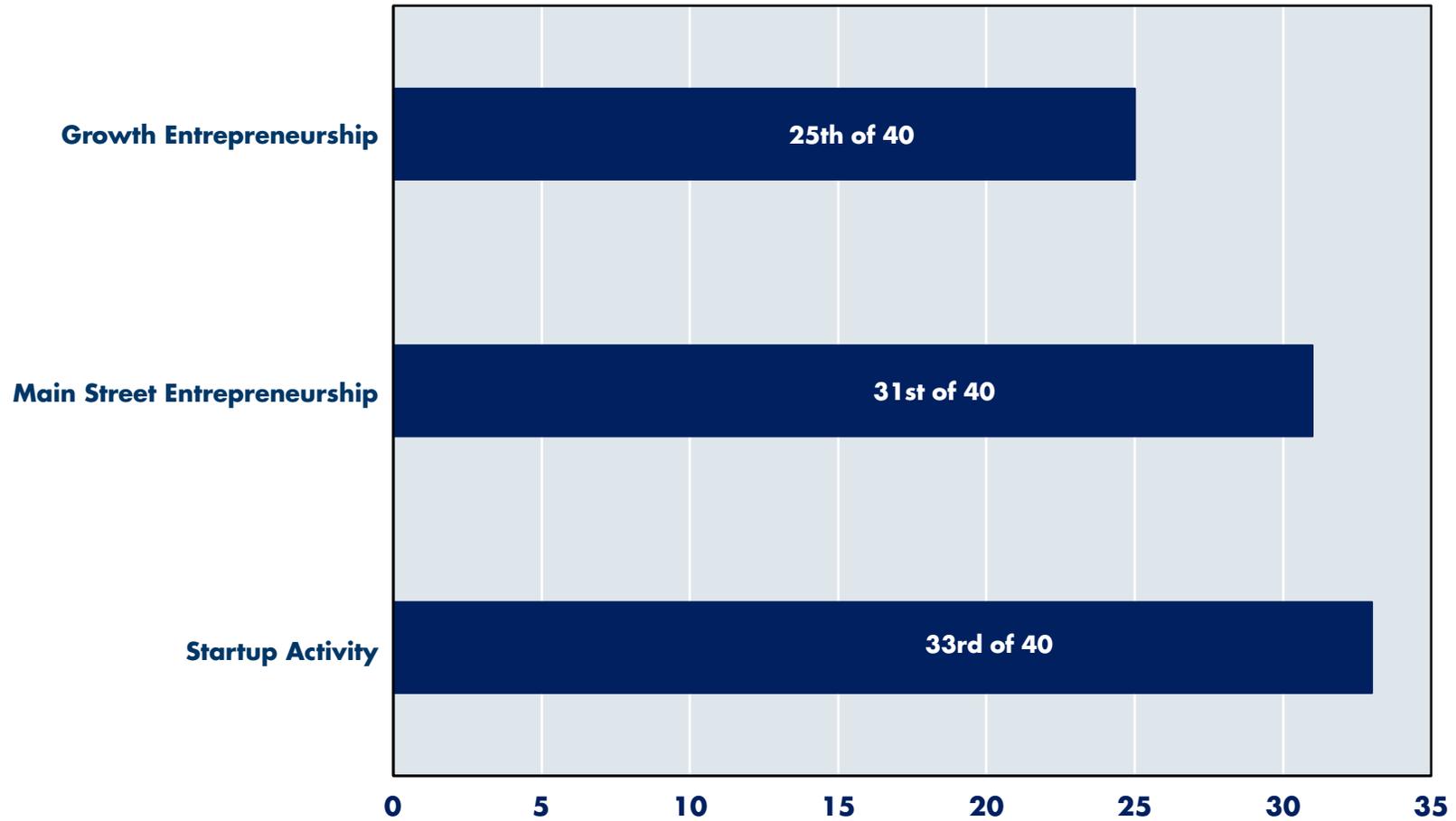
When a new firm is founded, this represents a signal of the confidence of its owners and investors in the future. It is indicative of economic and social vitality because it provides a reason for existing residents to stay and build, even as it beckons to the residents of other regions to come and test their mettle. If Hampton Roads suffers from a brain drain, then one place we should see evidence of this is in unimpressive new-firm formation statistics. Unfortunately, the available evidence points in this direction.

Our region's record in the realm of founding new businesses is mixed. The Kauffman Foundation, the foremost source in the nation for data concerning entrepreneurship, annually ranks states and regions in terms of their entrepreneurial and business startup activity. One can see in Graph 8 that Hampton Roads ranks in the bottom half of the distribution when the sample consists of the 40 largest metropolitan regions in the country. These data are consistent with the analysis of "America's Top-Rated Cities," which ranked our region only 154th among 183 metropolitan regions in terms of the best location to start a business.¹²

¹² 2016 America's Top-Rated Cities, www.nerdwallet.com/blog/small-business/best-places-to-start-business-2015.

GRAPH 8

**ENTREPRENEURSHIP AND BUSINESS STARTUP RANKINGS OF HAMPTON ROADS
AMONG THE 40 LARGEST METROPOLITAN AREAS IN THE UNITED STATES, 2016**



Source: <http://www.kauffman.org/kauffman-index/about/about>

Final Words

Our region has experienced some brain drain in recent years. While there is no universally accepted measure of brain drain, in the case of Hampton Roads, all the usual indicators are present – stagnant economic growth, below-average incomes and wage rates, modestly lower levels of educational achievement, and a sluggish rate of new business formation. When combined, these factors have resulted in a net outflow of domestic residents from our region. Reverse causation also is present here. The net outflow of domestic residents has dampened economic growth, reduced wages and hindered new business formation.

The major villain in this scenario is torpid federal spending in our region, brought about by federal budget sequestration. The mental aspects of sequestration may be as important as the immediate economic consequences in Hampton Roads because we have become accustomed to measuring our economic prosperity and progress in terms of defense-related expenditures and activities. This state of mind exists despite an impressive list of assets – actual and potential – that our region can deploy.

The solution to our malaise, however, is not to be found in expensive, showpiece projects (even though some may improve our quality of life), but instead in:

- focusing on conscientious, patient, long-term economic development and recognizing that no silver bullet exists that suddenly will vault us forward and change everything for the better;
- enhancing the quality of our human capital (economic jargon for investing in education and training at many different levels);
- ensuring that our tax and regulatory environments remain competitive and attractive both to new and existing firms;
- investing in projects that promise to commercialize the basic research being conducted at facilities such as NASA Langley and the Jefferson Laboratory;

- finding ways to attract, retain and capitalize on the individuals who leave the military;
- improving our transportation infrastructure;
- redirecting some of the funds that now subsidize the large projects of politically connected entrepreneurs to supporting and providing temporary subsidies to startup firms;
- investing in critical regional growth engines such as the “ed-med” sectors that are the centerpieces of the economies of most of our competitor regions; and
- pursuing regional solutions to the provision of public services where economies of scale exist.

At the end of the day, however, we must realize that changing the economic atmosphere is a decades-long process. Witness the Research Triangle in North Carolina. It took many years before investments there began to yield the impressive returns we see today.

If we are strategic and patient, we can turn “brain drain” into “brain gain” for Hampton Roads.

This chapter in The State of the Region report represents a special collaboration between Old Dominion University’s Center for Economic Analysis and Policy and the LEAD Hampton Roads Class of 2017. Members of the class conducted labor market research and spoke to human resources professionals in the region to help produce this chapter.



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