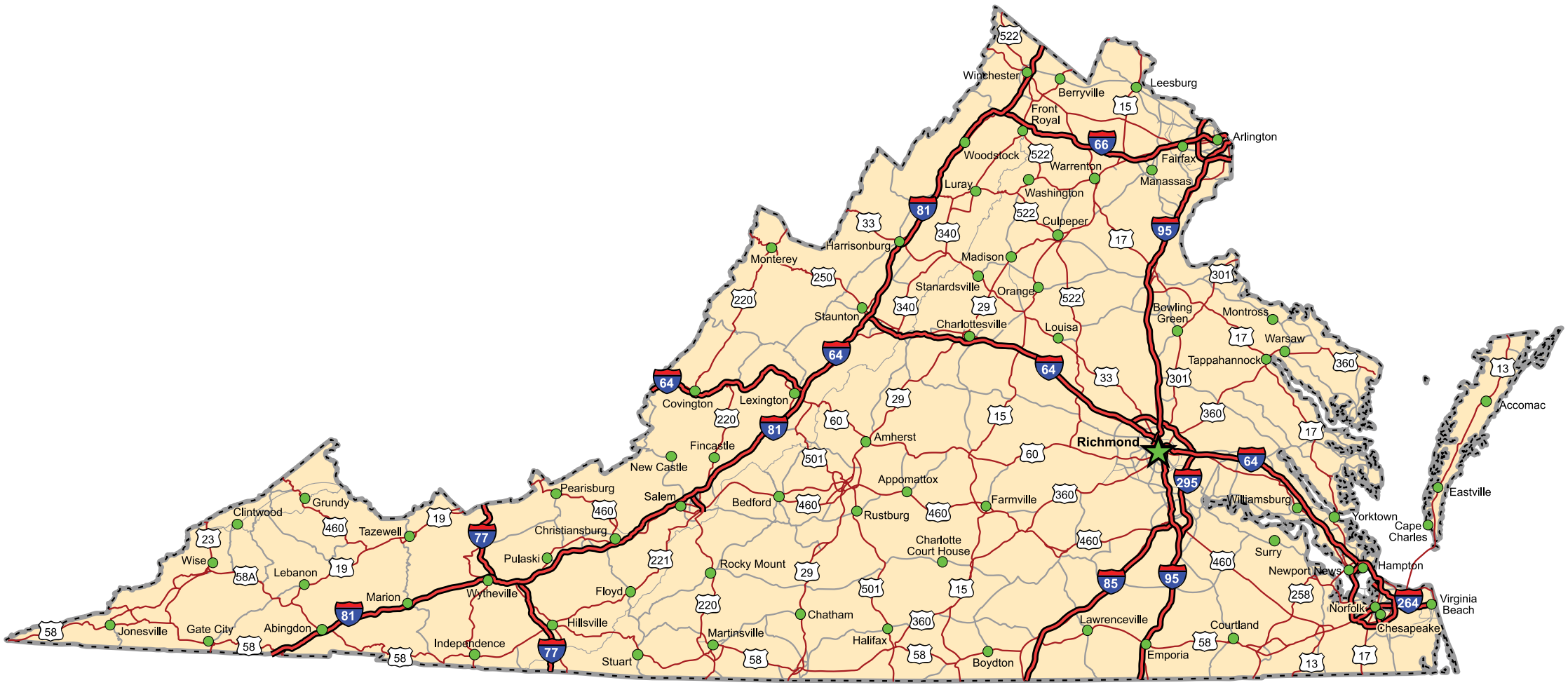




2017 State of the Commonwealth Report

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



November 2017

Dear Reader:

This is the third State of the Commonwealth Report produced by the Center for Economic Analysis and Policy at Old Dominion University. The report is sponsored, in part, by ODU's Strome College of Business. While the report represents the work of many people connected in various ways to the university, it does not constitute an official viewpoint of Old Dominion, its president, John R. Broderick, or the Board of Visitors.

This report maintains the goal of stimulating thought and discussion that ultimately will make the Commonwealth of Virginia an even better place to live, work and do business. We are proud of Virginia's many successes, but realize it is possible to improve our performance. To do so, we must have accurate and objective information about "where we are" and a sound understanding of the policy options open to us.

The 2017 report is divided into six parts:

Waiting for Godot? Virginia Impatiently Anticipates the End of

Sequestration: The Commonwealth's lackluster economic performance in 2016 highlights a lost decade of slow economic growth. The dependence on federal spending presents challenges to stimulating growth when discretionary federal spending is constrained by sequestration. We investigate the reasons for the slow pace of economic activity and ask whether new efforts to spur innovation and entrepreneurship are a step in the right direction.

Virginia's Metros: Running to Stand Still? The Commonwealth's economy is the sum of its regional parts, however different they may be. After most regions performed poorly in 2016, there are signs that 2017 may be a more positive year. We delve into data on employment, jobs and taxable sales to ask whether the good news will last.

The Scourge of Opioids in the Commonwealth: Opioid-related deaths have skyrocketed in the Commonwealth and the United States. Almost three-quarters of those who abuse opioids start with a legitimate prescription. We investigate the rise of fentanyl as the primary cause of overdose fatalities and compare opioid practices in the United States with other industrialized countries. We estimate the costs of the opioid crisis and ask what steps can be taken to help those currently addicted and to prevent future deaths.

Airbnb Rising: Short-Term Rentals and the "Gig Economy": Airbnb offers consumers short-term rentals that increase choice and lower costs. Cities in the Commonwealth are struggling with the question of how to work with Airbnb and similar firms, and the rise of Airbnb is a challenge to the traditional lodging sector. We explore the emergence of Airbnb, its phenomenal growth, and ask how Airbnb plays a role in the larger "gig economy."

Affordability and Access in Virginia Public Higher Education: The typical public four-year university has increased its published tuition and fees two to four times as rapidly as the consumer price index. Have reductions in state appropriations driven these increases or are they a result of administrative proliferation, new amenities and the lack of firm control on tuition and fees by the Commonwealth? We estimate the costs and consequences.

Time to Go Regional or Mega? Interest in regional cooperation is rising again in the Commonwealth. We discuss the benefits of regionalism and examine the rise of megaregions in the United States. We ask whether there is a Richmond-Hampton Roads megaregion in the making.

The Strome College of Business continues to provide support for this report. The report, however, would not be possible without the vital backing of the donors whose names appear below. They believe in the Commonwealth and the power of rational discussion to improve our circumstances, but they also are not responsible for the views expressed in this report.

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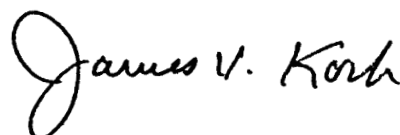
The State of the Commonwealth Report is available in PDF form at www.stateofthecommonwealth.com and www.ceapodu.com. Should you have comments or questions, please direct them to Robert M. McNab at rmcnab@odu.edu.

Sincerely,



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and Deputy Director, Center for Economic Analysis and Policy



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WAITING FOR GODOT? VIRGINIA IMPATIENTLY ANTICIPATES THE END OF SEQUESTRATION

Budget sequestration is a procedure in United States law that limits the size of the federal budget.

– Wikipedia, in a classic understatement insofar as Virginia is concerned



A decade after the Great Recession, economic growth in the Commonwealth remains tepid. For six consecutive years, the real (after inflation) economic growth of Virginia's economy trailed that of the United States. In two of these years, our state's economic growth was negative, meaning the Virginia economy contracted. There has been real economic growth in 2017, but it once again will be less than that of the nation.

The reasons for this underperformance are numerous: a dependence on federal spending, lackluster job creation among small and medium-sized enterprises, less than optimal development strategies and constraints on local governments. At the same time, Virginia has become an expensive place to pursue a public higher education degree, must deal with an opioid crisis and is burdened by several regions whose traditional economic bases have eroded substantially.

Some disagreement exists on the condition of Virginia's economy. Is our economic glass half full or half empty? No one believes we are amid an economic boom, but some point with enthusiasm to the Commonwealth's job growth, competitive business environment, thriving port and attractive location as harbingers of a much brighter future. To others, however, Virginia is a state exhibiting mediocre or worse economic performance; suffering from unnecessarily burdensome taxes and

regulations; and experiencing an outmigration of younger workers.¹ Both views contain kernels of truth. Reconciling these discordant views is a task we undertake in this chapter.

The economic data reveal a mixture of good and bad news. Economic growth decelerated in 2016, but picked up in 2017. Virginia's unemployment rate has fallen, its labor force has expanded and earnings have risen. On the other hand, our labor force participation rate remains low when compared to prior to the Great Recession – increasing numbers of people no longer are actively seeking employment. Job creation by small and medium-sized firms has fallen, raising questions about Virginia's efforts to encourage and sustain new businesses.

Making sense of conflicting economic news is difficult. It is much easier to cherry-pick one statistic to trumpet on Twitter, cable TV or the internet. However, this would provide a deceptive view of what is a much more complicated economic situation. The task of this chapter is to make sense of this jumble of seemingly contradictory data.

Disappointing Economic Growth Rates

Gross domestic product (GDP) is the headline measure of economic performance in the United States and the Commonwealth. It places a dollar amount on the value of all the goods and services we produce. While no measure of economic activity is perfect, and GDP does not count nonmarket activities such as barter, misses portions of the “gig economy” and does not place a value on household production, it is the most commonly used benchmark of the value of overall economic activity. In order not to be deceived by price inflation, however, we focus on real (price-adjusted) GDP.

¹ Gregory S. Schneider, “In their final debate for Va. Governor, Northam and Gillespie spar over records, economy, taxes,” *The Washington Post* (Oct. 10, 2017).

Let's examine Graph 1. The Commonwealth's real GDP growth in 2016 was only 0.6 percent, well below the somewhat weak performance of the entire United States economy at 1.6 percent. There are, however, glimmers of good news in these numbers. Economic activity picked up in the second half of 2016 and Virginia now has had three consecutive quarters with growth at or above 1.5 percent. The national economy is accelerating, with 3.1 and 3 percent growth in the second and third quarters of 2017, respectively.² The question is whether Virginia will pick up the pace or continue to fall behind.

Our estimate for economic growth for 2017 is 1.8 percent, which would represent an increase in economic activity from 2016. However, we will grow more slowly than our historical average and more slowly than the United States. If our forecasts are reasonably accurate, however, then this would represent the first consecutive years of real GDP growth above 1 percent for Virginia since 2005-2006.

What is behind Virginia's lethargic economic performance? An obvious culprit is the recent stagnation in federal government spending in Virginia. The federal government accounts for almost 30 percent of state GDP³ and therefore constant or declining federal spending is problematic. In fiscal year 2015 (FY 2015), Virginia was first among states in annual federal spending per capita (\$17,502), annual per capita spending on federal contracts (\$5,819) and annual per capita defense spending (\$6,324). Virginia was also one of three states with annual total federal salaries and wages above \$20 billion, the other two being Texas and California.⁴

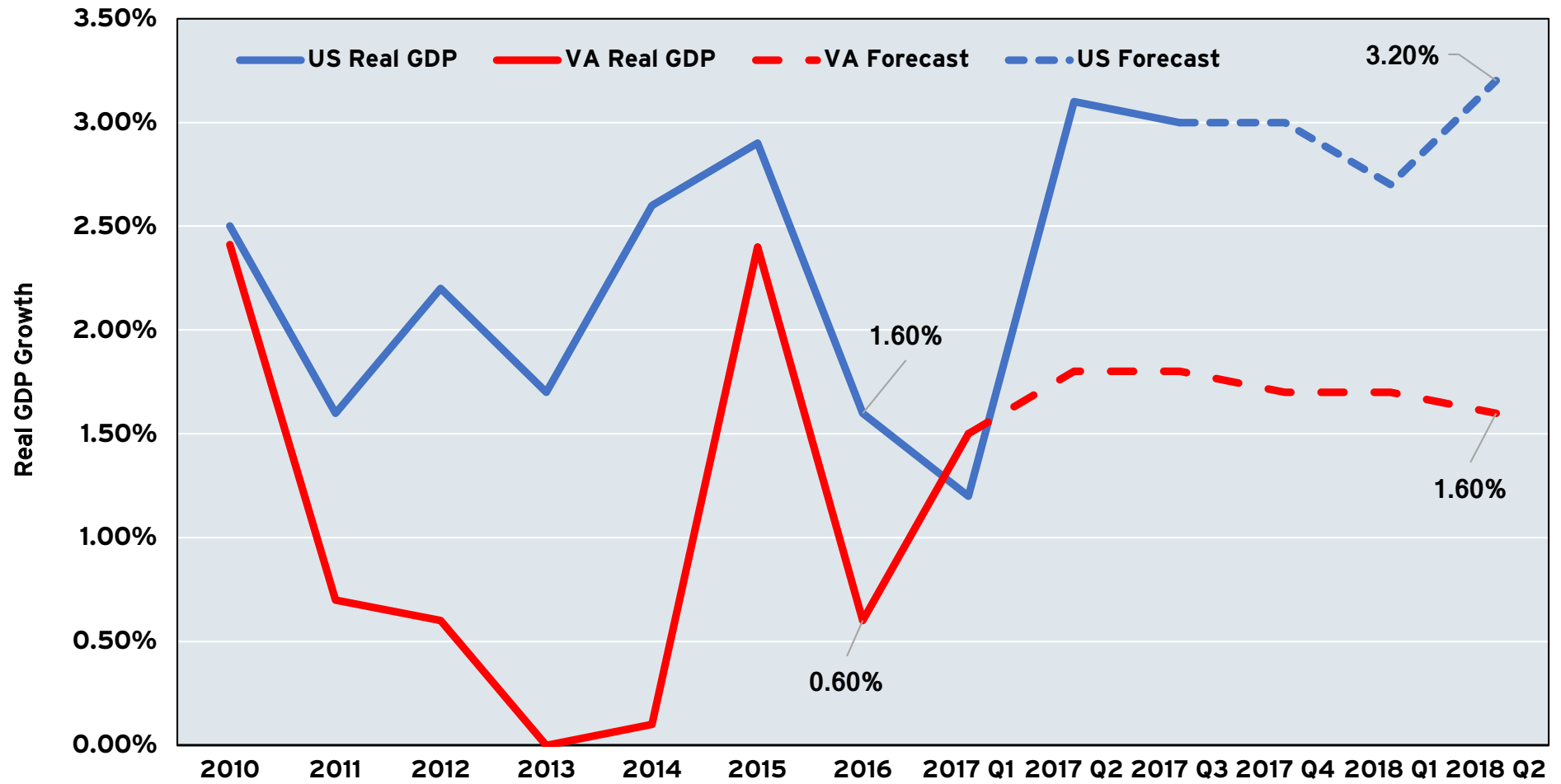
² Bureau of Economic Analysis, National Income and Product Accounts, Gross Domestic Product: Third Quarter 2017 (advance estimate).

³ The Council on State Governments (2017). “Federal Spending in the States” http://knowledgecenter.csg.org/kc/system/files/2017_CFFR_Report_3.pdf.

⁴ Office of Economic Adjustment (2017). “Defense Spending by State: Fiscal Year 2015” www.oea.gov/resource/defense-spending-state-fiscal-year-2015.

GRAPH 1

UNITED STATES AND VIRGINIA ACTUAL AND FORECASTED REAL GDP, 2010-2018 Q2



Sources: Bureau of Economic Analysis and the Center for Economic Analysis and Policy at Old Dominion University

Graph 2 shows the decline in the total dollar volume of federal contracts and Department of Defense (DOD) contracts in Virginia between FY 2008 and FY 2016. Total federal contracts in Virginia fell 7.8 percent over this period, from \$54.8 billion in FY 2008 to \$50.6 billion in FY 2016.⁵ The total dollar volume of DOD contracts was down 21.1 percent over the same period. Not only have contract awards fallen, but also the number of active-duty military personnel in Virginia declined by 25.5 percent over a similar period – from 119,950 in September 2008 to 89,333 in June 2017.⁶

At the same time DOD contract spending was stagnating, total federal awards declined in Virginia.⁷ As illustrated in Graph 3, total federal awards for all purposes peaked in FY 2012 and declined from FY 2013 through FY 2015. That Virginia's economy remained in neutral during most of these years should be no surprise.



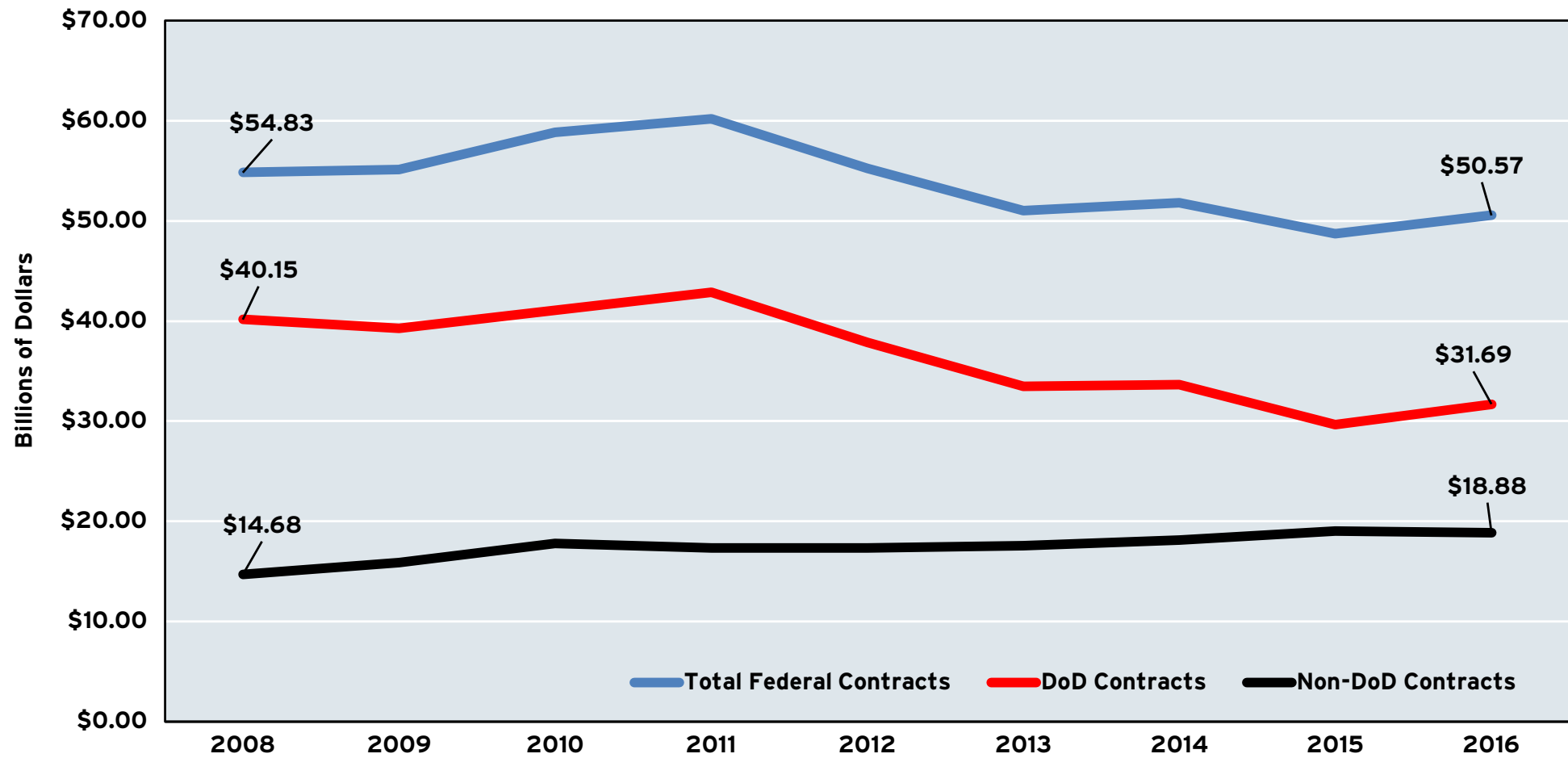
Navy.mil

⁵ USAspending.gov (2017). State Summary: Virginia.

⁶ Defense Manpower Data Center, Military and Civilian Personnel by Service/Agency by State/County, 2017, www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp.

⁷ Total awards include contracts, other financial assistance, grants and loans.

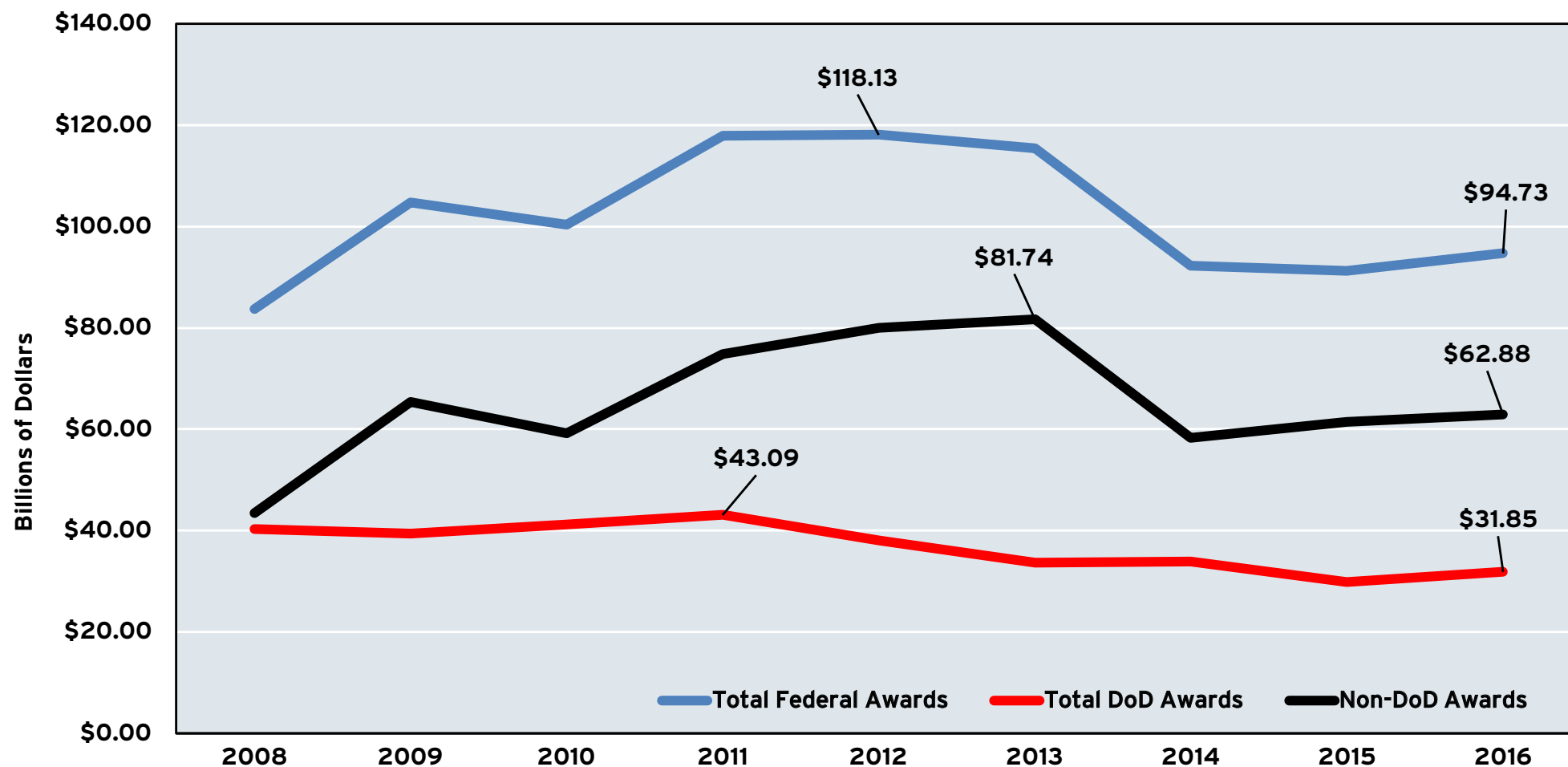
GRAPH 2
FEDERAL CONTRACTS IN VIRGINIA, FY 2008 TO FY 2017



Source: USAspending.gov

GRAPH 3

TOTAL FEDERAL, DOD AND NON-DOD AWARDS IN VIRGINIA, FY 2008 TO FY 2016



Source: USAspending.gov

Changes In Output: Running In Place

Before the Great Recession, which began in December 2007 and ended in June 2009, Virginia consistently ranked in the top half of states in terms of real GDP growth. Since the recession, Virginia has fallen behind its peers. With one exception (2015), Virginia's economic performance has been in the bottom half of states since 2011.

Table 1 ranks Virginia's real GDP growth against other states. The rankings do not give much reason to brag. Two states stand out as boom or bust: Alaska and North Dakota. When energy prices rise, the economies of these states grow rapidly, but falling energy prices generate the opposite effect.

Why is this important for Virginia? Federal spending in the Commonwealth is akin to oil and natural gas for Alaska and North Dakota. In the first decade of the century, rapid increases in defense spending fueled economic growth in Virginia. In the second decade, declines in federal awards and active-duty DOD personnel have shifted the Commonwealth's economic engine to neutral.

Not all the news is bad. Real economic growth in the first quarter of 2017 was 2 percent,⁸ above that of the United States and catapulting Virginia into the Top 10 of states in economic growth. Whether we can sustain this rate of economic growth depends, in part, on whether proposed increases in defense spending materialize in late 2017 and into 2018.

TABLE 1
REAL GDP GROWTH RANK

| | Virginia | Top State | Bottom State |
|-----------|----------|-------------------------|-------------------------|
| 2010 | 12 | North Dakota (7.2%) | Alaska (-1.7%) |
| 2011 | 35 | North Dakota (7.8%) | Louisiana (-2.6%) |
| 2012 | 31 | North Dakota (22.2%) | Wyoming (-3.5%) |
| 2013 | 40 | Texas (5.1%) | Alaska (-4.4%) |
| 2014 | 48 | North Dakota (7.3%) | Alaska (-3.3%) |
| 2015 | 19 | Texas (4.5%) | North Dakota (-3.1%) |
| 2016 | 41 | Washington (3.7%) | North Dakota (-6.5%) |
| 2017 (Q1) | 8 | Texas (3.9%) | Nebraska (-4.0%) |

Source: Bureau of Economic Analysis, Gross Domestic Product by State: First Quarter of 2017

⁸ 2nd Quarter real GDP data for Virginia is scheduled to be released on Nov. 21, 2017.

Defense Spending And Sequestration: A Closer Look

Using the word “sequestration” is almost equivalent to cursing in public for many Virginians. Sequestration historically referred to the forcible removal of assets until a debt was paid. In 2011, with the passage of the Budget Control Act (BCA), sequestration described a specific requirement for the president to reduce appropriated expenditures to the limits set by the BCA. While sequestration occurred only once in FY 2013, the term is now used to describe the BCA’s caps on national defense and nondefense discretionary spending. Under current law, these caps extend to FY 2025.

Attempting to forecast the outcome of the budget process in the current political climate is fraught with pitfalls, but we can make some useful observations. Congress must not only reconcile competing defense authorization bills, but must also come to an agreement on defense appropriations bills.

Congress also is attempting to pass tax cuts, extend the debt ceiling, reauthorize the Children’s Health Insurance Program (CHIP), decide whether to act on Deferred Action on Childhood Arrivals (DACA) and, most recently, discuss the Iranian nuclear deal. The legislative calendar is, to put it mildly, full.

Authorization bills create, extend or modify laws and set the amount of money that appropriators may spend on a specific program.

Appropriations bills provide discretionary funding to agencies and programs that have been authorized. While an authorization bill may create or extend a new program (building a new aircraft carrier, for example), the program is not funded by Congress until an appropriations bill containing the funding is signed into law. Federal agencies may only spend what is appropriated by Congress.

Comparing the differences between the defense authorization and appropriations bills sheds light on the challenges facing Congress. The BCA cap for FY 2018 on national defense discretionary budget authority is \$549 billion.⁹ The president’s budget request for national defense in the FY 2018 budget was \$603 billion, \$54 billion above the cap established by the BCA. The House’s version of the National Defense Authorization Act proposed national defense spending of \$624 billion, while the Senate proposed spending at \$640 billion. The conference agreement set the base national defense spending at \$626.4 billion, clearly above the existing BCA caps.¹⁰

Turning to the appropriations process for the DOD, the president’s base budget request for FY 2018 was \$574 billion, exceeding the DOD’s BCA’s caps by \$52 billion. The House passed an appropriations bill in July 2017, setting the DOD’s base budget at \$584 billion. While the Senate had yet to move a DOD appropriations bill out of subcommittee by the time this report was distributed, in all likelihood, the Senate’s defense appropriations bill will also be in excess of the BCA caps.

Although members of the House and Senate publicly acknowledge that the defense spending proposals exceed the BCA caps, no action has yet been taken to amend or repeal the spending caps. This means that even if Congress were to agree to higher levels of FY 2018 defense spending, the president would be required to implement a sequester to lower spending to the FY 2018 caps.

Using the House appropriations bill as a reference point, 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. Another round of sequestration would likely throw Virginia’s economy into reverse.

Given the legislative hurdles to pass the defense authorization and appropriations bills, there is a good chance that Congress will pass a

⁹ 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.

¹⁰ <https://www.armed-services.senate.gov/press-releases/senate-and-house-armed-services-committees-complete-conference-on-national-defense-authorization-act-for-fiscal-year-2018>.

new continuing resolution (CR) when the current CR expires on Dec. 8, 2017. A CR is legislation in the form of a joint resolution passed by Congress to provide budget authority to federal agencies and programs to continue in operation until regulation appropriations acts are passed by Congress and signed into law. Continuing resolutions typically provide existing agencies and programs with budget authority based on the previous year's appropriations.

Continuing resolutions usually prohibit expansion of existing programs and most new program starts. These resolutions typically constrain the ability of federal managers to address a changing environment and new demands for goods and services.

The impact of a CR on the DOD is not trivial. Over the last decade, the DOD has entered all but one fiscal year under a CR. The most recent delay, for example, between the start of FY 2017 and the passage of a defense appropriations bill was 217 days (Graph 4), a delay exceeded only once since 1970.

With an increasingly volatile geopolitical environment and increasing demands on the military services, CRs constrain DOD flexibility and planning. CRs also result in the delay of maintenance programs (including ship repair) and reductions in training and readiness. Former DOD Comptroller David Norquist eloquently captured the impact of a CR on DOD, "The longer the CR lasts, the more damage they do. They are corrosive."¹¹

The good news for Virginia is that we expect defense spending will increase in 2018. While there is not much agreement in Congress, there appears to be an emerging consensus that the BCA caps should be modified (or eliminated entirely). With a modification of the BCA caps and passage of the authorization and appropriations bills, defense expenditures in Virginia would increase in the second half of 2018. Such increases would be welcome news and would spur increased economic growth, subject to the usual caveats on economic and political shocks.

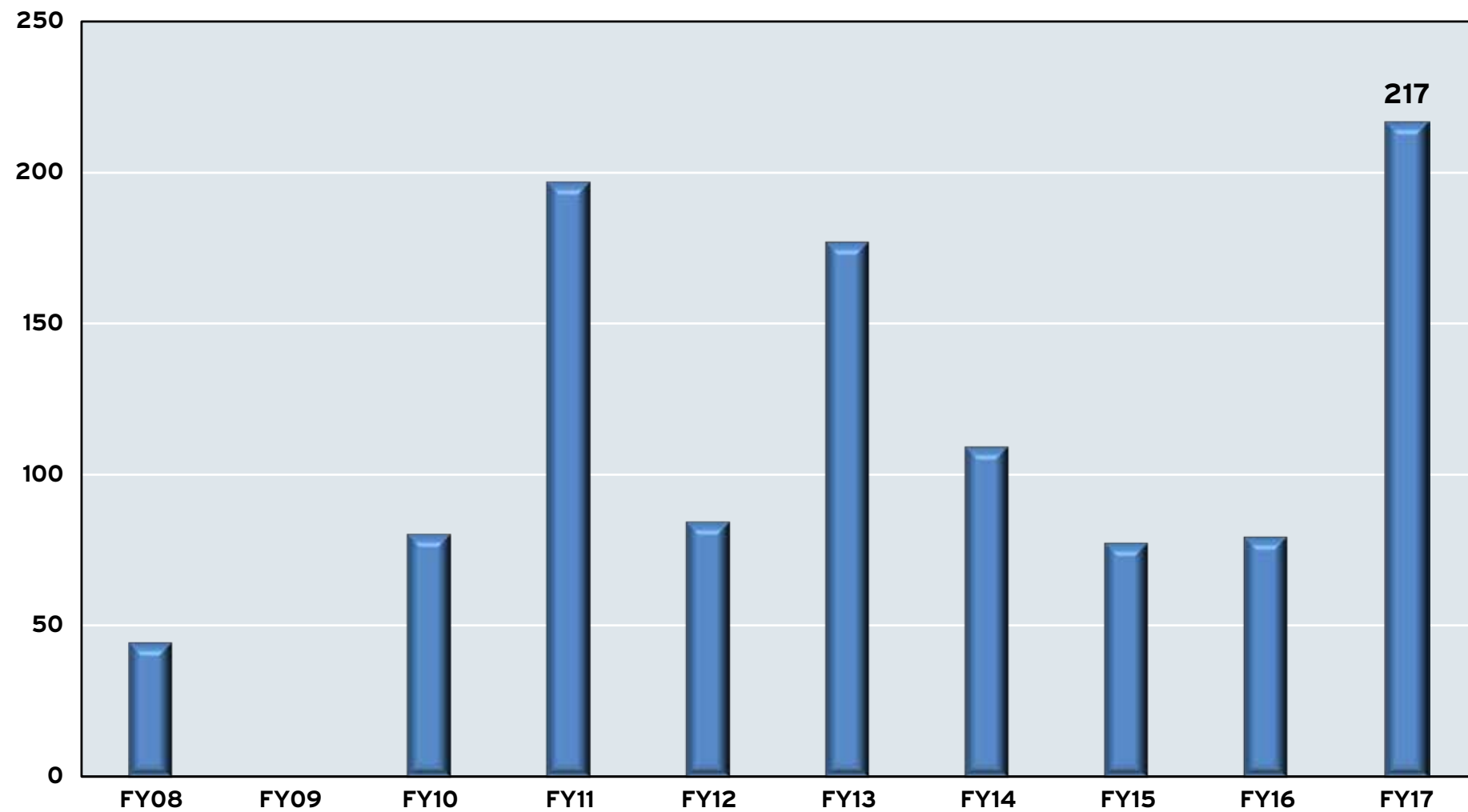


Navy.mil

¹¹ <https://federalnewsradio.com/defense-main/2017/09/cr-for-defense-likely-until-december-but-with-a-few-anomalies/>.

GRAPH 4

LENGTH OF CONTINUING RESOLUTION FOR DOD APPROPRIATIONS



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

Sectoral Growth In Virginia

Data from the Bureau of Economic Analysis suggest that the manufacturing sector contracted by 5.6 percent from 2015 to 2016. Graph 5 provides the annual growth rate for manufacturing as well as the other major sectors of the economy.

2016 represented the sixth consecutive year of decline for the manufacturing industry. As a share of overall economy activity in Virginia, the manufacturing sector declined from 11.6 percent at the beginning of the century to only 8.2 percent in 2016.

Potentially troubling is the contraction in economic activity in the management of companies. Wages and salaries in this sector are typically higher than other sectors and any contraction would signal a loss of high-paying jobs. In 2015, the sector grew almost 4 percent, so it is possible that 2016 is an anomaly.

On a more positive note, the agricultural sector grew by almost 6.4 percent in 2016. Utilities, information and health care, transportation and warehousing, and professional and business services also grew in 2016.

How has the economy of Virginia changed over time? In Graph 6, we compare the shares of real GDP in 2007 and 2016 for each major industry in the Commonwealth. Not only does this capture the relative contribution of each sector to overall economic activity, but also the changing contributions of each sector. Strong growth in professional and business services, health care and social assistance, and finance and insurance illustrate the increasing importance of these sectors to Virginia. More traditional sectors, to include manufacturing and wholesale trade, declined in importance

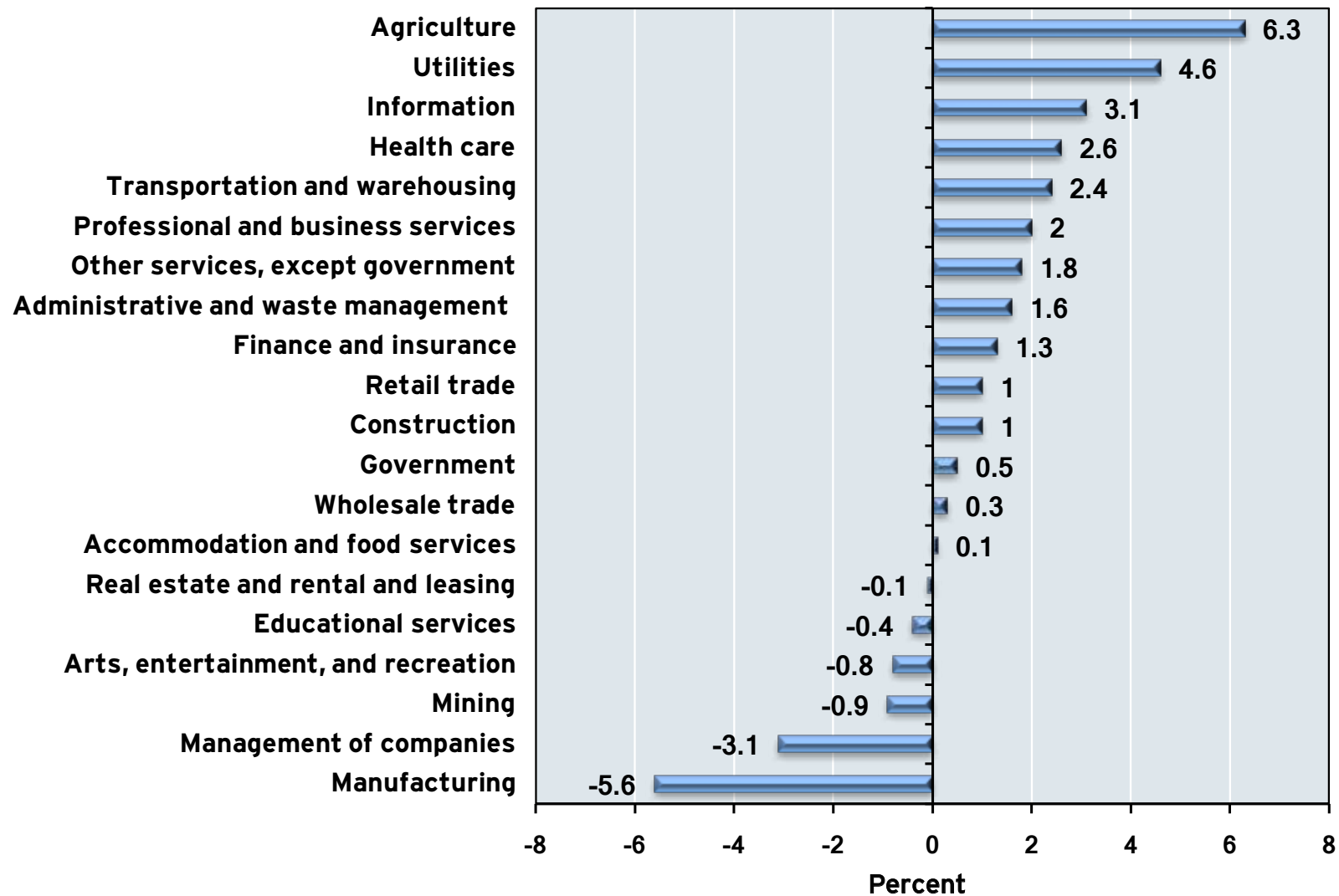
What about agriculture and mining? These sectors have steadily declined in relative importance over time, now each accounting for about 0.3 percent of economic activity in Virginia. The mining sector continues to struggle with a 0.9 percent decline in 2016 on the heels of a 12.8 percent contraction in 2015. While mining once offered a source of good-paying jobs and contributed positively to economic growth in Virginia, it appears

that this sector will continue its decline relative to other parts of the economy.



GRAPH 5

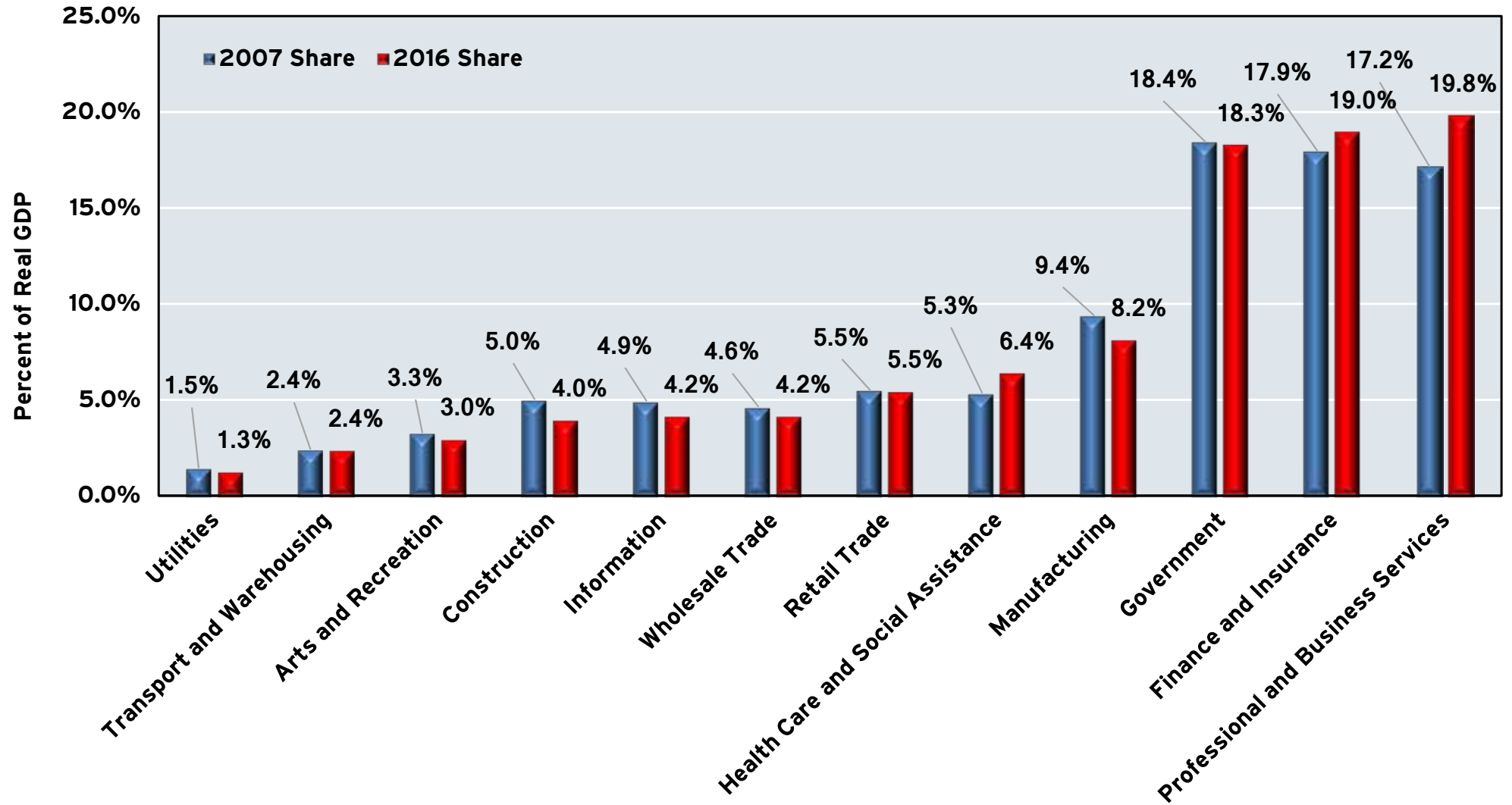
VIRGINIA: 2015-2016 GROWTH IN SELECTED INDUSTRIAL SECTORS



Source: Bureau of Economic Analysis, real GDP by state in millions of chained 2009 dollars.

GRAPH 6

INDUSTRY CONTRIBUTIONS TO REAL GDP, 2007 AND 2016



Source: Bureau of Economic Analysis

Labor Market Conditions

Labor market conditions generally continued to improve in 2016. Nearly 4.4 million Virginians were in the labor force in September 2017, an increase of around 85,000 from the year previous (Graph 7). Not only were more Virginians employed or actively looking for work, but also the number of employed workers increased in 2017. July 2017 represented the largest labor force and the largest number of employed Virginians on record since data collection began in 1976.

The data in Graphs 7 and 8 come from the Current Population Survey, which surveys households to find out if they are working, actively seeking work or not in the labor force. The U.S. Census Bureau conducts the survey for the Bureau of Labor Statistics.

More Virginians at work drove the Commonwealth's unemployment rate to lows not seen since April 2008. Graph 8 displays the unemployment rates in Virginia and the United States and shows that the unemployment rate in the Commonwealth typically has been below that of the United States. In September 2017, the unemployment rate in Virginia was 3.7 percent, compared to 4.2 percent for the United States.

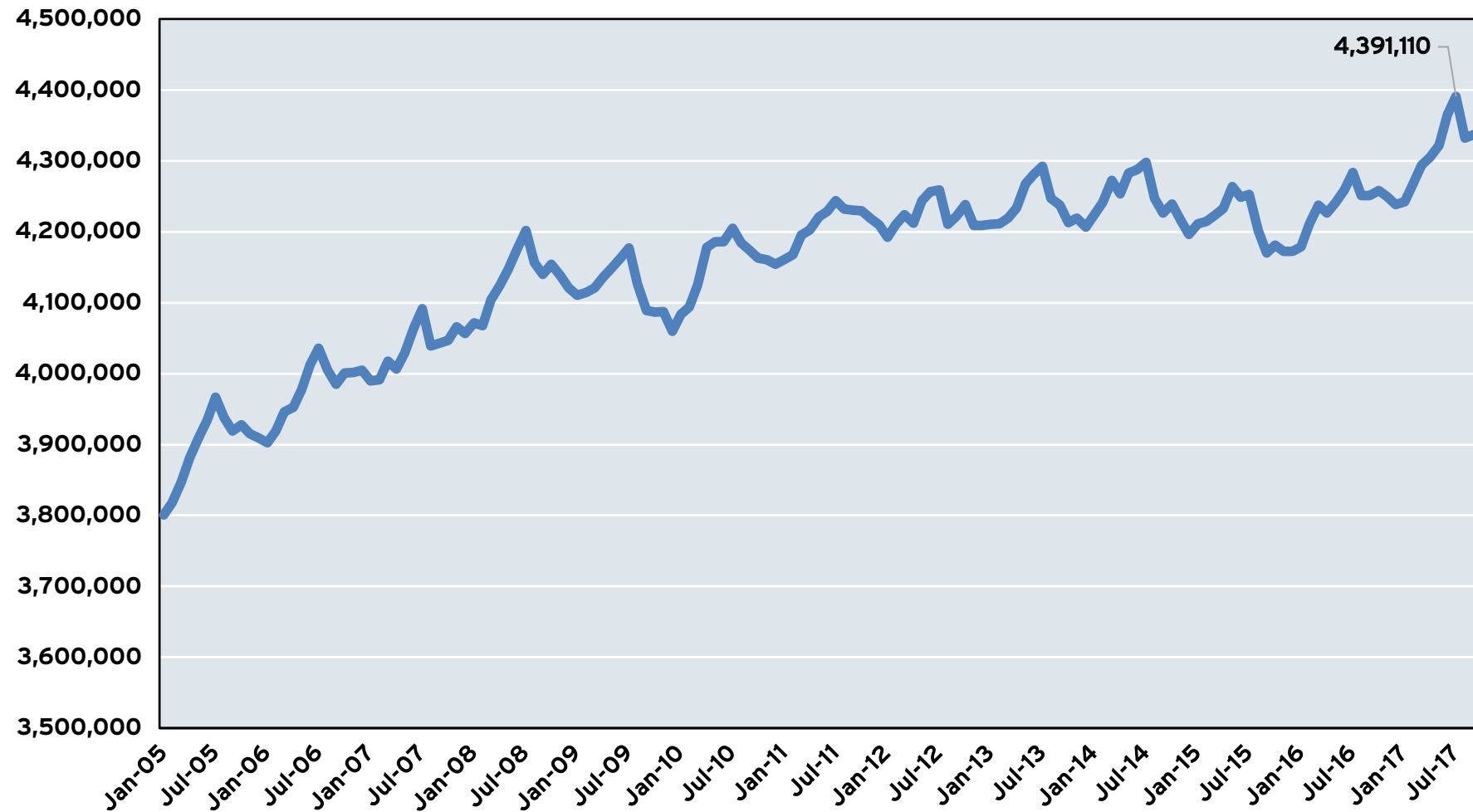
However, there is some cause for concern. Traditionally, Virginia's unemployment rate has been about 1.5 percent below that of the nation. This 1.5 percent gap continued all through the 2002-2008 expansion and even grew during the Great Recession. However, since 2012, Virginia's unemployment rate only has been about 0.7 percent lower than the national rate.

Could this signal a new economic reality for Virginia? Perhaps. The era of hyper-partisan politics and federal budget uncertainty could mean that a more "natural" rate of unemployment for the state is around 3.5 percent instead of 3 percent. In that case, the Virginia economy may be close to full employment.



GRAPH 7

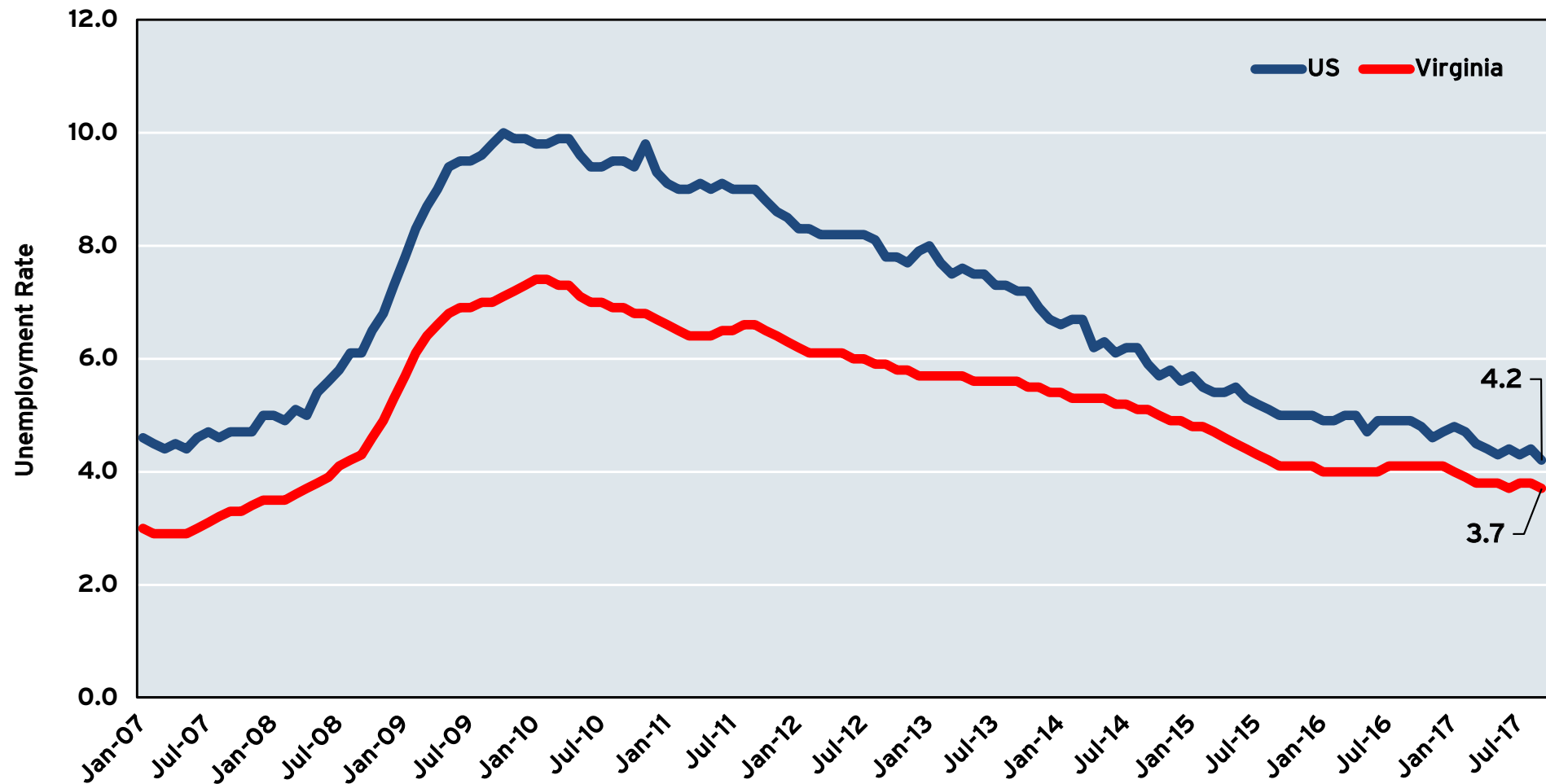
SIZE OF THE LABOR FORCE IN VIRGINIA, JANUARY 2005 TO SEPTEMBER 2017



Source: Virginia Employment Commission, Local Area Unemployment Statistics (not seasonally adjusted data)

GRAPH 8

UNEMPLOYMENT RATES FOR VIRGINIA AND THE UNITED STATES, JANUARY 2007 TO SEPTEMBER 2017



Sources: Bureau of Labor Statistics and the Virginia Employment Commission (seasonally adjusted data)

Labor Force Participation

Whether Virginians choose to participate in the labor force influences the level of employment, unemployment and the overall size of the labor force. Virginia's labor force participation rate typically exceeds that of the United States and 2017 is no exception. Almost 66 percent of Virginians participated in the labor force in September 2017 versus about 63 percent of all Americans.¹²

Labor force participation varies by locality. Figure 1 shows participation rates for 2016 were below 50 percent in many counties in southwestern

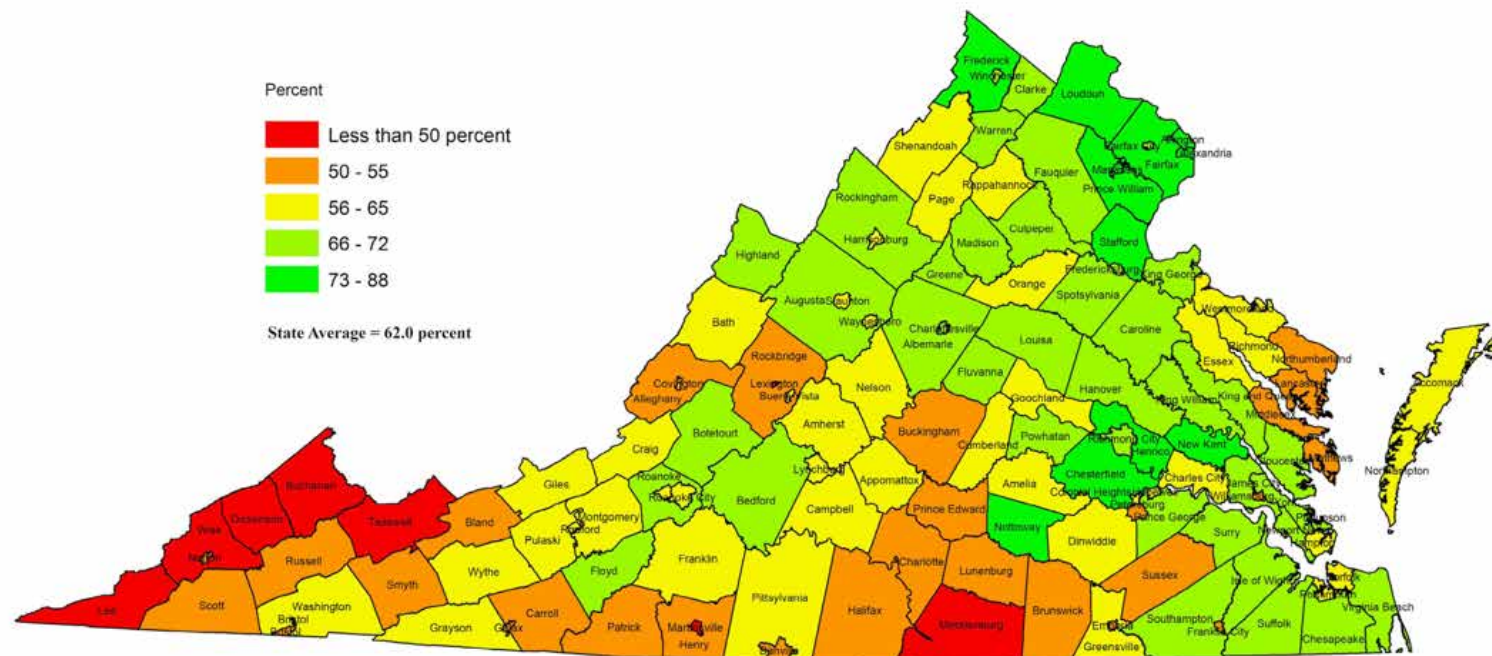
12 Bureau of Labor Statistics, Local Area Unemployment Statistics, October 2017.

Virginia and above 70 percent in Northern Virginia, Richmond and much of Hampton Roads. A challenge for Virginia is to address the declines in manufacturing, mining and other traditional employment sectors that influence participation rates. A further challenge, discussed later in this report, is how the opioid crisis undermines labor force participation.

Here is where the rubber meets the road with regard to labor force participation rates. One way or another, society must support individuals of prime working age who for whatever reasons are not in the labor force. Falling labor force participation therefore constitutes an anchor that drags down economic growth. Hence, one way to stimulate economic growth in Virginia is to increase labor force participation rates.

FIGURE 1

VIRGINIA LABOR FORCE PARTICIPATION RATE BY LOCALITY, 2016



Source: Virginia Employment Commission, Economic Information & Analytics, September 2017

Virginia's Job Performance: Better But Not Great

How has Virginia performed in terms of jobs? Total nonfarm payroll employment expanded by 58,500 jobs in 2016, a 1.5 percent increase from 2015 (Graph 9). This was the second-highest year for job creation since the Great Recession and is a welcome sign after our mediocre growth in 2013 and 2014. Job growth in the Commonwealth, however, continues to lag the United States.

The data in Graphs 9 and 10 come from the Current Employment Statistics program, which is a monthly survey of establishments on employment, hours and earnings. The Bureau of Labor Statistics conducts the survey.

Digging into the monthly job numbers, Virginia's year-over-year total nonfarm employment growth rate exceeded that of the United States in 2015 (Graph 10), but decelerated in the second half of 2016 and the first half of 2017. While job creation in the Commonwealth exceeded that of the United States in July and August of 2017, year-over-year growth was anemic in September 2017 at 0.9 percent. Virginia is underperforming the United States in job creation.

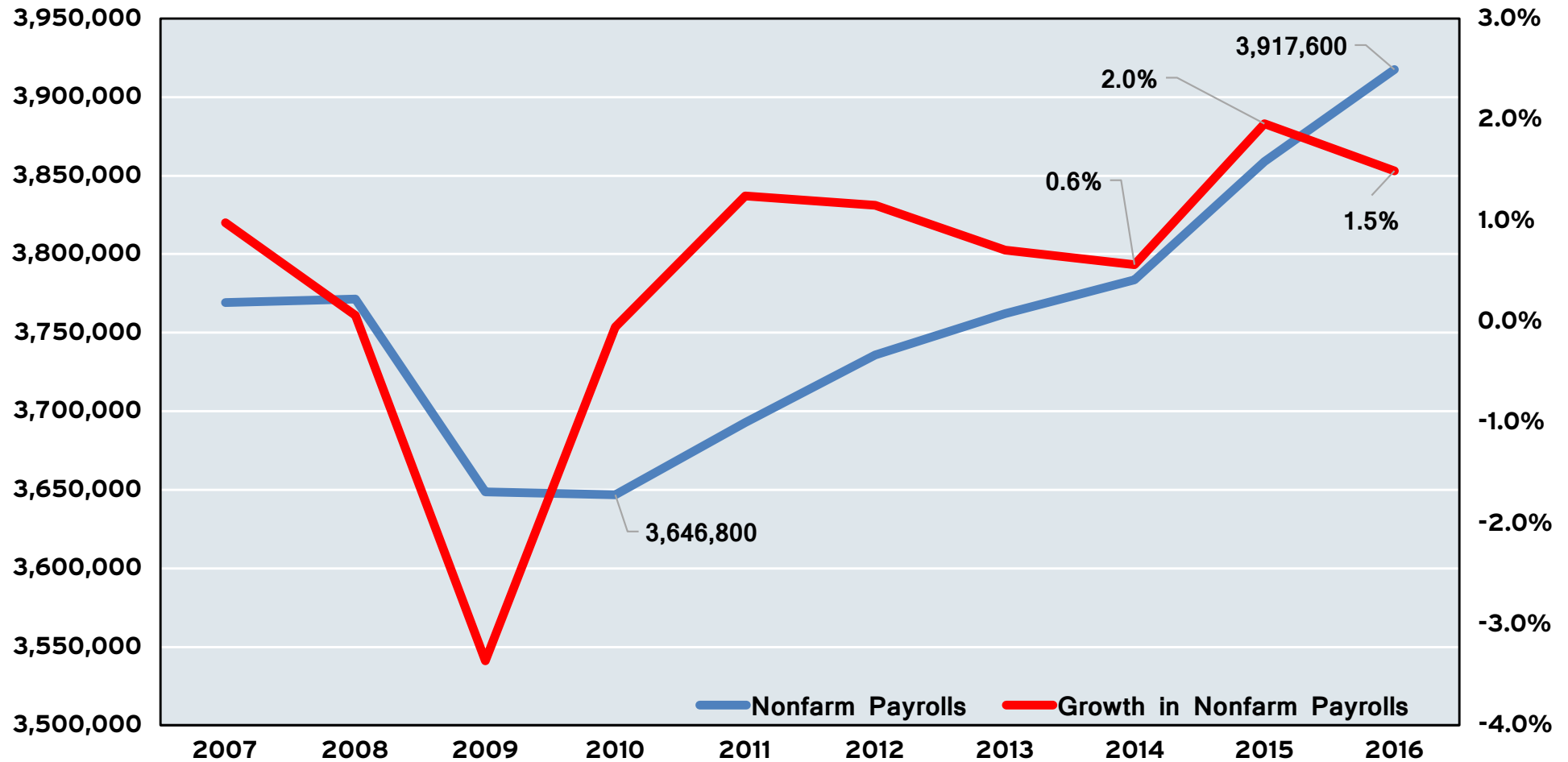
Graph 11 examines sector-level employment growth from 2015 to 2016. The health care and social assistance and leisure and hospitality industries led job creation in 2016, each adding 13,700 jobs when compared to 2015. Professional and business services also generated a significant number of new jobs (12,900), while the government sector added around 3,000 jobs. The information, mining and manufacturing sectors lost jobs in 2016.

Virginia's share of total employment in manufacturing has declined every year since 1990. Compared to many neighboring states, Virginia has the lowest share of employment in manufacturing. Only 6 percent of Virginia's jobs are in manufacturing, compared to 12 percent in South Carolina, 11 percent in North Carolina, 10 percent in Pennsylvania and 9 percent in Georgia. While Virginia has a higher share of manufacturing jobs than Maryland, Delaware, New York and New Jersey, this may not be a peg on which the Commonwealth wants to hang its hat.



GRAPH 9

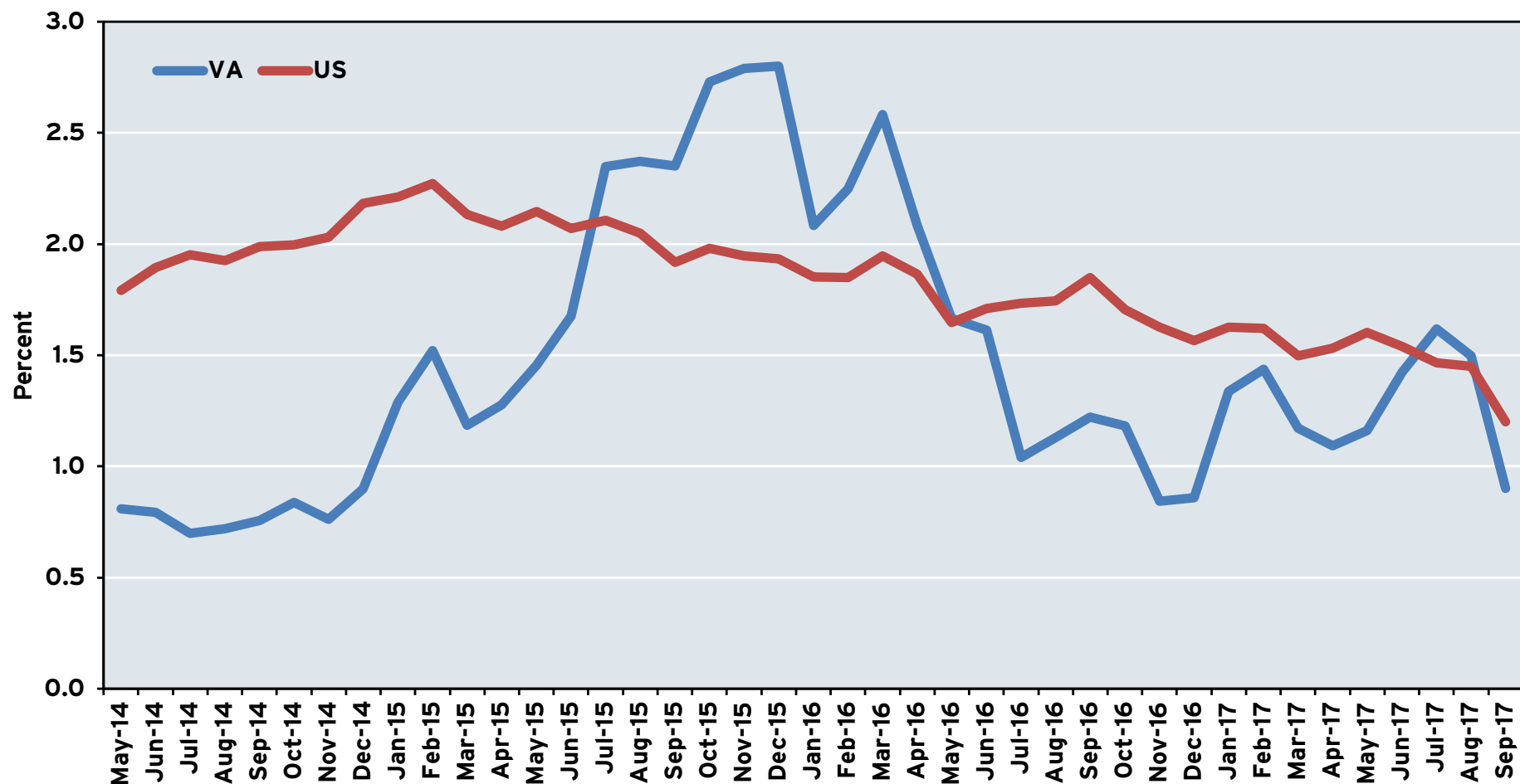
TOTAL NONFARM EMPLOYMENT AND ANNUAL GROWTH RATE, 2007-2016



Source: Bureau of Labor Statistics, Current Employment Statistics

GRAPH 10

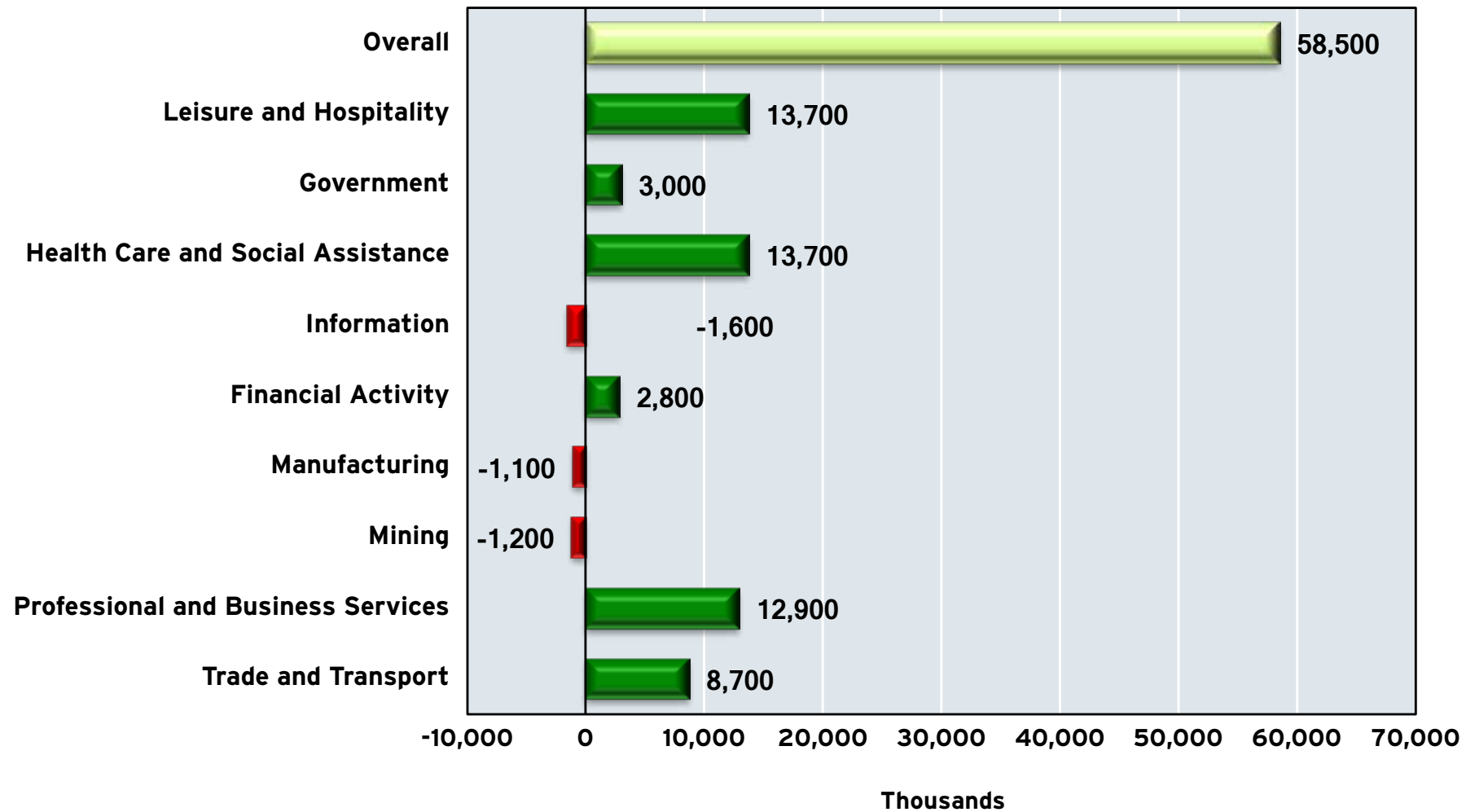
YEAR-OVER-YEAR GROWTH IN JOBS: VIRGINIA AND UNITED STATES



Sources: Bureau of Labor Statistics and the Virginia Employment Commission

GRAPH 11

VIRGINIA: CHANGE IN EMPLOYMENT LEVELS BY SELECTED SECTORS, 2015-2016



Sources: Bureau of Labor Statistics and Old Dominion University Center for Economic Analysis and Policy calculations

Average Weekly Earnings

Given that more Virginians are in the labor force and are employed, are they earning more money?¹³ **The good news is that a Virginian's average weekly earnings grew by 3.4 percent in 2016, well above the 2.6 percent growth for the United States (Graph 12). Virginia's earnings growth, however, appears to have fallen behind the United States in 2017 and may end up being below 2 percent.**

The latest average weekly earnings data for August 2017 show that Virginia's year-on-year average earnings growth increased by 1.9 percent

when compared to August 2016. While this is still behind earnings growth in the United States, where earnings increased by 2.5 percent in the same period, it is higher than earlier in the year. We expect that earnings growth will pick up in 2018 if Virginia's economy continues its recent expansionary pattern.

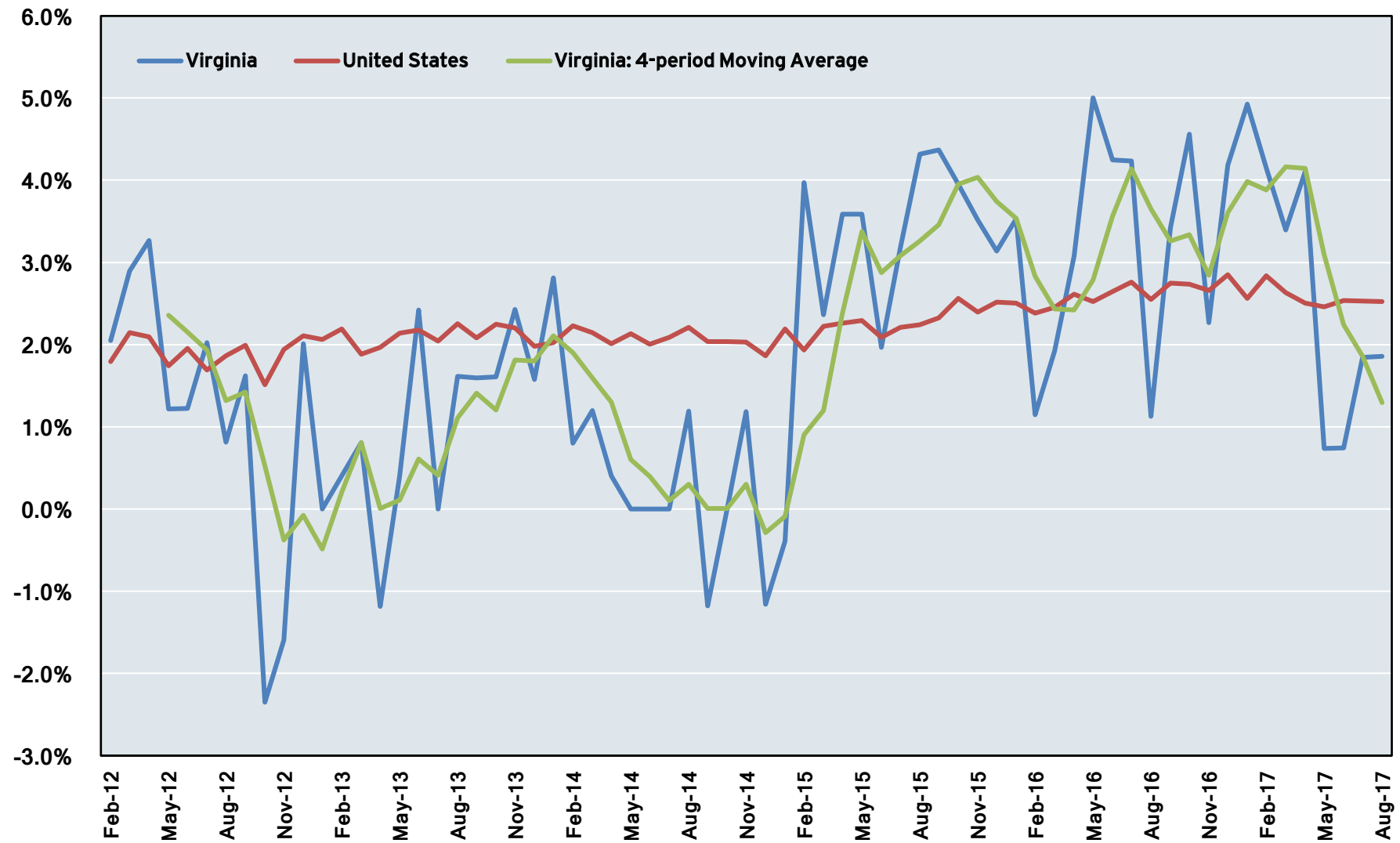
The economic data are discordant. Output gains are anemic and lag the United States. More Virginians are in the labor force, gainfully employed and enjoying larger paychecks. However, when Virginia is compared to neighboring states and the nation, its economic performance is mediocre.



¹³ We use average hourly earnings from the Current Employment Statistics program. This series measures wages and not total compensation. Benefits, bonuses and payroll taxes paid by employers are not included. As a result, average hourly earnings is not a suitable indicator of labor costs to firms.

GRAPH 12

VIRGINIA AND THE UNITED STATES: GROWTH IN AVERAGE HOURLY EARNINGS, FEBRUARY 2012 TO AUGUST 2017



Source: Bureau of Labor Statistics

The Dynamics Of Establishments In Virginia

An interesting alternative way to view the lack of dynamism in the Virginia economy is to focus on the number of new business establishments that have been created. New business creation reflects both economic optimism and perceived opportunities.¹⁴ It is apparent that Virginia has been falling short here recently. Let's see what the data tell us.

An overwhelming number of the employed (approximately 90 percent)¹⁵ in the United States are employed by businesses (as opposed to being self-employed). Graph 13 displays the share of jobs for small and medium-sized enterprises (SMEs), which accounted for 48 percent of jobs in Virginia and almost 50 percent of jobs in the United States.¹⁶ Virginia has tended to rely more on larger enterprises than the rest of the country, but this gap has closed dramatically since the Great Recession as the share of jobs in SMEs in the U.S. has declined below 50 percent. In other words, the share of total employment of large firms is growing in the United States and approaching that of Virginia.

Graph 14 displays SME's share of job creation in Virginia and the United States.¹⁷ For most of this century, Virginia's job creation by SMEs has trailed the United States. Briefly, in the fourth quarter of 2015 and the first quarter of 2016, the share of job creation by SMEs in Virginia exceeded the national average, but retreated in the latest data available.



¹⁴ There are subtle but important differences between establishments, firms and enterprises. An establishment is a single physical location while a firm is an establishment or a combination of establishments. Most businesses in the United States are single-establishment firms and the use of establishment data provides more precision with regard to employment. For further discussion see: www.bls.gov/opub/mlr/2016/article/establishment-firm-or-enterprise.htm.

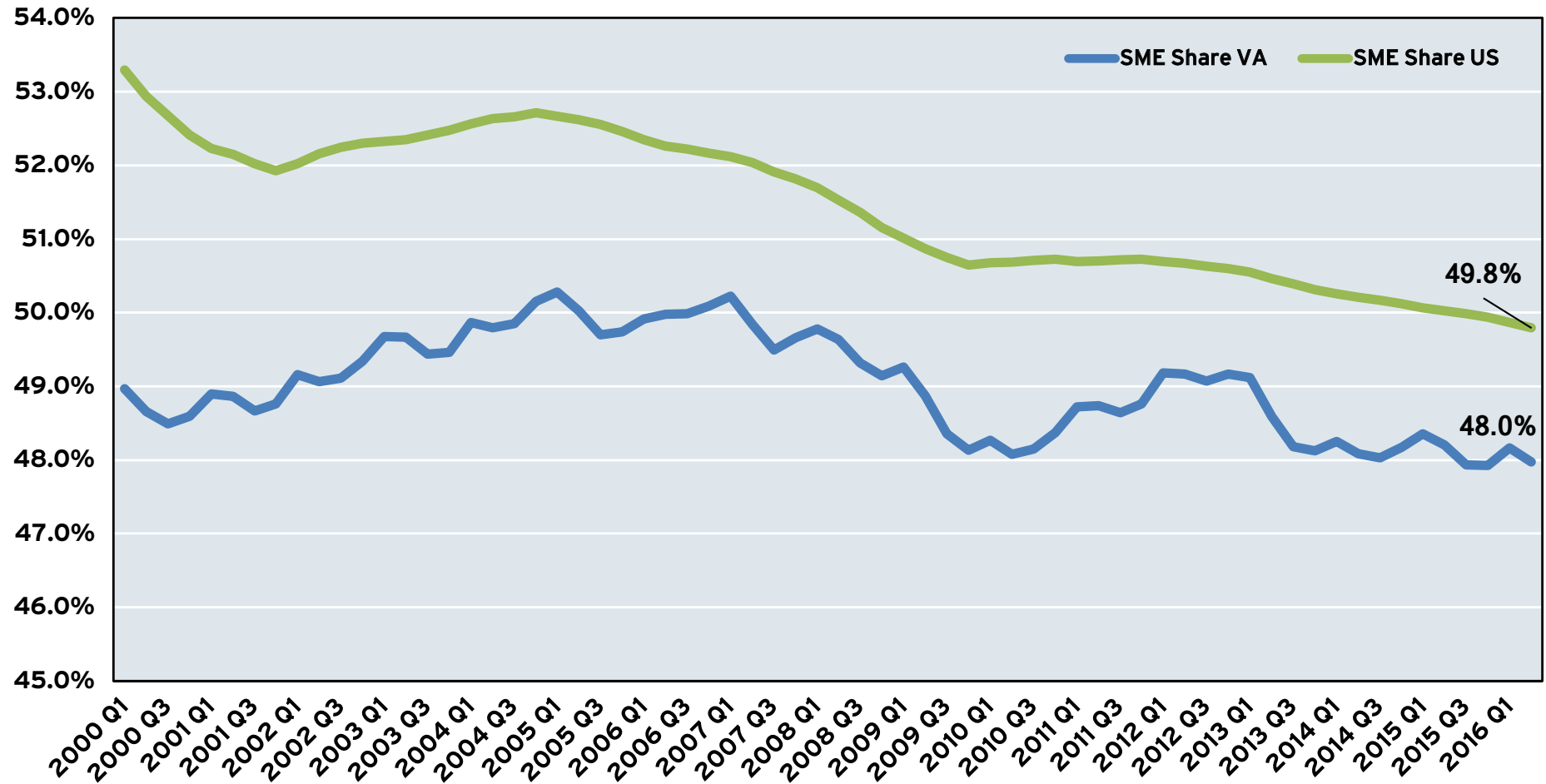
¹⁵ "Self-Employment in the United States," Steven Hipple and Laurel Hammond, Bureau of Labor Statistics, March 2016.

¹⁶ Small and medium-sized enterprises have 499 employees or fewer.

¹⁷ We examine gross job creation, which is different from net job creation. Net job creation is the difference between jobs being created (firm births and expansions) and jobs being destroyed (firm declines or firm deaths).

GRAPH 13

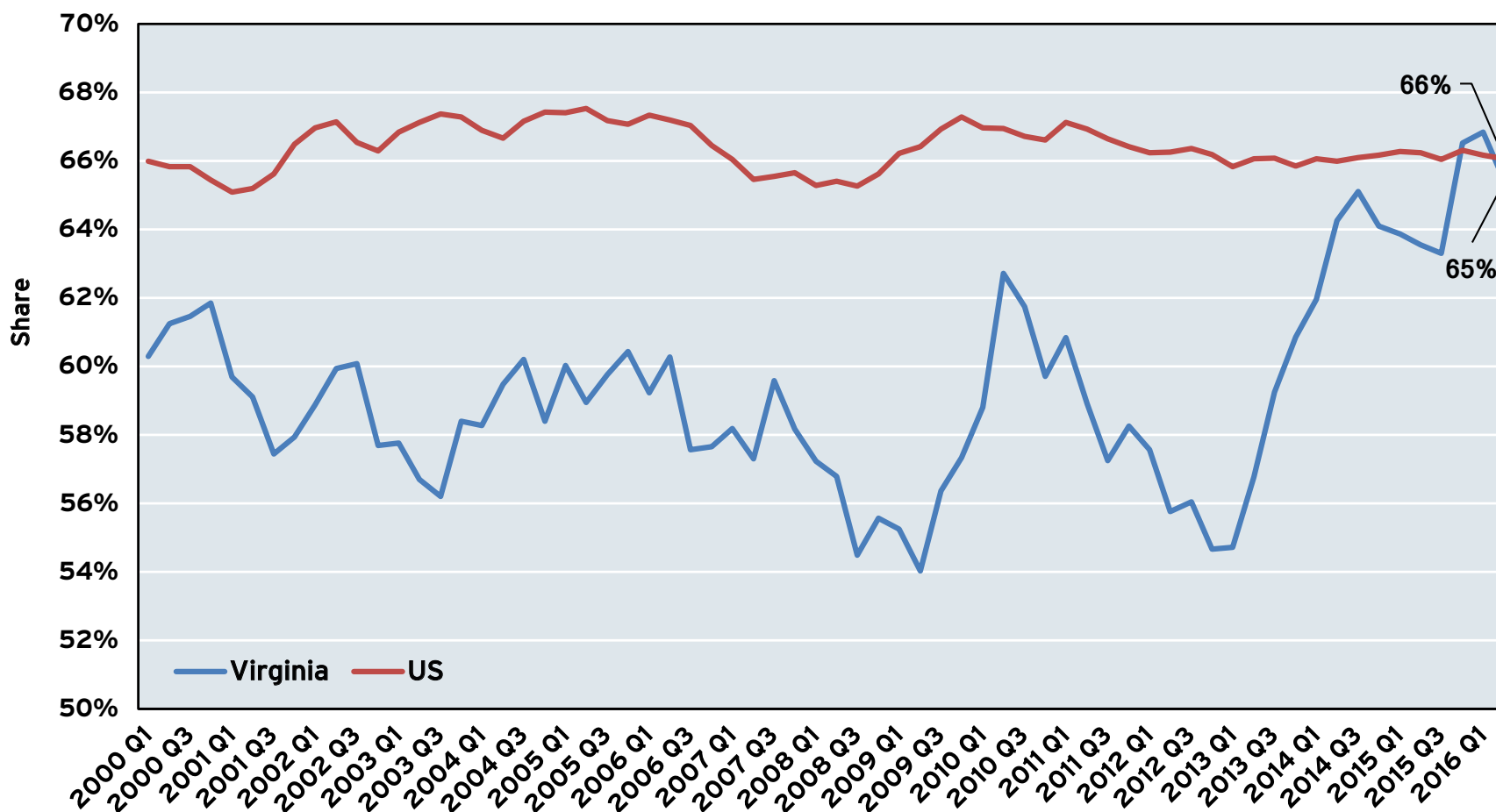
SHARE OF JOBS FOR SMALL AND MEDIUM-SIZED ENTERPRISES: VIRGINIA AND THE UNITED STATES, 2000 Q1 TO 2016 Q2
4-QUARTER MOVING AVERAGE



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics

GRAPH 14

**SHARE OF GROSS JOB CREATION BY SMES, 2000 Q1 TO 2016 Q2:
4-QUARTER MOVING AVERAGE**



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics

Small Establishment Creation

Not surprisingly, businesses start and fail on a regular basis. About 80 percent of establishments in the United States with employees survive their first year of business, 66 percent survive a second year and 50 percent survive until their fifth year of business. About 30 percent of establishments survive until their 10th year of business.¹⁸ Improving establishment creation and survival is a key to generating long-term economic development.

How is Virginia faring in fostering a climate conducive to establishment creation? Graph 15 displays the number of new establishments in Virginia from the first quarter of 2000 through the last quarter of 2016. On average, about 5,600 new establishments are created each quarter in Virginia. The pace of new establishment births declined in the aftermath of the Great Recession and once again in 2013 in response to sequestration. Births peaked in 2015 and remained above the historical average for most of 2016. The four-quarter moving average is also trending back to the historical average, suggesting slowing establishment births. If the focus of public policy has been on fostering new establishments, then it appears that Virginia has been only modestly successful in this regard.

What about establishment destruction? Graph 16 presents establishment deaths in Virginia for 2000 to 2016 Q1. On average, 5,054 establishments died per quarter over the period. As one might expect, firm deaths during the Great Recession spiked and there also was an increase in deaths in the third quarter of 2013, perhaps due to sequestration. Firm deaths rose above the long-term average in the first quarter of 2016, in line with our previous discussion that 2016 was a poor year for economic activity in the Commonwealth.

If the objective of economic development is to foster an environment conducive to the creation and sustainment of new establishments, then Virginia's postrecession performance is underwhelming in most years.

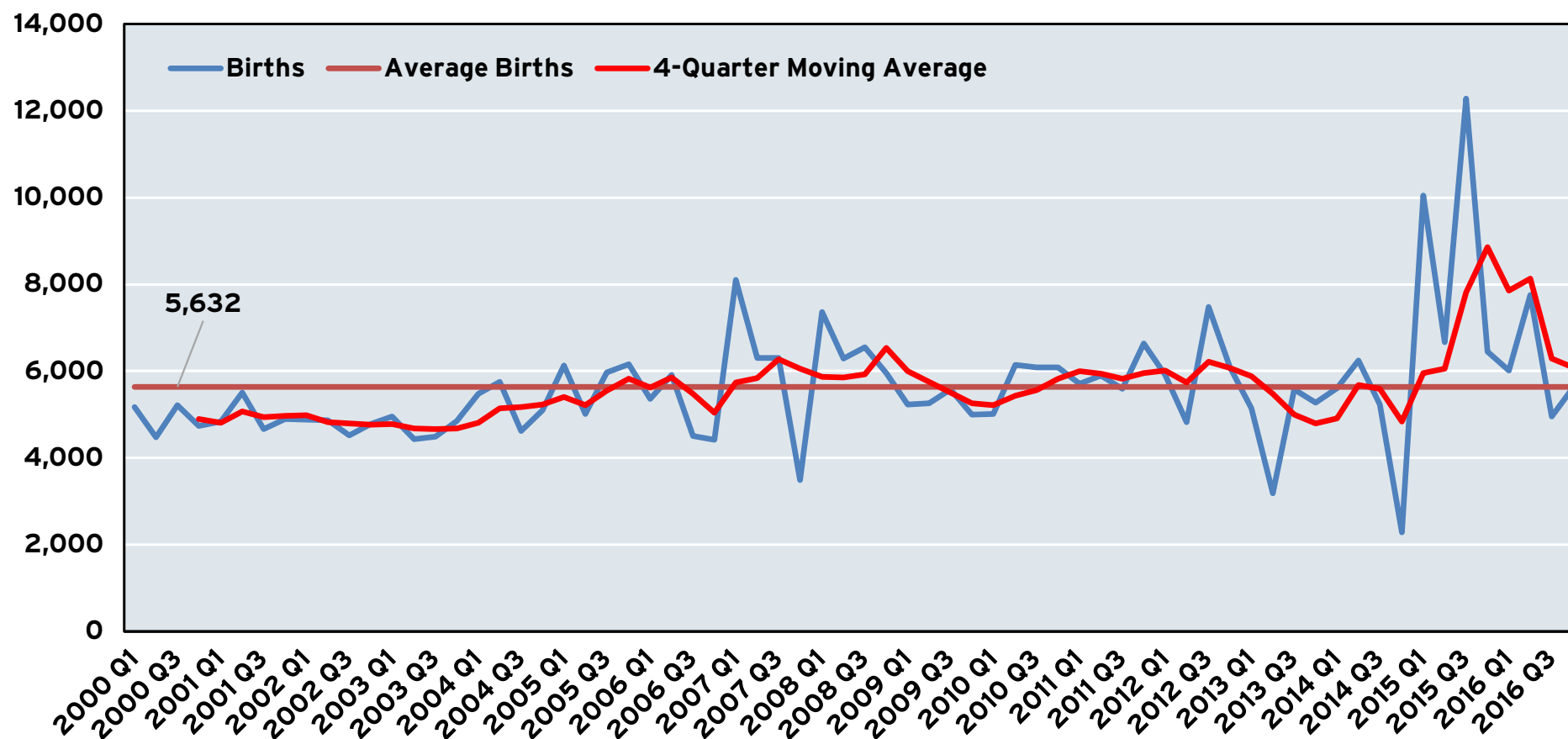
As shown in Graph 17, net establishment creation was close to zero or negative in 2013 (likely due to sequestration) and uneven in 2014. 2015 was a robust year for establishment births in the first and third quarters, and the first quarter of 2016 saw more births than deaths. Not surprisingly, the Commonwealth posted its best postrecession real GDP growth in 2015 when Virginians created, on average, 2,000 net new establishments. Since the turn of the century, the Commonwealth's real GDP growth was lackluster in years when net births were negative and robust in years when net births were above the historical average.

New establishments create jobs, while establishment deaths destroy jobs. Graph 18 illustrates the net job gain or loss from the creation and destruction of establishments. We can again see that when net job creation falls, economic activity in the Commonwealth stagnates. The relatively good performance of the Commonwealth in 2015 was, in part, driven by a large uptick in new establishment job creation.

¹⁸ Bureau of Labor Statistics, "Survival of private sector establishments by opening year," www.bls.gov/bdm/us_age_naics_00_table7.txt.

GRAPH 15

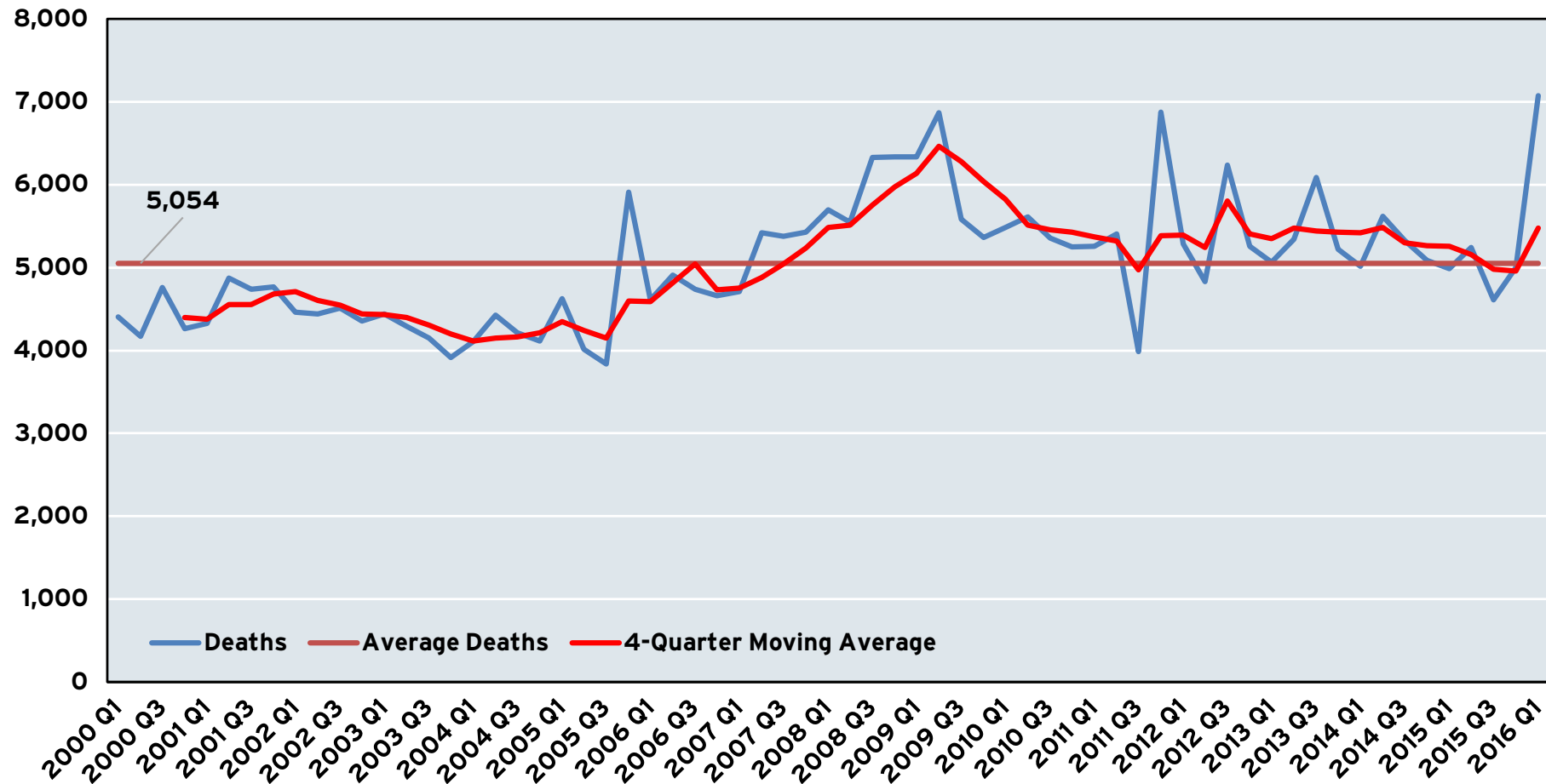
NUMBER OF ESTABLISHMENT BIRTHS, 2000 Q1 TO 2016 Q4



Source: Bureau of Labor Statistics, Business Employment Dynamics, 2017

GRAPH 16

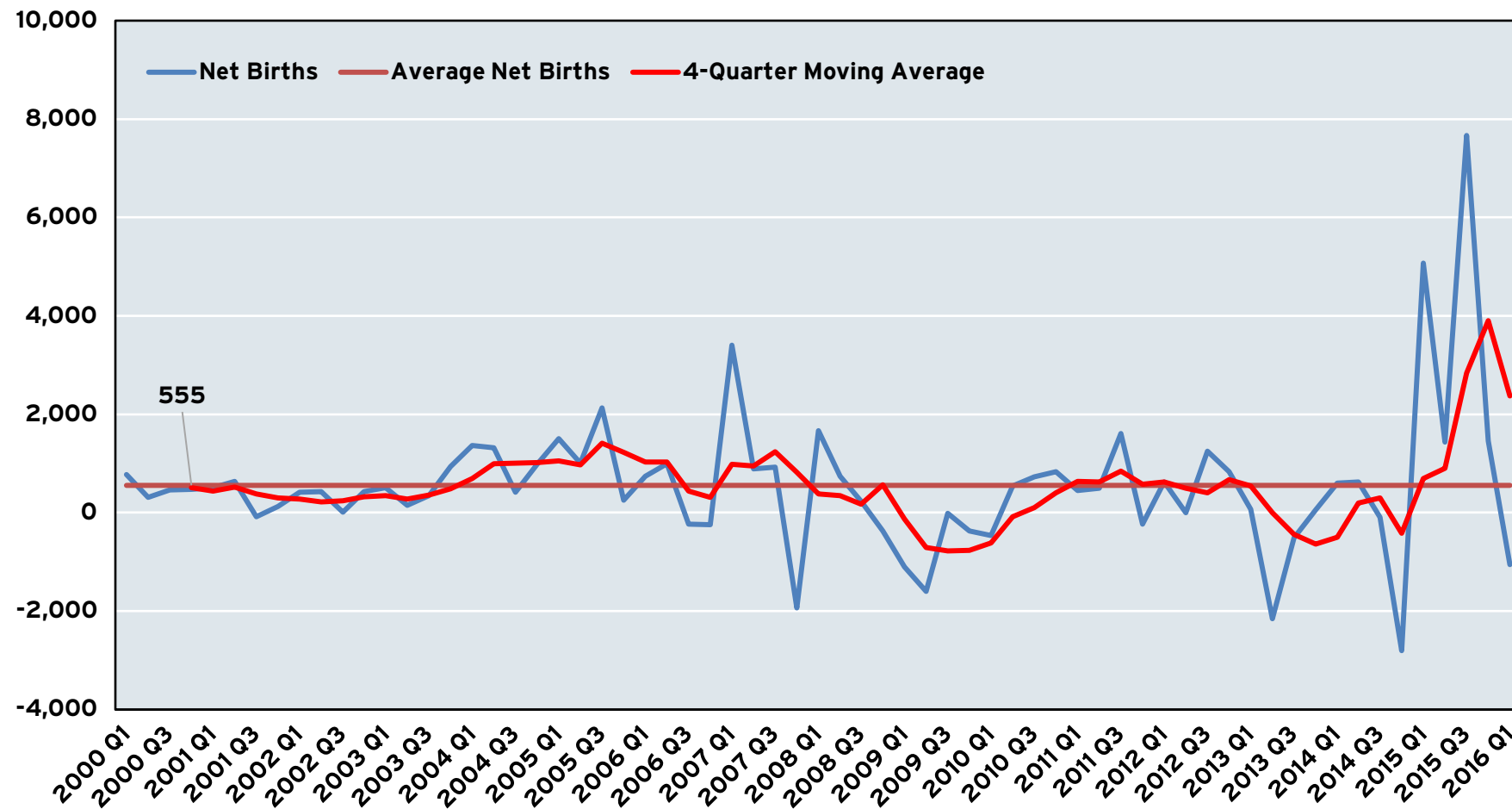
ESTABLISHMENT DEATHS IN VIRGINIA, 2000 Q1 TO 2016 Q1



Source: Bureau of Labor Statistics, Business Employment Dynamics, 2017

GRAPH 17

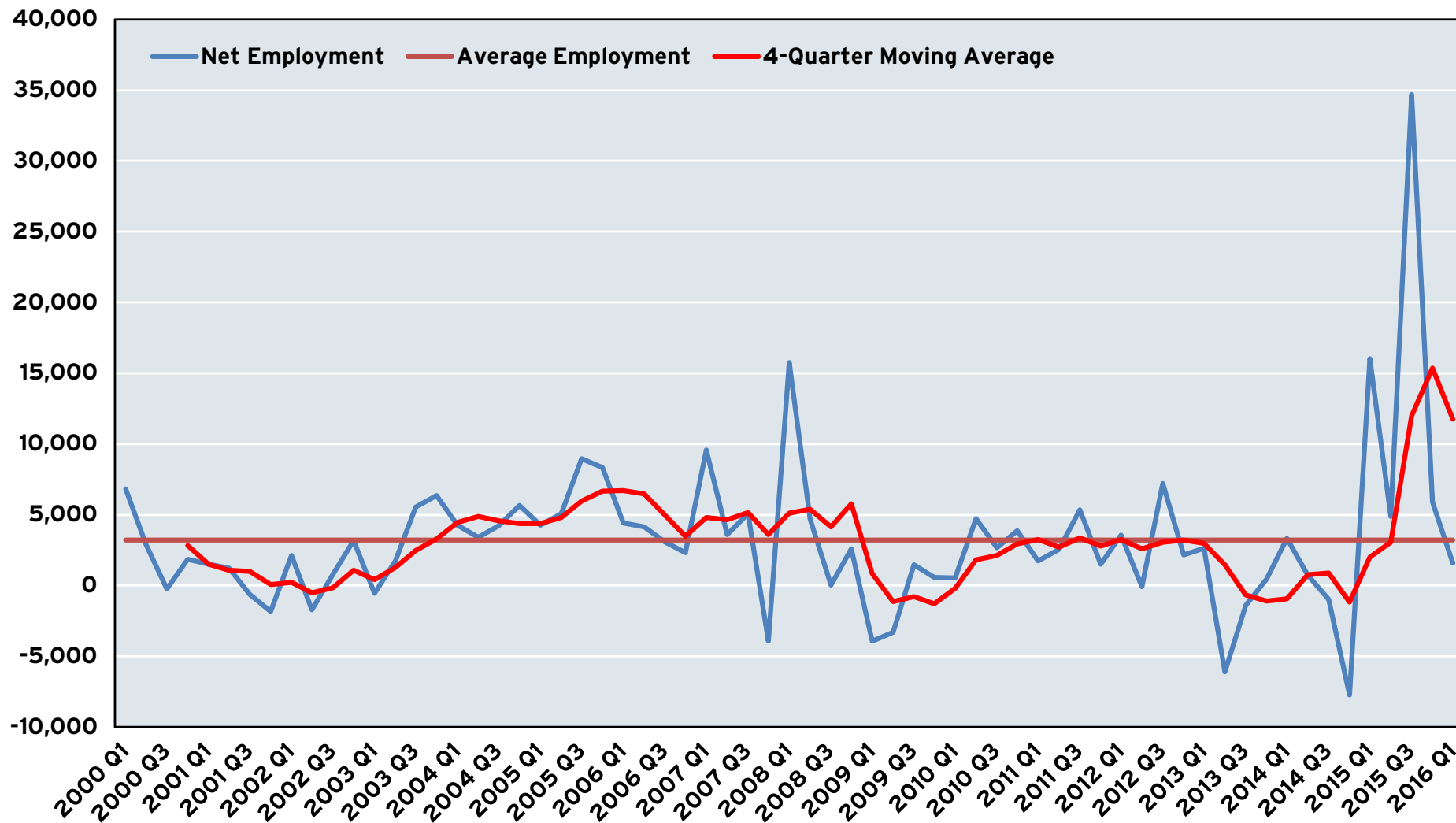
NET ESTABLISHMENT BIRTHS IN VIRGINIA, 2000 Q1 TO 2016 Q1



Source: Bureau of Labor Statistics, Business Employment Dynamics, 2017

GRAPH 18

NET JOB CREATION IN VIRGINIA BY NET ESTABLISHMENT BIRTHS, 2000 Q1 TO 2016 Q1



Source: Bureau of Labor Statistics, Business Employment Dynamics, 2017

Small And Young Firms And Job Creation

We now move to examining whether small firms and young firms contribute to job creation in the Commonwealth. We would like the reader to note that our conversation is shifting from establishments to firms as we are beholden to the available data. While the two are invariably linked (many establishments are single-unit firms), there are fewer firms than establishments. Young firms are the ones responsible for the lion's share of job creation.¹⁹ Let's take one more dive into the numbers.

An establishment is a firm operating in a single physical location. A firm may have more than one establishment. A local "mom and pop" store with only one location is a single-establishment firm. A firm with multiple locations is a multi-establishment firm.

Undoubtedly, net job creation by small firms and net job creation by young firms are linked. Younger firms tend to be small, but there are also many small firms that are "long in the tooth." Firm size is a function of efficient scale, so equating startups with all small firms can be misleading.

It is interesting to examine net job data by firm age rather than firm size. We classify young firms as those in existence for 0 to 10 years and mature firms as those 11-plus years in existence. Graph 19 shows that net job creation is highly cyclical in mature firms, much more so than young firms. In fact, mature firms generate far more net jobs during periods of economic expansion. However, young firm net job growth is far more stable across the business cycle. Mature firms generated more net jobs in the early stages of recovery from the Great Recession, but the pace of job creation by younger firms now exceeds that of more established firms.

How does our pace of young firm job creation compare to the nation? Graph 20 shows that net job creation in both Virginia and the United

States is highly cyclical, increasing during periods of economic expansion and declining during periods of slow growth or contraction. **Since the Great Recession, however, the paths of the United States and Virginia have diverged. Since 2012, younger firms in the United States have created net jobs at a higher rate than Virginia. Simply put, Virginia is falling behind in the creation of new jobs by young firms. The sluggishness of the Virginia economy may be due, in part, to the lack of dynamism in small firm creation.**

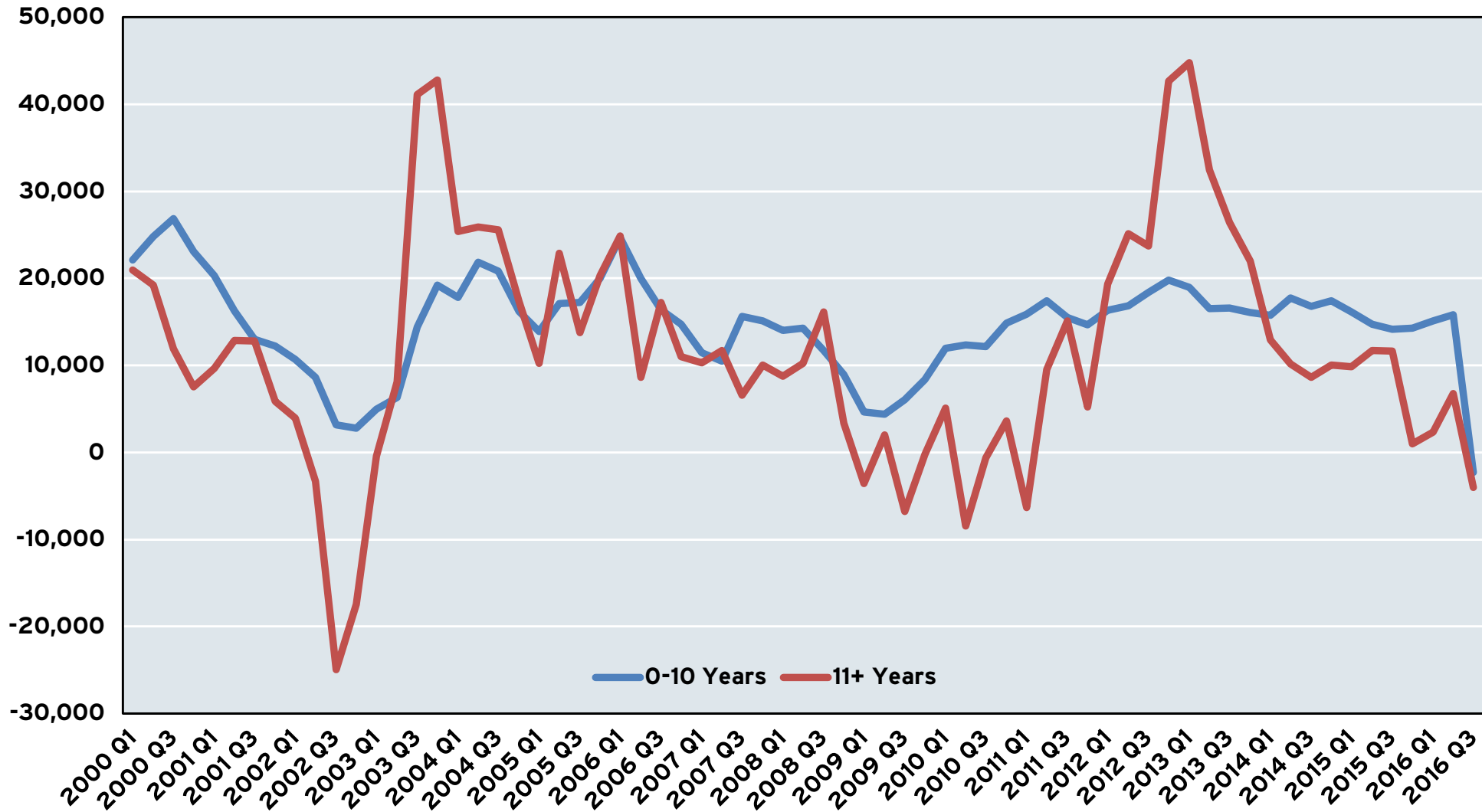
Is Virginia succeeding at fostering an improved climate for startups? The data suggest that the Commonwealth is creating an environment where individuals are creating more new firms than at any previous point in the century. Yet, the focus on firm creation may be misleading. The death rate of young firms in Virginia is too high and thus net job creation for smaller and younger firms in Virginia lags that of the nation.

We urge public officials and economic development agencies to focus on the sustainability of small and young firms. It is not enough to proclaim the number of startups as a measure of success. Reducing the mortality rate of these firms is important to retain the newly created jobs and create economic growth in the Commonwealth. Redirecting scarce public funds from grandiose development efforts to services that sustain small firms is a step in the right direction.

¹⁹ Haltiwanger, et al. "Who Creates Jobs? Small versus Large versus Young," *The Review of Economics and Statistics*, May 2013.

GRAPH 19

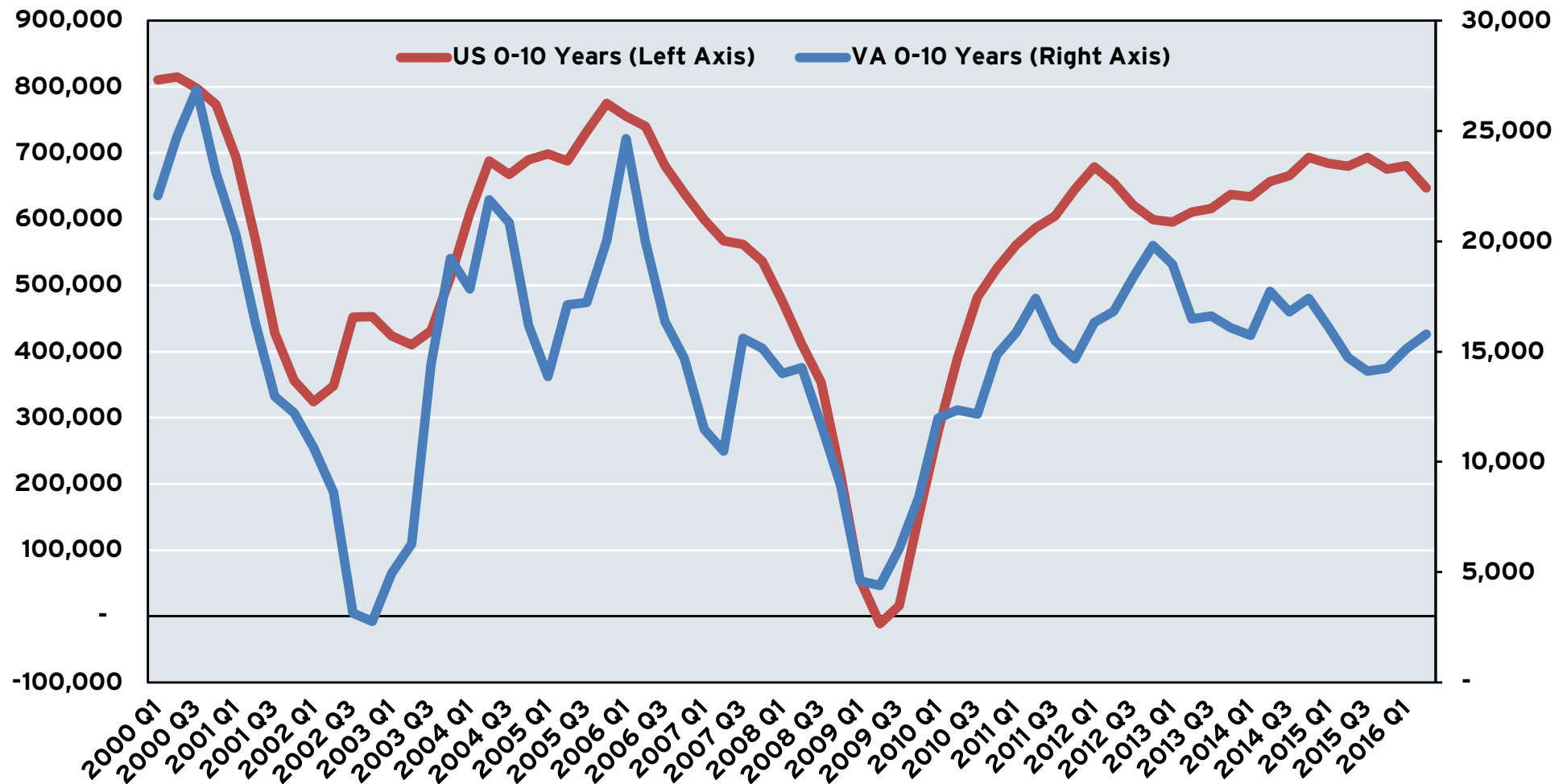
YOUNG FIRM NET JOB CREATION IN VIRGINIA, 2000 Q1 TO 2016 Q3:
4-QUARTER MOVING AVERAGE



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators

GRAPH 20

**YOUNG FIRM NET JOB CREATION IN VIRGINIA AND THE UNITED STATES,
2000 Q1 TO 2016 Q2: 4-QUARTER MOVING AVERAGE**



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators

Looking Ahead

In the next year or two, the only undisputed way to supercharge the Virginia economy is for the federal government to end budget sequestration. Federal spending continues to be the most important determinant of the Commonwealth's economic destiny.

In the long run, however, Virginia does control most of its own economic fate. We can make intelligent, focused decisions that improve the business climate in the Commonwealth. Improved economic infrastructure, an enhanced K-12 education system and targeted investments in “ed-med” research and development are among the most attractive strategies available to us.

However, as we have just seen, providing the environment and resources that will encourage the creation of a larger number of new firms also deserves increased attention and support, as do efforts toward helping these budding firms survive. Alas, this would constitute a new way of looking at things for most cities and counties, which have tended to focus their economic development dollars on financial grants to selected private entrepreneurs who construct showpiece hotels, arenas and other visible structures that elected officials proudly point to as immediate achievements. This is despite abundant empirical evidence that the economic rate of return on such public investments often is impressively low, or even negative.

Supporting new entrants into the marketplace represents a much less expensive and likely more productive use of public funds. While this is a long-run approach to economic development, it is more likely to lead to economic diversification.

The same can be said of investments in infrastructure, K-12 education and “ed-med” activities. They constitute long-term strategies. Witness California, North Carolina and Texas in this regard. Each of these states now is enjoying impressive growth based substantially upon investments made decades previously.

Do Virginia and its cities and counties have the vision and patience to pursue this path? We shall see.



VIRGINIA'S METROS: RUNNING TO STAND STILL?

*We can do lots better, but we're going to have
to get used to doing it together.*

– A Virginia legislator



The Virginia economy we see is the product of the economic activities of citizens and businesses across the Commonwealth. However, each metropolitan area is distinctive and therefore does not always perform in sync with Virginia as a whole. Nevertheless, from an economic standpoint, the state is the sum of its regional parts, however different from each other they may be. Hence, understanding the economic performance of specific metropolitan areas can provide us with insight into the challenge of generating consistent, broad-based economic growth across the entire Commonwealth.

Unfortunately, measuring economic vitality at the metropolitan area level (MSA) often can be a perplexing task. As we have noted in previous State of the Commonwealth reports, the Bureau of Economic Analysis (BEA) generates the national, state and MSA gross domestic product (GDP) estimates that we and nearly all other analysts use. A problem is that the BEA's GDP estimates for states and regions have long lag times. Even though we are nearly through 2017, the BEA's current advance estimates for MSAs only include economic activity through 2016.

This is not the only challenge. The BEA's MSA estimates are updated annually and often those updates produce significantly revised, almost head-scratching estimates. For Virginia's MSAs, these revisions can change economic growth from negative to positive. This is one of the reasons why we caution Virginians from drawing conclusions based on BEA data alone.

BEA estimates provide us with only one glimpse of an economic picture that may be much more complicated. These estimates should be used only as one piece of information.

With these caveats in mind, Table 1 presents real (inflation-adjusted) GDP growth rates for Virginia's metropolitan areas between 2010 and 2016. **In 2016, Virginia continued to struggle to produce economic growth across all its metropolitan regions. The Commonwealth's largest economic region, Northern Virginia, grew at a tepid pace. Only one region, Richmond, stood out in terms of economic performance. Blacksburg, Harrisonburg, Hampton Roads, Staunton and Winchester each recorded significant contractions in 2016. Charlottesville, Lynchburg and Roanoke contracted as well, though only moderately.**

Virginia grew only 0.6 percent in 2016, so the poor regional numbers are not entirely surprising.

Unfortunately, even if we do take a perspective longer than a single year, things do not improve. While the United States' real GDP growth rate between 2010 and 2016 was 2.1 percent, only Richmond approached the national average. Three regions – Harrisonburg, Lynchburg and Staunton – contracted over the period and real GDP growth was anemic in the remaining metro areas. Another startling fact is that Richmond was the only metro area in Virginia to post positive GDP growth annually since 2010.

TABLE 1

REAL GROSS DOMESTIC PRODUCT GROWTH RATES, 2010-2016

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2010-2016 CAGR ¹ |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-----------------------------|
| United States | 2.5% | 1.6% | 2.2% | 1.7% | 2.6% | 2.9% | 1.5% | 2.1% |
| Virginia | 2.4% | 0.7% | 0.6% | 0.0% | 0.1% | 2.4% | 0.6% | 0.7% |
| Blacksburg | 1.2% | 1.4% | 7.6% | -1.0% | 2.2% | 2.8% | -2.1% | 1.8% |
| Charlottesville | 3.3% | 1.0% | 2.7% | -0.5% | 3.8% | 4.5% | -0.7% | 1.8% |
| Hampton Roads | -1.6% | 0.3% | -0.8% | -0.6% | -0.3% | 2.8% | -1.1% | 0.0% |
| Harrisonburg | 3.6% | -0.9% | -0.9% | -0.4% | -0.3% | 2.5% | -2.2% | -0.4% |
| Lynchburg | 2.5% | -1.8% | -0.9% | 0.0% | -0.2% | -0.3% | -0.5% | -0.6% |
| Northern Virginia | 3.8% | 1.5% | 0.5% | -0.8% | 0.5% | 2.4% | 1.1% | 1.2% |
| Richmond | 1.7% | 0.8% | 2.8% | 1.3% | 1.0% | 3.7% | 2.6% | 2.0% |
| Roanoke | -1.5% | -1.0% | 0.4% | -0.1% | -0.2% | 2.3% | -0.4% | 0.1% |
| Staunton | 3.0% | -6.8% | -7.6% | 1.7% | 0.8% | 3.0% | -2.1% | -1.9% |
| Winchester | 3.0% | 1.9% | 1.4% | 1.4% | 1.0% | 2.9% | -1.6% | 1.2% |

Sources: U.S. Bureau of Economic Analysis and the Old Dominion University Center for Economic Analysis and Policy

¹ The Compound Annual Growth Rate (CAGR) is a measure of growth over multiple periods. While annual averages ignore the effects of compounding and can overestimate growth, CAGR captures the one consistent rate at which real GDP would have grown over time.

Making sense of the MSA-level GDP data can be akin to taking a Rorschach test. The picture may be blurry and different individuals will draw very different conclusions. Because this is true, we introduce three additional measures to help us analyze the performance of each metropolitan area: (1) employment, (2) wages and (3) taxable sales. A major advantage of these additional variables is that each is measured more frequently. Employment and taxable sales are measured monthly, while wages are measured quarterly. Hence, they provide a better “real-time” picture of the economic conditions in a metro area. Also, one can argue that these three measures are more tightly linked to metro area economic health than GDP.

Metropolitan Area Employment

Examining metropolitan area jobs and employment data provides conflicting signals about the state of the metro economies. While the employment data suggest robust growth in 2017, jobs data indicate a slowdown.² To understand these different signals, let’s first discuss how employment and jobs are measured.

Employment data come from a monthly survey of households and are more sensitive to recent changes in employment, as individuals tend to disclose immediately whether they are employed or not. Employment data also capture whether individuals are self-employed or engaged in short-term employment, such as driving for Uber, working through Thumbtack or laboring in other parts of the emerging “gig economy.”

On the other hand, the jobs data come from a monthly survey of employers. Unlike the employment data (which count people), the jobs data count, as one might suspect, jobs. Therefore, if a person holds multiple jobs with multiple employers, each employer will report the

individual is working for them. The jobs data can thus significantly outpace the employment data if people are working multiple jobs.³ Both measures provide valuable information about the state of the economy. Thus, while the terms “jobs” and “employment” might mean the same thing to a noneconomist, to the Bureau of Labor Statistics (and therefore to economists) they have different meanings. They are measured in different ways and thus yield different information.

Are more people employed in Virginia’s metropolitan areas? Graph 1 shows that employment growth was higher in each of the Commonwealth’s metro areas between January and August 2017 when compared to 2016. This is good news, as more people are reporting that they are gainfully employed compared to the previous year.

In Virginia’s three largest metropolitan areas, employment growth was highest in Northern Virginia, followed by Richmond and then Hampton Roads. Hampton Roads experienced positive employment growth in 2016 despite the BEA reporting that real GDP growth in that region was negative. As a consequence, it should not surprise us if the BEA revises its GDP estimate for Hampton Roads upward (more on this later).

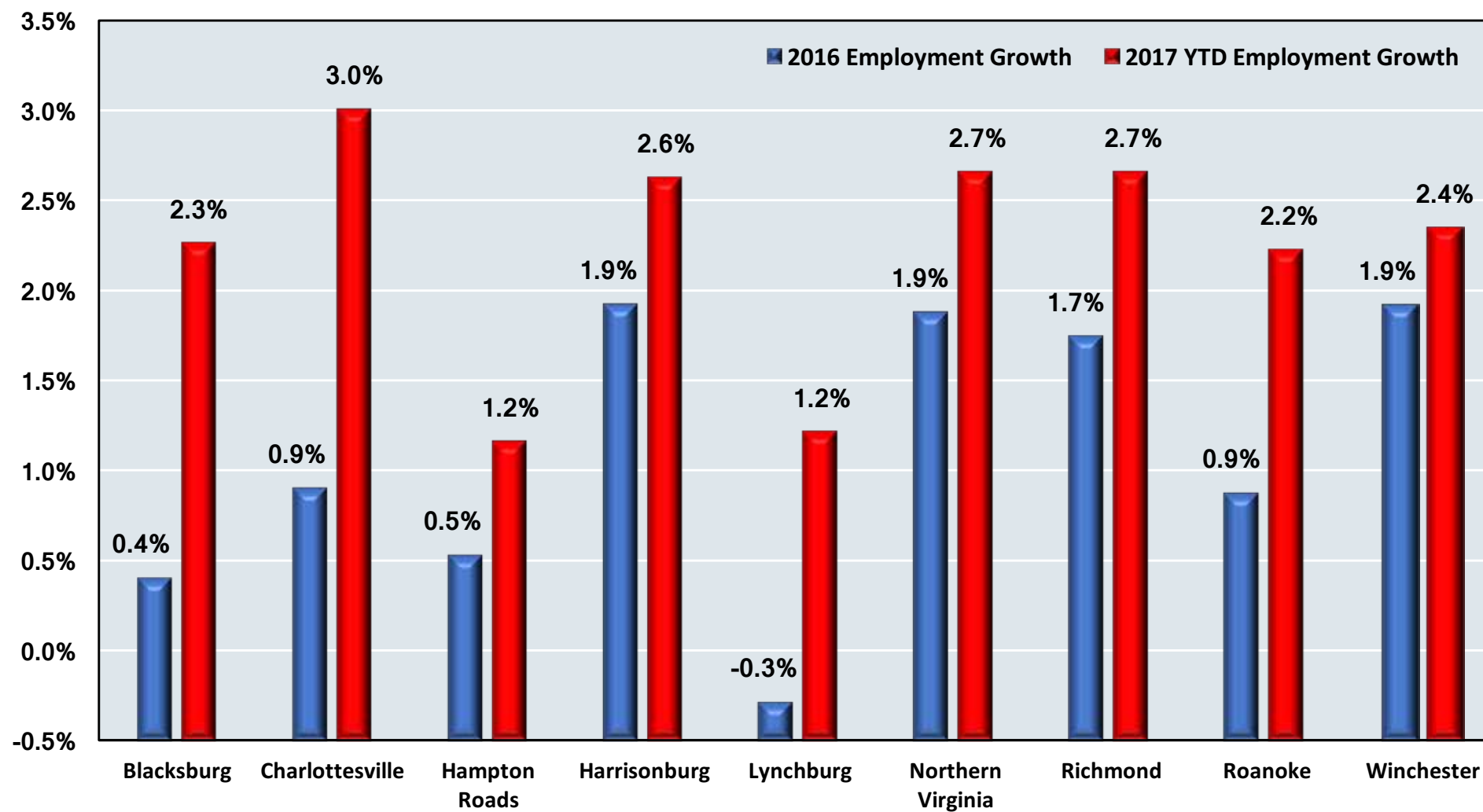
Other metropolitan areas showed strong employment growth, with Charlottesville reporting 3 percent growth in 2017. The positive, and in some cases strong, employment growth suggests that economic activity picked up in 2017 inside several of Virginia’s metro areas.

² The Current Population Survey (CPS) covers households and asks whether an individual was employed or actively seeking employment. The Current Employment Survey (CES) covers businesses and reports the number of jobs. An individual who is employed with two jobs would be counted once in the CPS and twice in the CES. The U.S. Census Bureau conducts the CPS for the Bureau of Labor Statistics. The BLS conducts the CES.

³ This occurs because the jobs data would count each of the jobs separately, while the employment data would only count the same individual once.

GRAPH 1

EMPLOYMENT GROWTH IN VIRGINIA'S METROPOLITAN AREAS, 2016 AND 2017 YEAR-TO-DATE



Source: Bureau of Labor Statistics, Current Population Survey (not seasonally adjusted data), 2017

Are there more jobs in Virginia's metropolitan areas? The data here paint a different picture. Recall from chapter 1 that job growth for the Commonwealth slowed from 2 percent in 2015 to 1.6 percent in 2016 to 1.5 percent in 2017. Graph 2 compares 2016 metro area job growth with 2017 year-to-date job growth.

Year-to-date job growth in 2017 has slowed in each of Virginia's large metropolitan areas when compared to 2016. While Northern Virginia and Richmond continued to add jobs, albeit at a slower pace, job growth stalled in Hampton Roads. **Because these three metro areas contain 73 percent of all jobs in the Commonwealth, slow job growth regionally translated into slow growth for the state.**

There is, however, some good news. Job growth in 2017 for Harrisonburg has remained well above the state average even though it slowed from 2016. Blacksburg, Charlottesville, Lynchburg and Roanoke all saw signs of stronger job growth in 2017.

Graph 3 presents employment and jobs growth in Virginia's metro areas between January and September 2017. One can immediately see that depending on one source of labor market data could result in strikingly different conclusions. In Hampton Roads, for example, employment is up 1.2 percent, yet the number of jobs is stagnant.

The Richmond and Northern Virginia metropolitan areas also exhibit large differences in the employment and jobs data. Employment in Northern Virginia increased by 2.7 percent while jobs grew by 1.7 percent. Richmond also reported employment growth of 2.7 percent, and jobs there increased 1.6 percent. Charlottesville saw robust employment and job growth with 3 percent and 2.3 percent, respectively. In Harrisonburg, the employment and job growth were the same at 2.6 percent. We can conclude that jobs and employment are growing in many of Virginia's metro areas but nevertheless one should avoid relying solely upon one measure of the labor market over another.

Nevertheless, can we explain why there are such large differences between jobs and employment data in several of Virginia's metropolitan areas?

One possible explanation is the impact of the Great Recession. In the immediate aftermath of the Great Recession, the number of part-time jobs soared as individuals took on additional jobs. Nationally, part-time employment peaked in January 2010 at 20.1 percent of all jobs. The ratio of part-time to full-time jobs in September 2017 was 17.9 percent, still above the average ratio prior to the recession.⁴ In areas with a larger federal government presence (Hampton Roads and Northern Virginia), sequestration also undoubtedly played a role. As these two metro economies continue to recover, it seems likely that they have experienced slower part-time job growth relative to full-time jobs, and this has caused their job growth to lag their employment growth.

Another explanation is the emergence of the contract or "gig economy." More Americans are employed as contractors than at any previous point in history, with some estimates suggesting that more than 40 percent of American workers have contingent jobs.⁵ Rapidly increasing levels of self-employment (whether by choice or not) would be reflected in the employment data, but not in the jobs data. Large urban metro areas are common locations for freelancers (though there is some recent evidence that more freelancers are choosing smaller metros and rural areas). Driving for Uber or selling your wares on Etsy are two illustrations of these phenomena. Neither of these "gigs" would show up in the jobs data, but the individuals occupying these jobs would consider themselves employed and answer when surveyed.

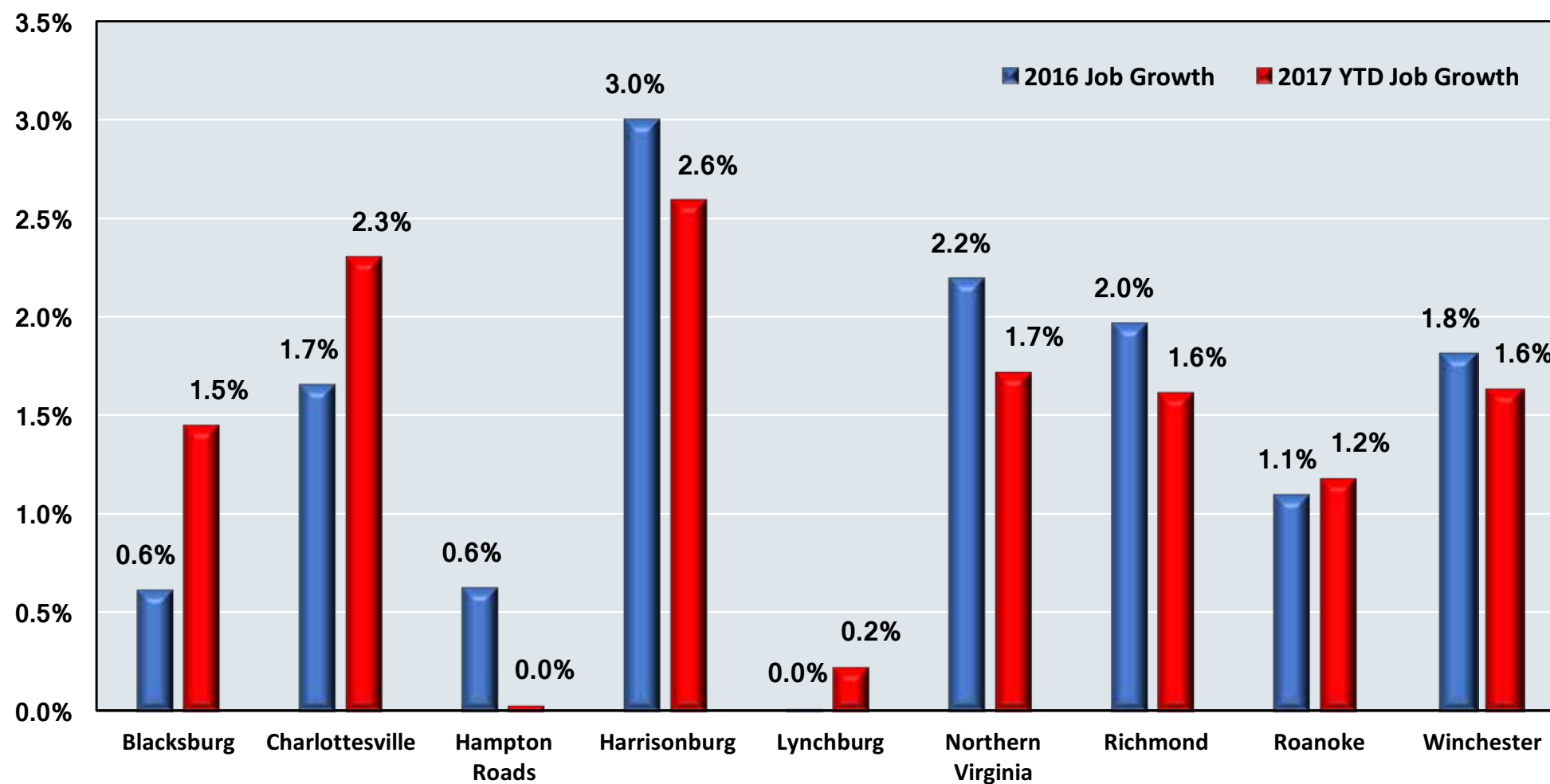
As contract work and freelance work become more prevalent, accurately measuring employment and jobs will become more complicated. These discordant measures do not mean that we should throw our hands up and quit in frustration. If anything, the data illustrate the need to dive deeper into the numbers to understand the underpinnings of economic activity in Virginia. Relying on one measure may be useful for Twitter or cable television, but not for economic policy.

⁴ Bureau of Labor Statistics, Table A-9, Employment Situation Summary.

⁵ Elaine Pofeldt, "Shocker: 40% of workers now have contingent jobs, says U.S. Government," *Forbes* (May 25, 2015).

GRAPH 2

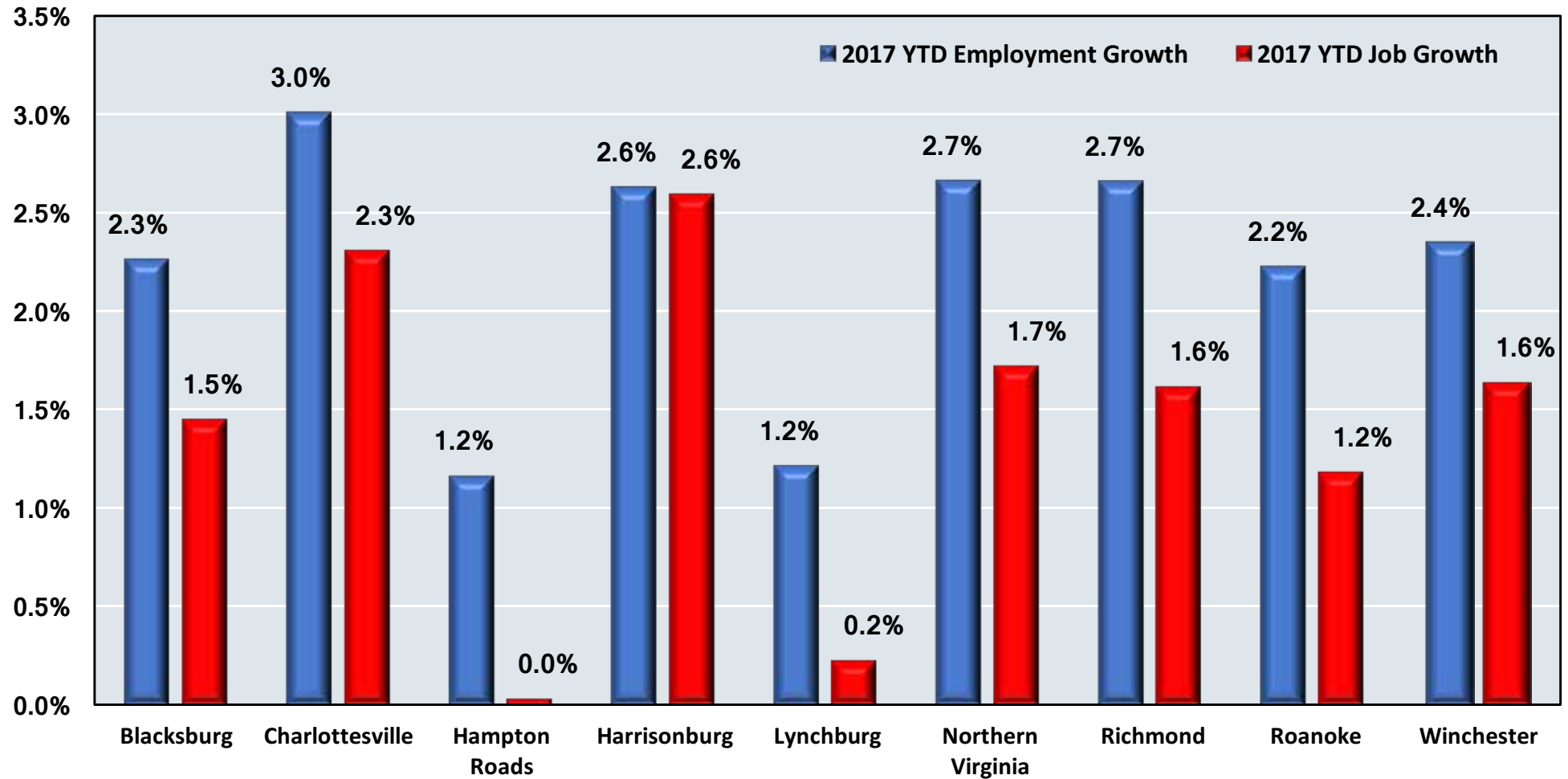
YEAR-TO-DATE JOB GROWTH, 2016 AND 2017



Source: Bureau of Labor Statistics, Current Employment Survey (not seasonally adjusted data), 2017

GRAPH 3

VIRGINIA'S METRO AREAS: EMPLOYMENT AND JOBS, 2017 (YEAR TO DATE)



Sources: Bureau of Labor Statistics, Current Population Survey and Current Employment Survey, 2017, and the Old Dominion University Center for Economic Analysis and Policy

Metro Area Wages

Politicians of all stripes promise that their policies will improve wages. However, one problem is that wage growth can be measured in different ways, and wages, much like metropolitan area GDP, are measured with a considerable time lag. 2017 is almost over and the most recent metropolitan area wage data are for the first quarter of 2017. We present three measures of wage growth for Virginia's metro areas in Table 2. As with our discussion in the previous section, we dive into the numbers to see if any consistent pattern emerges across Virginia's metro areas.

Column 1 presents what is commonly referred to as year-over-year wage growth. This measure represents an annual growth rate calculated by comparing wages in the first quarter of 2017 with wages in the first

quarter of 2016. Charlottesville stands out with double-digit wage growth. The other metros also experienced wage growth according to this measure.

Column 2 displays the growth in wages from 2015 to 2016, while column 3 presents the growth rate in wages between 2012 and 2016. The picture here is one of slowing wage growth across most metro areas. Wages, for example, grew only 0.6 percent in 2016 in Hampton Roads, slower than the growth rate from 2012 to 2016. Only Lynchburg and Winchester maintained average wage growth in 2016. The story that emerges is that wages grew faster earlier in the decade and growth slowed in 2016.

The conclusions from this data set are mixed and perhaps a bit confusing. The data in column 1 suggest a labor market that is tightening and wages that are growing above the recent rate, but the other columns suggest something different. Cautious optimism is the order of the day, given the rather disappointing numbers for some metro areas in 2017 Q1 and the slower rate of wage growth in 2016 when compared to 2012-2016.

To further confound, there is an alternative source of wage data – the survey of employers – that provides yet another scenario. These data paint a solid picture of wage growth in the metropolitan areas through August 2017 (see Graph 4). All metro areas, except Blacksburg, experienced wage growth through August 2017 when compared to the same period from 2016. Moreover, the growth rates in all but three metro areas (Blacksburg, Roanoke and Northern Virginia) outpaced existing inflation. The other six metro areas of the state saw real wage growth during the first eight months of 2017. Good news indeed.

How you interpret these data depends on where you stand. A pessimist might argue that wage growth is not only slowing, but has turned negative in some metropolitan areas. An optimist would point to double-digit wage growth and trumpet the progress Virginia is making. The truth lies somewhere in the middle. Wages appear to be rising in most of the metro areas, but wage growth slowed in 2017, which is alarming as wages should be rising as we approach full employment. If wage growth is slowing, this is indeed disconcerting, as many metros are approaching what typically has been considered full employment.

TABLE 2

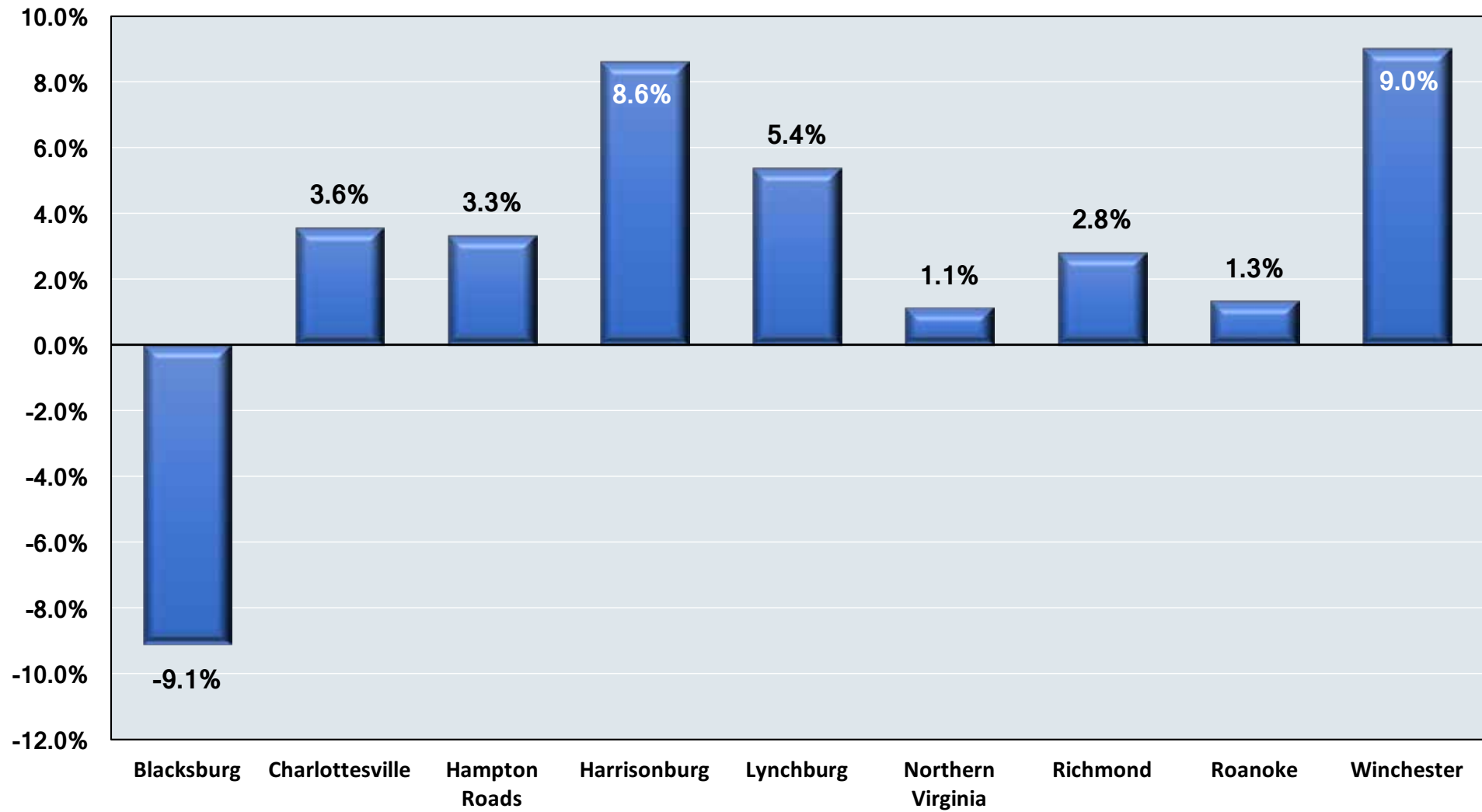
WAGE GROWTH IN VIRGINIA'S METROPOLITAN AREAS

| | (1) | (2) | (3) |
|-------------------|---------------------------|---------------------|----------------|
| | 2016 Q1-2017 Q1 Growth | 2015-2016 Growth | 2012-2016 CAGR |
| United States | 6.6% | 1.3% | 2.1% |
| Virginia | 6.8% | 1.1% | 1.5% |
| Blacksburg | 6.3% | 1.2% | 1.4% |
| Charlottesville | 11.6% | 0.6% | 2.3% |
| Hampton Roads | 5.3% | 0.6% | 1.8% |
| Harrisonburg | 4.5% | 0.0% | 1.5% |
| Lynchburg | 7.3% | 1.8% | 1.8% |
| Northern Virginia | 6.6% | 0.8% | 1.2% |
| Richmond | 8.6% | 1.0% | 1.6% |
| Roanoke | 4.5% | 1.6% | 2.0% |
| Winchester | 7.5% | 1.8% | 1.8% |

Sources: Bureau of Labor Statistics and Virginia Employment Commission, QCEW Wages. CAGR is the Compound Annual Growth Rate.

GRAPH 4

METRO AREA WAGE GROWTH IN 2017 (YEAR TO DATE)



Source: Bureau of Labor Statistics

Taxable Sales

Another viable measure of economic activity is taxable sales. More than two-thirds of the total spending in the U.S. economy comes in the form of consumption. Taxable sales capture most of this activity, though it is important to note that not all conventional sales are taxable and numerous economic exchanges go unrecorded.

Consumption levels in Virginia have increased each year since 2009. Residents of the Commonwealth consumed approximately \$42,000 of goods and services per person in 2016, up from \$40,000 in 2015.⁶ Unfortunately, we do not have recent data on consumption spending within Virginia's metropolitan areas. Instead, we have data on taxable sales within metros, but as noted, this measure will miss some forms of consumption spending.

Taxable sales growth predictably rises during business cycle expansions and falls during business cycle contractions. However, taxable sales growth at the metropolitan level usually leads the business cycle, and this makes it a valuable leading indicator of future economic conditions.

At the time of publication, data were only available for the metropolitan areas through August 2017. Taxable sales data are highly seasonal and so it is important when comparing across time to ensure that the time periods are consistent. Table 3 presents taxable sales growth rates for data through August of each year. Columns 1 through 4 show growth rates for 2014-2017 through August of each year. Column 5 shows the average annual growth rate for the prerecession period 2004-2007 as a comparison.

Two things stand out. First, taxable sales growth between 2014 and 2017 was positive, suggesting a growing economy. Second, though taxable sales grew each year between 2014 and 2017, the growth rates lagged the average annual taxable sales growth during the prerecession period. So, the metropolitan areas experienced taxable sales growth the past four years, but that growth was slower than they experienced prior to the recession.

⁶ Bureau of Economic Analysis, Personal Consumption Expenditures by States, October 2017.

| TABLE 3 | | | | | |
|---|-------|------|------|------|--------------------------------|
| METRO AREA AVERAGE ANNUAL GROWTH IN TAXABLE SALES (THROUGH AUGUST OF EACH YEAR) | | | | | |
| | (1) | (2) | (3) | (4) | (5) |
| | 2014 | 2015 | 2016 | 2017 | 2004-2007 Average Annual |
| Blacksburg | 4.2% | 1.6% | 1.9% | 0.9% | 5.9% |
| Charlottesville | 6.4% | 3.2% | 6.3% | 2.6% | 5.4% |
| Harrisonburg | 4.6% | 2.3% | 5.7% | 4.1% | 4.7% |
| Lynchburg | 6.6% | 1.8% | 3.2% | 1.3% | 6.4% |
| Richmond | 5.5% | 4.4% | 0.9% | 4.5% | 6.4% |
| Roanoke | 4.7% | 3.0% | 0.2% | 1.9% | 4.4% |
| Hampton Roads | 1.8% | 3.7% | 1.8% | 2.9% | 5.1% |
| Winchester | 3.9% | 2.5% | 5.2% | 4.6% | 4.0% |
| Northern Virginia | -0.5% | 4.6% | 2.6% | 2.9% | 4.1% |
| Source: Center for Economic and Policy Studies, Weldon Cooper Center for Public Service, University of Virginia | | | | | |

Is GO Virginia Going Anywhere?

Lawmakers and other regional leaders have had a marked change in heart with regard to economic development policy in recent years. They have been taking a much more aggressive and proactive stance. Virginia's lawmakers approved two new initiatives during the 2016-17 General Assembly session – GO Virginia and the Virginia Research Investment Fund (VRIF). Both programs aim to create high-wage jobs in industries of strength. Another goal of both programs is collaboration. The lack of regional cooperation and collaboration is frequently mentioned as an inhibiting factor to growth.

GO Virginia incentivizes collaboration by providing state funds for initiatives that have at least two separate localities participating. The program organizes Virginia into nine regions, each with a regional council that scores proposals submitted from business, academia, localities and regional organizations. The first round of proposals was not yet submitted at the time of publication, so we are unable to comment on benefits that may accrue to the regions. However, the process of regional collaboration is likely to stimulate beneficial economic activity with or without funding through GO Virginia.

VRIF is designed to stimulate commercialization of research conducted at universities. The program provides state funds and bonding authority to renovate, purchase or build research labs and research equipment. The final budget bill in the 2017 General Assembly session designated \$4 million for VRIF in FY 2017 and \$8 million in FY 2018 as well as \$29 million in bonding authority.⁷ A small amount for the task at hand.

We believe that both programs address a critical weakness in the Virginia economy at present – innovation. Innovation is at the core of modern-day economic development. Innovation enhances productivity, creates value and increases wages. Innovation is not just about entrepreneurship, however. It is important for existing companies as well. It helps those

firms increase productivity and tap new markets. Innovation is also at the core of establishment creation. We are hopeful but must await further funding and the results of actual projects to make firm statements about the benefits of GO Virginia and VRIF.



⁷ State Council of Higher Education for Virginia, Virginia Research Investment Fund, <http://www.schev.edu/index/institutional/grants/va-research-investment-fund>.

Concluding Remarks

If one were to view the regional metropolitan economies as the pistons that drive the economic growth engine in Virginia, then it is clear from an economic perspective that not all the pistons are firing at the same time and with the same strength. The problem is that we cannot point to one malady for the stops and starts of the regional economies in the Commonwealth. Sequestration and the caps on defense spending have hindered federal spending in Hampton Roads. The declining importance of mining and forestry has hurt southwestern Virginia. The textile industry has almost disappeared in Southside Virginia. Meanwhile, Richmond has accelerated modestly ahead of the Commonwealth's other regions.

There are strands of good news even amid the ping-pong and stalling of the economic engine. Both employment and jobs are up in most of the metropolitan areas, though their growth appears to have tapered off in 2017. Wage data suggest a tightening labor market and this could boost wages throughout 2017. Taxable sales continue to grow in most metro areas but, as with the labor market, growth appears to be declining in 2017. Not only is economic growth in Virginia overall stuck in neutral, there is also a distinct possibility that many metro areas may be shifting into reverse.

GO Virginia is a step in the right direction, but a small step. The amount of funding for GO Virginia is too small relative to the task at hand. Further, rather than spending scarce public funds upon low-likelihood attempts to woo large employers, or heavily subsidizing private development, or investing in large, economically unproductive showcase projects, Virginia should invest in projects that spur innovation and in the commercialization of products and technology coming from its federal laboratories and universities. Attention also should be devoted to providing incentives that might bolster the Commonwealth's below-the-national-average rate of new business formation.

If GO Virginia truly spurs regional cooperation, then the Commonwealth should seriously consider large increases in GO Virginia funding to encourage regional economic growth. This assumes that the regional projects put forward have sound economic bases rather than representing predictable grabs at what some may view as a proverbial Christmas tree full of presents.

What does the future hold? Virginia's regional economies, except for Richmond, appear to be decelerating. While increased federal spending may be on the horizon, political uncertainty may push such increases well into 2018. We believe that concerted political action to alleviate burdensome regulations, promote long-term investment and improve regional cooperation is needed now. This is hardly a new recommendation, but one we need to repeat until the Commonwealth climbs out of its current rut.



THE SCOURGE OF OPIOIDS IN THE COMMONWEALTH

So consider the amount of standard daily doses of opioids consumed in Japan. And then double it. And then double it again. And then double it again. And then double it again. And then double it a fifth time. That would make Japan No. 2 in the world, behind the United States.

– Kevin Humphreys, Professor of Psychiatry and Behavioral Sciences, Stanford University, 2017



Opioids are the leading cause of accidental death in the United States and the Commonwealth of Virginia. Over the past decade, opioid overdose deaths in Virginia surged past gun- and vehicular-related deaths. Regardless of whether the number of deaths and hospitalizations is called a “crisis,” “epidemic” or “emergency,” one point is clear: Virginians are dying in ever-greater numbers from opioids.

Opioids are painkillers and have many legitimate uses. When prescribed and supervised by physicians, opioids enable individuals to reduce or avoid pain in medical situations that range from arthritis to surgery. When used inappropriately or abused, however, opioids can result in hospitalization and, in many cases, death.

One episode of opioid abuse gained widespread attention last year. It featured a heart-rending and unforgettable picture (see next page) that quickly went viral – a confused child in the back seat of an automobile staring at two unconscious adults in the front seat, each with mouth agape. Published in September 2016 and reprinted here, this photo opened the eyes of many Americans to what has become a raging epidemic – opioid abuse and addiction.

The picture, taken after the driver was pulled over for driving erratically, illustrates the destructive nature of opioid abuse. The child’s grandmother, who was in the front passenger seat, had been granted custody only six weeks before, as the mother was no longer able to take care of him. Police quickly administered

Narcan to counter the effects of the apparent opioid overdose and then arrested the grandmother and driver for child endangerment. The young child now lives with distant relatives in another state. We don't know what opioids were used nor do we know if the adults in the car have found the right treatment to combat their addiction. What is becoming clear, however, is that opioids are wreaking havoc on communities, and children are especially vulnerable.

Unfortunately, events like this are increasingly common and raise troubling questions. Were the opioids prescribed or obtained illegally? What happens to children whose parents or guardians fall into the grips of opioid abuse or addiction? What are the financial consequences of illegal opioid use?

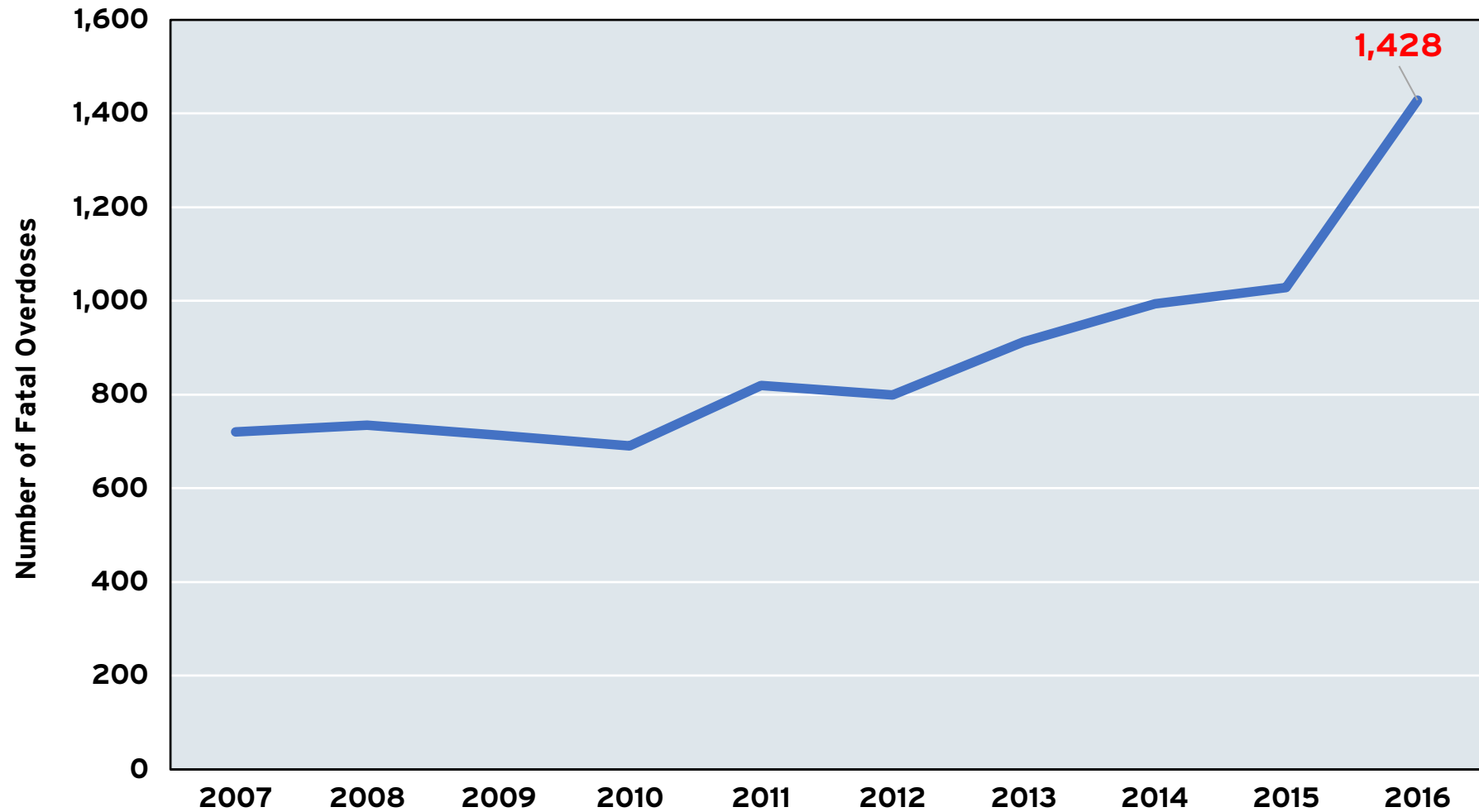
Often, there are more questions than answers when opioid addiction is the subject of discussion. One thing that we do know for certain, however, is that the misuse and abuse of opioids have led to a crisis that has left a destructive imprint on the Commonwealth and the United States. Graph 1 illustrates the disheartening growth in drug overdose deaths in Virginia. The number of opioid-related deaths has almost doubled over the last decade. Opioid overdose was not only the leading cause of accidental death in Virginia in 2016, but also responsible for an increasing number of emergency calls and hospitalizations. In this chapter, we outline this crisis and suggest a plan of action.



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

GRAPH 1

**ESTIMATED NUMBER OF DEATHS DUE TO ALL DRUG OVERDOSES:
VIRGINIA, 2007-2016**



Source: Virginia Department of Health, Medical Examiner, Forensic Epidemiology, 2017

Opioids: A Primer

Opioids can be natural substances that reduce pain, such as opium or morphine, both of which come from poppy plants. They also can be synthesized from opium and morphine into other forms, such as heroin. Opioids, as well, can be manufactured into a wide variety of legitimate products that either are prescribed by physicians, or can be purchased over the counter.

As is true for common and legitimate drugs, opioids come in five major forms: tablets, capsules, nasal sprays, patches and liquids. The key ingredients 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 U.S. came from Afghanistan in 2013.¹

Synthetic opioids such as oxycodone (OxyContin), hydromorphone (Dilaudid) and hydrocodone (Tussionex) are made by changing the chemical structure of naturally occurring opioids.² The starting point, however, is a naturally occurring opioid such as opium or morphine.

Table 1 reports the most common opioid varieties.

Fentanyl, an opioid that is 50 to 100 times more potent than morphine, offers dramatic pain relief but is also causing an increasing number of opioid deaths in the Commonwealth and the United States. 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 injection. Used recreationally and abusively, however, it can be fatal.

In the summer of 2016, an increasing number of overdoses and deaths appeared related to a derivative of fentanyl, Carfentanil. Carfentanil is typically used to sedate large animals, such as elephants and rhinoceroses. **While fentanyl is up to 100 times more potent than morphine, Carfentanil is up to 10,000 times more potent than morphine.** What

makes this drug so dangerous is that it typically appears as a dry, white powder, is hard to detect when mixed with other illicit drugs, and even a very small dose (0.6 milligrams) is fatal. **To put this into perspective, the U.S. government only authorized production of 10 grams a year of Carfentanil versus 1,750 kilograms of fentanyl in 2017.**³ From October 2016 to June 2017, Customs and Border Protection seized almost 2 kilograms of the drug, illustrating the stark difference between legal production and illegal importation.⁴

Consistent opioid use, even when prescribed legitimately by a physician, can lead to physical dependence. As dependence increases, individuals may find themselves less willing or able to work and participate in society. Habitual use or abuse of opioids such as heroin and fentanyl may result in unintended death. While the withdrawal from opioids is generally not fatal, there are substantial physical and financial costs involved in the treatment of opioid addiction.

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

¹ "The Drug Addiction Pipeline: Who Supplies Drugs to America?" *The Recovery Village*, <https://www.therecoveryvillage.com/drug-addiction/who-supplies-drugs-america>.

² CAMH: Centre for Addiction and Mental Health. www.camh.ca/en/hospital/health_information/a_z_mental_health_and_addiction_information/oxycotin/Pages/opioids_dyk.aspx.

³ <https://s3.amazonaws.com/public-inspection.federalregister.gov/2016-23988.pdf>.

⁴ Angela M. Hill, "This elephant tranquilizer is killing people, but no one knows how many," Sept. 25, 2017, <http://www.wkbw.com/longform/getting-a-fix-carfentanil-is-an-elusive-killer>.

Opioid-Related Fatalities

Deaths attributable to opioid misuse or abuse have been rising rapidly. **In Virginia, 1,138 people died from an opioid overdose in 2016, a 40 percent rise from the 811 opioid overdose deaths in 2015.**⁵

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).

By no means is this solely a Virginia problem. Nationwide, opioids were directly responsible for the deaths of 53,000 people in 2016, almost 15,000 more than in 2015.⁶ Graph 2 illustrates the rapid growth in overdose deaths involving opioids between 2000 and 2016 in the United States. Fentanyl-related deaths in the U.S. grew by 540 percent over the past three years and are expected to increase again in 2017.

Physicians wrote more than 320 million opioid prescriptions to over 61 million Americans in 2016.⁷ 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 received from a physician.⁸ 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 surgeon general of the United States estimated that more

than 27 million Americans used illegal drugs or violated the terms of their prescription in 2015.⁹ These are grim statistics.

An International Perspective

There is no way to sugarcoat the numbers. Fueled primarily by overly permissive opioid prescription practices, Americans use far more opioids than the citizens of any other nation. Graph 3 compares the average daily consumption of opioids per 1 million inhabitants from 2013 to 2015 for a selection of developed countries. **Americans consumed 138 percent more opioids than Canadians, 394 percent more than residents of the United Kingdom, 631 percent more than Italians and 3,890 percent more than residents of Japan.**

Why does the United States (and Canada) stand out for legitimate opioid usage? Compared to other industrialized nations, there appears to be a lower regulatory burden with regards to the prescription and dispensation of prescription opioids for medical issues. Nonmedical uses of opioids are also significantly higher. Finally, opioid prescriptions are typically covered by health insurance, unlike many other industrialized countries.¹⁰

While opioid use is merely problematic in countries such as Sweden and Spain, it is reaching catastrophic proportions in the United States. Clearly, the dynamics of opioid possession and use are different in the United States than in other developing countries. We stand out like in the proverbial sore thumb.

5 Virginia Department of Health, Medical Examiner, Forensic Epidemiology, <http://www.vdh.virginia.gov/medical-examiner/forensic-epidemiology>.

6 Centers for Disease Control, National Center for Health Statistics, https://www.cdc.gov/nchs/data/health_policy/monthly-drug-overdose-death-estimates.pdf.

7 CDC National Center for Injury Prevention and Control. 2017. Annual Surveillance Report of Drug-Related Risks and Outcomes, United States. <https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf>.

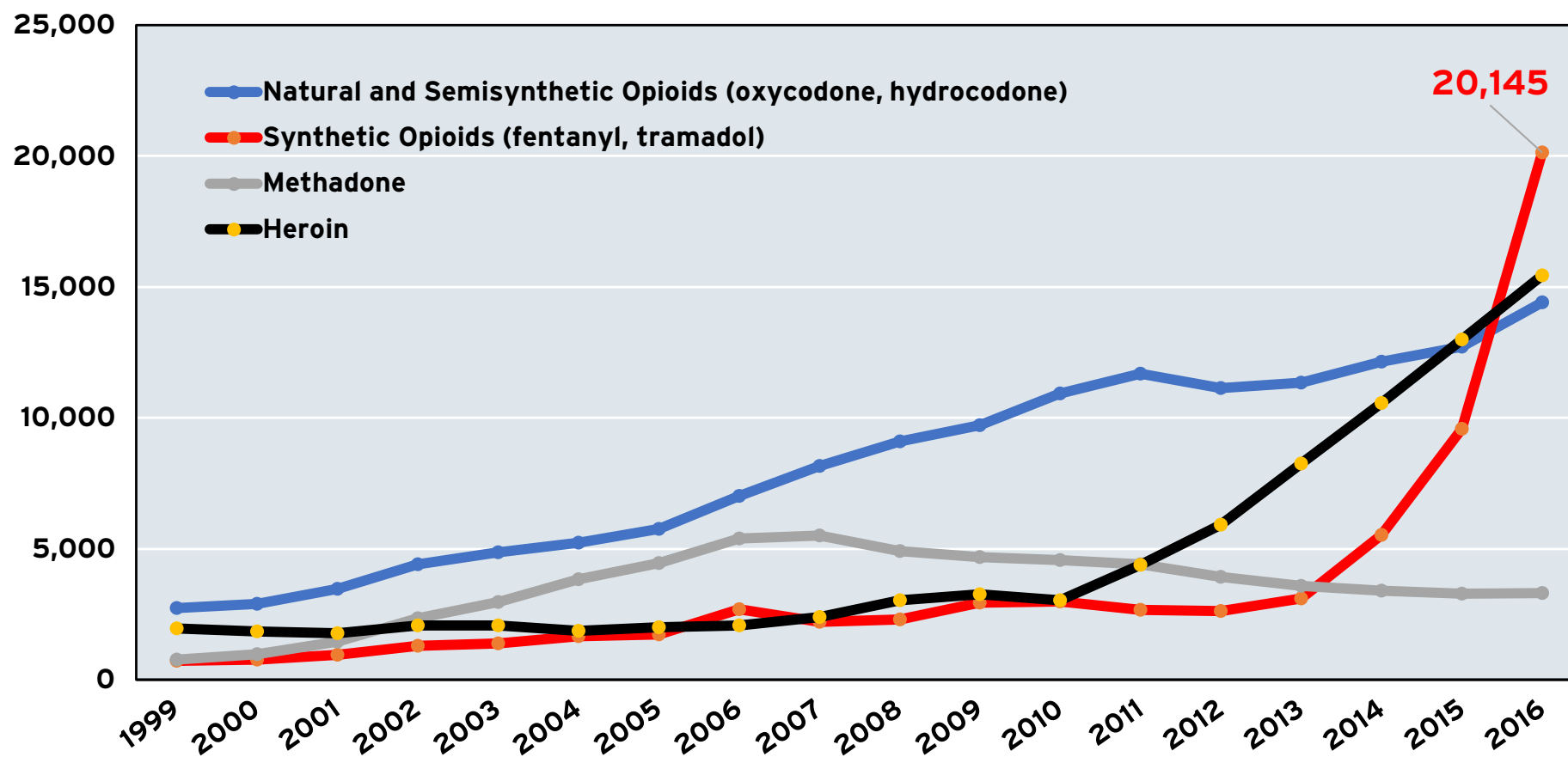
8 Marc Siegel, "Opioids Shouldn't Be a Doctor's First Resort," *The Wall Street Journal* (March 28, 2017).

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

10 Benedikt Fischer, Annette Keates, Gerhard Buhringer, Jens Reimer and Jurgen Rehm. 2014. Non-medical use of prescription opioids and prescription opioid-related harms: why so markedly higher in North American compared to the rest of the world? *Society for the Study of Addiction* (109) 2, 177-181.

GRAPH 2

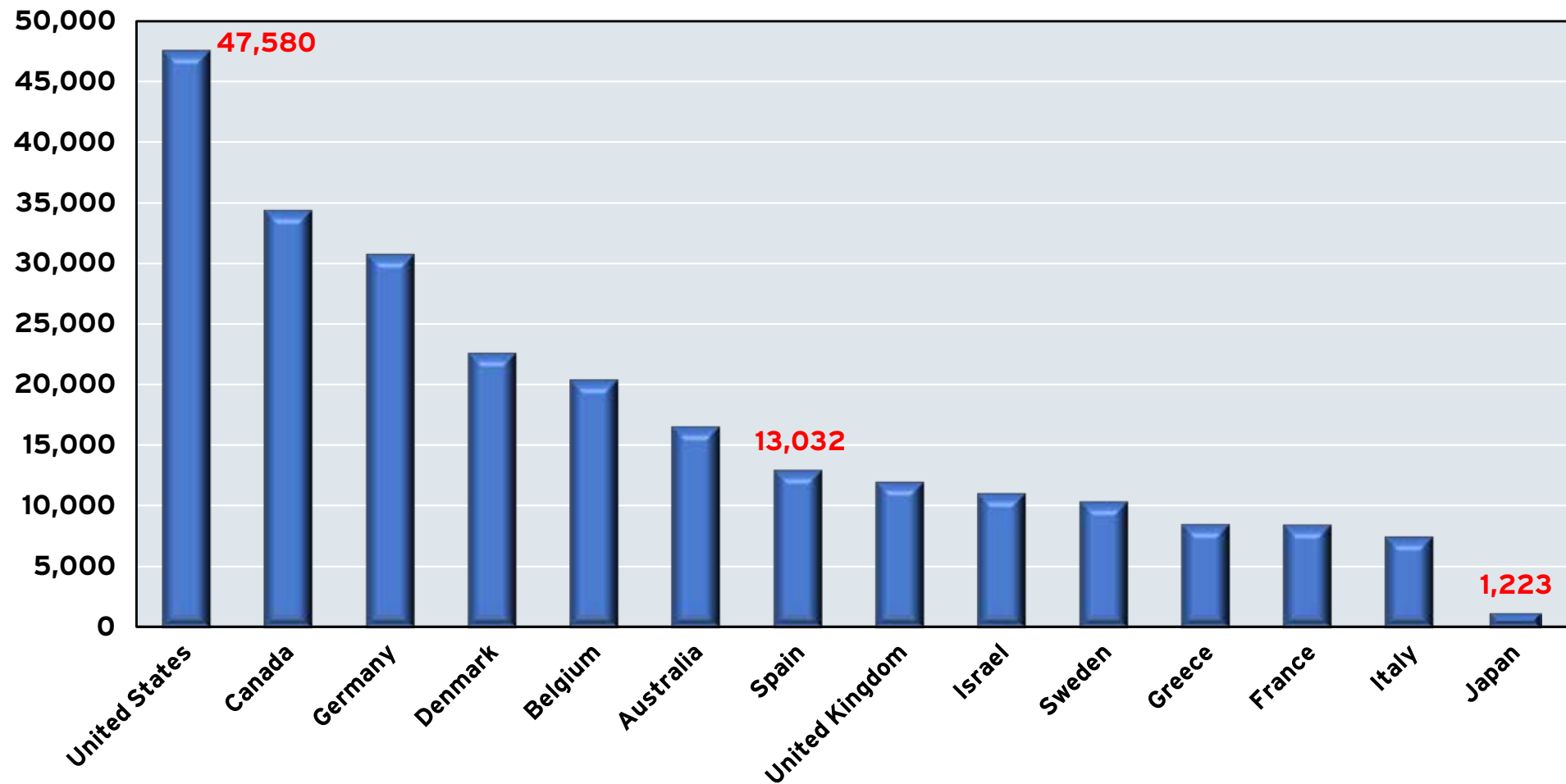
OPIOID OVERDOSE DEATHS IN THE UNITED STATES, 1999-2016



Source: Centers for Disease Control, National Center for Health Statistics, 2017



GRAPH 3

**ESTIMATED AVERAGE CONSUMPTION OF OPIOIDS, 2013-2015:
DAILY DOSES PER 1 MILLION INHABITANTS**

Source: International Narcotics Control Board, Narcotic Drugs 2016

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. 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 anything 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.¹¹

Opioids are sold legally under many different brand names, including those just listed. 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.

In many American cities, identifiable illicit street markets exist where opioids are bought and sold.¹² The flourishing nature of these illegal opioid street markets means not only that they constitute a major source of income for some participants, but also that they are responsible for individuals abandoning searches for legitimate employment. Frequently, one of the sources of the illegal opioid supply is multiple prescriptions that individuals have obtained from multiple physicians.

On occasion, unethical doctors operate “pill mills”¹³ and write substantial numbers of prescriptions either to addicts or to middlemen who sell them to drug dealers. Illegal opioids also are purchased on the “dark web”

with cryptocurrencies such as bitcoin, which renders the transactions financially untraceable. Recent charges against two men in China illustrate the linkages between illicit international production of opioids and the shipment of opioids through Canada for distribution throughout the United States.¹⁴ Ironically, opioids often are shipped inside this country via the U.S. Postal Service.¹⁵

TABLE 2
COMMON STREET AND BRAND NAMES OF OPIOIDS

| Street Names (Nonprescribed and Illegal) | | Brand Names (Prescribed) |
|--|------------------|--------------------------|
| Captain Cody | Goodfella | Fiorinal 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

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_dykc.aspx.

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

13 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.

14 Pete Williams, “Two Chinese nationals charged with selling Fentanyl to U.S. Suppliers,” NBC News (Oct. 17, 2017).

15 <http://www.lexingtoninstitute.org/the-threat-to-public-safety-in-the-u-s-mail/>.

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 sharply increased.

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.¹⁶ 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 severe withdrawal symptoms, including anxiety, sweating, insomnia, agitation, tremors, muscle aches, nausea, vomiting, diarrhea and extreme mental and physical discomfort. These symptoms typically last four to 10 days, although methadone withdrawal may last longer. Generally, opioid withdrawal is not medically dangerous or life threatening, though some symptoms can persist for months.¹⁷

The cure is not worse than the disease in the case of opioids; however, 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.¹⁸ 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. Naloxone (also known as Narcan) is a drug that can be used to treat narcotic overdoses in emergency situations. Since Nov. 21, 2016, when Gov. Terry McAuliffe announced that State Health Commissioner Marissa J. Levine declared the Virginia opioid addiction crisis a Public Health Emergency,¹⁹ naloxone 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 naloxone without a prescription and have it ready when needed.²⁰ While naloxone addresses the results of opioid abuse and not the causes, its greater availability is a positive step forward that undoubtedly will save lives.

A Closer Look At Virginia

Virginia looks reasonably good when compared to other states on drug overdose death rates. Graph 4 presents data describing overall drug overdose death rates for a selection of states in 2016. Virginia's rate is below the national average and below that of neighboring states (not all states reported comparable data).

Graph 5 shows that since 2010, the number of total opioid overdose deaths has more than doubled in Virginia. We need, however, to look deeper into the numbers. Figure 1 presents information on the fatal overdose death rate by locality for 2016. Total opioid overdose deaths are higher in southwestern, northern and coastal Virginia.

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

17 Substance Abuse and Mental Health Service Administration. (2010). Protracted Withdrawal. <https://store.samhsa.gov/shin/content/SMA10-4554/SMA10-4554.pdf>.

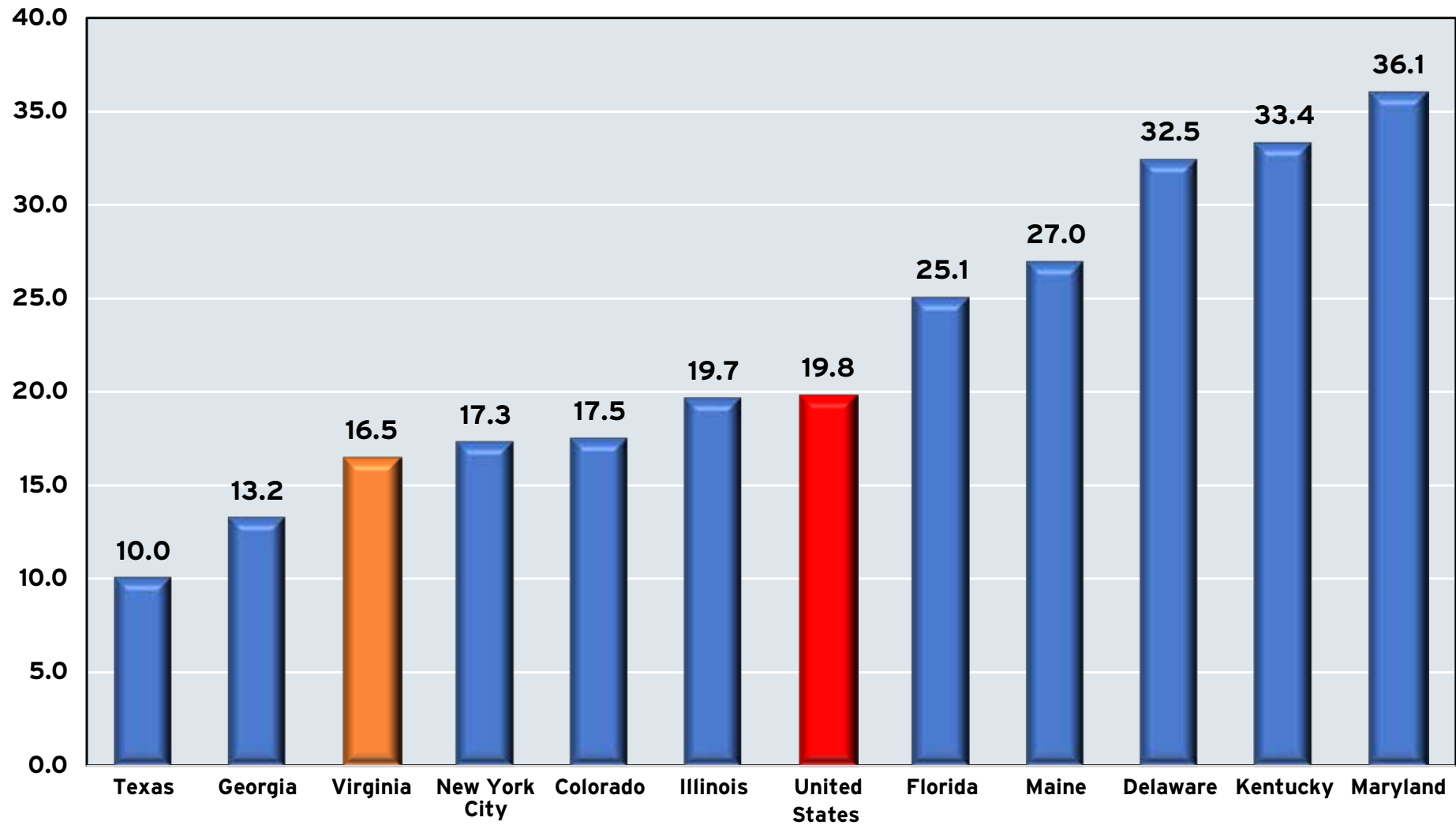
18 Angee Baldini, et al., *A Review of Potential Adverse Effects of Long-Term Opioid Therapy. The Primary Care Companion for CNS Disorders*, 2012, doi:10.4088/pcc.11m01326.

19 Office of the Governor, "Opioid Addiction Crisis Declared a Public Health Emergency in Virginia," Nov. 21, 2016.

20 There is now a standing order in Virginia that serves as a prescription for all Virginians to obtain naloxone. Virginia residents can directly request naloxone from a pharmacy without first having to visit their medical provider. For further information, see the Virginia Department of Behavioral Health and Developmental Services.

GRAPH 4

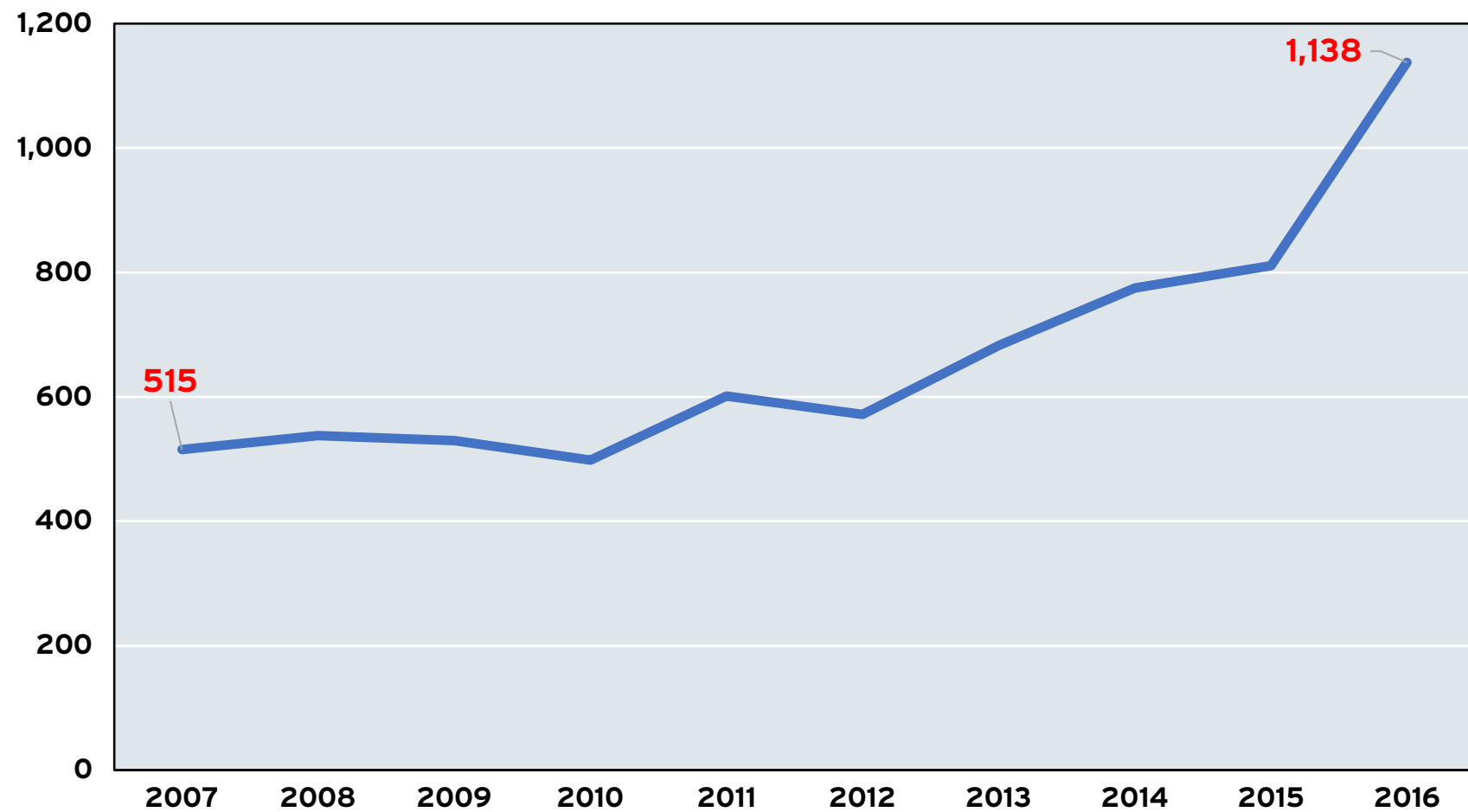
STATE DRUG OVERDOSE DEATH RATES PER 100,000 POPULATION, 2016



Sources: Centers for Disease Control, www.cdc.gov/nchs/data/health_policy/monthly-drug-overdose-death-estimates.pdf for the number of overdose deaths, and the U.S. Census Bureau for population estimates

GRAPH 5

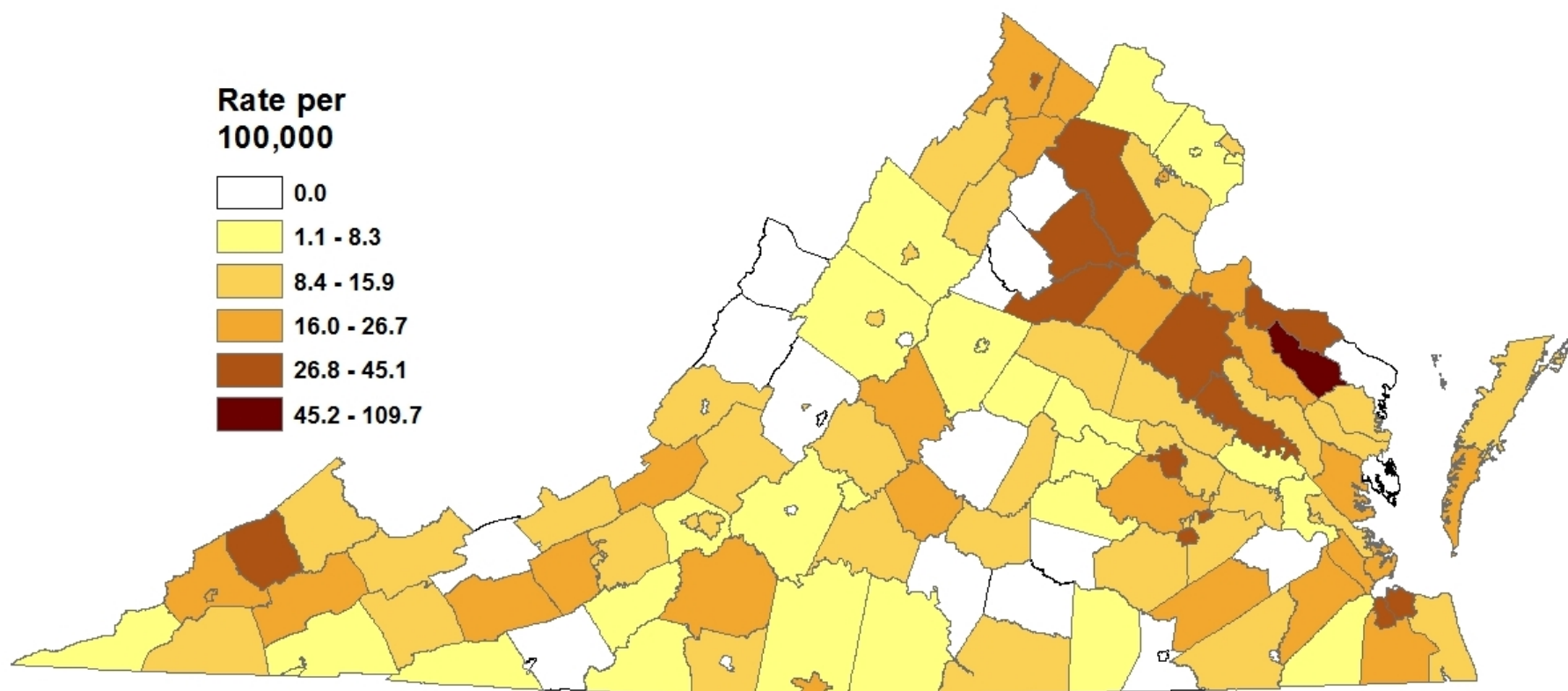
TOTAL OPIOID OVERDOSE DEATHS IN VIRGINIA, 2007-2016



Source: Virginia Department of Health, Medical Examiner, Forensic Epidemiology, 2017

FIGURE 1

RATE OF ALL OPIOID OVERDOSES BY LOCALITY OF OVERDOSE, 2016



Source: Virginia Department of Health, Quarterly Drug Report, 2nd quarter, 2017

The Virginia Department of Health reported that prescription opioid overdoses fell by 6.2 percent from 2011 to 2016.²¹ Figure 2 depicts the fatal prescription overdose death rate by localities in Virginia for 2016. There may be a correlation between the number of individuals on Medicare and Medicaid in Virginia counties and the abuse of prescription opioids. Southwest Virginia appears to bear a disproportionate burden. A recent estimate suggested that, for 2013, over 40 percent of Medicaid spending in southwest Virginia health districts on emergency room and inpatient hospital services was related to opioid abuse.²²

If prescription overdose deaths fell slightly from 2011 to 2016, what is driving the increase in overall opioid overdose deaths? **Much like in the United States, the recent emergence of fentanyl and fentanyl-heroin combinations has led to the startling increase in deaths.**

We first turn to heroin. From 2007 to 2011, heroin overdose deaths in the Commonwealth were relatively stable, even declining sharply in 2010. Since 2010, however, heroin deaths have steadily increased and were often attributed as the primary cause of opioid overdose fatality until the emergence of fentanyl. Since 2007, heroin overdose deaths increased 348 percent, and 31 percent from 2015 to 2016. Figure 3 illustrates that heroin overdoses appear to be concentrated in Northern Virginia, Richmond and Hampton Roads. From an economic perspective, illicit drug markets flourish in more population-dense areas, leading to higher rates of illicit drug overdose in these urban areas.

Graph 7 indicates the sharp rise in fentanyl-related overdose deaths in Virginia and Figure 4 shows the distribution of deaths throughout the Commonwealth. From 2007 to 2012, the number of fentanyl deaths was relatively stable. **Since 2012, however, fentanyl deaths in the Commonwealth have increased by 1,140 percent, including a 176 percent increase from 2015 to 2016. The number of fentanyl deaths is expected to increase in Virginia in 2017.**²³



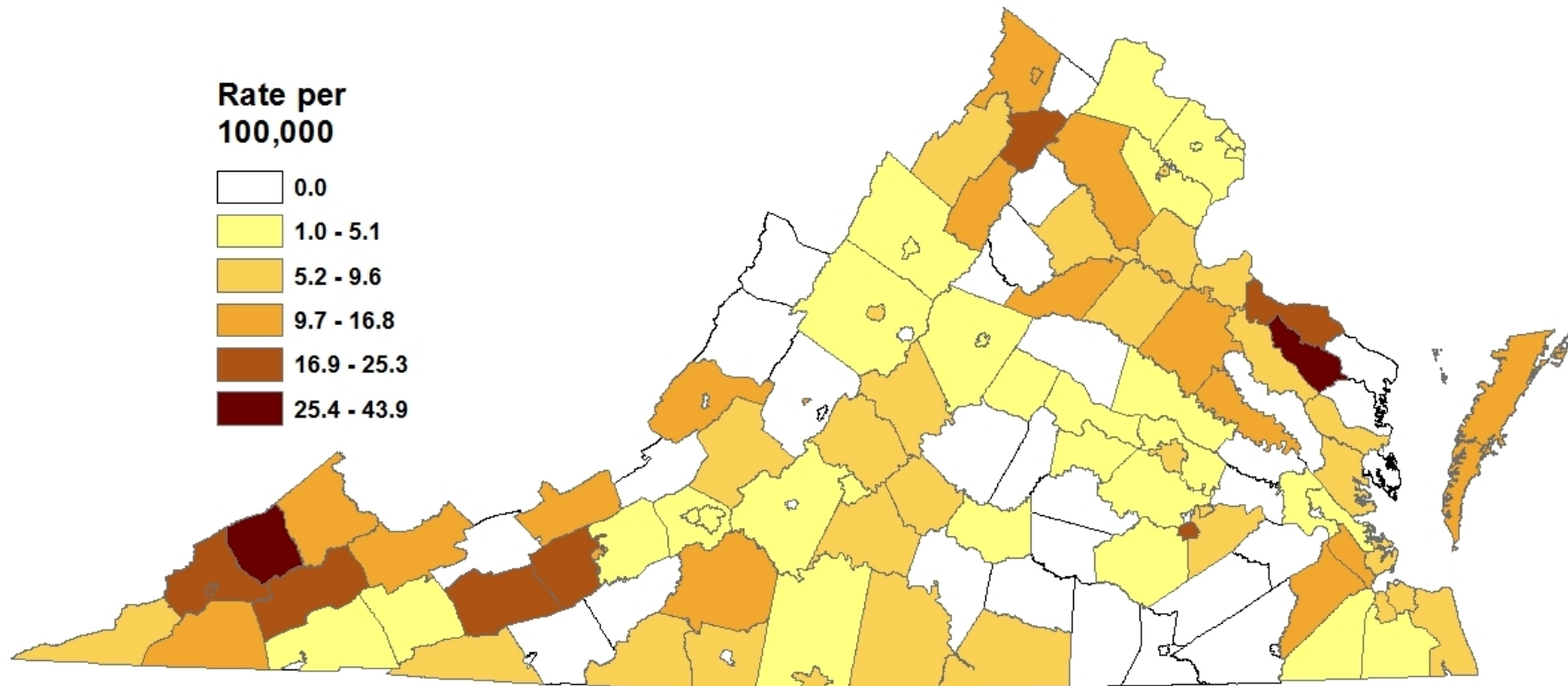
²¹ Virginia Department of Health. Opioid Addiction Indicators.

²² VCU Health, VCU School of Medicine. "The Opioid Crisis Among Virginia Medicaid Beneficiaries" (January 2016).

²³ Virginia Department of Health, Medical Examiner. Fatal Drug Overdose Quarterly Report. October 2017.

FIGURE 2

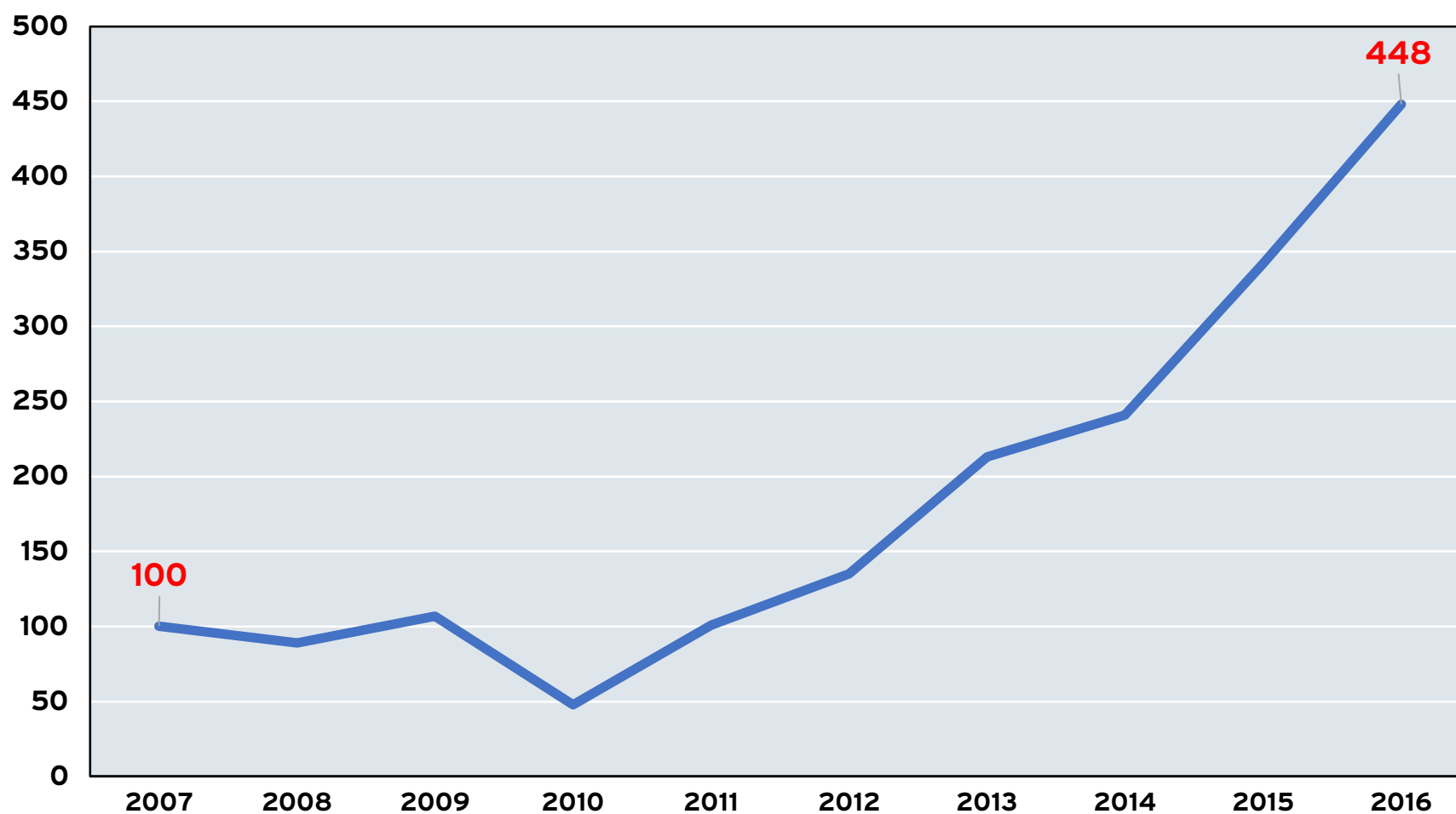
RATE OF FATAL PRESCRIPTION OPIOID (EXCLUDING FENTANYL) OVERDOSES BY LOCALITY OF OVERDOSE, 2016



Source: Virginia Department of Health, Quarterly Drug Report, 2nd quarter, 2017

GRAPH 6

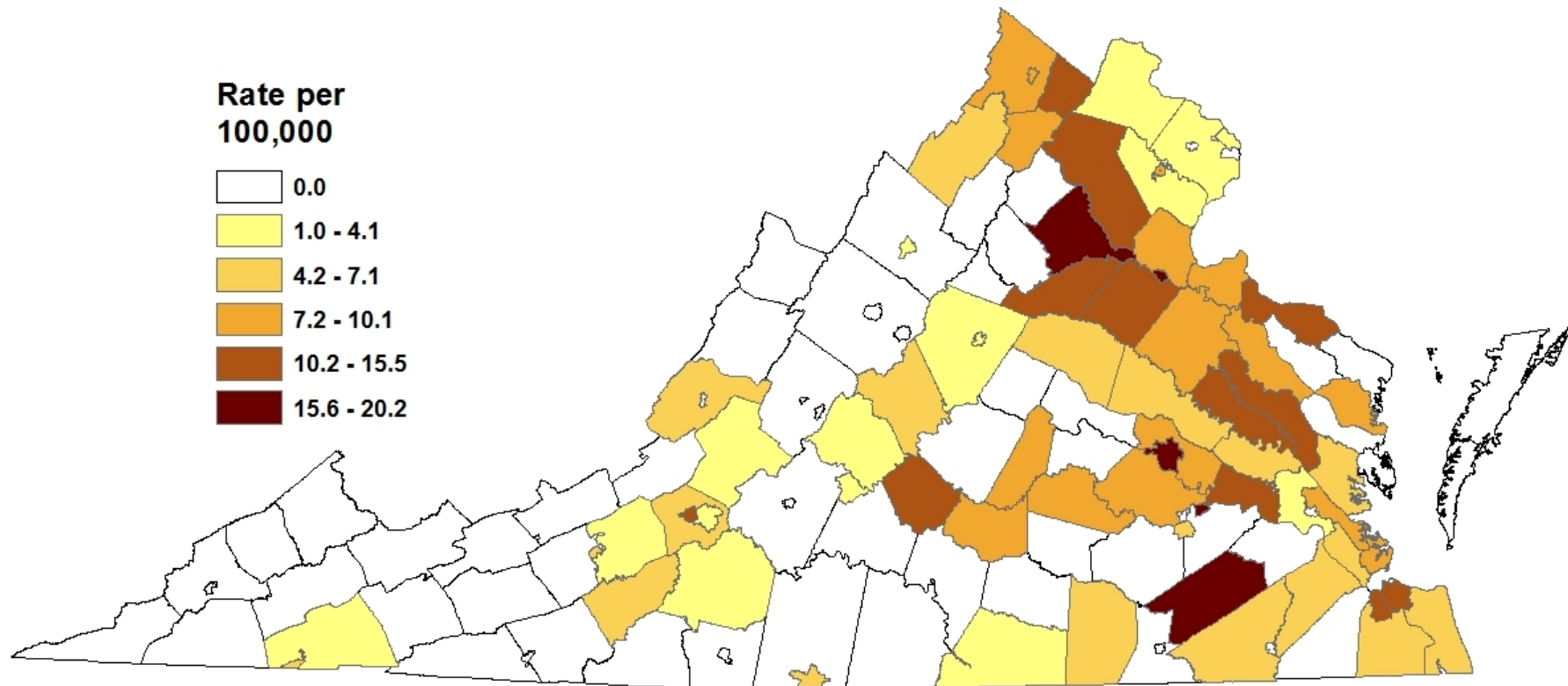
HEROIN OVERDOSE DEATHS IN VIRGINIA, 2007-2016



Source: Virginia Department of Health, Medical Examiner, Forensic Epidemiology, 2017

FIGURE 3

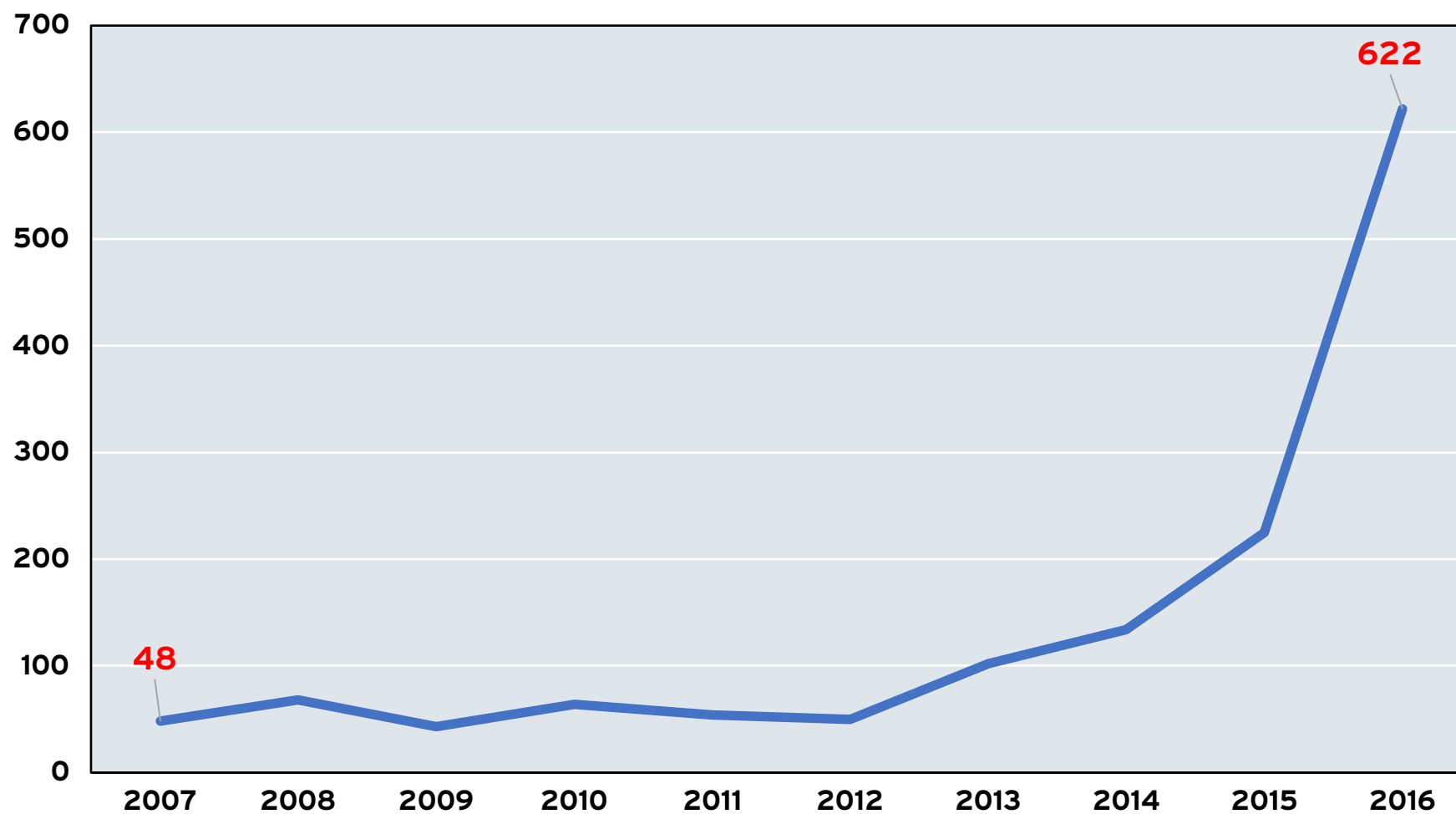
RATE OF FATAL HEROIN OVERDOSES BY LOCALITY OF OVERDOSE, 2016



Source: Virginia Department of Health, Quarterly Drug Report, 2nd quarter, 2017

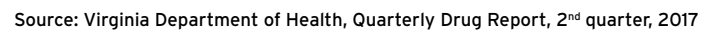
GRAPH 7

FENTANYL-RELATED DEATHS IN VIRGINIA, 2007-2016



Source: Virginia Department of Health, Medical Examiner, Forensic Epidemiology

RATE OF FATAL FENTANYL (RX, ILLICIT AND ANALOG) OVERDOSES BY LOCALITY OF OVERDOSE, 2016



There is more to the story. The cost of opioid addiction and abuse to Virginia is not just measured in the number of overdose deaths. A locality may not have any opioid overdose deaths in a given year but may incur significant expenses responding to nonfatal opioid overdoses. Emergency Medical Services (EMS) units respond to opioid overdose calls and, in many cases, administer naloxone (Narcan) to counter the effects of an overdose. Graph 8 illustrates the 481 percent rise in naloxone administrations by EMS personnel from 2011 to 2016 for Virginia.

The administration of naloxone does not come without cost. While it is a generic drug produced by multiple companies, the price has steadily increased over the last five years.²⁴ The cost of a naloxone kit ranges from \$40 to \$200, depending on the number and strength of doses. Newer auto-injectors of naloxone have also become available, with significantly higher prices, ranging from about \$300 to over \$3,750 per auto-injector. The range of possible methods of injecting naloxone makes it difficult to estimate the cost, but clearly the cost is likely in the hundreds of thousands (if not millions) of dollars, especially if one factors in the cost of the drugs, training, and first responder and emergency personnel time. If one includes the cost to families, the economic consequences associated with the administration of naloxone are stark.

Even more troubling is that newer opioid combinations require more than one dose of naloxone. First responders and families are now recommended to have multiple doses of naloxone on hand and, in the case of fentanyl-related overdoses, to be prepared to administer these doses. The increasing potency of opioids not only increases the likelihood of an unintended overdose, but also the cost to localities and families to save lives.²⁵

Another impact of the opioid crisis is on Emergency Departments (ED) throughout Virginia. An ED is also known as an Accident & Emergency department (A&E), Emergency Room (ER) or Emergency Ward (EW). As the number of overdoses has increased, the number of ED visits for treatment has increased, straining scarce resources. As shown in Table 3, visits for heroin overdoses increased by 75 percent from 2015 to 2016. Non-heroin related overdoses increased by 18 percent for the same period.²⁶

TABLE 3
EMERGENCY DEPARTMENT VISITS FOR HEROIN AND OPIOID OVERDOSE, 2015 AND 2016

| | 2015 | 2016 |
|------------------------|--------------|--------------|
| Heroin Overdose | 800 | 1,401 |
| Opioid Overdose | 7,534 | 8,710 |

Source: Virginia Department of Health, Opioid Addiction Indicators, 2017

"I could feel his pulse coming back slowly, and then it jumped. I've seen firsthand what a miracle this stuff is. I've seen people wake up that I didn't think would wake up. I took a class to learn how to use it, and the class was only half an hour. Half an hour to save someone's life. I think it's very important." - Bob DeTriquet, director of Male Programs at The McShin Foundation in Richmond, on the ease of the administration of naloxone. ("Free classes on administering lifesaving drug: 'I could feel his pulse come back slowly,' " WTVR, July 20, 2017)

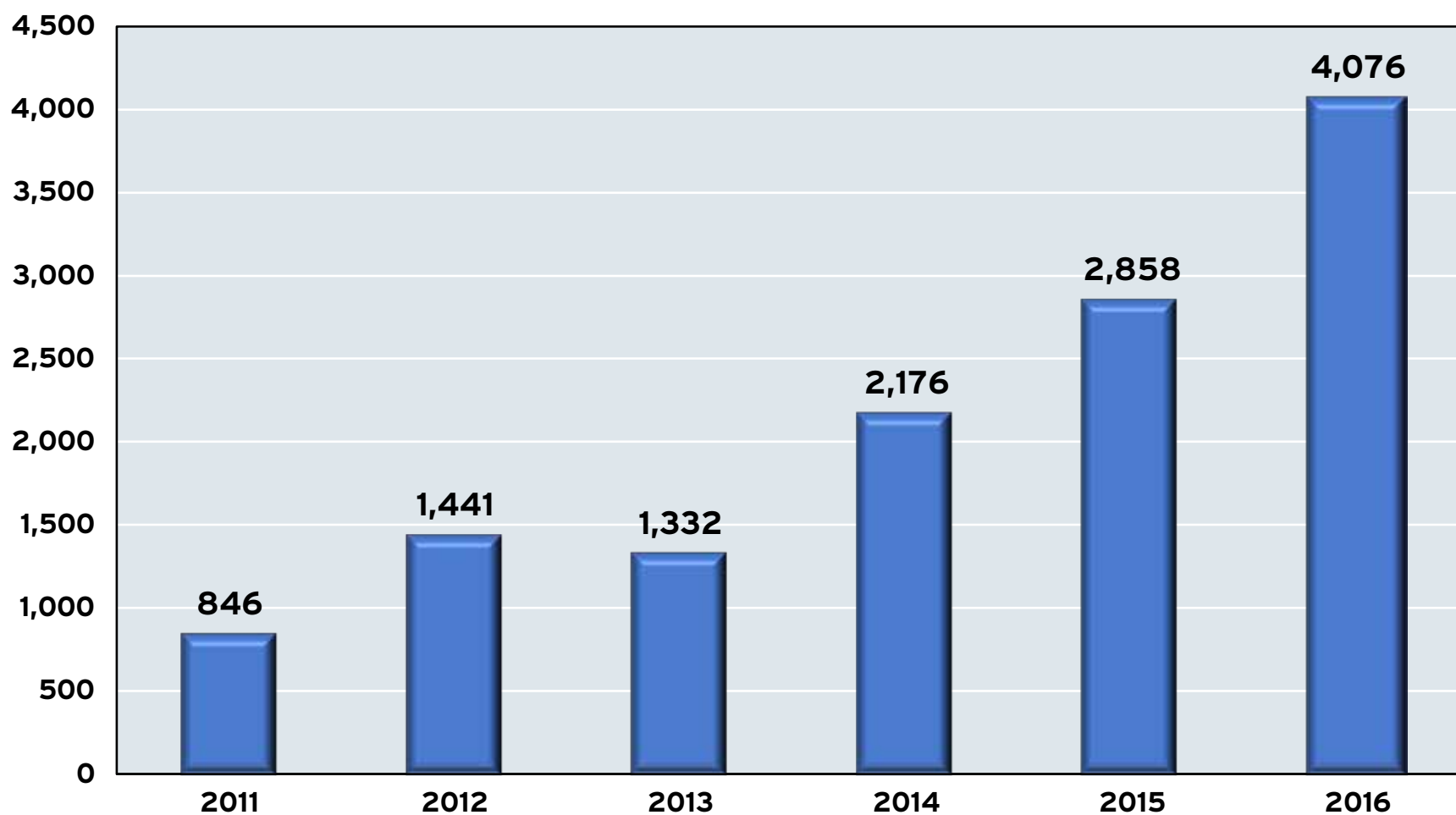
²⁴ Meg Tirrell, "As opioid epidemic worsens, the cost of waking up from an overdose soars." Jan. 4, 2017. CNBC. <https://www.cnbc.com/2017/01/04/as-opioid-epidemic-worsens-the-cost-of-waking-up-from-an-overdose-soars.html>.

²⁵ <https://emergency.cdc.gov/han/han00384.asp>

²⁶ The data represent visits by Virginia residents to emergency departments for unintentional overdose. Visits for opioid overdose include visits where the drug causing the overdose was not determined at the time of the patient's arrival at the hospital.

GRAPH 8

NALOXONE (NARCAN) ADMINISTRATIONS BY EMS PERSONNEL IN VIRGINIA, 2011-2016



Source: Virginia Department of Health, Opioid Addiction Indicators, 2017

Opiate Addiction And Employment

Prima facie, opiate misuse or abuse is antithetical to regular, productive employment. Even so, because the U.S. economy has now expanded for more than eight years consecutively, rising opioid use has coincided with rising total employment and falling rates of unemployment. This does not imply that drug use reduces unemployment; as we have seen, the opposite is true. What it does mean is that overall economic prosperity sometimes disguises the relationship between opioid use and unemployment rates.

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

It is also true that unemployment rates can be deceptive because an individual who drops out of the labor force and stops looking for a job is not counted as unemployed. LFPRs, however, catch this.

The labor force participation rate in the United States for adults 25-54 years old has been on the decline for many years and reached a near 40-year low in May 2015 (see Graph 9). 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.²⁷ 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 of employed men and 19 percent of unemployed men (but looking for work) in the same age group reported taking any painkillers (see Graph 10). Krueger's empirical work led him to estimate that about 20 percent of the decline in labor force participation rates in the United States can be attributed to opioid use and abuse.

If, for whatever reason, many people of prime working age are not working, then how do they survive? Some successfully claim disability. Social Security provided disability insurance payments to 8.8 million beneficiaries in 2016, up from 5.5 million beneficiaries in 2002.²⁸

An increasing proportion of people who have left the labor force cobble together a combination of sources of support that may include disability payments, extended family support, as well as charitable gifts, unemployment insurance, food stamps and perhaps some criminal activity. They may end up standing on a 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 Virginia economy? This is not easy to measure. **If, however, labor force participation rate data in Virginia have declined 3 percent due to opioid addiction, then the Commonwealth has experienced between \$4.5 billion and \$7.6 billion in lost productivity.²⁹ To put it another way, the lost productivity is at least equal to 1 percent of the Commonwealth's gross domestic product for 2017 and may be as high as 1.7 percent.**

27 Alan B. Krueger, “Where Have All the Workers Gone?” Federal Reserve Bank of Boston Working Paper (Oct. 16, 2016). Also, Katherine M. Keyes et al., “Understanding the Rural-Urban Differences in Nonmedical Prescription Opioid Use and Abuse in the United States,” *American Journal of Public Health* (February 2014), www.ajph.aphapublications.org. For nontechnical presentations, see Yoki Noguchi, “Opioid Abuse Takes a Toll on Workers and Their Employers,” National Public Radio (Jan. 20, 2016), www.npr.org, and Patrick Gillespie, “The Opioid Crisis Is Draining America of Workers,” CNNMoney (July 27, 2017), www.money.cnn.com.

28 Social Security Administration, Office of the Chief Actuary (2017). <https://www.ssa.gov/oact/STATS/dibStat.html>.

29 In August 2017, Virginia's labor force numbered 4.33 million individuals. If 3 percent (129,900) of those workers left the labor force, then our estimate of lost productivity is equal to \$35,000*129,900 or \$4.55 billion annually. If we use average weekly wages from the 1st quarter of 2016 (\$1,129), then our estimate jumps to \$7.63 billion. We obtain data on gross domestic product from the Bureau of Economic Analysis and data on the labor force from the Bureau of Labor Statistics.

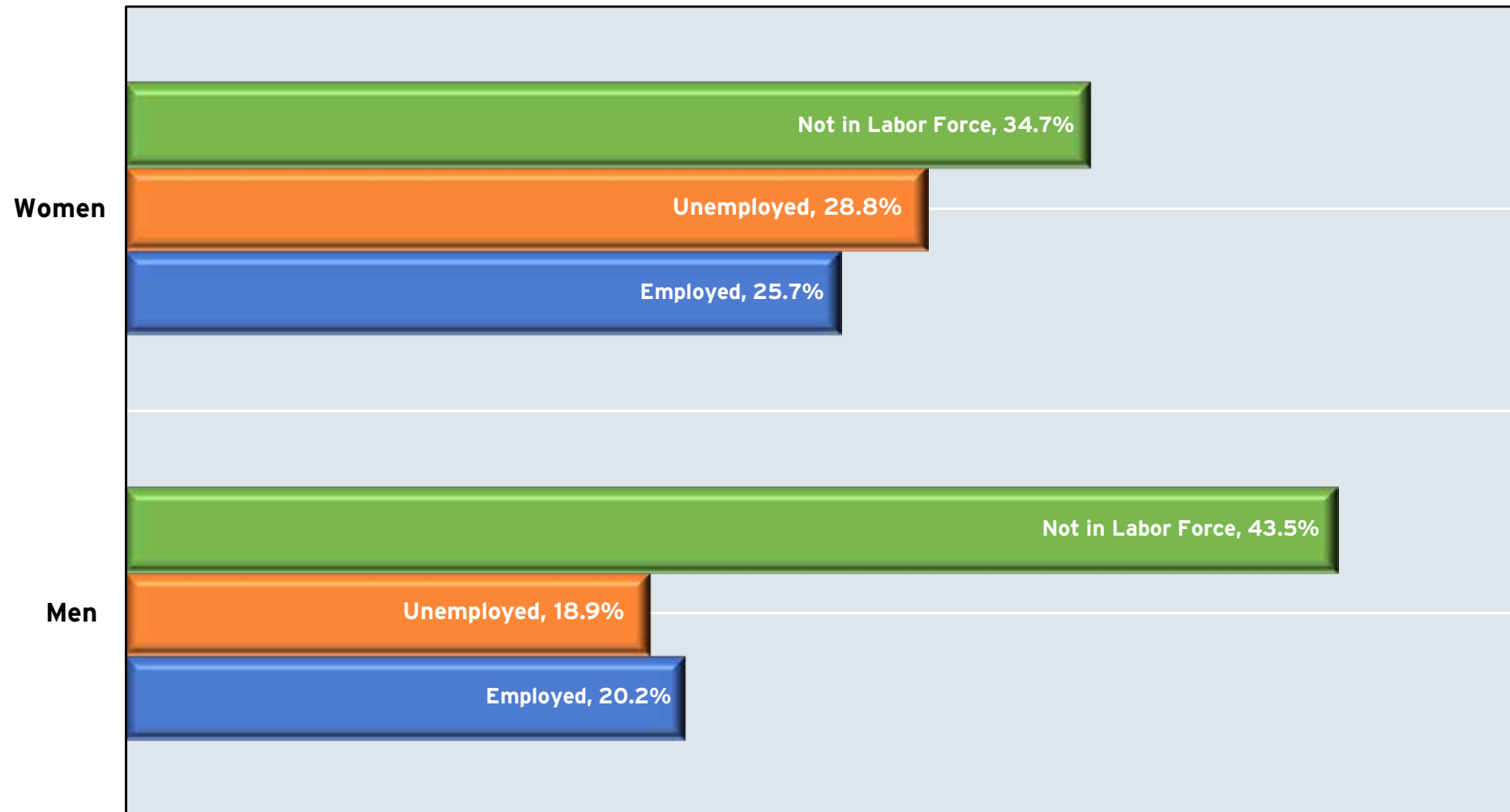
GRAPH 9

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



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

GRAPH 10

**PERCENTAGE OF PEOPLE WHO TOOK PAINKILLERS THE DAY BEFORE, 2010-2013
(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.”³⁰ Evidence concerning this is limited. Most crime rates in many 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 importance 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 (ERs) and there are costs associated with this. Virginia’s Joint Legislative Audit and Review Commission (JLARC) estimated that 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.³¹ 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 \$29,497.³² 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 attributed only about one-quarter of the

aggregate national cost of opioid addiction and abuse to governments. The lion’s share of the costs is 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 \$1,124 in Northern Virginia, \$1,105 in central Virginia, \$819 in southwest Virginia and \$746 in eastern Virginia.³³ 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 \$6,000.³⁴ 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.

³⁰ Virginia Performs, <http://vaperforms.virginia.gov/indicators/publicsafety/crime.php>.

³¹ Joint Legislative Audit and Review Commission, *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).

³² www.latimes.com/nation/la-sci-sn-opioid-overdose-prescription-hospital-er-20141026-story.html.

³³ Virginia Health Information, www.vhi.org/healthcarepricing/procedure.asp?id=ERM22.

³⁴ Matt Gregory, “Drug Addiction: The Cost of a Second Chance” (Feb. 16, 2017), <http://drugfreeva.org/drug-addiction-the-cost-of-a-second-chance>.

Policy Considerations

1. **The foremost need of citizens, physicians and elected officials is to acquire more and better information concerning opioid addiction. This chapter is a step in that direction. 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 magnitude 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 2012.³⁵ The study found that more than 90 percent of these patients continued to receive opioid medications from doctors, even after their overdose. Both physician and pharmacy education are 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 people to obtain repeated and duplicative prescriptions.**

5. **The medical community should continue to utilize opiate substitute drugs such as methadone to move opiate addicts away from their addiction, and drugs such as naloxone to reverse the effects of opiate drug overdoses. Almost needless to say, such interventions will require 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.

³⁵ 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).



AIRBNB RISING: SHORT-TERM RENTALS AND THE “GIG ECONOMY”

Uber is redefining the transportation industry now; Airbnb is doing it to the hotel industry. You can expect that to happen in every single industry.

– Masayoshi Son, Chief Executive Officer,
SoftBank

Let there be no doubt. Airbnb is a disrupter. The international, internet-based firm that connects owners of rental properties (“hosts”) with prospective short-term renters (“guests”) is upending conventional ways of doing business and in the process challenging the market positions of the traditional hotel and motel lodging industry.

Founded in 2008, Airbnb asserts that it is active in more than 65,000 cities and 191 countries and that it has facilitated the accommodation of more than 200 million guests.¹ Airbnb claims to have more than 3 million rental listings worldwide and its estimated market value exceeded \$31 billion in early 2017.² Airbnb is now nearly as valuable as the Marriott International hotel group and almost twice as valuable as Hilton Worldwide Hotels, with a workforce that is 1 percent the size of either hotel chain.³

The Commonwealth has not been left behind. Airbnb is growing rapidly in many of Virginia’s major markets and its rise presents challenges to policymakers and the traditional lodging sector. In August 2017, 10,395 Airbnb listings (mostly involving residential homes) were in Virginia, led regionally by Northern Virginia with 3,863.⁴

¹ Airbnb, “About Us,” <https://www.airbnb.com/about/about-us>.

² Lauren Thomas, “Airbnb just closed a \$1 billion round and became profitable in 2016,” March 9, 2017, CNBC, <https://www.cnbc.com/2017/03/09/airbnb-closes-1-billion-round-31-billion-valuation-profitable.html>.

³ Maya Kosoff, “Why Airbnb is now almost twice as valuable as Hilton,” March 20, 2017, *Vanity Fair*, <https://www.vanityfair.com/news/2017/03/why-airbnb-is-now-almost-twice-as-valuable-as-hilton>.

⁴ Airdna data for the Commonwealth received in September 2017.



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 many cities and counties worry that they are not collecting all taxes due.

This chapter analyzes the development of Airbnb and 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 are observing 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.⁵

Airbnb In Virginia

To say that the rise of Airbnb is nothing short of remarkable may be an understatement. Starting with the rental of an air mattress in San Francisco in 2008, Airbnb has rapidly emerged in terms of listings, funding and name recognition. Airbnb continues to expand its business model, now offering “experiences” (hosted tours) and an increasing number of connections to travel websites. The Commonwealth is no exception to the rapid rise of Airbnb and its challenge to the established lodging industry.

To track Airbnb’s activities in Virginia, 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.⁶ Throughout this chapter, unless otherwise noted, we use data from Airdna to examine the listing, revenue and occupancy of Airbnb-hosted properties. While there are many other potential short-term rental hosts, including Flipkey, Homeaway and VRBO, individual listing data for

these sites are not readily available and Airbnb is clearly the dominant player in this growing market.

Airbnb’s growth in Virginia has been meteoric. Graph 1 illustrates the almost fivefold increase in Airbnb listings, from 2,023 in October 2014 to 10,395 in August 2017. Graph 2 highlights that total revenue from Airbnb rentals in Virginia rose from \$1.52 million to \$17.39 million over the same period. Revenues from Airbnb rentals grew more than 1,000 percent in Virginia in less than three years.⁷

How does this compare to the traditional lodging sector? **Graph 3 shows that the revenues of Airbnb’s Virginia hosts rose from only 0.49 percent of the revenues of traditional hotels and motels in October 2014 to 4.67 percent in August 2017. This is an almost tenfold increase over a three-year period.**

When we examine the performance of the traditional lodging sector, the growth in Airbnb listings and revenue becomes even more remarkable. Here we use data from STR Global (formerly known as Smith Travel Research), a company that provides high-quality data on the performance of hotels and motels. **Comparing October 2014 to August 2017, the supply of traditional hotel rooms in Virginia increased by only 1.7 percent. Revenue for hotels and motels from August 2015 to August 2017 only increased by 8 percent.⁸ While the Airbnb rental sector may be smaller than the traditional lodging sector, Airbnb is a rising competitor.**

What kinds of properties are driving this growth in listings and revenue? Hosts can choose to rent out a portion of their property (known as “private room rentals”) or to rent out the entire property (known as “entire place rentals”). As displayed in Graph 4, the growth of Airbnb’s revenue in Virginia is mostly due to entire place rentals rather than private room rentals. Revenues from entire place rentals increased from \$1.15 million in October 2014 to \$14.98 million in August 2017. **While private room revenues increased sixfold during this period, entire place revenues increased thirteenfold.**

⁵ 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.

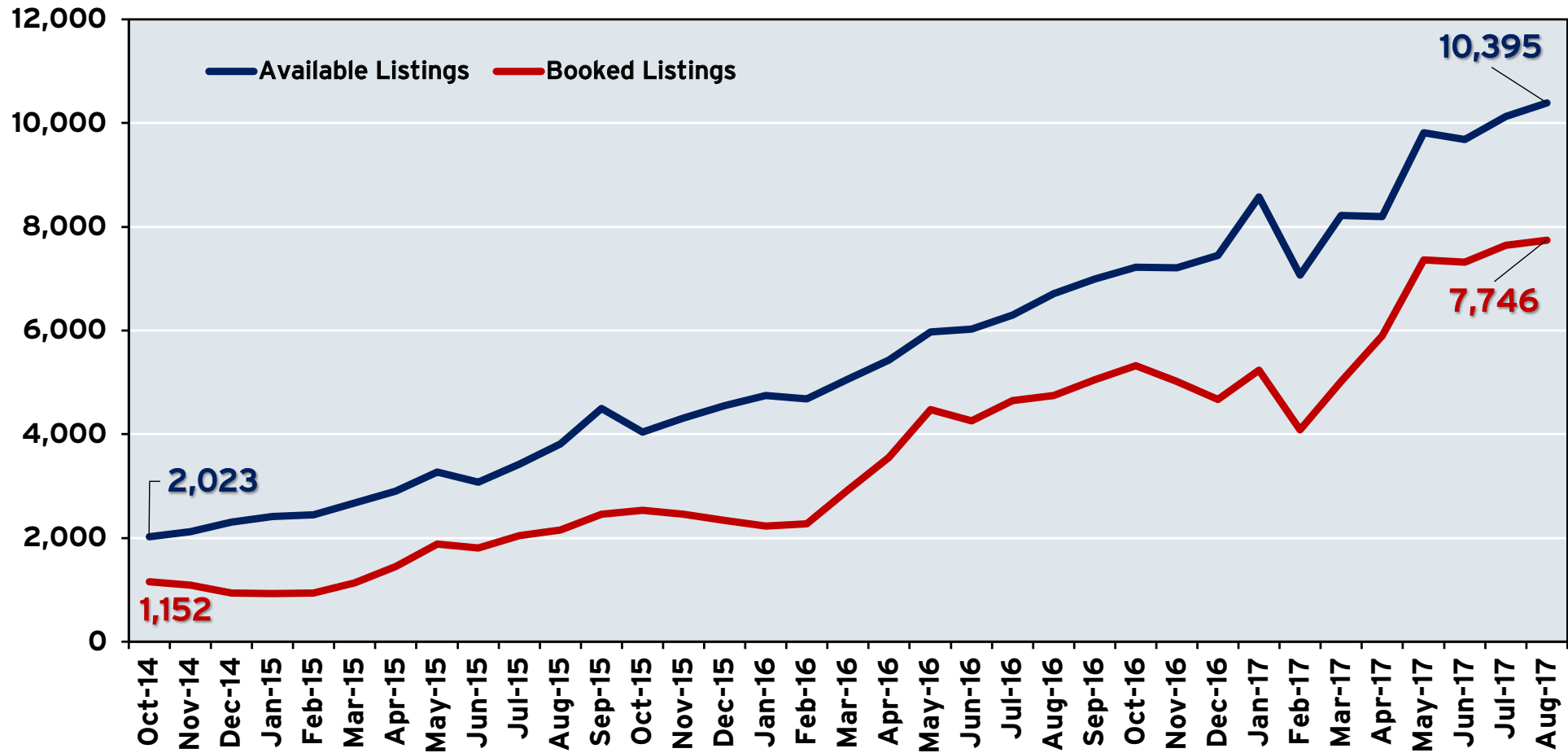
⁶ As Airbnb does not provide open access to its data, Airdna tracks the performance of listings and predicts whether properties are booked or not. For more information, see www.airdna.co/methodology.

⁷ This is consistent with the reported national Airbnb growth rate in revenues in 2016 of 138 percent. 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.

⁸ STR trend reports: Jan. 24, 2017, and Sept. 15, 2017.

GRAPH 1

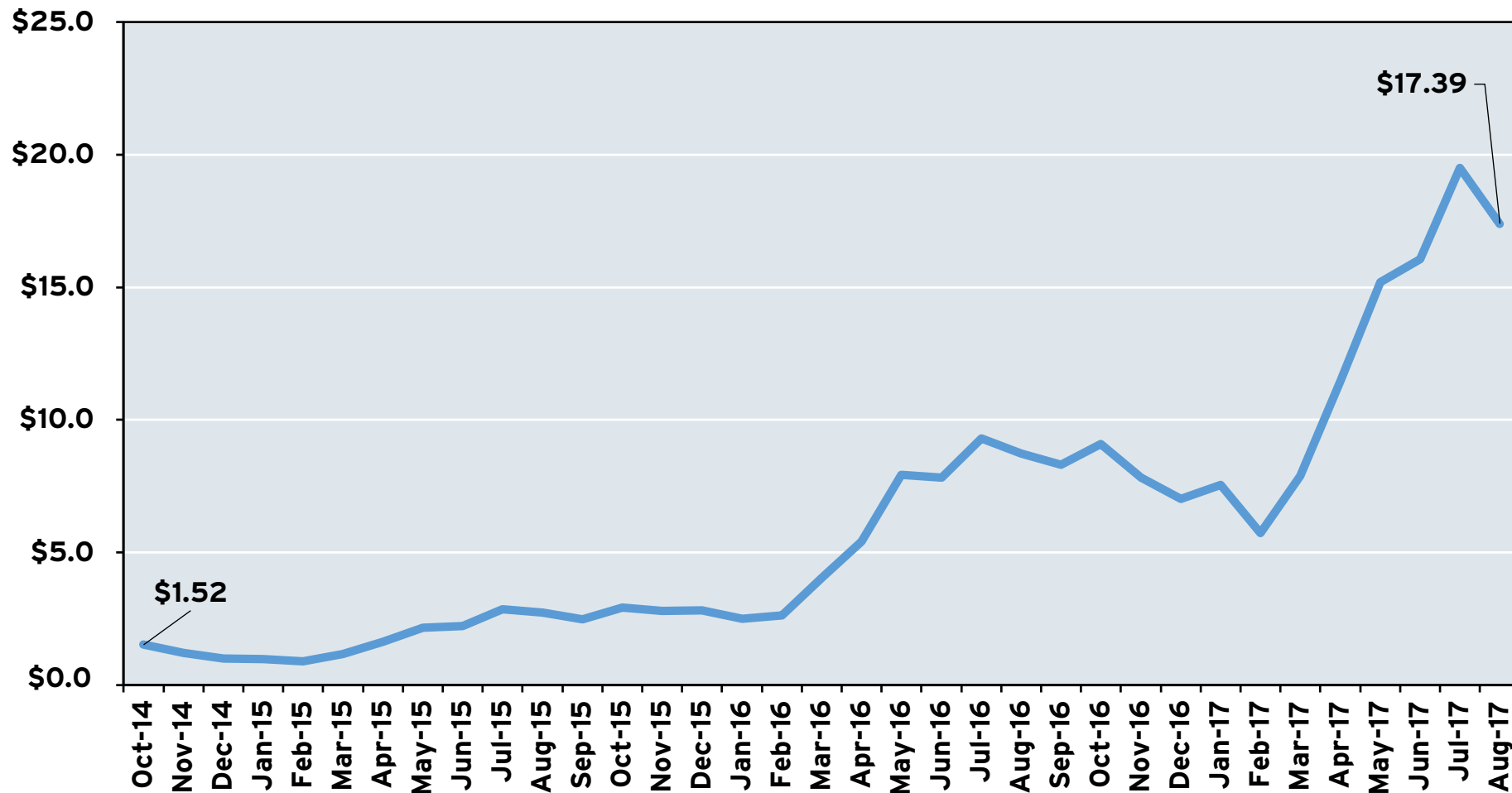
AVAILABLE AND BOOKED LISTINGS OF ALL AIRBNB PROPERTIES:
VIRGINIA, OCTOBER 2014 TO AUGUST 2017



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 2

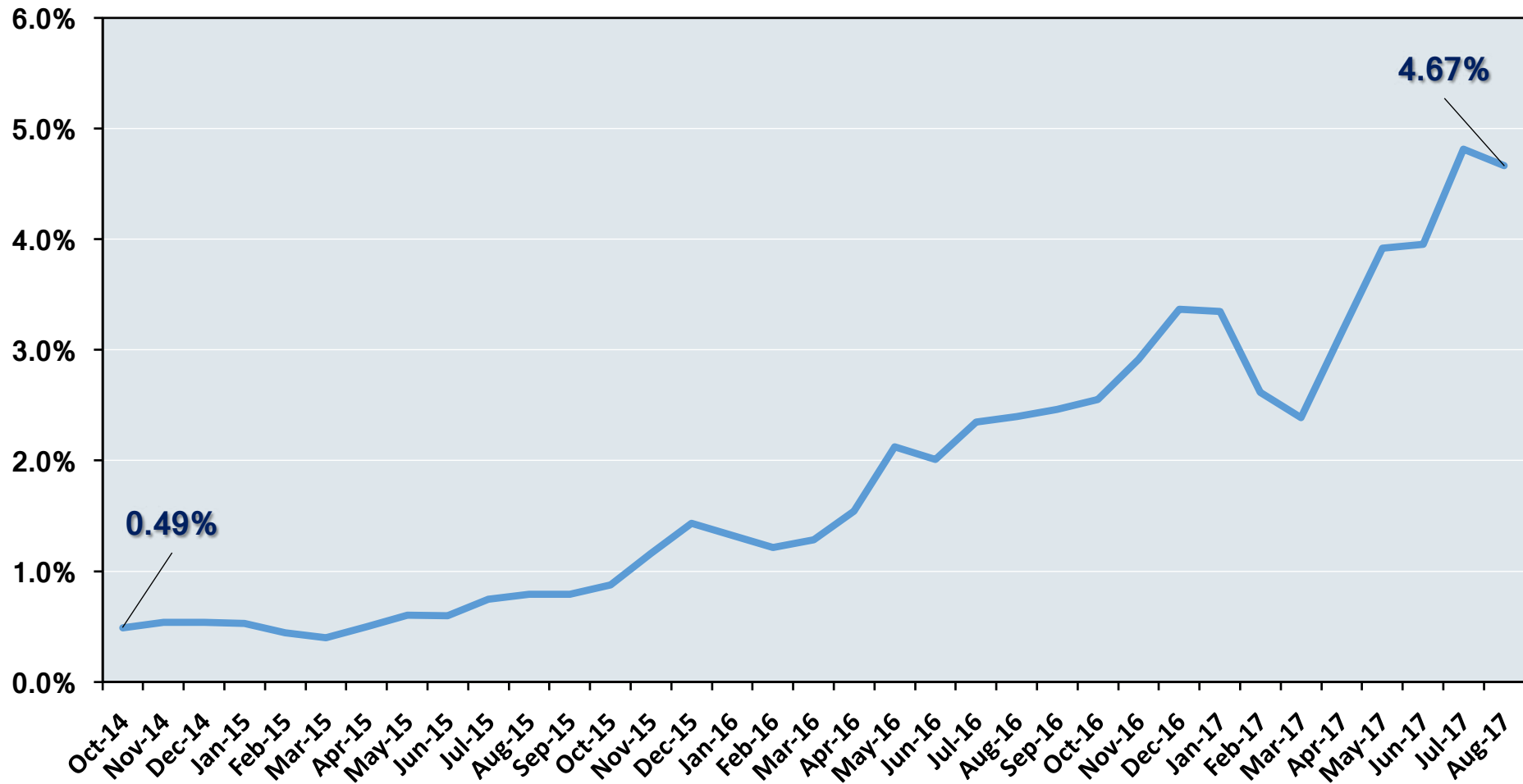
**TOTAL MONTHLY REVENUE FROM ALL AIRBNB PROPERTIES: VIRGINIA, OCTOBER 2014 TO AUGUST 2017
(MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 3

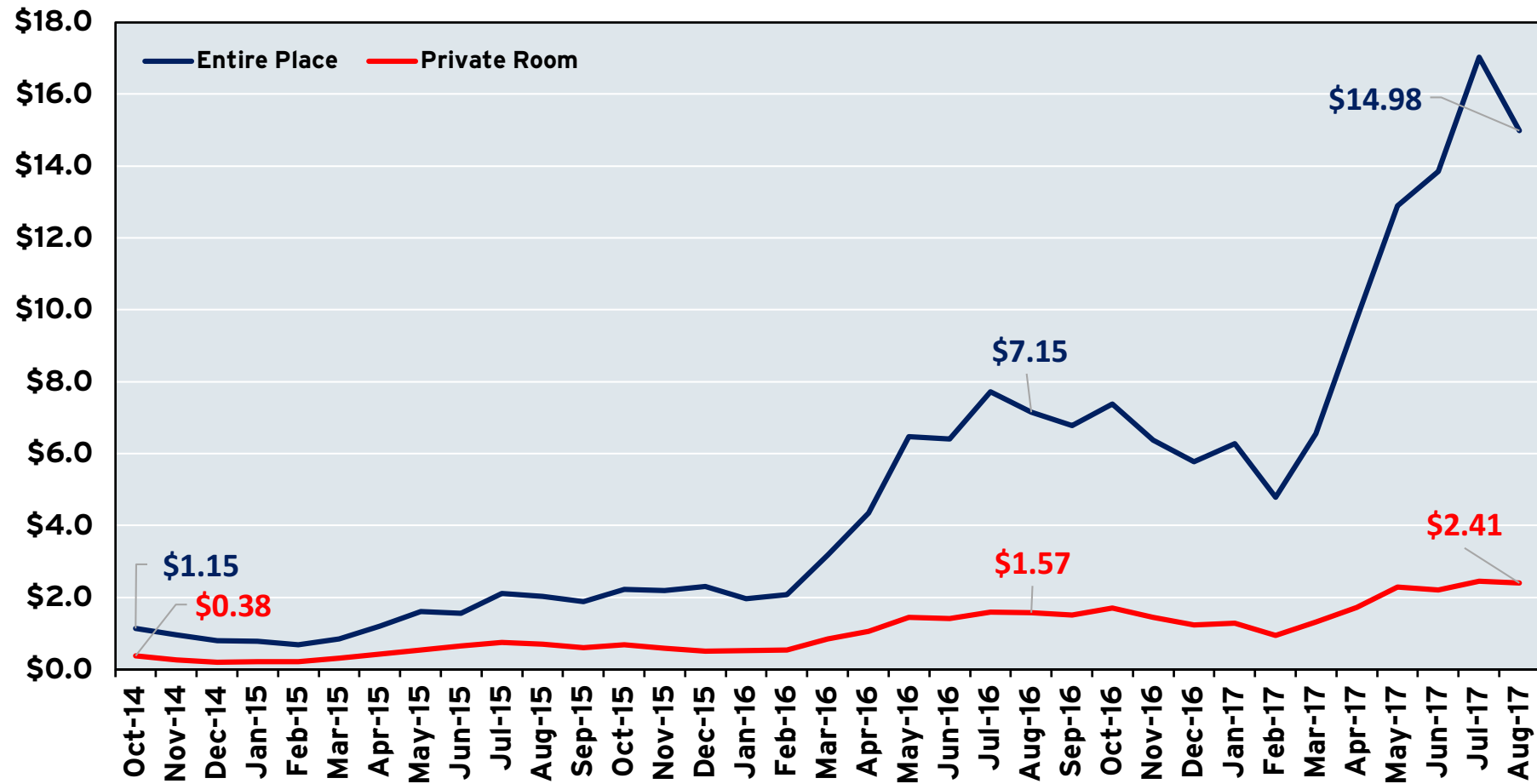
**RATIO OF AIRBNB'S REVENUE TO TOTAL CONVENTIONAL HOTEL REVENUE:
VIRGINIA, OCTOBER 2014 TO AUGUST 2017**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 4

**AIRBNB'S REVENUE FROM ENTIRE PLACE AND PRIVATE ROOM RENTALS:
VIRGINIA, OCTOBER 2014 TO AUGUST 2017 (MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

So far, our discussion has focused on Airbnb listings. A listing on Airbnb might consist of a shared room, a private room, a 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 an important point to consider when one attempts to estimate the performance of Airbnb rentals and draw comparisons with traditional hotels and motels.

In August 2017, 7,746 (74.5 percent) of the 10,395 Airbnb listings in Virginia were “active” (actually booked listings) in Airdna’s terminology, meaning these listings were currently rented or had been rented in the last month. On average, each active listing in Virginia involved 1.8 rooms. This means that many of the most active listings for Virginia for the period in question were for multiple rooms, confirming that property listings understate the number of rooms offered for rent. As illustrated in Graph 5, the share of revenue derived from the rental of properties involving four or more bedrooms has steadily climbed from about 14 percent in October 2014 to almost 31 percent in August 2017.

Our “more Airbnb rooms than listings” conclusion is consistent with a recent study conducted 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 6).

When compared to the total number of rooms available in traditional hotels and motels in Virginia, Airbnb’s active listings of rooms in August 2017 was less than 9 percent of the total. To some this might suggest that the fears of Airbnb are overstated, but we must draw attention to the fact that Airbnb is less than 10 years old. Imagine if the number of hotel rooms increased by 9 percent in less than 10 years in Virginia; this would represent a remarkable growth in the number of hotels and motels. We are confident in our conclusion that Airbnb (and similar firms) have become an integral part of the lodging market in Virginia.

Airbnb’s greatest impact on the conventional hotel and motel market in Virginia occurs either during peak tourist times, such as the Fourth

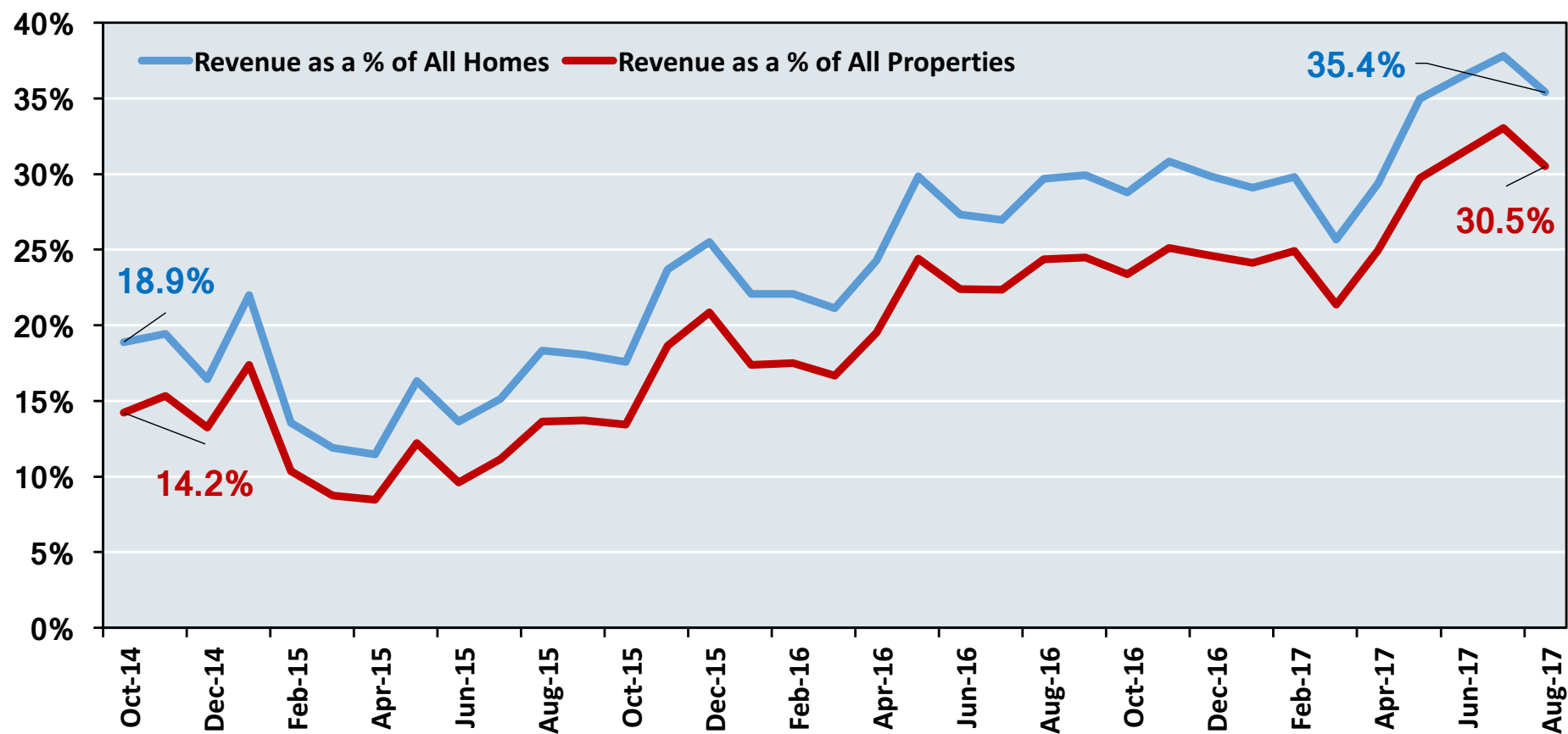
of July and Labor Day or in specific locations – for example, Northern Virginia during special events, such as the presidential inauguration. During these time periods, Airbnb’s listings surge and it appears that the availability of Airbnb as an option discourages conventional hotels and motels from increasing their prices as much as they might have in the past. Put simply, it appears that Airbnb reduces the profit margins of conventional hotels and motels during such peak-load periods.

Airbnb often stresses the role of single-bedroom rentals by its residential single-family hosts when it interacts with city and county governments. This provides it with political cover because many elected officials are reluctant to impose regulations on individual homeowners who believe they have the right to use their property as they see fit. While single-room rentals in residential homes may have been the backbone of Airbnb in its formative days, this no longer holds true. We estimate that 80 percent of Airbnb’s revenues in Virginia Beach are derived from full houses, apartments and condos, and that 65 percent of these revenues come from properties with multiple bedrooms.

The American Hotel and Lodging Association fervently argues that firms such as Airbnb functioning in the short-term rental arena are hotels for all intents and purposes, albeit ones that often do not have to comply with all the rules and regulations confronting standard hotels. Not surprisingly, the association advocates a legal and enforcement crackdown on Airbnb and similar firms, which increasingly have become viable competitors to the association’s members. The association’s reaction in this regard is like 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 Synchro and Quicken, some universities to online learning sites and of course dozens of competitors across many industries to Amazon, Facebook and Google.

GRAPH 5

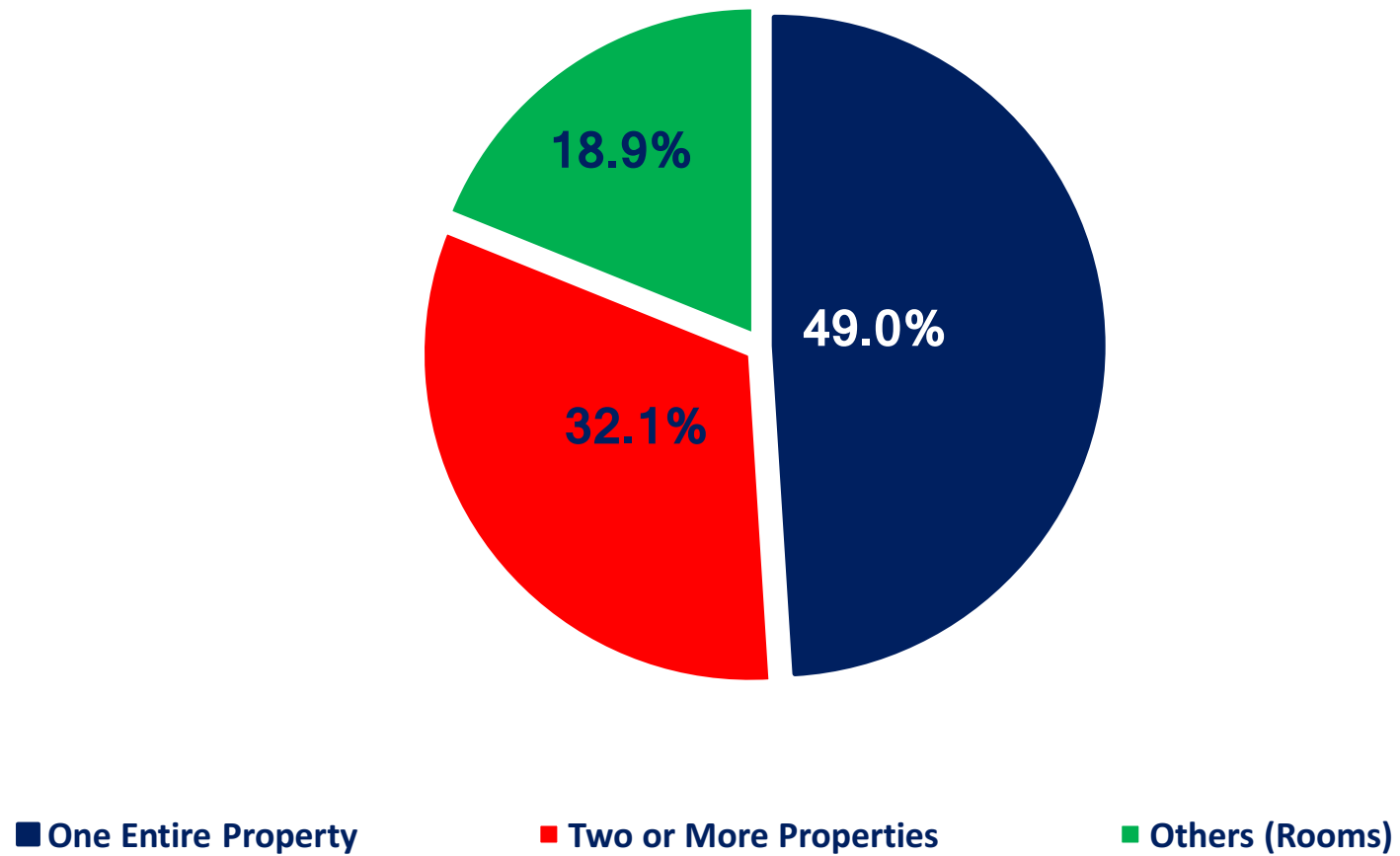
**SHARE OF AIRBNB REVENUE ACCOUNTED FOR BY FOUR OR MORE BEDROOMS IN HOMES:
VIRGINIA, OCTOBER 2014 TO AUGUST 2017**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 6

AIRBNB REVENUE SOURCES: UNITED STATES, 2016



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

The Rapid Growth Of Airbnb In Virginia's Metro Areas

We now turn to examining the rise of Airbnb in Virginia's metropolitan areas (MSAs). On average, these metro areas account for about 91 percent of total hotel revenue and 90 percent of total Airbnb revenue. Because of how STR Global defines hotel markets and how the Bureau of Economic Analysis defines MSAs are somewhat different, we combine the Harrisonburg and Staunton/Waynesboro metro areas into one market. Since we are only examining Airbnb in the Commonwealth, the data for the Kingsport-Bristol MSA represent only the Virginia portion of this metro area.

Airbnb represents a growing share of the lodging market in each of Virginia's metropolitan areas. Graph 7 displays the revenues of Airbnb hosts in August 2017. Hampton Roads generated the largest amount of revenue in August 2017 (\$4.83 million), followed closely by Northern Virginia (\$4.10 million). The Virginia portion of the Kingsport-Bristol MSA had the lowest amount of total monthly revenue, slightly less than that of Roanoke.

When we examine the share of Airbnb revenue to hotel revenue, however, a different story emerges from the data. While Charlottesville's total Airbnb revenue for August 2017 was only about \$2.5 million, this amounted to almost 22 percent of total hotel and motel revenues in that region. Lynchburg's total Airbnb revenue for August 2017 was \$780,000, but this was equivalent to 15 percent of the total revenue of the traditional lodging sector in that area. While many believe that Airbnb is limited to dense, urban markets, Graph 8 shows that, as a percentage of hotel revenue, Airbnb is performing well in less urbanized markets.

Because Charlottesville and Lynchburg stand out, let's take a closer look at those metro areas. Over the past two years, the number of hotel rooms in Lynchburg has remained constant, with about 2,700 rooms available for rent. Hotel revenues in Lynchburg increased about 7 percent between August 2015 and August 2017, slightly below the 8 percent average growth rate for the Commonwealth. Charlottesville, on the other hand,

has seen its supply of hotel rooms grow by about 6.5 percent, while hotel revenues grew by about 19 percent over the same period. The traditional lodging sector is underperforming the Commonwealth in Lynchburg, but outperforming it in Charlottesville.

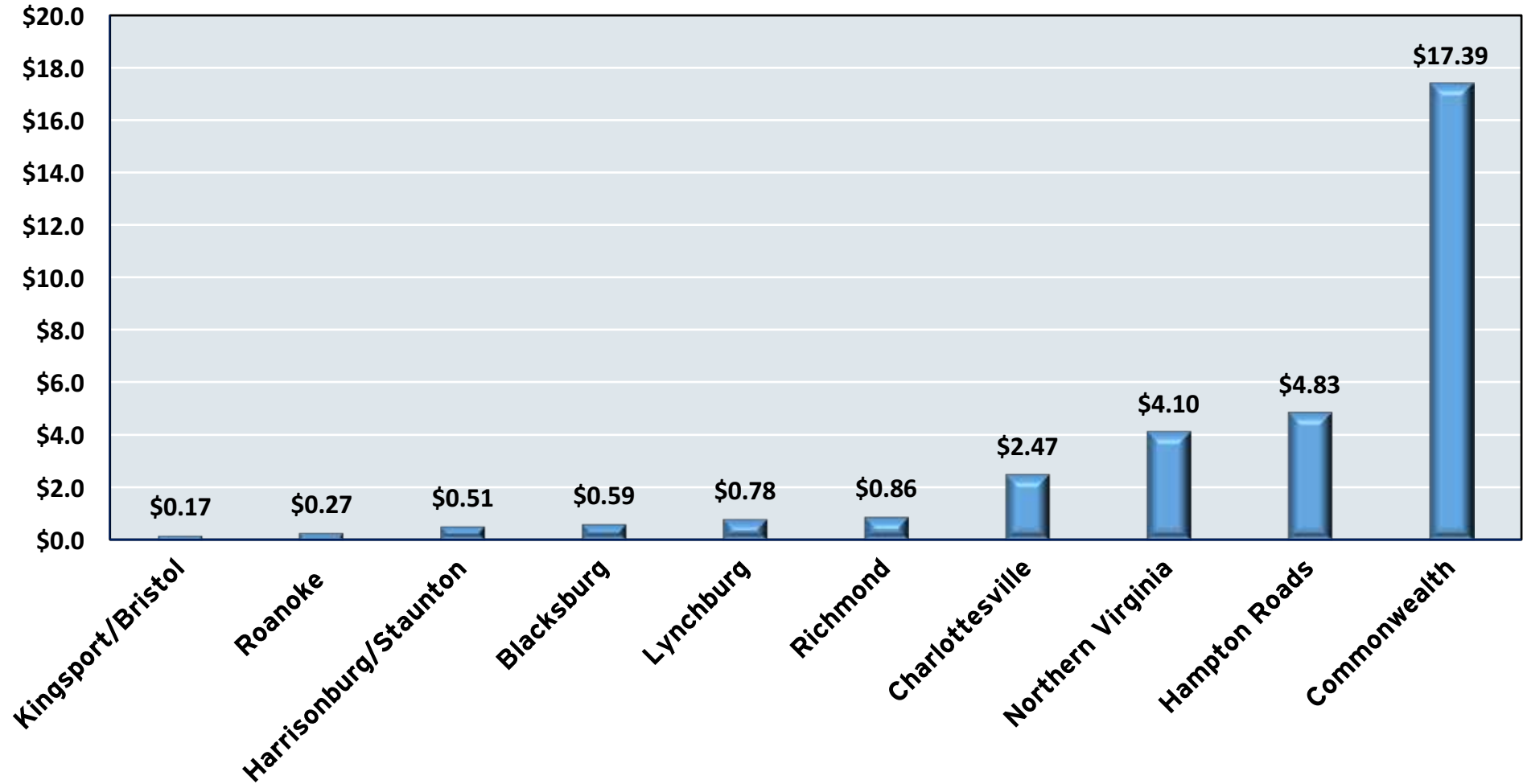
What happened to Airbnb during the same period? In Lynchburg, available Airbnb listings grew from 54 in October 2014 to 479 in August 2017, an increase of 787 percent (Graph 9). Booked listings grew from 36 to 348 for the same period, an increase of 867 percent. **Total revenue from Airbnb-related rentals in Lynchburg jumped from about \$30,000 to \$780,000 in the same period, a twenty-sixfold increase in less than three years (Graph 10).**

In Charlottesville, available Airbnb listings grew from 323 in October 2014 to 1,052 in August 2017, an increase of 226 percent (Graph 11). Booked listings grew from 218 to 883, an increase of 305 percent over the same period. Total revenue from Airbnb rentals increased from about \$380,000 to \$2.47 million, an increase of 550 percent (Graph 12). **Not only were more listings available for rent in Lynchburg and Charlottesville, but also a higher percentage of listings were rented over time.**

What is driving the revenue growth in Lynchburg and Charlottesville? In Lynchburg, revenues from entire place rentals increased by almost 3,370 percent in less than three years (Graph 13). For the same period, Charlottesville saw an increase of about 600 percent in Airbnb revenues from entire place rentals (Graph 14). **As with the Commonwealth, the rise in entire place rentals is driving the rapid growth in the Airbnb rental market.**

GRAPH 7

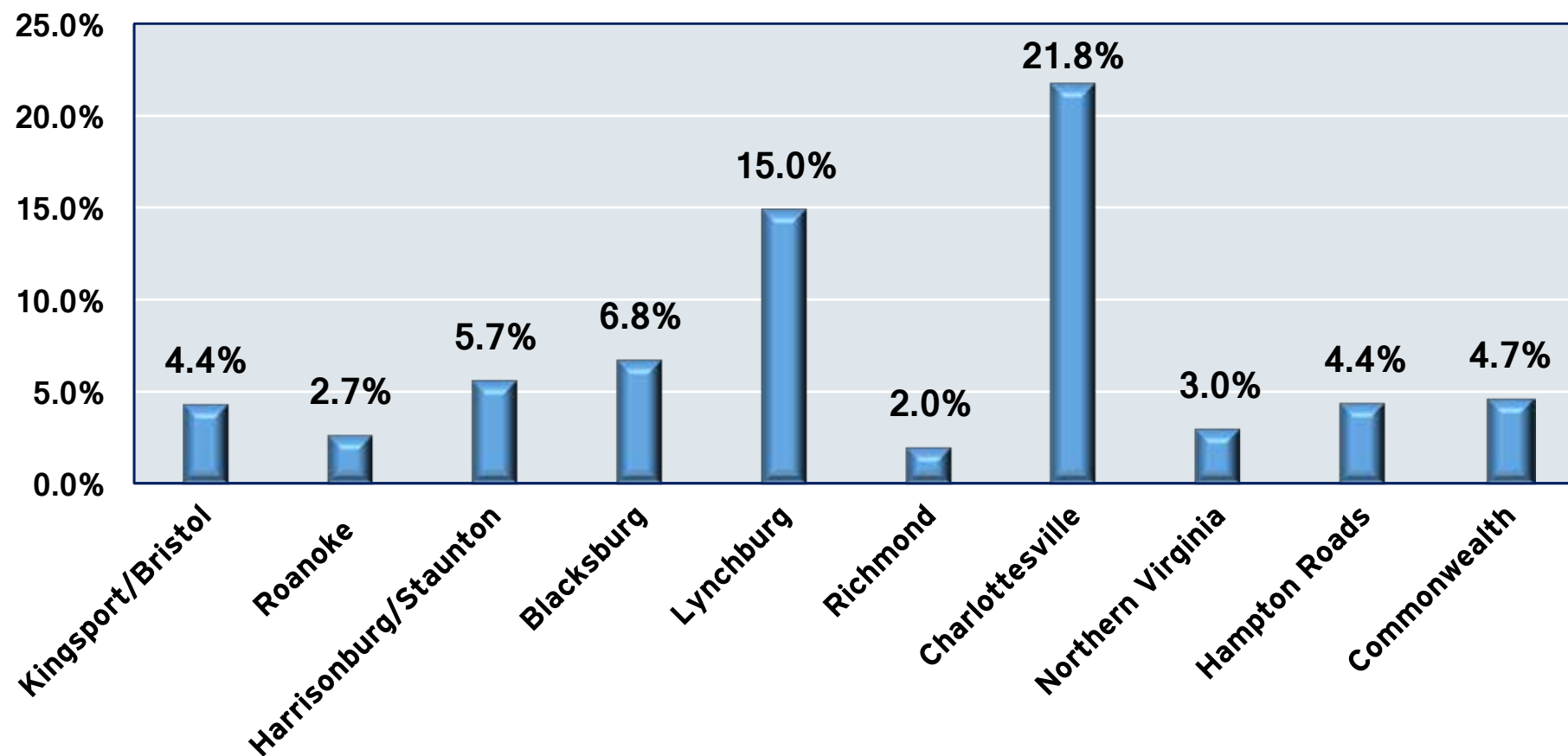
**REVENUES OF AIRBNB HOSTS IN VIRGINIA AND ITS MAJOR METROS IN AUGUST 2017
(MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 8

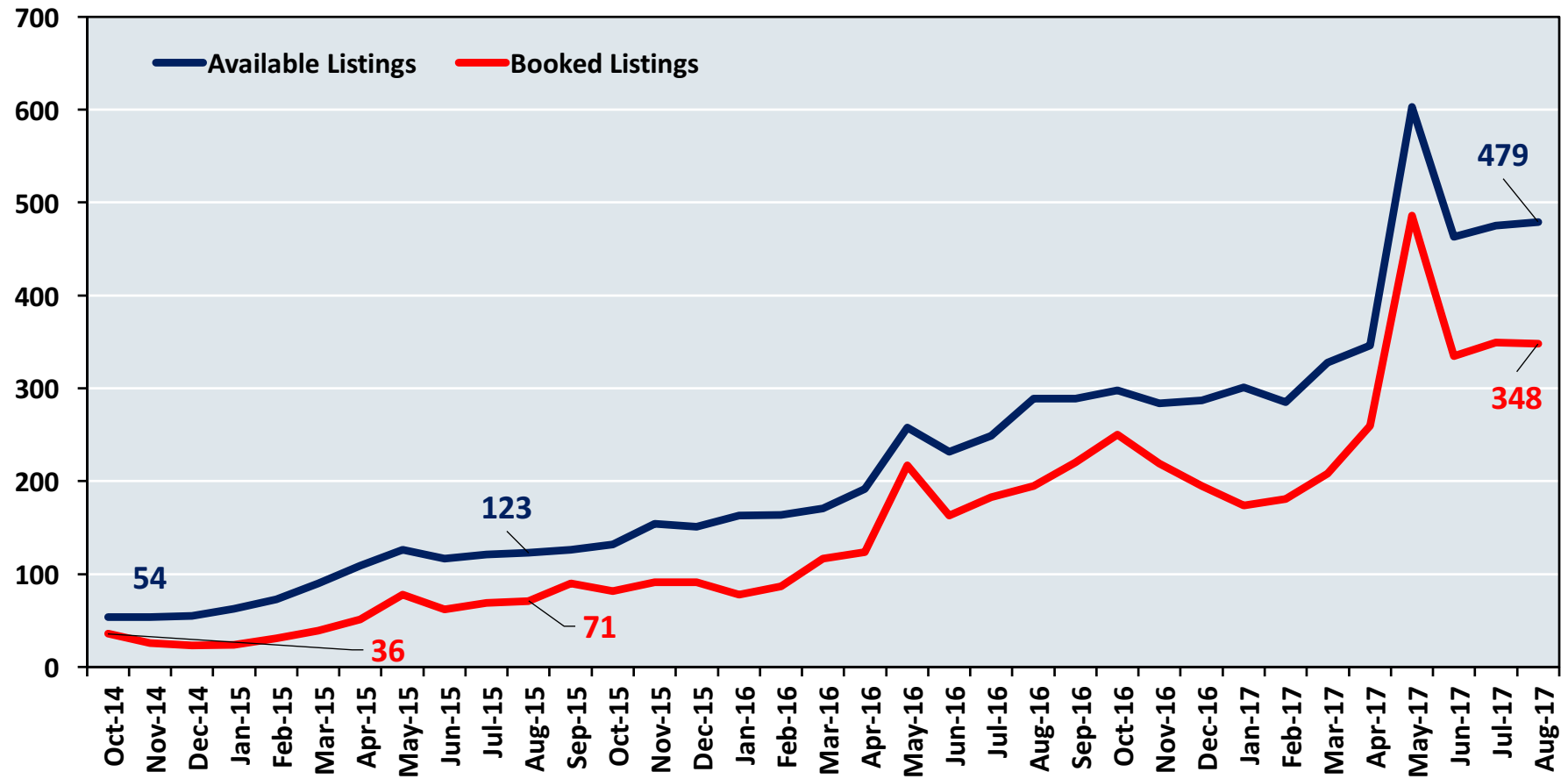
RATIO OF AIRBNB'S REVENUE TO HOTEL REVENUE IN VIRGINIA AND ITS MAJOR METROS IN AUGUST 2017



Sources: Airdna data for the Commonwealth received in September 2017 and STR trend reports

GRAPH 9

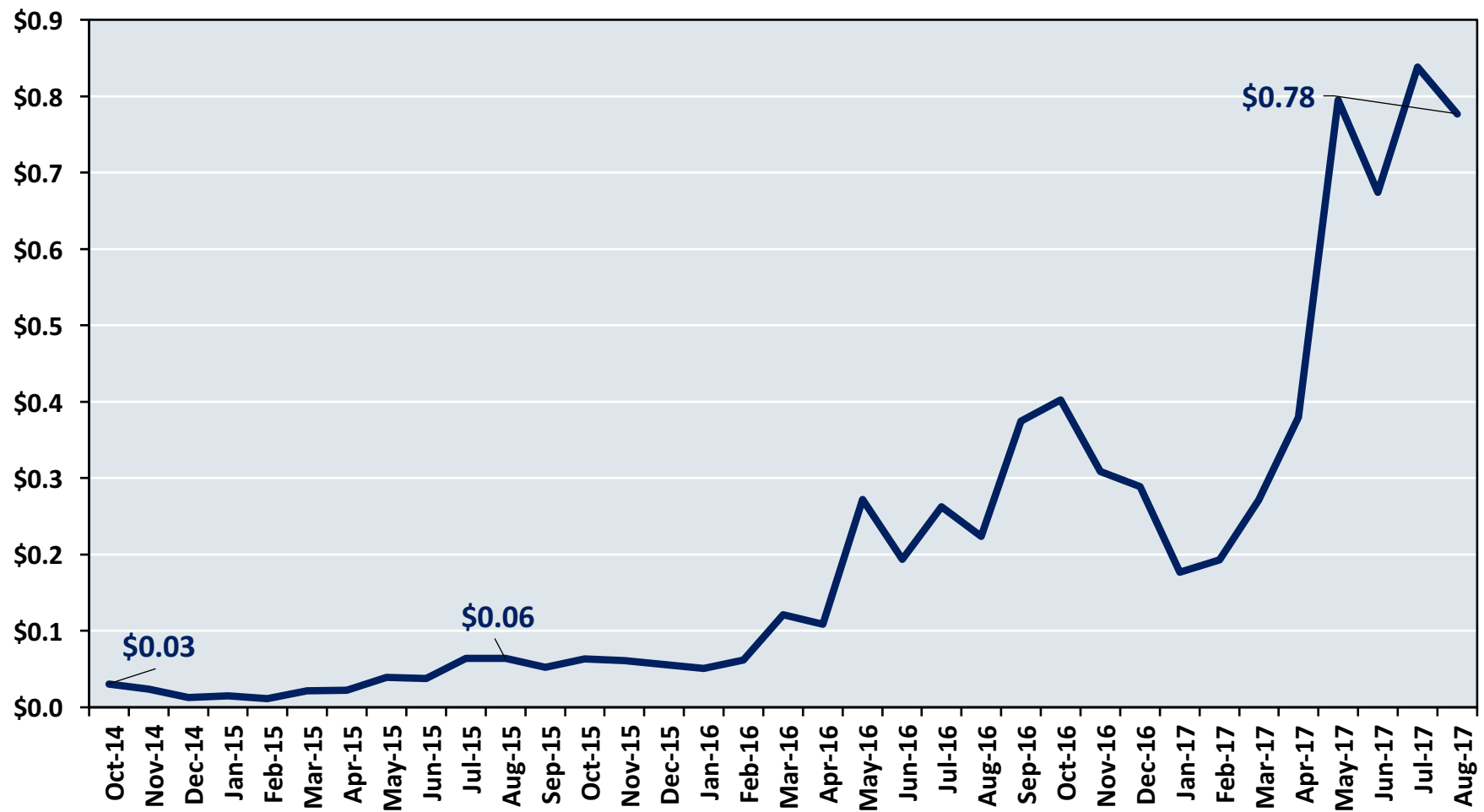
AVAILABLE AND BOOKED LISTINGS OF ALL AIRBNB PROPERTIES:
LYNCHBURG, OCTOBER 2014 TO AUGUST 2017



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 10

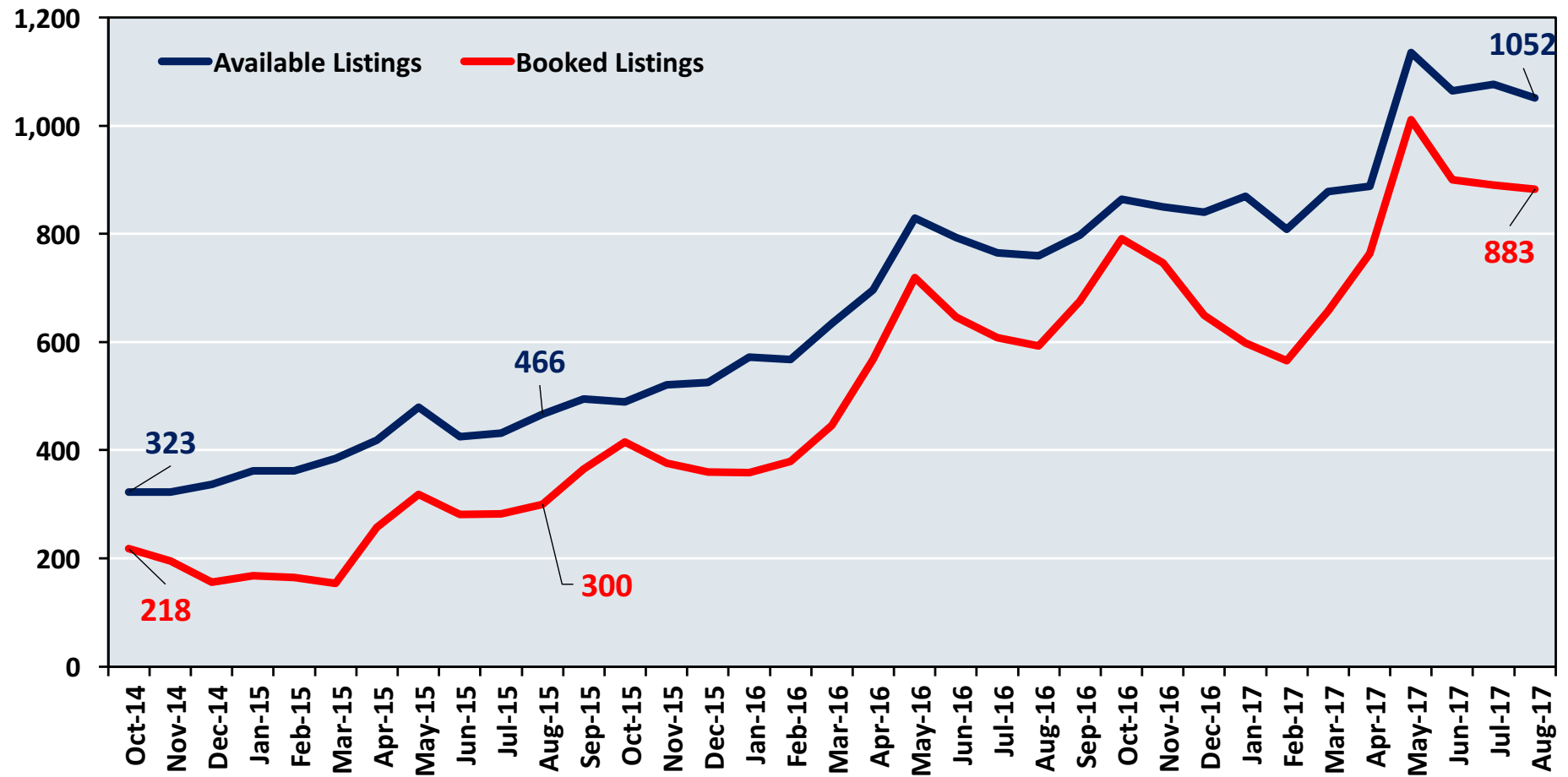
**TOTAL MONTHLY REVENUE FROM ALL AIRBNB PROPERTIES:
LYNCHBURG, OCTOBER 2014 TO AUGUST 2017 (MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 11

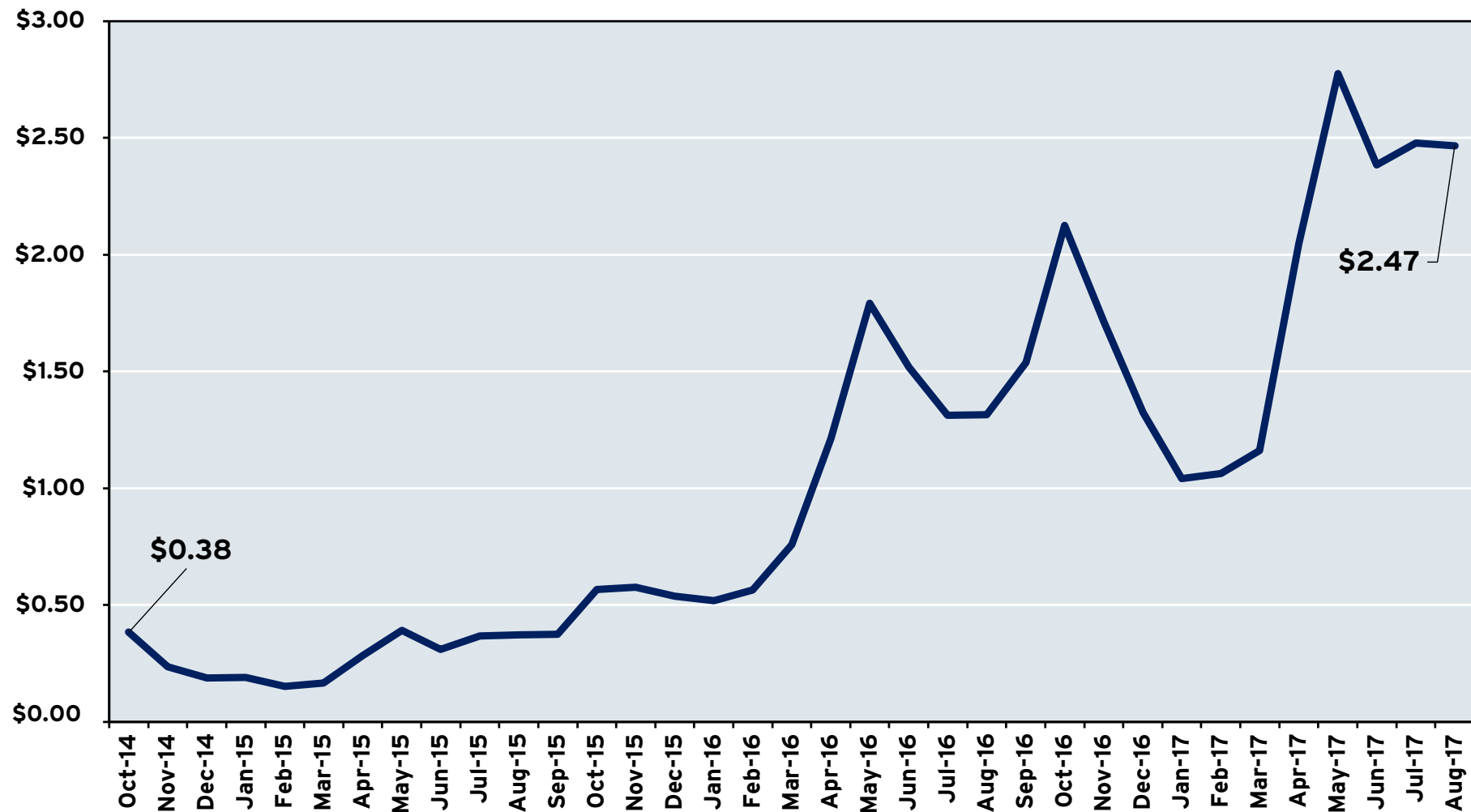
AVAILABLE AND BOOKED LISTINGS OF ALL AIRBNB PROPERTIES:
CHARLOTTESVILLE, OCTOBER 2014 TO AUGUST 2017



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 12

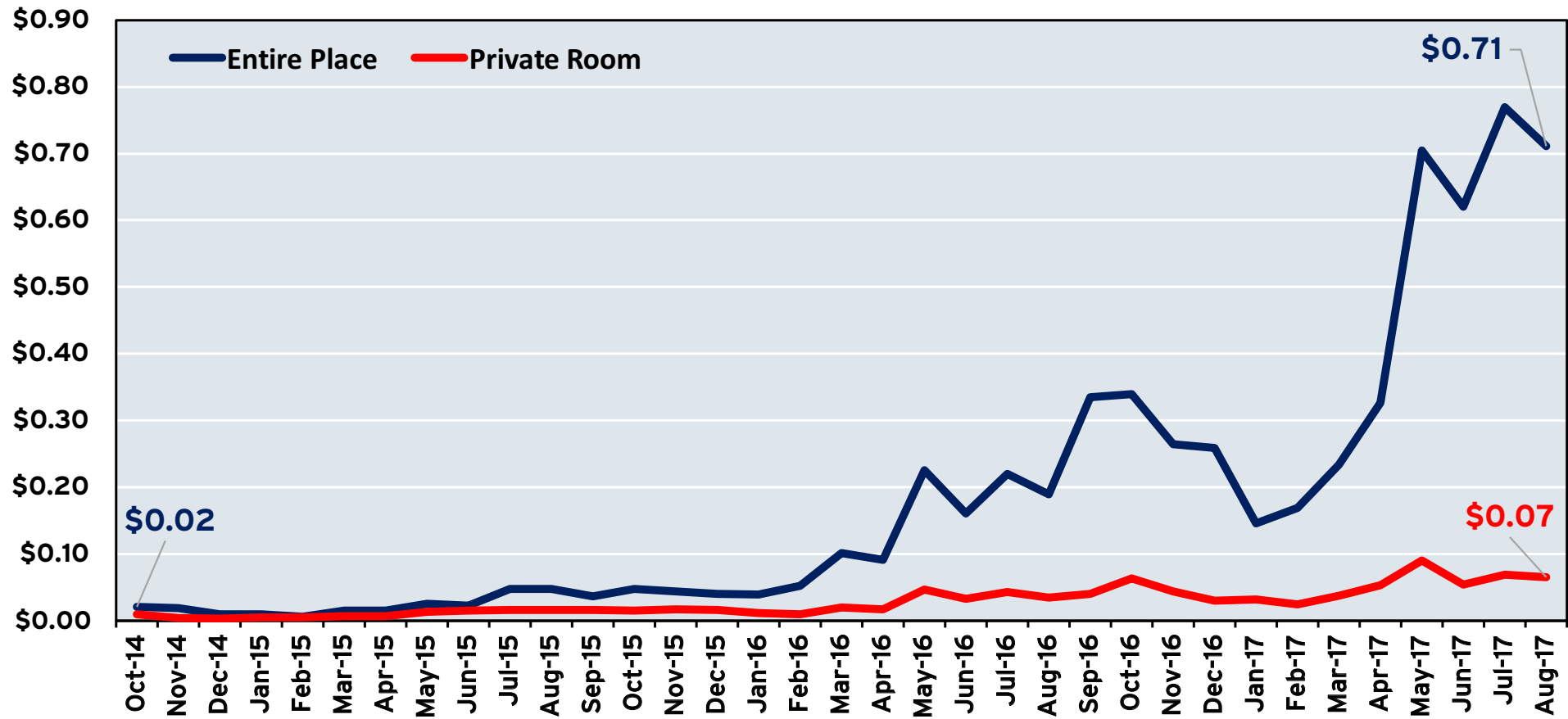
**TOTAL MONTHLY REVENUE FROM ALL AIRBNB PROPERTIES:
CHARLOTTESVILLE, OCTOBER 2014 TO AUGUST 2017 (MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 13

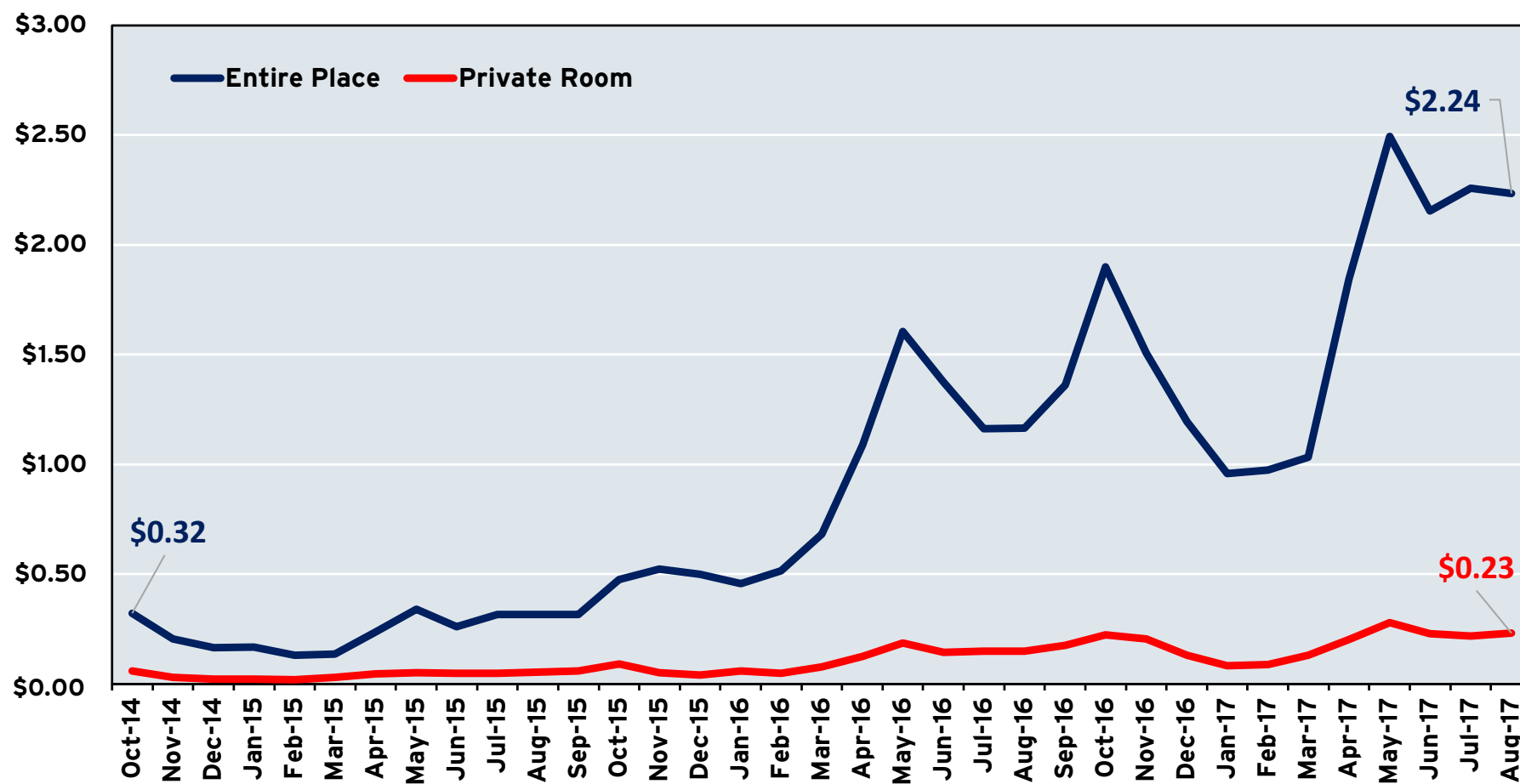
AIRBNB'S REVENUE FROM ENTIRE PLACE AND PRIVATE ROOMS:
LYNCHBURG, OCTOBER 2014 TO AUGUST 2017 (MILLIONS OF \$)



Source: Airdna data for the Commonwealth received in September 2017

GRAPH 14

**AIRBNB'S REVENUE FROM ENTIRE PLACE AND PRIVATE ROOMS:
CHARLOTTESVILLE, OCTOBER 2014 TO AUGUST 2017 (MILLIONS OF \$)**



Source: Airdna data for the Commonwealth received in September 2017

Some Measures Of The Performance Of Hotels And Airbnb

With Airbnb's rapid increases in listings and revenues, one might conclude that its rentals are outperforming the traditional hotel industry. Before we can reach this conclusion, however, we need to compare apples to apples; that is, we need to use comparable measures of performance over the short term and across traditional lodging sectors.

The gold standard of the lodging industry is revenue per available room (RevPAR). RevPAR captures the average revenue received by a host per room available and captures both supply and demand influences. STR Global uses *room nights* to calculate the measures and, as we noted

previously, we need to calculate on a similar basis for Airbnb's rentals because its listings are not equal to room nights.

How has the traditional lodging sector been performing in Virginia's metropolitan areas? We look at data for 2016 and 2017 in the months of January and July. Typically, the demand for hotel rooms is the lowest in January and highest in July. As illustrated in Table 1, the Commonwealth overall and every one of Virginia's metros saw growth in hotel RevPAR from January 2016 to January 2017, with the exceptionally large increase for Northern Virginia likely associated with the presidential inauguration and the Women's March on Washington. The story is more nuanced when we compare July 2016 to July 2017. **One possible explanation is that Airbnb hosts exit the market when there is low demand and enter the market when demand is higher. This would limit the ability of hoteliers to increase prices during periods of peak demand.**

TABLE 1

NOMINAL REVPAR FOR HOTELS: VIRGINIA AND SELECTED METROS, 2016 AND 2017

| | Jan-16 | Jul-16 | Jan-17 | Jul-17 | Growth Jan-Jan | Growth July-July |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------|
| Virginia | \$40.51 | \$84.09 | \$48.24 | \$85.17 | 19.08% | 1.28% |
| Blacksburg | \$28.42 | \$61.34 | \$28.86 | \$60.34 | 1.55% | -1.63% |
| Charlottesville | \$51.12 | \$98.97 | \$52.70 | \$102.09 | 3.09% | 3.15% |
| Hampton Roads | \$26.90 | \$105.38 | \$30.85 | \$108.31 | 14.68% | 2.78% |
| Harrisonburg-Staunton | \$34.08 | \$67.12 | \$36.45 | \$67.08 | 6.95% | -0.06% |
| Kingsport-Bristol, VA | \$24.00 | \$49.20 | \$24.02 | \$47.54 | 0.08% | -3.37% |
| Lynchburg | \$35.27 | \$61.82 | \$40.26 | \$55.41 | 14.15% | -10.37% |
| Northern Virginia | \$55.15 | \$91.51 | \$73.45 | \$94.01 | 33.18% | 2.73% |
| Richmond | \$44.15 | \$66.28 | \$45.27 | \$64.88 | 2.54% | -2.11% |
| Roanoke | \$29.98 | \$53.74 | \$30.90 | \$53.70 | 3.07% | -0.07% |

Source: STR trend reports: Jan. 24, 2017, and Sept. 15, 2017

How did Airbnb hosts fare during this period? As shown in Table 2, RevPAR for Airbnb hosts was lower than that of hotels. Airbnb hosts didn't earn as much per available room as traditional hoteliers. On the other hand, Airbnb RevPAR increased quite dramatically in Virginia and almost all the metropolitan areas. With few exceptions, RevPAR increased in every metro area, regardless of the period in question. While RevPAR

for hotels jumped 33 percent in Northern Virginia in January 2017, Airbnb RevPAR jumped over 100 percent. These large increases in RevPAR suggest that Airbnb hosts can not only command higher prices over time for their rooms and houses, but they also are gaining the ability to engage in "surge pricing" for special events, such as the presidential inauguration.

TABLE 2

NOMINAL AIRBNB REVPAR: VIRGINIA AND SELECTED METROS, 2016 AND 2017

| | Jan-16 | Jul-16 | Jan-17 | Jul-17 | Growth Jan-Jan | Growth July-July |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------|
| Virginia | \$11.77 | \$32.95 | \$19.30 | \$37.53 | 63.98% | 13.90% |
| Blacksburg | \$6.34 | \$16.42 | \$14.10 | \$27.04 | 122.40% | 64.68% |
| Charlottesville | \$17.74 | \$34.37 | \$22.65 | \$42.07 | 27.68% | 22.40% |
| Hampton Roads | \$9.55 | \$47.65 | \$13.52 | \$45.02 | 41.57% | -5.52% |
| Harrisonburg-Staunton | \$17.32 | \$26.99 | \$15.98 | \$32.06 | -7.74% | 18.78% |
| Kingsport-Bristol, VA | \$2.35 | \$13.89 | \$3.02 | \$20.82 | 28.51% | 49.89% |
| Lynchburg | \$7.37 | \$23.04 | \$11.18 | \$34.01 | 51.70% | 47.61% |
| Northern Virginia | \$13.29 | \$36.27 | \$26.86 | \$33.03 | 102.11% | -8.93% |
| Richmond | \$10.93 | \$26.50 | \$18.30 | \$28.94 | 67.43% | 9.21% |
| Roanoke | \$7.20 | \$26.18 | \$9.45 | \$35.34 | 31.25% | 34.99% |

Source: Airdna data for the Commonwealth received in September 2017

Comparing Airbnb In Virginia Cities To Out-Of-State Cities

How do Virginia cities compare to other markets where Airbnb is concerned? We have selected cities in six metropolitan regions in other states where Airbnb is active for comparison. It should be noted that, since we do not have access to STR data on metropolitan areas outside of Virginia, all comparisons, including those for cities in Virginia, are based on Airdna reports. In all the comparator cities, Airbnb listings grew rapidly from 2011 through 2016 (see Table 3). 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. Between 2015 and 2016, the Airbnb market segment in the city of Virginia Beach grew the fastest of any of the 12 cities listed in Table 3.

Virginia Beach, however, stands out in term of the nature of its rentals. Using active-listing data from March 2017, Table 4 enables us to see 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 reflects the existence of many large, four-plus bedroom buildings 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.

TABLE 3

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 reports

TABLE 4

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 reports

With respect to occupancy, Arlington leads Virginia cities in terms of its average Airbnb occupancy rate (see Table 5). Here, however, we must be careful because Airdna listing data ordinarily assume a one-listing, one-room relationship when the typical listing involves an average of almost two rooms. Hence, the occupancy data presented in Table 5 are biased strongly upward – perhaps as much as 100 percent on average. Portland’s 60.33 percent Airbnb occupancy rate, for example, in fourth quarter 2016 may be in the range of 30 to 35 percent.

In general, the less seasonal a market, the higher its average occupancy rate. Airbnb activity in Arlington is not as closely tied to tourism as it is in Virginia Beach.

STR data reveal an average occupancy rate of 57.9 percent for conventional hotels and motels located in Virginia for the fourth quarter of 2016. The unweighted average Airbnb occupancy rate was 47.8 percent in the same period, but as just noted, this does not consider the

phenomenon of multiple rooms per listing. Airbnb properties tend to be occupied less than traditional hotels, suggesting that many hosts struggle to rent their properties on a consistent basis.

Remember that RevPAR is revenue per available room and refers to the average revenue received by a host per room available. Again, however, we must issue a caution. Airdna’s data report RevPAR per listing and there usually are multiple rooms attached to a single listing. Consequently, Airdna’s data are biased strong upward here as well.

TABLE 5

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

Note: Smith Travel Research reported a room occupancy rate of 57.9 percent for conventional hotels and motels located in Virginia for fourth quarter 2016.

With this caveat in mind, we can observe in Table 6 that Arlington once again leads the Virginia pack, though Lynchburg, Norfolk, Richmond and Virginia Beach all recorded considerably higher growth rates in their RevPARs between 2015 and 2016.

There are two additional inferences we can draw from Table 6. One is that there is wide dispersion in RevPARs among the cities and in RevPAR growth rates as well. The other is that if we were to divide the reported Airbnb RevPARs by two to take account of the listings versus rooms problem, then the average October 2016 RevPAR of \$75.48 in conventional hotels and motels was substantially higher than actual Airbnb RevPAR in any of the 12 cities covered.

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 7). Virginia Beach's share of revenue from four or more bedroom rentals (36.6 percent of revenue earned) eclipsed that of all other cities in our sample.

If tax revenue collections are a major concern for cities, then the data in Table 7 strongly suggest that cities' attention should be focused on the multiple-bedroom Airbnb properties. In a city such as Virginia Beach, almost three-quarters of all revenue earned by Airbnb hosts is derived from multiple-bedroom properties,⁹ while it is 66 percent in Richmond and almost 63 percent in Arlington.

⁹ We estimate that almost 80 percent of the lodging taxes that the city of Virginia Beach collects from Airbnb hosts is derived from hosts who rent full houses, apartments or condos.

TABLE 6

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 reports

Note: Smith Travel Research reports that RevPAR in conventional hotels and motels in Virginia was \$75.48 in October 2016 and that it grew 6.6 percent between October 2015 and October 2016.

TABLE 7

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 reports

The moral to the story revealed by the data in Table 7 is once again that cities that decide to devote considerable resources to forcing compliance from hosts renting shared or private rooms are likely to find that the costs of doing so will exceed the incremental revenues they receive from this enforcement. Simply put, 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, possibly hard-to-track 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 cities 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 cities to collect the 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 becomes subject to taxation. Airbnb and related hosts may believe they can thumb their noses at cities, 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 can levy some impressive penalties to inspire cooperation.

Perish the thought: city income taxes, perhaps piggybacked on the state or federal income taxes, may turn out to be the wave of the future in the gig economy – if cities are serious about collecting taxes due from

Airbnb hosts and the multitude of other gig economy entrepreneurs who increasingly are inhabiting the cities' economic environment. We make this observation not because we are advocates of income taxes per se, but rather as dispassionate observers of economic trends. Sales-related taxes may become increasingly difficult to collect.

IS THERE A CONNECTION BETWEEN THE GROWTH OF AIRBNB AND HOTEL BEHAVIOR?

Costs and prices make a difference, or so at least academic economists tell their students. **While a more rigorous analysis would be required to render a definitive judgment, *prima facie* it appears that the pricing behavior of Virginia hotels is partially responsible for the rapid growth of Airbnb in their respective cities.** 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 cost-conscious tourists and business travelers to contemplate alternatives, including Airbnb, which may result in hotels losing market share to competitors such as Airbnb.

Unless dramatic action is taken by cities, it is safe to say that Airbnb and similar rental contractors are not going to disappear. Nevertheless, traditional hotels in the Commonwealth have three major avenues open to enable them to become more competitive with respect to Airbnb and similar firms. 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 are more personal, engaging and memorable (qualities many Airbnb customers say attract them to Airbnb accommodations). Third, cities can make their hotels 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 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 because there are competing points of view, each 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. **If we adopt this view, then it follows 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 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 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 does not follow that it would be wise for cities to devote substantial resources to ensuring that every Airbnb-type host complies with all of the city's ordinances. Let's use Virginia

Beach as an example. Airbnb hosts who rent single or shared single rooms in private homes accounted for a very small percentage of the total number of rooms available in Virginia Beach during 2016 and generated only about one-fifth of that city's potential tax revenues from Airbnb-like activities. Further, these hosts do not often appear to be the sources of behavioral problems (noise, trash, crime, etc.).

Cities would be wise to devote their scarce enforcement resources to identifying and obtaining compliance from Airbnb hosts offering their entire place for rent. 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.

Larger Virginia cities might usefully 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 cities can replicate this, then the revenues they receive from small Airbnb-like hosts plausibly could exceed the costs required to collect them. However, this will not be easily accomplished because it imposes costs on Airbnb and plausibly reduces both its own profits and those of its hosts. Airbnb is unlikely to comply immediately or happily. We recognize this, but note that the somewhat similar circumstances surrounding Amazon eventually have resulted in Amazon collecting and remitting sales taxes to jurisdictions, even where Amazon has no physical presence. We believe the same evolutionary process will occur in markets where firms such as Airbnb operate.

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.¹⁰ To place this in perspective, this is about 25 percent higher than the value of the entire Hilton Hotel chain.

The notion that the meteoric growth of Airbnb and similar hosts can 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.

Implications Of The Gig Economy For Virginia Cities And Counties

It would be shortsighted 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 2020.¹¹ Graph 15 illustrates the dramatic growth in contract and temporary employees in the U.S. economy.

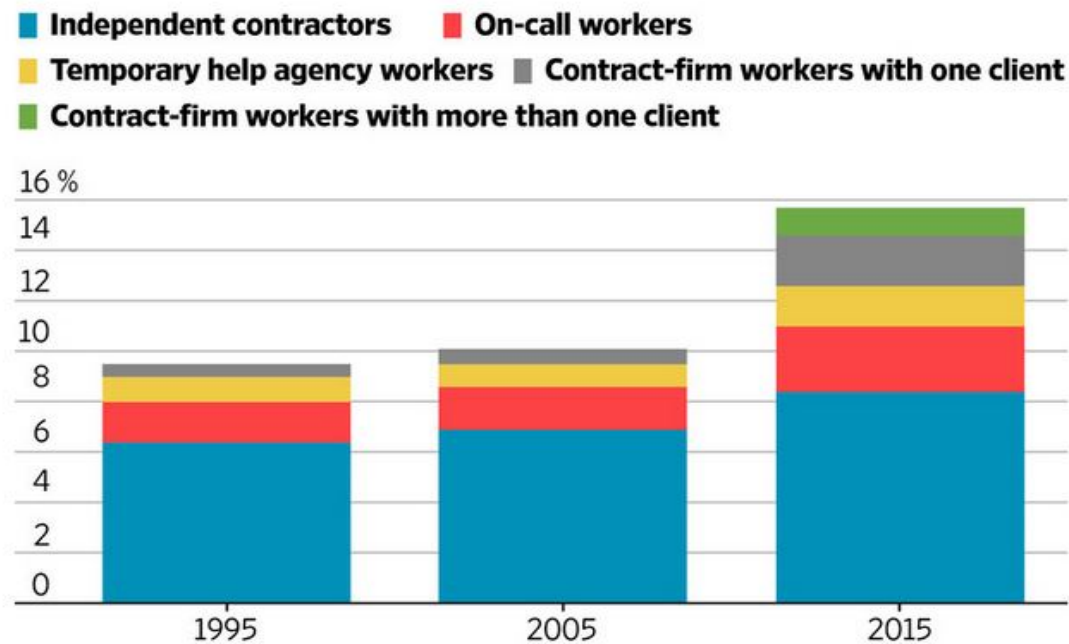
¹⁰ Matt Rosoff, “Airbnb Is Now Worth \$30 Billion,” *Business Insider* (Aug. 6, 2016), www.businessinsider.com.

¹¹ 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.

GRAPH 15

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

These are among the major implications for cities in Virginia:

- **Cities and counties 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 them.**
- **Jurisdictions seeking to economize and do the best for their citizen taxpayers likely will choose to hire more temporary workers.** Must they place limits on their employment of contractual workers even if this turns out to cost more money?
- **Jurisdictions must decide what levels of fringe benefits (if any) they will provide contractual employees, particularly when their employment period is lengthy, or when the individual is employed repetitively. I.e., how long or often must someone be employed in order for the city's obligations to such employees change?**
- **Jurisdictions will find that the gig economy workers who actually reside in Virginia (though perhaps only for a period of time) will place larger demands upon their 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.**
- **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.**
- **Jurisdictions 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 the Commonwealth. Jurisdictions must be proactive if they wish a different outcome. Further, reputable recent evidence suggests that many Airbnb hosts engage in racial discrimination based upon the names of prospective renters.¹² Virginia 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.



¹² 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.

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



Were one 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, one likely would be regaled with tales of woe. Such students no doubt will complain that the price of attendance has gone up too rapidly and that as a result, 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 their family incomes, 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. Increases in the Virginia Community College System ranged from Richard Bland 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 data come from the Chronicle of Higher Education,

¹ Partners 4 Affordable Excellence @ EDU, a 501-c-3 nonprofit foundation, 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.

which maintains a large easily accessible tuition and fee database on the nation's colleges and universities.

Sticker prices are the charges approved by boards of visitors and published in catalogs. They differ from the actual prices that students end up paying because of financial grants students may receive. These actual prices are labeled *net prices*. This situation is analogous to the difference between the sticker price of a new automobile and the actual sales prices that a purchaser negotiates.

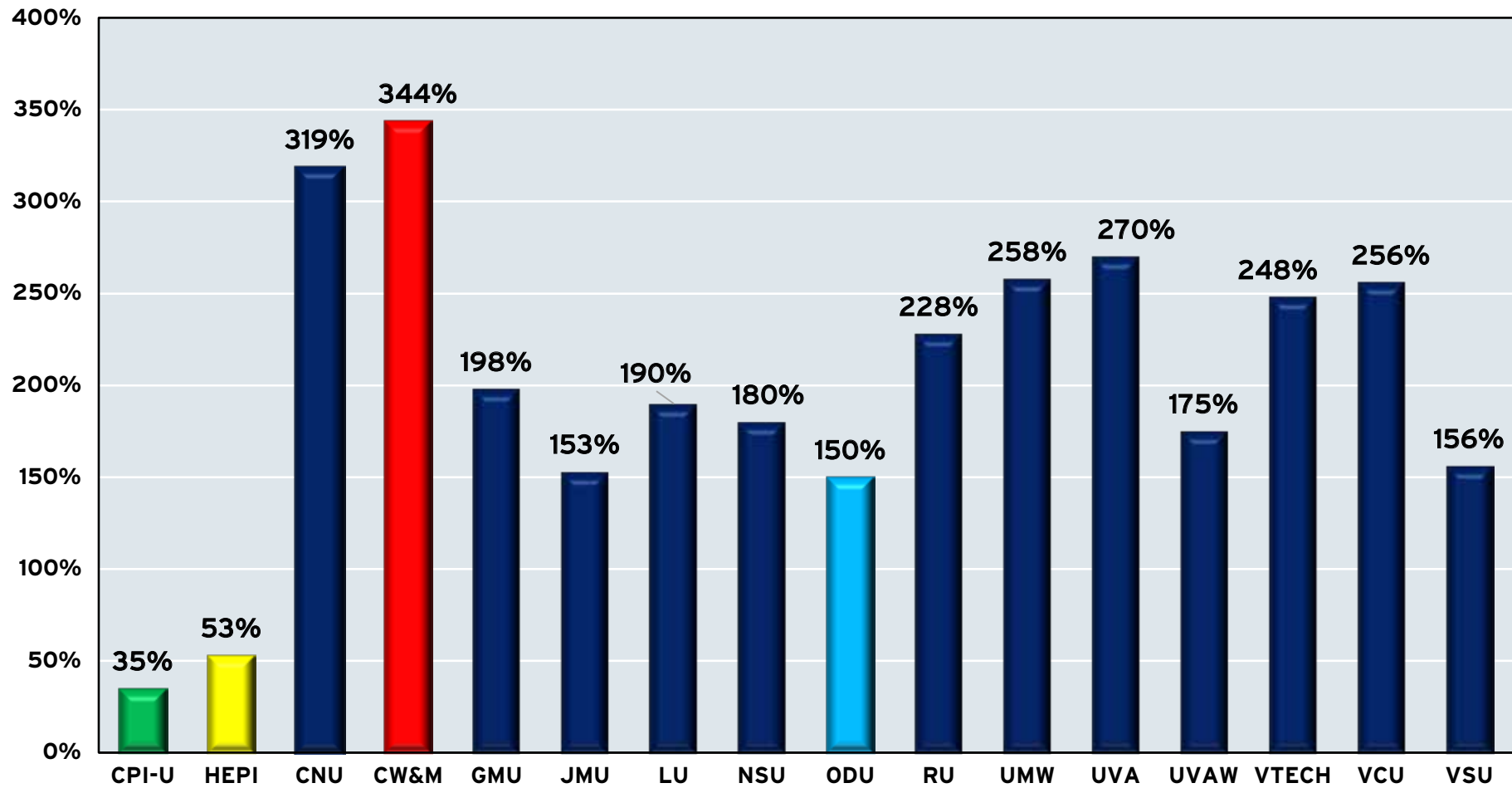
As we shall see, there are real-world consequences associated with these cost increases. They include the inability of many Virginians to afford to attend a public college, or to have to do so on a part-time basis; increasing levels of student and family debt; increasing social and economic stratification 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. These are among the reasons why Virginia's economy has grown more slowly than that of the United States for six consecutive years.² It also helps explain why enrollment in Virginia's public institutions of higher education has crept downward every year since 2011 (see Graph 3). Simply put, increasing numbers of potential students have decided that our public colleges have become too expensive compared to the benefits they generate in return.



² See chapter 1 of this report.

GRAPH 1

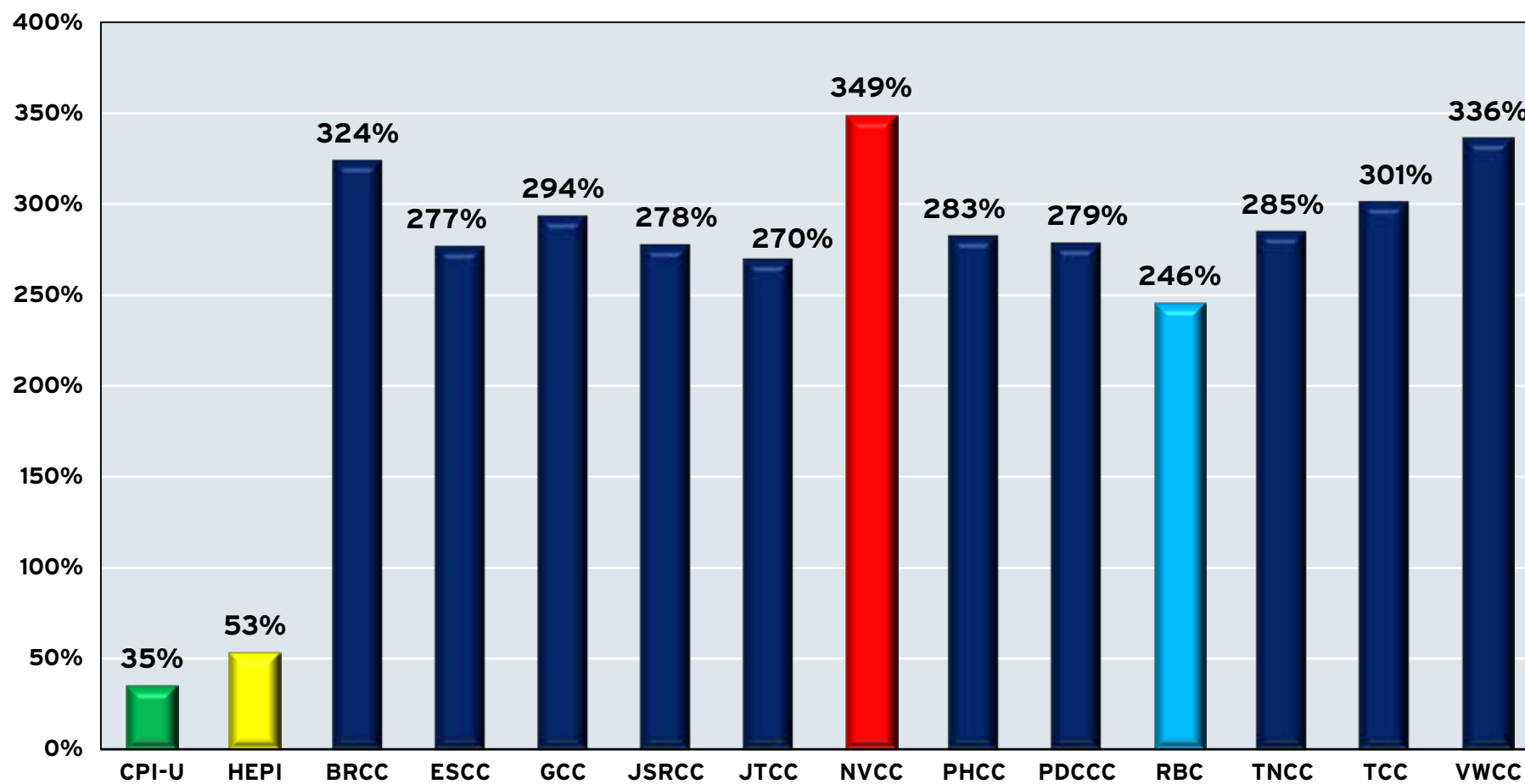
**PERCENT CHANGE IN IN-STATE TUITION AND FEES,
VIRGINIA FOUR-YEAR PUBLIC INSTITUTIONS, 2001-02 TO 2016-17**



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

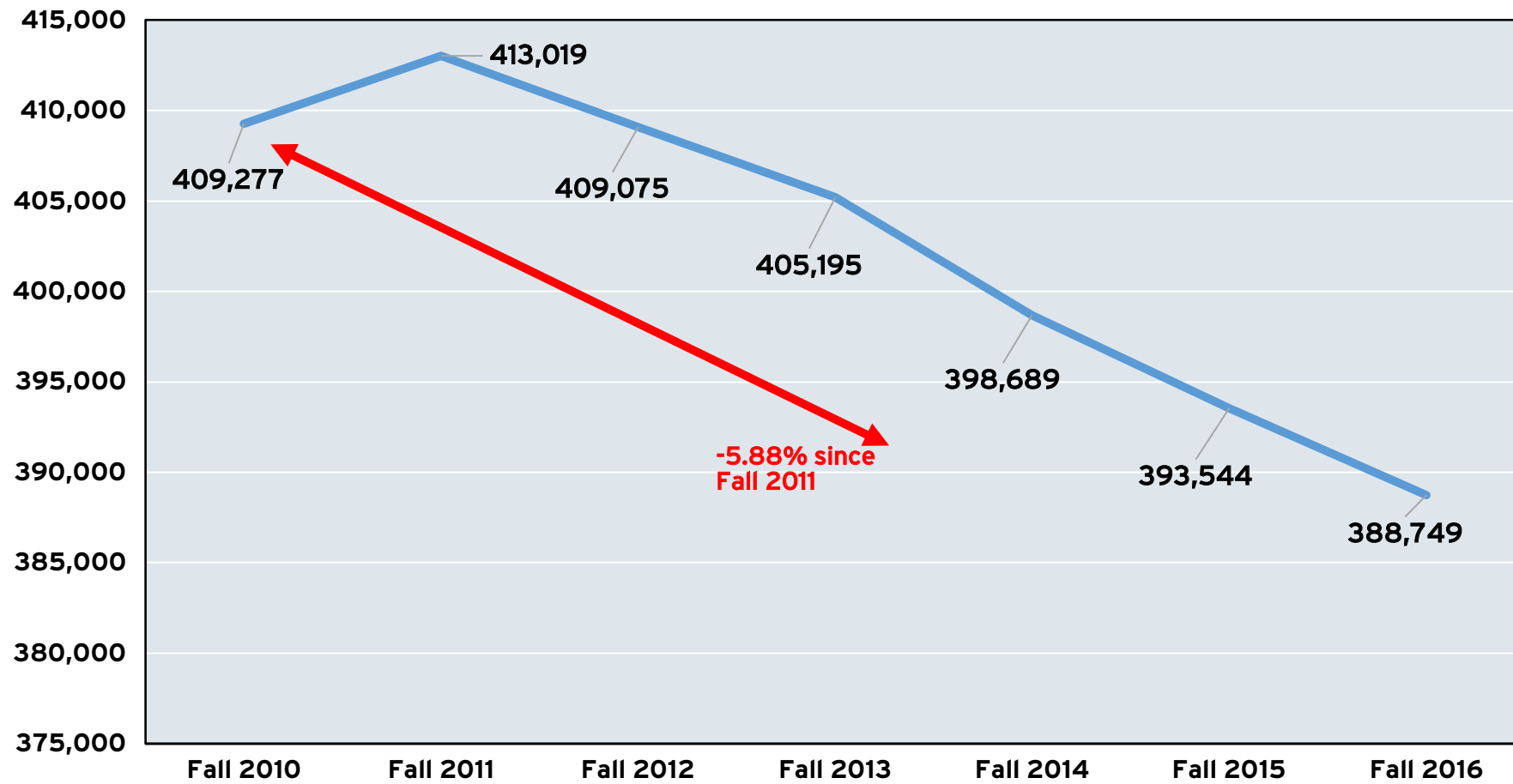
**TOTAL PERCENT INCREASE IN IN-STATE TUITION AND FEES,
SELECTED VIRGINIA TWO-YEAR PUBLIC INSTITUTIONS, 2001-02 TO 2016-17**



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 3

DECLINING FALL SEMESTER HEADCOUNTS AT VIRGINIA'S PUBLIC INSTITUTIONS OF HIGHER EDUCATION



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

Comparing Tuition And Fee Increases To Changes In Prices And Incomes

Published tuition and fee charges at Virginia's public institutions have far outpaced both the CPI-U (the consumer price index for all urban consumers)³ 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 4 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 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 18.7 percent during these years – only about one-quarter as much as the increase in published tuition and fees. Graph 5 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.

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 3.3 times as fast as Virginia median household income between 2001 and 2016.**

An interesting and relevant 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

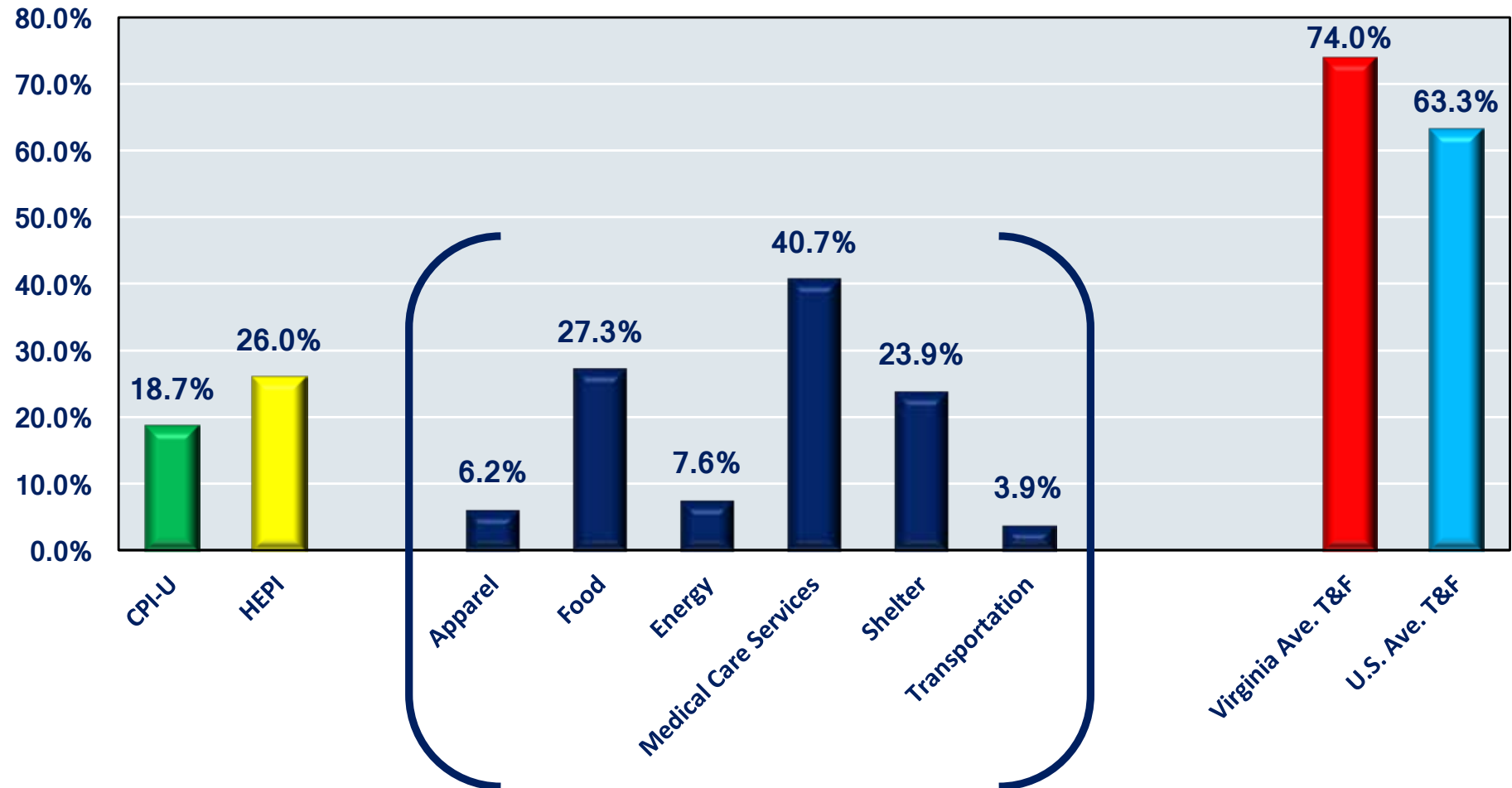
or university? Graph 6 provides this information, which is eye-opening. **In 2001, 227.7 hours of work were required for a Virginian earning the median hourly wage to pay for tuition and fees at the typical four-year public Virginia institution. (And this was before taxes.) By 2016, the number of hours of work required had grown to 438.** For the Virginia Community College System, the comparable numbers were 140.2 and 234.2.

Even though need-based financial aid has increased (which we document later), it is difficult to avoid concluding that the typical Virginian gradually 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.

³ The CPI-U covers approximately 80 percent of all Americans.

GRAPH 4

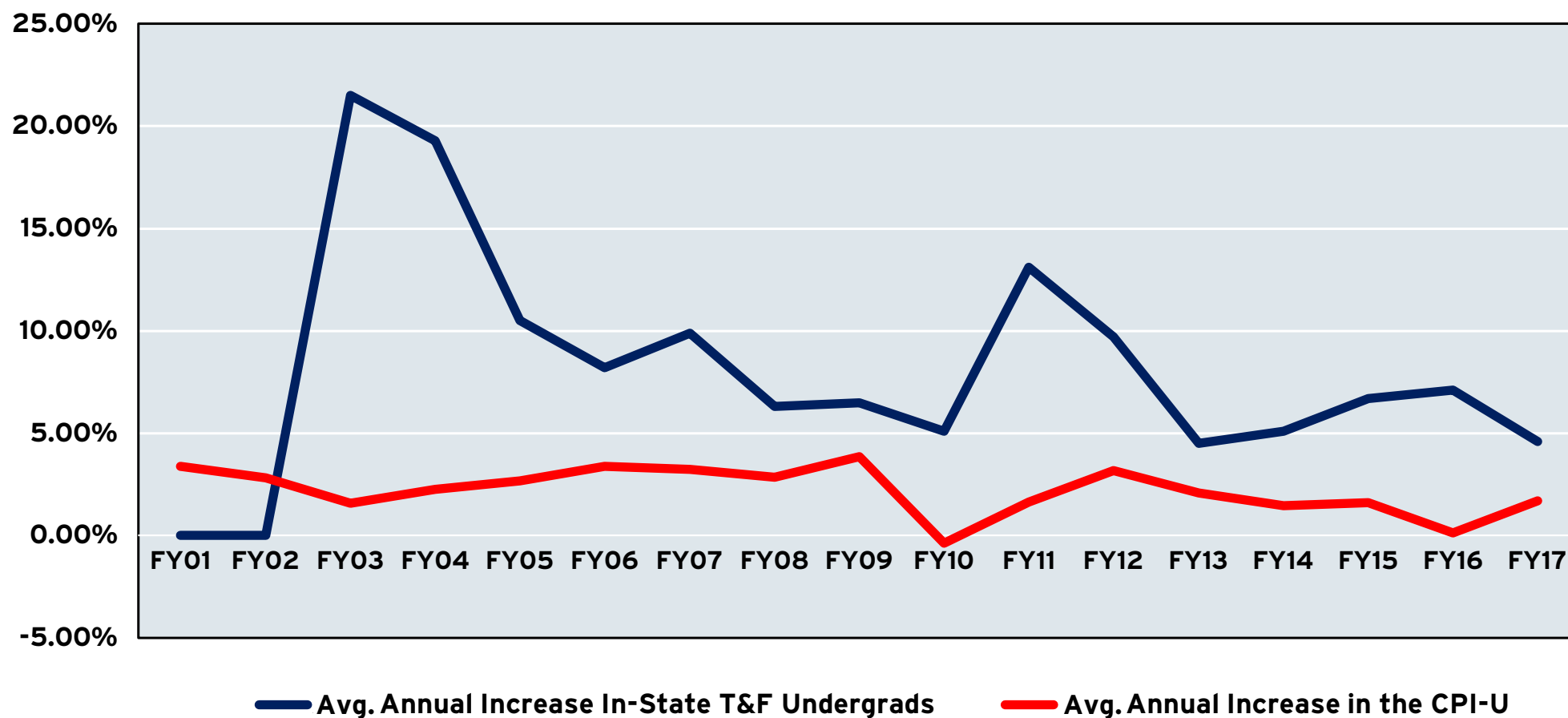
**COMPARING TUITION AND FEE INCREASES AT VIRGINIA'S PUBLIC FOUR-YEAR INSTITUTIONS
TO CHANGES IN OTHER PRICES, 2006-07 TO 2016-17**



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-U; Commonfund for the HEPI

GRAPH 5

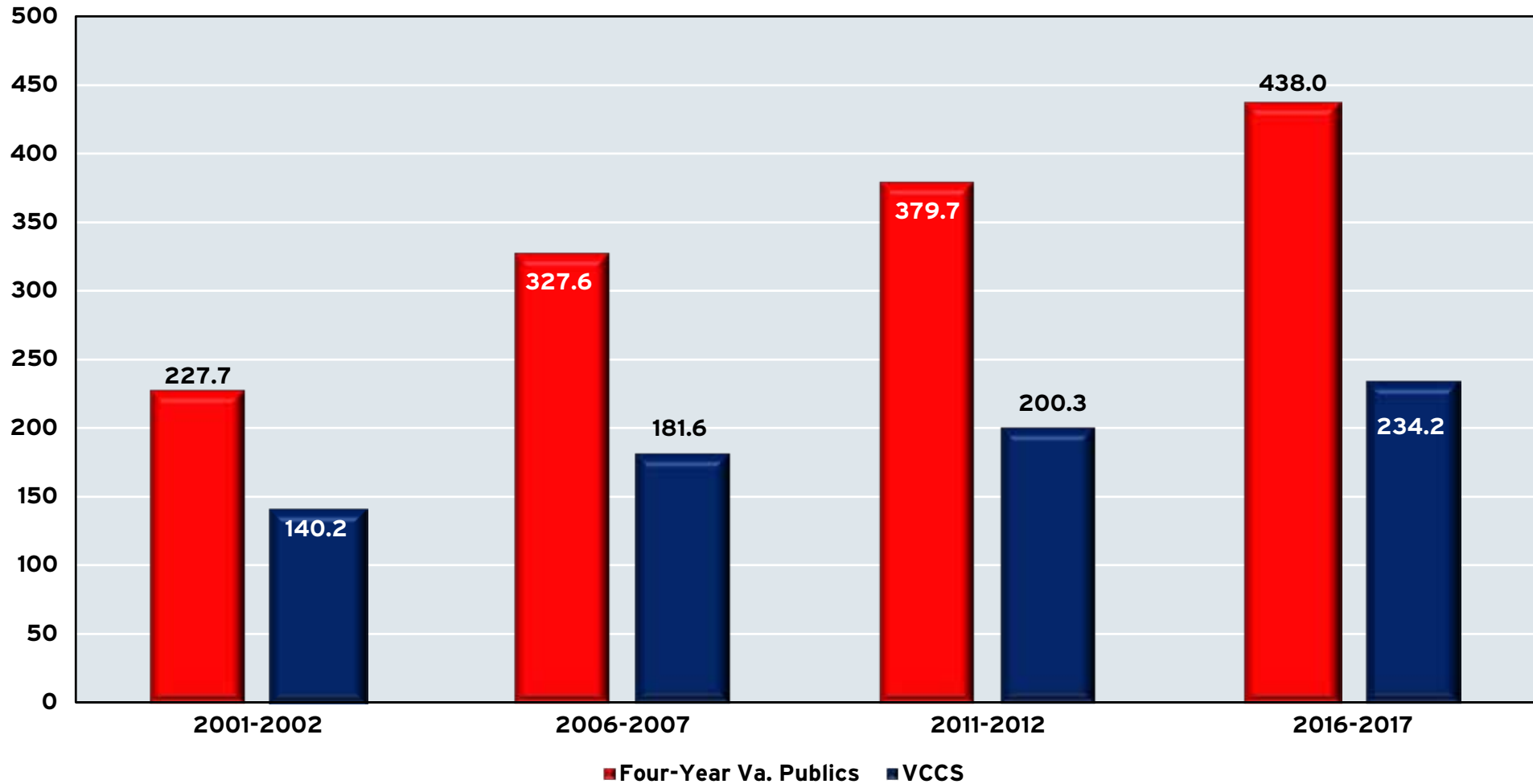
**COMPARING AVERAGE FOUR-YEAR PUBLIC TUITION AND FEE INCREASES
AT VIRGINIA PUBLIC INSTITUTIONS TO THE CONSUMER PRICE INDEX, FY 2001 TO FY 2016**



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

GRAPH 6

**NUMBER OF WORK HOURS REQUIRED 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 and State Council of Higher Education for Virginia for tuition and fees

Net Prices Are Most Important

The tuition and fee numbers presented thus far have been “sticker prices” – the charges approved by each institution’s board of visitors and subsequently published in their catalogs. At some colleges and universities, only small proportions of the student bodies actually pay these sticker prices and the massive remainder pays lower prices because they receive financial grants. These grants can be need-based or merit-based, the latter perhaps reflecting superior grades and standardized test scores, or a particular talent 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. Instead of, or in addition to Pell Grants, institutions may provide students with other financial grants that do not need to be paid back. Institutional endowments commonly are thought to be the major source of such funds, but reality is that internally redistributed tuition and fee monies provide the most dollars for such grants. There are two primary sources of redistributed funds. First, out-of-state students are charged premium prices and the dollars they contribute subsequently are allocated by institutions for a variety of purposes, including financial grants to students. Second, students hailing from families with higher incomes effectively are charged higher prices and often their tuition dollars are reallocated via grants to other students who come to campus from lower-income families.

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) administer a collegiate version of a steeply progressive income tax, taking from the more wealthy and giving to the less wealthy by means of the net prices each group pays.⁴ Again, “net price” here refers to 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 price.

Graph 7 presents the average net price paid by undergraduate students at Virginia’s four-year public colleges and universities in 2014-15, the latest year for which comparable data are available. The data in Graph 7 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 7 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 Appropriations Committee of the Virginia House of Delegates 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, but tuition and fees increased an average of 170 percent.**

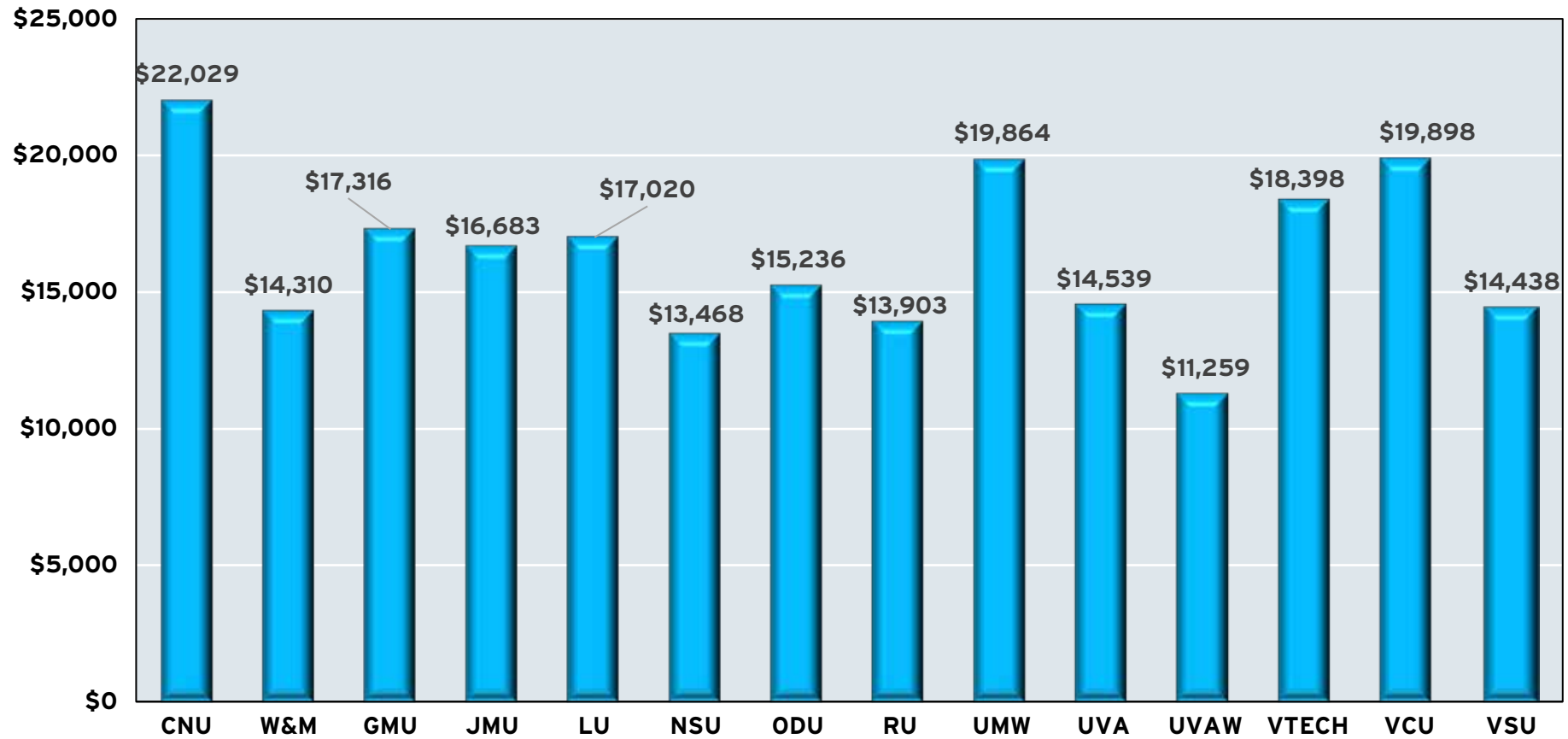
Nationally, the College Board, a nonprofit organization representing more than 6,000 colleges and universities, reported that even after accounting for all financial grants received by students at public colleges and universities, the real, price-adjusted costs paid by these students rose by a total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

Nevertheless, there is considerable variation among institutions where net prices are concerned. Institutions with larger endowments typically provide larger financial grants to students that need not be repaid, though the impact of these grants is reduced because their tuition and fee charges are higher as well. Also, as noted above, some institutions are very aggressive price discriminators – they charge different students 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).

⁴ Critics argue that these pseudo-taxes have not been approved by the Virginia General Assembly.

GRAPH 7

**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 enjoys brand magnetism that enables it to do so. As time passes, the pricing and financial aid policies of each institution mold the composition of its student body.

In January 2017, The New York Times published revealing data for more than 2,000 institutions that disclosed the percentage of each institution's student body 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 Patrick Henry 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 five Virginia public institutions (University of Virginia, William & Mary, Virginia Tech, University of Mary Washington and Christopher Newport University) have relatively few common people in 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. It is evident 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 average⁵ and hence fewer Virginians qualify for Pell Grants; and (2) tuition and fees at Virginia institutions are higher than the national average. 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.

The College of William & Mary's 11 percent Pell Grant percentage for its undergraduate student body was the lowest of any public college or university in the United States and the University of Virginia's 12 percent was not far behind. *Prima facie*, neither institution is very accessible to student applicants from lower-income families. Additions to this list might include James Madison, Christopher Newport, Virginia Tech and Mary Washington. One could question whether this is consistent with their status as public institutions serving the entire citizenry.

In defense of several of these institutions (and especially W&M), 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.

William & Mary's generously low \$4,459 net price for students 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 net price (\$2,660). The University of Virginia also deserves kudos for lowering the net price paid by its lowest-income students by more than \$600 between 2014-15 and 2015-16.

⁵ 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 1**FAMILY INCOMES OF UNDERGRADUATE STUDENTS AT SELECTED VIRGINIA INSTITUTIONS**

| | Percent Students From Families Upper 1% | Percent Students From Families Bottom 40% |
|-----------------------|--|--|
| Washington and Lee | 19.1% | 8.4% |
| U Richmond | 15.1% | 20.6% |
| U Virginia | 8.5% | 15.0% |
| William & Mary | 6.5% | 12.1% |
| Hampden Sydney C | 6.1% | 22.3% |
| U Mary Washington | 2.9% | 17.6% |
| Virginia Tech | 2.8% | 15.0% |
| James Madison U | 2.6% | 12.6% |
| Christopher Newport U | 1.7% | 18.1% |
| George Mason U | 1.5% | 26.2% |
| Radford U | <1% | 26.4% |
| Va Commonwealth U | < 1% | 31.0% |
| Old Dominion U | < 1% | 33.2% |
| Northern Va CC | <1% | 42.3% |
| Liberty U | <1% | 43.4% |
| Blue Ridge CC | <1% | 50.9% |
| Thomas Nelson CC | < 1% | 52.4% |
| Norfolk State U | < 1% | 66.0% |
| Patrick Henry CC | <1% | 75.8% |

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

TABLE 2**PERCENTAGE OF ALL UNDERGRADUATES RECEIVING PELL GRANTS
AT SELECTED VIRGINIA INSTITUTIONS, 2015-16**

| | |
|-------------------------|-----|
| Washington and Lee U | 9% |
| C of William & Mary | 11% |
| U of Virginia | 12% |
| James Madison U | 14% |
| Virginia Tech | 16% |
| Christopher Newport U | 16% |
| U of Mary Washington | 17% |
| U of Richmond | 18% |
| Roanoke C | 23% |
| Randolph-Macon C | 23% |
| Longwood U | 24% |
| Virginia Average | 26% |
| George Mason U | 27% |
| Virginia Commonwealth U | 28% |
| Dabney Lancaster CC | 29% |
| Radford U | 31% |
| Old Dominion U | 37% |
| National Average | 39% |
| U Virginia Wise | 38% |
| J. Sargeant Reynolds CC | 39% |
| Thomas Nelson CC | 42% |
| Eastern Shore CC | 43% |
| Mountain Empire CC | 46% |
| Liberty U | 47% |
| Norfolk State U | 62% |
| Virginia State U | 71% |

Source: National Center for Education Statistics' College Navigator

TABLE 3

**NET PRICES PAID BY STUDENTS COMING TO SELECTED CAMPUSES
FROM FAMILIES WITH INCOMES \$30,000 OR BELOW IN 2015-16**

| | |
|-------------------------|----------|
| William & Mary | \$4,459 |
| U of Virginia Wise | \$9,396 |
| U of Virginia | \$9,463 |
| Old Dominion U | \$11,470 |
| Radford U | \$12,720 |
| Norfolk State U | \$13,952 |
| Virginia State U | \$12,998 |
| U of Mary Washington | \$11,899 |
| James Madison U | \$12,872 |
| Virginia Tech | \$11,998 |
| Longwood U | \$15,786 |
| George Mason U | \$15,089 |
| Virginia Commonwealth U | \$13,593 |
| Christopher Newport U | \$15,500 |

Source: National Center for Education Statistics' College Navigator

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 at 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 colleges and universities whose pricing of undergraduate education to Virginians often imitates private institutions? Is it appropriate for the citizenry to subsidize institutions that increase social and economic inequality rather than provide the traditional 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.⁶

There are undeniable financial considerations attached to institutional admission strategies. Pell Grant students can be expensive to educate because they require more institutionally based financial aid and 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.

Rare is the president of a top-ranked institution who wants to preside over a noticeable decline in his or her institution's rankings. What member of an institution's board of visitors will brag about the lower national ranking that came about because more Pell Grant students were admitted?

Are there other reputable national models available for consideration?

Yes. At the University of California at Berkeley, for example, 30 percent of undergraduates were Pell Grant recipients in 2015-16, while at UCLA it was 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 all but a few of Virginia's four-year public institutions. Further, these institutions offer rather low net prices to their lowest-income students – 8,677 at Berkeley and \$7,900 at UCLA in 2015-16.⁷

Georgetown University's Center on Education and the Workforce recently examined Pell Grant enrollments in highly selective colleges and universities and concluded "selective colleges can afford to admit more Pell Grant recipients." Anthony Carnevale and Martin Van Der Werf of Georgetown recently proposed a "20% Solution" such that the undergraduate student bodies of selective institutions should include at least 20 percent Pell Grant recipients. The duo argue that the institutions can afford to do so and that this "could equalize opportunity in higher education."⁸

⁶ With respect to graduation rates, see Sarah Butrymowicz, "Billions in Pell Dollars Go to Students Who Never Graduate," *Hechinger Report* (Aug. 17, 2015).

⁷ College Navigator.

⁸ <https://cew.georgetown.edu/wp-content/uploads/The-20-Percent-Solution-web.pdf>.

Ultimately – 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. Several Virginia institutions have done so in recent decades (notably James Madison and Christopher Newport), though they have moved away from, not toward, the Pell 20 model. Nevertheless, the example of the University of California campuses suggests that institutions may be able to retain both rankings and reputation even while they become more accessible to students from lower-income backgrounds.

A bipartisan proposal in Congress would assign financial penalties to institutions that take the lowest proportions of Pell Grant students.⁹ At least half a dozen Virginia public four-year institutions appear to have made strategic decisions that effectively restrict the access of lower-income Virginians to those campuses. Is this a trend that the citizenry should support? We do not have the answer to this question, but it is easy to observe that what is perceived to be good for an individual institution's national rankings may not be synonymous with what is good for Virginians.

Student Debt

When students and their families cannot afford 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. **SCHEV found that 62 percent of 2015-16 baccalaureate degree graduates borrowed an average of \$29,822 to pay for their education.** The 62 percent debtor number for 2015-16 graduates was up from 56 percent for 2006-007 graduates. SCHEV labels these debts “known” and cautions that its report may not capture all debt these graduates incurred.

⁹ Jon Marcus, “Top Universities Could Take Thousands More Low-Income Students, Study Says,” *Hechinger Report* (May 2, 2017), <http://hechingerreport.org/top-universities-take-thousands-low-income-students-study-says>.

TABLE 4

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

| Year | Percent of Known Debtors | Average Level of Debt |
|-----------|--------------------------|-----------------------|
| 2011-2012 | 61% | \$26,407 |
| 2012-2013 | 62% | \$27,582 |
| 2013-2014 | 63% | \$28,322 |
| 2014-2015 | 63% | \$29,267 |
| 2015-2016 | 62% | \$29,822 |

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

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.

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.¹⁰ 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 8).¹¹ Thus, Virginia’s public colleges and universities have been increasing tuition for other reasons as well. This conclusion is consistent with recent national studies.¹²

What are those other reasons? They include:

- Institutional concern with national rankings is epitomized by U.S. News & World Report rankings. Fixation on rankings can lead to a variety of decisions considerably 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 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 and headcount enrollments are declining. Modernization and rehabilitation of existing space may make more sense and be less expensive.
- Institutions increasingly assess mandatory fees to support items ranging from student centers to athletic teams. In 2016-17, eight Virginia four-year public institutions charged their full-time undergraduate students athletic fees of \$1,538 or more. Consider Christopher Newport’s \$1,886 annual fee. This corresponds to a charge of \$188.60 per three-hour undergraduate 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 9). 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.

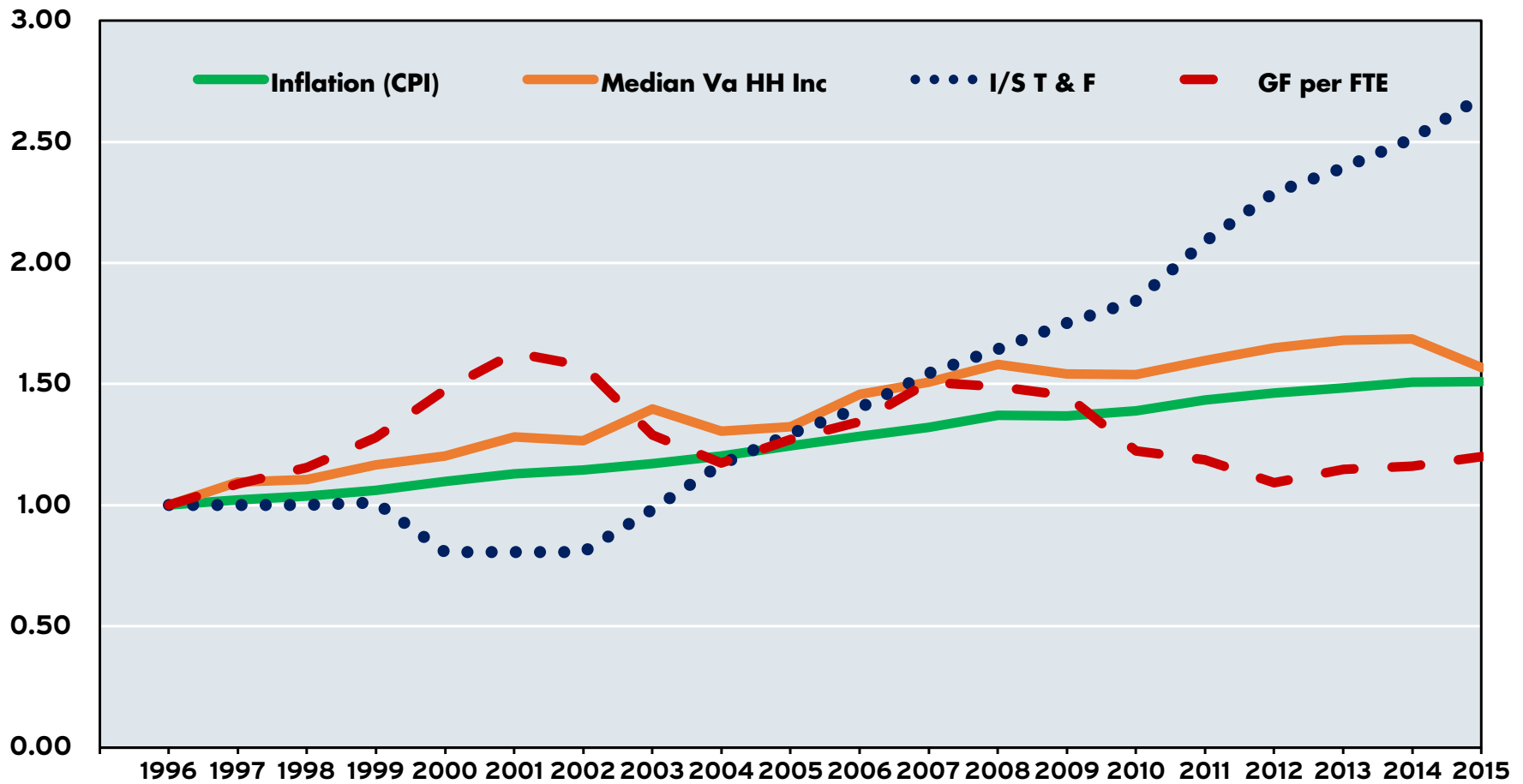
¹⁰ “Higher Education Affordability,” House Appropriations Committee Retreat, Nov. 15-16, 2016, <http://hac.virginia.gov/committee/files/2016/11-15-16/III%20-%20Higher%20Education%20Affordability.pdf>.

¹¹ “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>.

¹² One example is Neal McCluskey, “Not Just Treading Water,” Policy Analysis (Cato Institute, Feb. 15, 2017).

GRAPH 8

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>

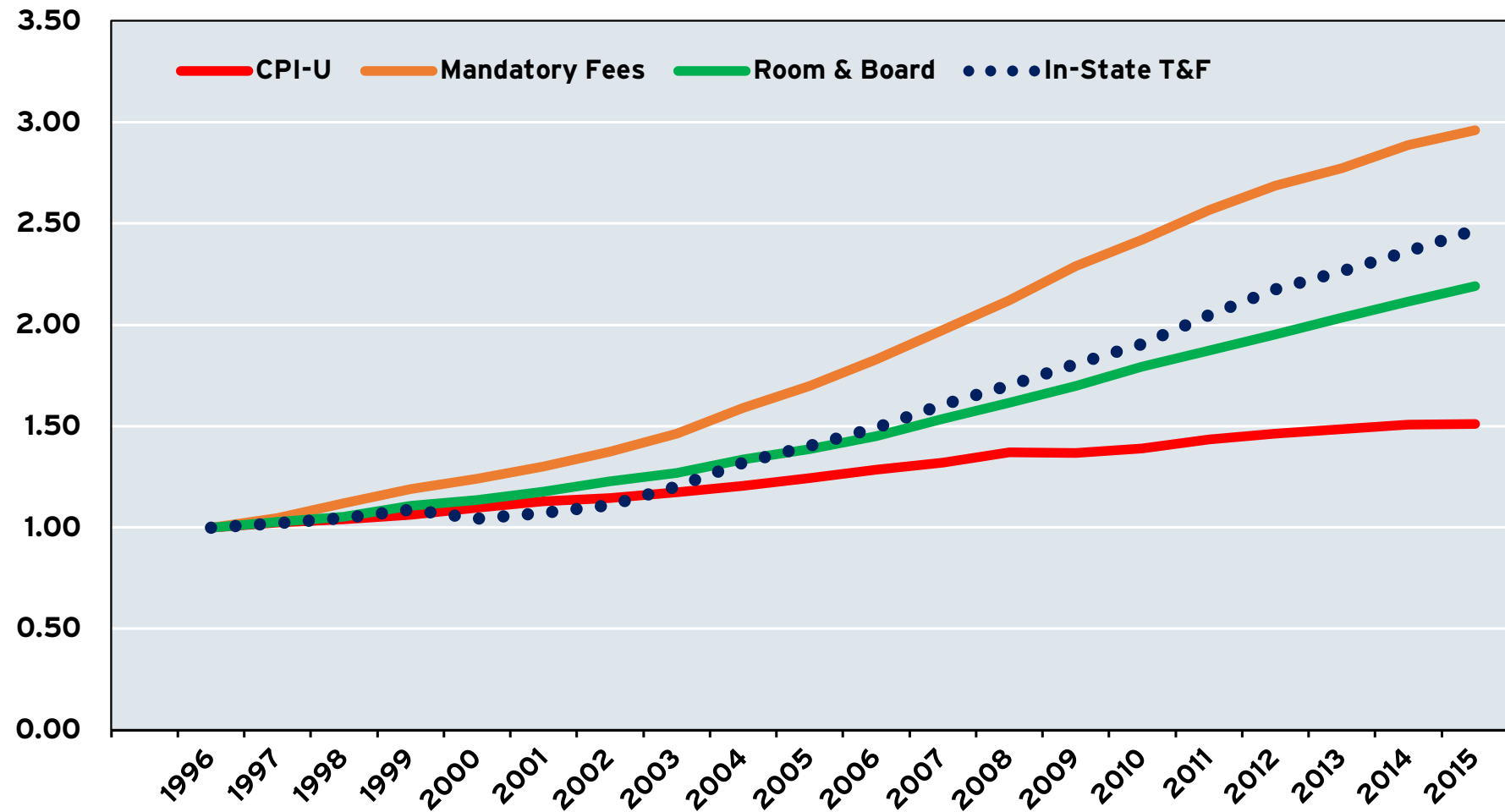
- Institutions have reduced the proportion of their budgets they spend on instruction (see Graph 10).
- Disproportionate growth in spending on employee fringe benefits (which sometimes have substituted for pay raises during difficult years) has pushed tuition and fees upward.
- Federal government financial aid policies are based upon institutional costs. Hence, when institutional costs increase, the “feds” supply more money.
- 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 with other institutions, even in low-enrollment areas such as foreign languages and literatures.
- Institutions are averse to pricing the resources they use internally, such as space, and this leads to suboptimal behavior and hoarding.
- Institutional mission creep has propelled many institutions into offering new, low-enrollment programs, often at the graduate level.
- Faculty productivity, as measured by faculty credit hours generated, has declined on most campuses.
- Subsidies from undergraduate students often are required to support faculty research activity and this is true even in cases where the research also 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 in Virginia, where institutional independence is relatively high compared to many other states, not the least because each institution has its own board of visitors. Collectively, 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 9

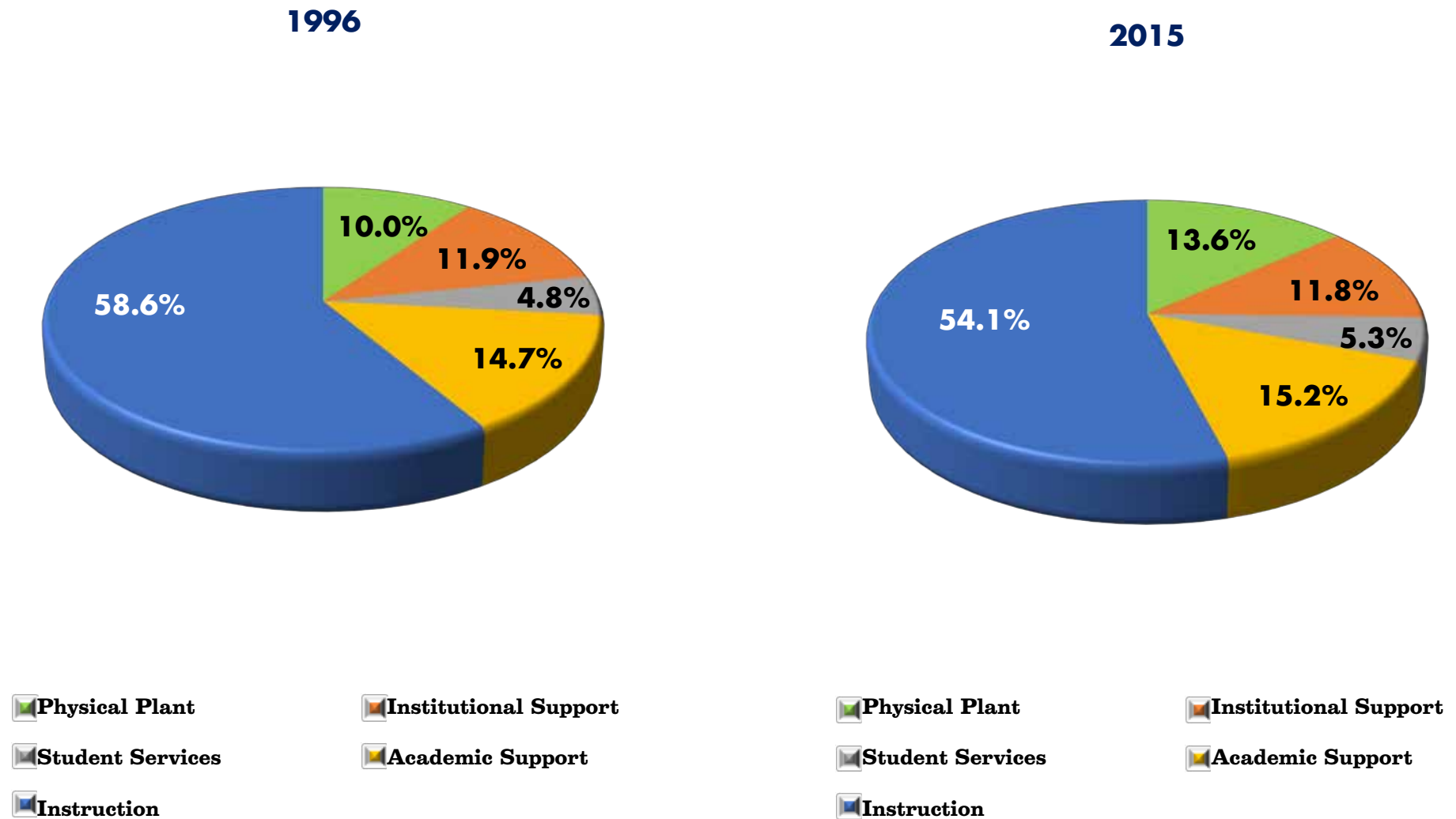
COMPARING CHANGES IN THE MAJOR ELEMENTS OF THE COST OF ATTENDANCE
AT VIRGINIA PUBLIC INSTITUTIONS TO CHANGES IN THE CONSUMER PRICE INDEX, 1996-2015



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 10

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 or the State Council of Higher Education for Virginia constrain increases and improve the situation? Perhaps.

Let's utilize an example to clarify the situation. Graph 11 compares the University of Virginia'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 subsequent years, 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 UVA's per student in-state tuition and fee charge in 2016-17. Specifically, UVA's published tuition and fee price in 2016-17 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 CPI,¹³ then in 2016-17 its tuition and fee charge would have been only \$6,047 – 38.5 percent of the actual cost.

One 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 they would have saved \$106.11 million – a rather tidy

sum. In effect, 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.¹⁴

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 even while these tuition increases were being imposed, UVA was accumulating a \$2 billion-plus 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 billion-plus 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 previously noted? Ultimately, such decisions reflect the values held by the senior officers of institutions and their board members.

The point here is not that UVA misused the \$721.38 million (or the \$2 billion-plus fund), but instead that as economists point out, there were real opportunity costs – foregone alternatives – attached to this approach to managing the institution. Alternatively, 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 a low-tuition policy have done damage to UVA's rankings and its ability to accomplish its stated institutional goals? Quite possibly, given the fashion in which rankings usually are assigned. This is an important reason why our discussion here will not lead to a definitive conclusion. The goal of this chapter has been to highlight affordability and access issues and the costs associated with current tuition and fee regimens, not to

¹⁴ 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.

¹³ July to July of each year.

prescribe an operating plan for any Virginia public institution, including UVA.

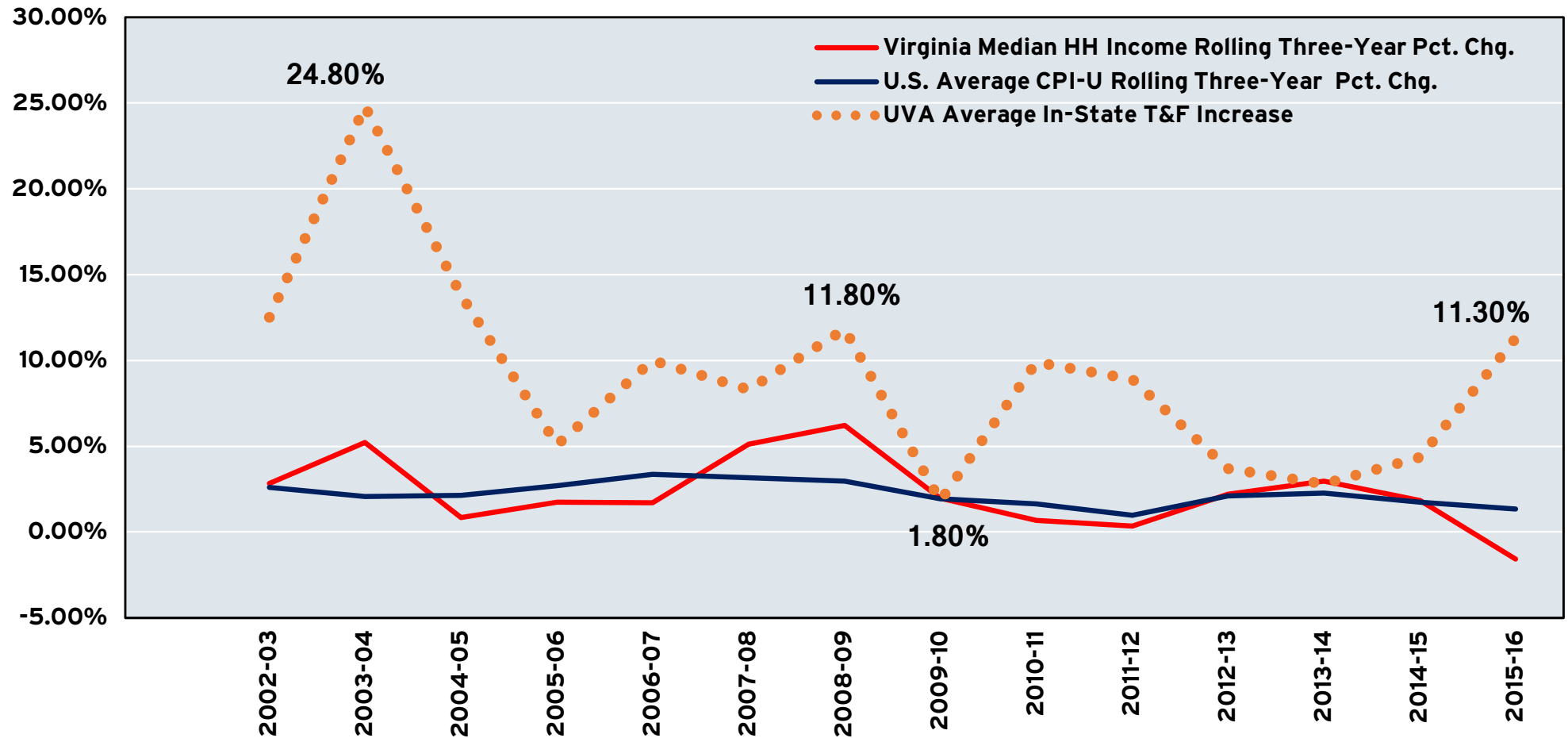
Lest anyone view tuition and fee rules such as the one we have just illustrated for the CPI as a panacea, we point out that skillful administrators likely could find a variety of ways around any restrictive rule legislators might devise. For example, they might choose instead to impose discipline-specific surcharges (for example, charging engineering students higher tuition) to sidestep an overall tuition cap. 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 their residence hall operations (or any other auxiliary enterprise) for central services provided.

One could go on, but the implications are clear: Regulatory authorities nearly always must struggle to impose their wills on those they regulate. Human imagination seemingly is infinite and those who are regulated are adept at finding new ways to circumvent what initially might appear to be ironclad behavioral rules. The law of unintended consequences still holds sway.



GRAPH 11

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

Is “Free” Tuition A Solution?

Considerable attention nationally has been focused on proposals for “free” tuition. Tennessee led the way in this regard for adult community college students and political candidates in both parties have picked up free tuition as a popular campaign plank. The notion has simple appeal – simply abolish tuition at public institutions, or at least at community colleges.

Alas, this is a notion that does not survive careful analysis. First, at most community colleges, large numbers of students pay little or no tuition already because of the need-based financial aid they receive. Hence, free tuition ends up supporting large numbers of students who have no demonstrated financial need. This represents a questionable redistribution of income and use of public funds.

Second, place yourself in the role of a college president who has just been informed that henceforth the state will cover tuition costs for her students. What incentive does she now have to control costs? Little or none. Free tuition fails to address an obvious problem in public higher education – rampant cost inflation. On the contrary, it accentuates the difficulty.

Third, if institutions no longer collect tuition from many students, then they will become heavily dependent upon state appropriations. Unfortunately, state general fund support is highly variable and on a per-student basis has declined substantially over past decades. Institutions would find themselves dealing with highly cyclical finances.

Free tuition is a Band-Aid solution to the much more deep-seated problem of public college price inflation. It does not respond to the forces that have generated our current challenges.

Governors, Boards Of Visitors And The General Assembly Are Crucial

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. One can cut to the chase by observing that many, perhaps most, members of the boards of Virginia colleges and universities come to believe that 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 positive 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 periodically 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 the uncomfortable territory of affordability and access, may find themselves being counseled by senior board members and advised to stick to the agenda and avoid being contentious.

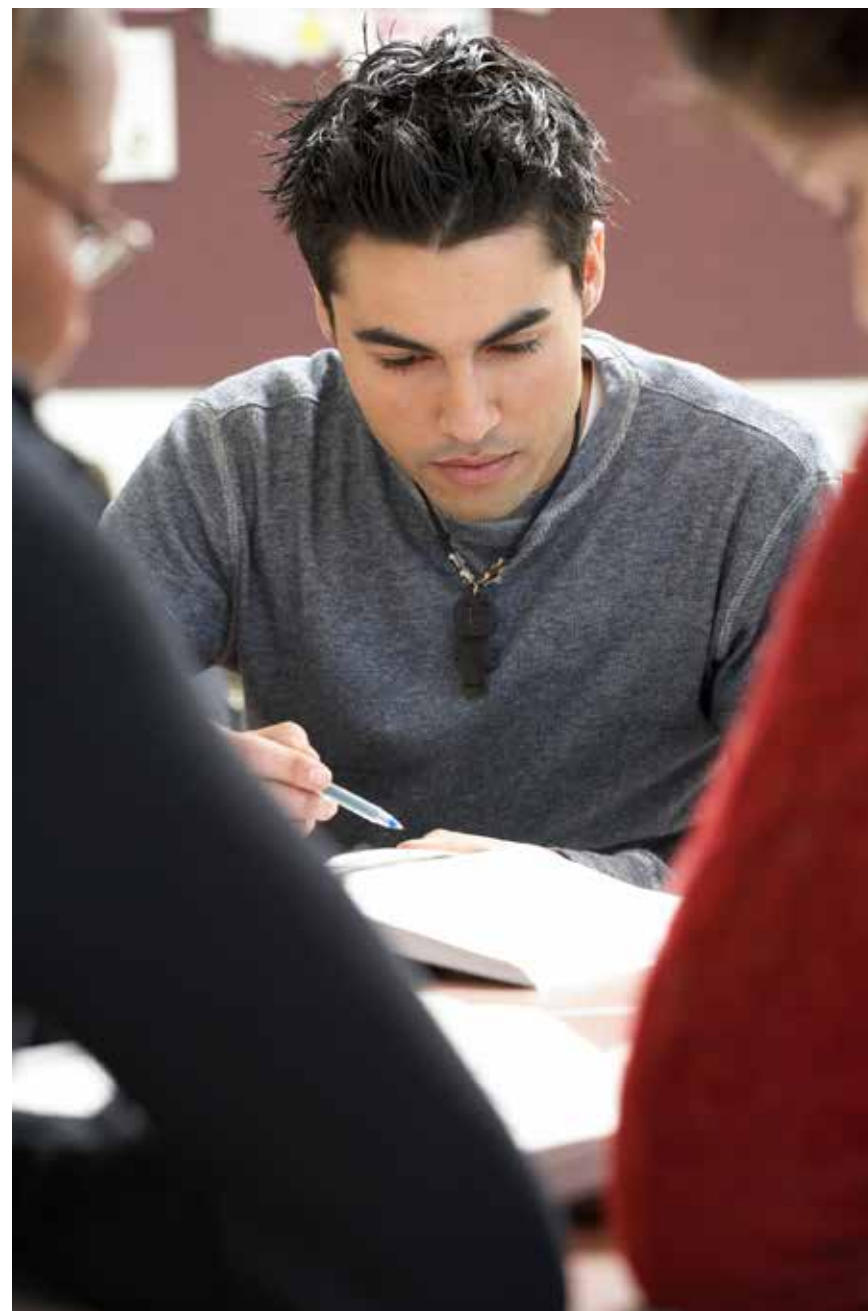
Given this environment, what if future Virginia governors were to choose to appoint to boards of visitors only those individuals who view citizens, taxpayers and students as their primary constituency and concern? What if future Virginia public college and university presidents were evaluated on the 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 only if governors, legislators and board members understand what has been going on and how the game is played on campus. It will take definitive action by future governors, legislators and board members for the Commonwealth to pull itself out of the current rut.


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?¹⁵ Legislators can and should ask significant questions of prospective board of visitors 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, then the rewards will be higher economic growth rates and, some might argue, a more equitable society that emphasizes the opening of opportunities rather than the closing of doors.

¹⁵ Old Dominion University provides an instructive example. As Graph 1 reveals, ODU's tuition and fee increases have been the lowest in Virginia among four-year institutions and *Business Insider* named the institution the "most affordable" four-year public institution in Virginia. It enrolls large percentages of financially needy students who aspire to social and economic mobility. Its reward has been visibly lower per student general fund financial support (compared to other doctoral institutions). Restraint has been penalized.



TIME TO GO
REGIONAL OR MEGA?

A large crowd of people is seen from behind, filling the lower half of the page. They are looking towards a bright, hazy horizon, possibly at a large gathering or event. The image is in warm, golden-hour lighting.

The notion that unified regional governments in Virginia's metropolitan areas might improve our lot has been around for a long time. After all, it is not heretical to assume that economic and political benefits could accrue if we pursued regional governance and consolidated the provision of many public services.

The economic arguments in favor of regionalization focus on a factual reality and a supposition. First, the weight of economic empirical evidence tells us that public services, ranging from water supply to libraries, exhibit significant economies of scale.¹ Large size lowers unit costs and, on occasion, can increase the quality of output as well. Of course, there are always exceptions to the rule and not all public services enjoy economies of scale.

Second, the supposition is that businesses prefer to locate in regions that “have their act together” (the observation of a Virginia corporate executive). Firms and organizations understandably prefer the certainty of dealing with a minimum number of governmental entities. While businesses may not always be thrilled with what these governmental entities do, they know what buttons to push. It is certainly not a stretch to argue that businesses can save money if they don't have to interact with a large number of governmental entities.

In the political realm, deservedly or not, cities and counties in several areas of Virginia have acquired reputations for pushing multiple,

¹ Alesch, Daniel J., and L.A. Dougharty. The Feasibility of Economies-of-Scale Analysis of Public Services. Rand, 1971.

competing legislative agendas. The absence of clear regional priorities and direction affects the ability of other state and national representatives to bring home the proverbial legislative bacon. It seems plausible that more might be accomplished if the cities and counties were all rowing in the same direction. Unified regional governmental units arguably might help in not only coordinating legislative action, but also in attracting new businesses and dealing with challenges such as climate change.

The most obvious example of large-scale regional government is New York City, with its more than 8.5 million residents spread across five boroughs. Since 1898, the boroughs have been united in one city government. The consolidation of the boroughs not only created a unifying government, but also allowed each borough to retain some aspects of local authority. The borough-city relationship in New York mirrors the state-national federalism of the United States. Virtually all agree, however, that the borough of Manhattan is primarily a location, and New York City is both a location and the ultimately responsible governmental unit.

It is not a stretch to assert that many of the things we prominently associate with New York City today – the United Nations, numerous Fortune 500 company headquarters and superb cultural attractions, such as the Metropolitan Museum of Art – would exist in the metropolitan area only in diminished form, or not at all, if five or more separate cities existed rather than one unified city. Witness the city of Richmond and Henrico and Chesterfield counties, or the seven major cities of Hampton Roads, as they wrestle over matters small and large, including entertainment venues, outlet malls, economic development agencies, vehicle tolls and the like.

At the same time, however, it also is true that New York City simultaneously has developed a reputation for supporting a large, expensive and bureaucratic government. Further, some major infrastructure and institutions do not seem to work well (consider LaGuardia Airport and the subway system). The Big Apple also generates very large levels of economic inequality.² It appears that ledgers with respect to regional unification nearly always contain both pluses and minuses.

² <http://www.epi.org/publication/income-inequality-in-the-us>.

Virginia Antecedents

Interest in regional government and the consolidation of public services has waxed and waned over the years in Virginia. Appendix A lists some of the successful and unsuccessful annexation attempts by Virginia cities in the last century. Richmond's acquisition of Manchester in 1910, Newport News' addition of Warwick in 1958 and Christiansburg's addition of Cambria in 1964 are among the successful acquisitions. The list of failures is long, however, and includes rejected annexation attempts by Winchester in 1969, Charlottesville in 1970 and Roanoke in 1990.

In 1980, the Commonwealth reacted to pressures from those opposed to annexations and approved regulations that permitted counties with larger populations and greater population density to immunize themselves from annexation proposals. Chesterfield, Henrico, Henry, Prince William, Roanoke and York counties immediately benefitted from this legislation. Virginia also granted partial protection to counties that already provided public services similar to those of adjoining cities anxious to annex them. **In 1987, the General Assembly imposed a “temporary” ban on annexations of county lands by cities that remains in effect to this day.**

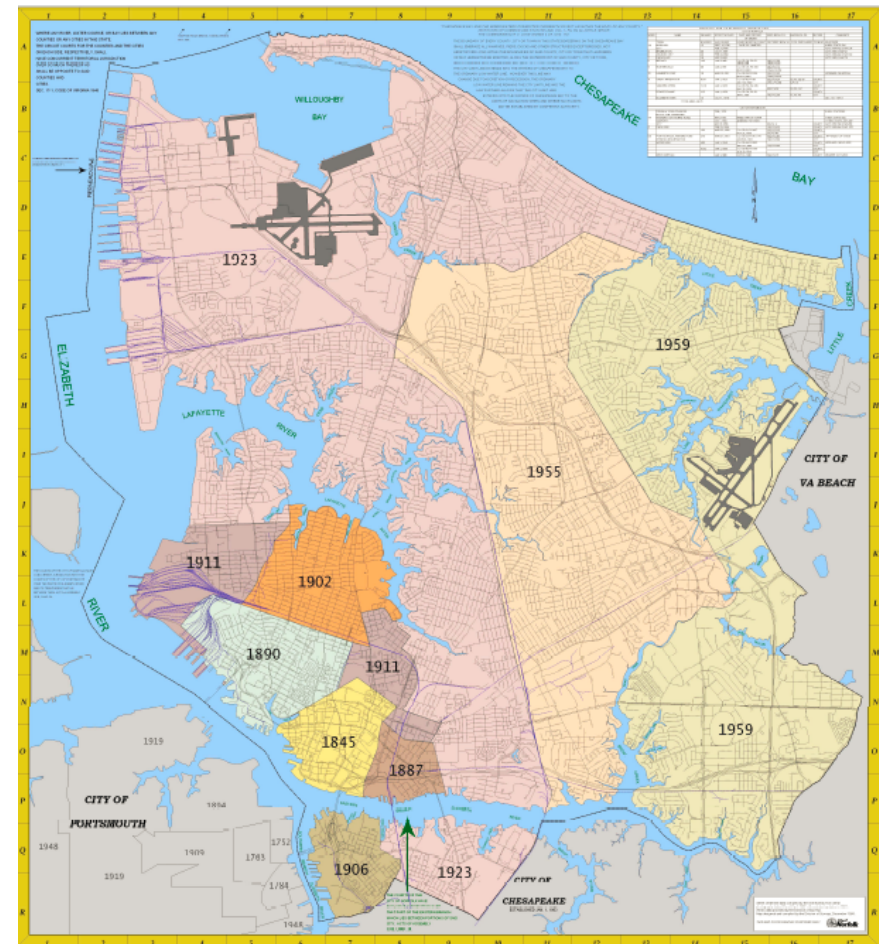
Since 1980, Virginia law has authorized local circuit courts to grant counties immunity from any annexation by a city if they satisfied certain population and population density requirements: a population of 50,000 and a density of 140 residents per square mile; or, a population of 20,000 and a density of 300 residents per square mile. Practically speaking, these standards virtually eliminate annexations in urban areas.

Each of the preceding developments is consistent with Virginia's status as a Dillon Rule state. The foundation of the Dillon Rule is a distrust of the motivations and competence of local governments. Virginia's Supreme Court adopted the Dillon Rule in 1896 via *City of Winchester v. Redmond*, and has concluded that local governments in Virginia only have powers that are conferred upon them by the General Assembly, and that these powers must be explicitly defined and related to the core functions of

local governments.³ Figure 1 brings these restrictions to life in the realm of annexations by means of the example of the city of Norfolk. Between 1845 and 1959, Norfolk's physical size expanded as the result of five major annexations, including the areas encompassing the largest naval base in the world and the region's major airport. Annexations halted, however, in 1959 with the creation of the cities of Virginia Beach and Chesapeake and subsequent changes in state laws in the 1970s and 1980s. Norfolk today is an enclosed city for which no opportunities for further annexation exist. The same circumstance effectively applies to other Virginia cities such as Alexandria, Fairfax, Lynchburg, Richmond and Roanoke.



FIGURE 1
ANNEXATION BY NORFOLK, 1845-1959:
AN EXAMPLE OF LOCAL GOVERNMENT CHANGES IN HAMPTON ROADS



Source: City of Norfolk, Map Gallery

³ Lamb, James C., and Martin P. Burks. "Virginia Reports. Reports of Cases in the Supreme Court of Appeals of Virginia." The Virginia Law Register 93 (1897): 711-18. doi:10.2307/1097665.

GO Virginia And Regionalization

Imitating Old Faithful, approximately once per decade in Virginia, interest in regional solutions to governance and service provision rekindles and groups are formed to encourage regional solutions to problems and issues. The current GO Virginia initiative – with its statewide brief – follows in this tradition (<http://www.govirginia.org>). In 2016, the General Assembly allocated \$27 million to GO Virginia to encourage regional collaboration, with a primary focus on making the Commonwealth's regions more attractive to current and prospective businesses.

The emergence of GO Virginia must be considered in the context of the Joint Legislative Audit and Review Committee's widely cited November 2016 report, which eviscerated the performance of the Virginia Economic Development Partnership.⁴ This highly critical review of the Partnership's operations generated a set of changes: a new Partnership director, a reorganization and a reduced budget. It also stoked political support for alternatives, such as GO Virginia.

GO Virginia is a more focused approach to economic development that simultaneously spurs regional cooperation. Axiomatically, legislators usually like programs that promise the return of state dollars to their districts, and GO Virginia promises to do just that. Politically, GO Virginia also provided both the executive and legislative branches with a valuable opportunity to stand clear of the documented failures of the Virginia Economic Development Partnership.

Public-spirited efforts with a regional accent, such as GO Virginia, usually attract the support of major corporations, corporate leaders and cognoscenti because they appeal to virtues that many citizens hold dear, such as cooperation, elimination of duplication and the promotion of economic growth. It is not surprising that the consensus view in the Commonwealth is that GO Virginia represents a new, more productive

path to travel. The proponents of GO Virginia include nearly every organization of significance in the Commonwealth.

There are other views, however. Less charitable pundits view GO Virginia as a new publicly financed Christmas tree around which ambitious cities, businesses and universities will gather to pluck gifts. Thus, many of Virginia's largest businesses will partner with universities, new firms and governmental units to grab a share of the goodies. Universities will perceive these funds as a viable way to offset the general fund cuts and as a funding source for construction of new research and development facilities. Surely, none of these developments is necessarily a bad thing, but such processes may not result in the highest and best use of the funds.⁵

GO Virginia is governed by a 24-member statewide board that oversees nine regional boards, each of which may submit programmatic and funding proposals to the statewide board. The regions vary substantially in terms of population – about 400,000 to 2.5 million – and do not reflect the geography of already established planning districts. GO Virginia is not a part of the executive branch, but instead reports to the General Assembly. Nor does the State Council for Higher Education in Virginia appear to have any specific authority relating to the activities of public colleges and universities funded by GO Virginia. Yet to be clearly established is who will evaluate GO Virginia performance, or how and when this will occur.

⁴ Joint Legislative and Review Committee, Management and Accountability of the Virginia Economic Development Partnership (November 2016), <http://jlarc.virginia.gov/vedp-2016.asp>.

⁵ See the website Bearing Drift, "Stealth Regionalism Quietly Makes Headway on the Coattails of GO Virginia," Part One (May 10, 2017) and Part Two (May 23, 2017), <https://bearingdrift.com>.

Megaregions?

This United States has been rapidly urbanizing in recent decades. In 2015, the Census Bureau reported that 62.7 percent of all Americans reside in only 3.5 percent of the nation's land area.⁶ Most of these inhabitants live in "megaregions," consisting of overlapping metropolitan areas that once were separate and distinct. Witness the expansion of the Baltimore-Washington, D.C., agglomeration, which now stretches south to within 50 miles of Richmond and north to the Delaware border.

Thinking in terms of megaregions, some contend, is entirely rational because these entities are meaningful, interdependent economic units that overlay city, county and state boundaries. Individuals commute to Washington, D.C., from all directions, including West Virginia, Maryland and Virginia. In Chicago, the market for commuters and customers stretches from Wisconsin through Illinois to Indiana. The salient point is that "old" geographic and political boundaries do not constrain economic activity or social intercourse, and megaregions roughly define the most critical economic and social interconnections.

Megaregions are defined by the behavior of workers and customers rather than conventional geographic boundaries.

As Parag Khanna, a global strategist and author, argued in The New York Times ("A New Map for America," April 15, 2016):

"Increasingly ... socially and economically, America is reorganizing itself around regional infrastructure lines and metropolitan clusters that ignore state and even national borders. ... To an extent, America is already headed toward a metropolis-first arrangement. The states aren't about to go away, but economically and socially, the country is drifting toward looser metropolitan and regional formations, anchored by the great cities and urban archipelagos that already lead global economic circuits."

Proponents of megaregions estimate that between now and 2050, more than two-thirds of the U.S. population growth and economic growth will

occur in megaregions. A September 2005 Global Gateway Report, "The United States of America's 3rd Century Strategy: Preserving the American Dream" (Regional Plan Association, 2005), proposed:

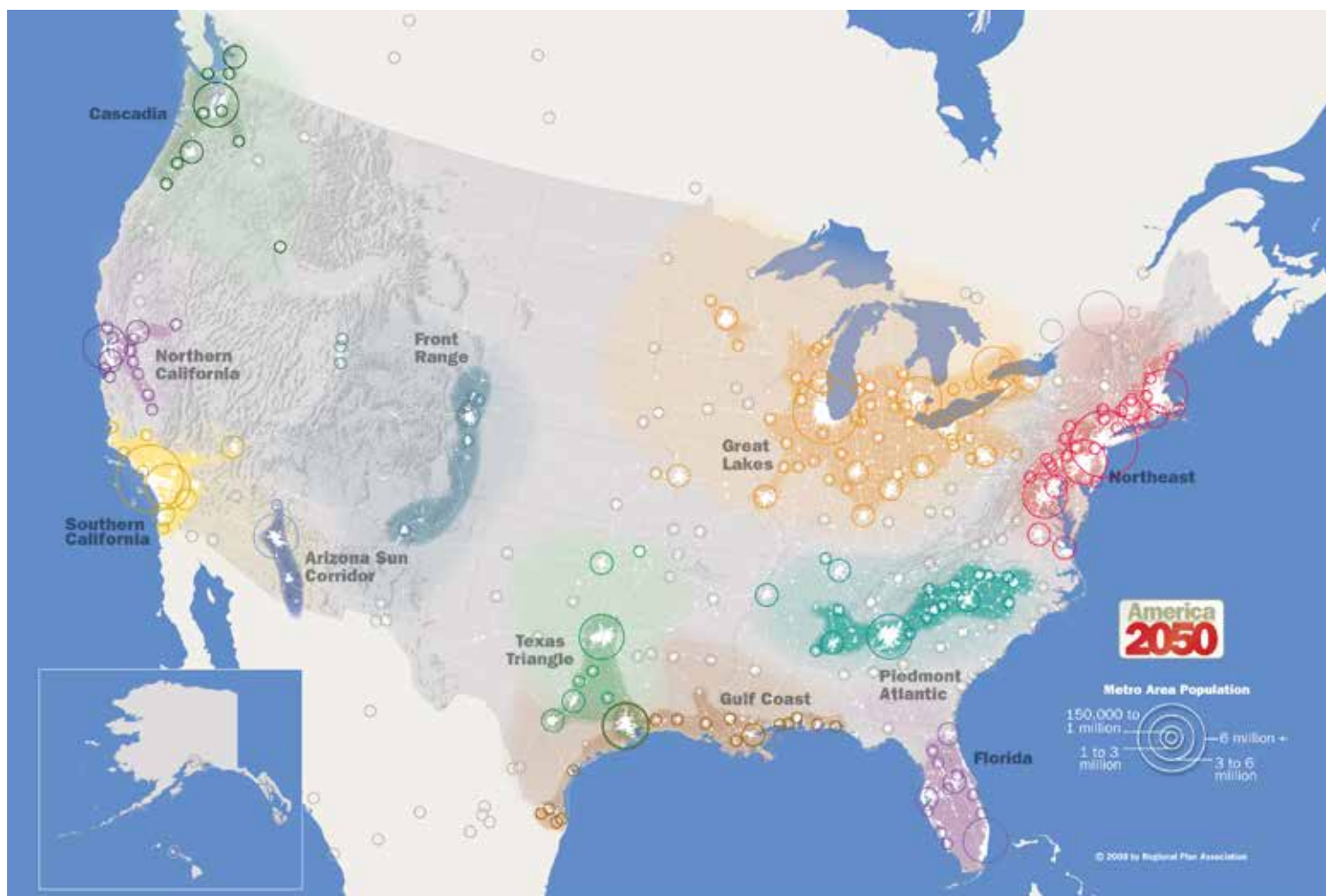
"As the number of economically competitive regions grows around the world, America's cities need to band together in order to strengthen their role in the global economy. ... As metropolitan regions in the United States grow together, many diseconomies have emerged, such as congestion in transportation networks which affect the economic vitality and quality of life of these regions. The megaregion model is based upon the idea that if the cities in these colliding regions work together they can create a new urban form that will increase economic opportunity and global competitiveness for each individual city and for the nation."

America 2050⁷ has identified 10 megaregions expected to emerge over the next several decades. They are depicted in Figure 2 and include a huge northeastern megaregion that extends from Boston to Northern Virginia. **Note that the Richmond-Virginia Beach-Norfolk-Newport News axis is not included on this list and Richmond's leadership appears to be more interested in pursuing connections with Northern Virginia than with Hampton Roads.**

⁷ America 2050 is the Regional Plan Association's national infrastructure planning and policy program, providing leadership on a broad range of transportation, sustainability and economic-development issues impacting America's growth in the 21st century.

⁶ www.census.gov/newsroom/press-releases/2015/cb15-33.html.

FIGURE 2
AMERICA 2050'S EMERGING MEGAREGIONS



Source: www.America2050.org

Richmond And Hampton Roads: Are There Arguments For A Megaregion?

Practically speaking, regional and megaregional cooperation will occur only if citizens and leaders opt for collaboration rather than competition. This is much easier said than done. Candidates running for office in Fairfax County receive zero votes from residents of Loudoun County and so their political future is not tied to regionalism. The legendary Tip O'Neill, speaker of the U.S. House of Representatives from 1977-1987, was substantially on target when he commented that, ultimately, "all politics is local."

Nevertheless, many modern governmental problems and their solutions overlap political boundaries and metropolitan regions. Transportation issues frequently exemplify this situation. If widening I-81 is a good idea (and few who travel it consistently would say otherwise), then multiple regions and states must be involved in planning such a development and pushing it to conclusion because the highway travels through dozens of counties and cities and several states. Political boundaries begin to blur in such situations.

Finding common ground is the key to any uncoerced agreement. The most attractive common ground for voters and elected officials is identifiable financial gains. This can come in the form of reduced costs or improved service. Prospective multiregion gains are possible (though hardly guaranteed) if cities, counties and regions cooperate not only on transportation projects, but also in areas such as sanitation and health, the environment, job training, cultural amenities, higher education and the ability to attract businesses large and small. A side benefit is that joint approaches often also generate the raw political clout that translates larger size and population into more favorable governmental treatment at the state and federal levels.

The notion that a megaregion approach to many issues would be advantageous is not a new one. Thomas R. Frantz, of the Williams Mullen

law firm, was involved in discussions in the early 2000s with business leaders of Hampton Roads and Richmond concerning the possibility of merging the two metropolitan statistical areas (MSAs) to create one megaregion from Hampton Roads to Richmond. Frantz wrote in the Richmond Times-Dispatch in June 2012:

"As the competition to attract economic development becomes greater and more global, many localities are finding short-term financial incentives are not enough. A solid infrastructure, plentiful amenities and the ability for people and businesses to connect with one another and to the outside world must also be present. Cities that want to compete nationally and internationally are blurring boundaries, combining their assets and resources, and redefining themselves through alliances with other nearby cities to become more attractive."

In an article in Virginia Business magazine, Frantz explained further what he was proposing:

"We're not talking about merging cities, counties, fire departments. We're not talking about combining governments or even merging economic development authorities. All we're talking about is to enhance the way we hold ourselves out to the world as a combined mid-Atlantic gateway."

A Richmond-based regional think tank, Richmond Future, led by former Virginia Commonwealth University president Eugene P. Trani, has researched the central Virginia region and assessed the future of the capital city and the surrounding area. While the group has not formally adopted a resolution supporting the megaregion approach, it did say the following in a report printed in the Richmond Times-Dispatch on Feb. 21, 2016:

"The interests that our region shared with Hampton Roads around the Port of Richmond and Route 460 became far clearer to see, with some even envisioning the potential formation of a 'mega-region' in which the economic and transportation planning would enhance our common interests in a globally integrated economy."

The contributors to “Megaregions: Planning for Global Competitiveness” (Catherine Ross, ed., Island Press, 2009) concluded:

“Megaregions offer flexible frameworks to harmonize transportation with quality of life, economic opportunity, and environmental sustainability. Megaregions are the infrastructure and economic footprint in the global economy. Megaregions provide a sustainable future through multi-scalar, cross-boundary solutions. Megaregions allow us to think globally, coordinate regionally and act locally.”

This is grand rhetoric. Not yet demonstrated, however, are answers to two critical questions: (1) Can economic and political benefits really be realized by acting together, or are the differences between areas such as Hampton Roads and Richmond, or Richmond and Northern Virginia, so large that they cannot be overcome? (2) If the benefits do exist, will the body politic, especially the Dillon Rule-protective General Assembly, permit cooperative megaregion behavior to develop and flourish?

Are We On Our Way To A Richmond-Hampton Roads Megaregion?

Table 1 reveals that while the Richmond-area MSA is physically larger (4,576.3 square miles) than the Hampton Roads MSA (2,682.9 square miles), the population of the Hampton Roads region is larger (1,726,907 to 1,281,708). The greater density of the population in Hampton Roads is reflected in the transportation issues discussed subsequently. Likewise, the nominal gross domestic product of Hampton Roads exceeds that of Richmond (\$92.8 billion compared to \$80.7 billion).

What would be the economic size of a combined Richmond-Hampton Roads megaregion? Table 2 tells us that it would rank as the 20th-largest metropolitan economy in the country. Clearly, a metropolitan region of this size would be sufficient to attract a major airport and other transportation

TABLE 1
COMPARING THE RICHMOND AND HAMPTON ROADS MSAS (2016)

| Characteristic | Richmond MSA | Hampton Roads MSA |
|---------------------------------|------------------|-------------------|
| Square Miles of Land Area | 4,576.3 | 2,682.9 |
| Counties | 13 | 5 |
| Cities | 4 | 9 |
| Population | 1,281,708 | 1,726,907 |
| Education, High School Grad | 90.0% | 91.1% |
| Education, Bachelor's or Higher | 36.7% | 31.4% |
| Civilian Labor Force | 669,033 | 831,056 |
| Per Capita Personal Income* | \$50,460 | 46,400 |
| Personal Income* | \$64,151,580,000 | \$80,033,527,000 |
| Median Family Income* | \$75,126 | \$70,597 |
| Gross Domestic Product | \$80,702,000,000 | \$92,827,000,000 |

*Most recent data from 2015 (U.S. Census)
Sources: Virginia Economic Development Partnership, Virginia Employment Commission, U.S. Census Bureau and Bureau of Economic Analysis

accouterments if, of course, the citizens of the new megaregion could agree upon its location.

Does the theoretical concept of a Richmond-Hampton Roads megaregion represent reality insofar as work patterns and connections are concerned? Not quite yet, as Figure 3 reveals. However, we can see in Table 4 that a substantial number of workers do make the trek between the two metropolitan areas. Of the top 10 out-of-metro cities and counties to which residents of Richmond commuted in 2014, five were in Hampton Roads: Virginia Beach, Norfolk, Newport News, James City County and Chesapeake, in that order of magnitude. This involved 20,834 workers. Additionally, of the top 10 out-of-metro locations from which Richmond workers commuted, five were in Hampton Roads: the cities of Virginia

Beach, Newport News, Norfolk, Chesapeake and Hampton, in that order. This flow involved 22,595 workers. The total “in and out” flow of workers in the Richmond metro constituted 6.49 percent of the labor force and the total flow in both directions was 43,429.

Of the top 10 out-of-metro cities and counties to which residents of Hampton Roads commuted in 2014, four were in the Richmond area: Henrico, Chesterfield and Hanover counties, and the city of Richmond. This flow involved 27,007 individuals. Of the top 10 out-of-metro sites from which workers in Hampton Roads commuted, three were in the Richmond area: Richmond and the counties of Chesterfield and Henrico. This flow involved 15,916 individuals and the total flow in both directions was 42,923.

To place these numbers in context, consider that in 2016, on average the size of the civilian labor force in the Richmond metropolitan area was 669,033. Hence, $43,429/669,033 = 6.49$ percent of that labor force was traveling to or from Hampton Roads for work. Insofar as Hampton Roads was concerned, $42,923/831,056 = 6.57$ percent of that labor force was traveling to or from Richmond for work.

If we consider Richmond and Hampton Roads as a unit, then in 2014, more than 86,000 workers commuted back and forth between Richmond and Hampton Roads. This does not a megaregion make, but does reveal that economic connections between the two regions are greater than some might suspect.

TABLE 2

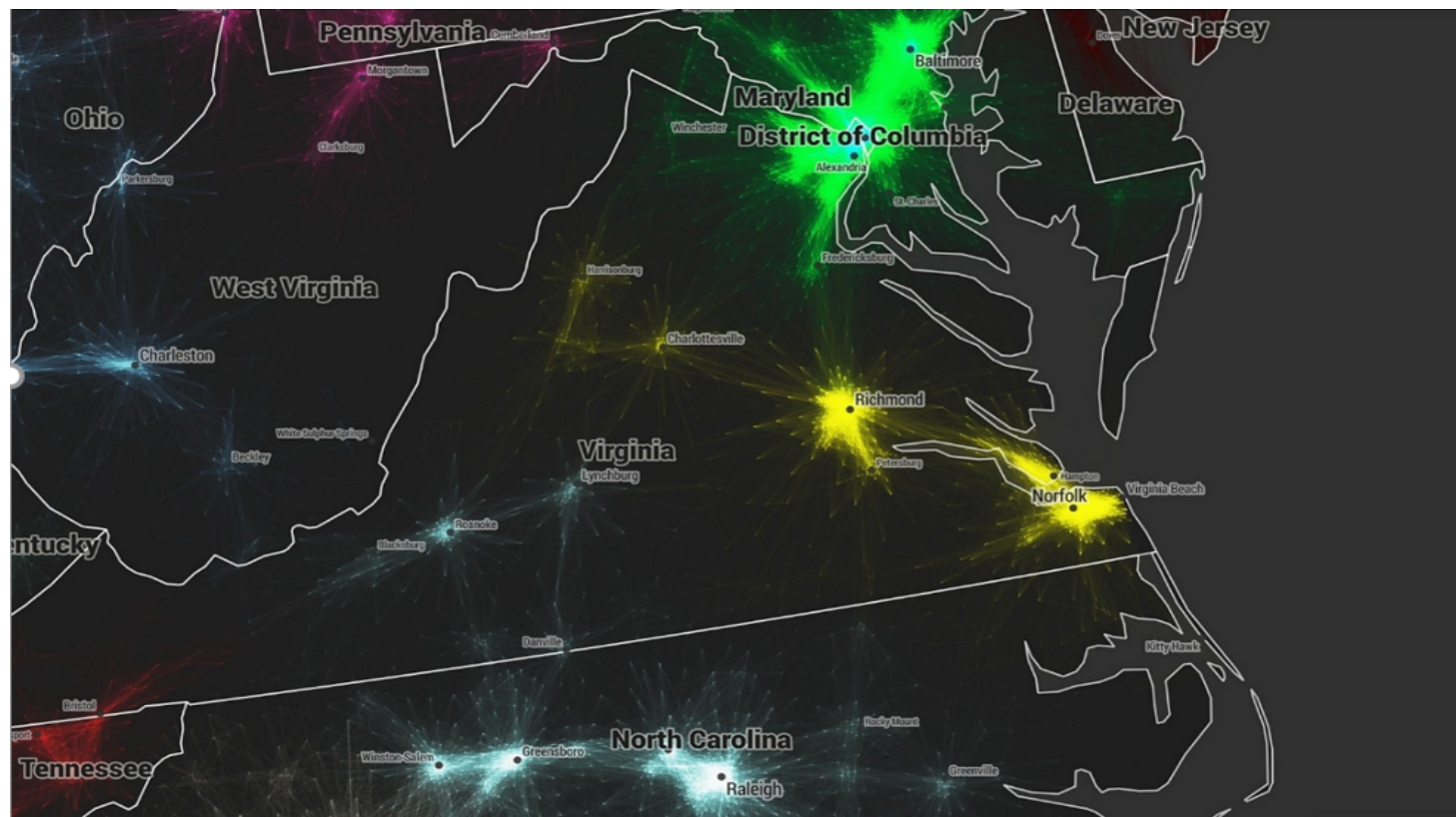
REAL GROSS REGIONAL PRODUCT (GRP) BY METROPOLITAN AREA, 2010 AND 2016 (CHAINED 2009 DOLLARS)

| | GRP 2010 | GRP 2016 | Nat'l Metro Size Rank | GRP Growth Rate (2010-2016) |
|----------------------|----------|----------|-----------------------|-----------------------------|
| Baltimore MSA | 150,990 | 164,545 | 19 | 8.98% |
| Charlotte MSA | 115,827 | 140,815 | 21 | 21.57% |
| Cincinnati MSA | 105,826 | 116,071 | 28 | 9.68% |
| Cleveland MSA | 104,299 | 114,492 | 29 | 9.77% |
| Columbus MSA | 94,257 | 114,492 | 30 | 21.47% |
| Denver MSA | 151,224 | 180,446 | 18 | 19.32% |
| Phoenix MSA | 178,640 | 203,253 | 16 | 13.78% |
| Portland MSA | 141,374 | 151,817 | 20 | 12.42% |
| St. Louis MSA | 134,051 | 140,712 | 22 | 4.97% |
| Hampton Roads MSA | 81,132 | 81,363 | 39 | 0.28% |
| Richmond MSA | 61,992 | 69,987 | 44 | 12.90% |
| RICH/HR Combined MSA | 143,124 | 151,350 | 21 | 5.75% |

Source: Bureau of Economic Analysis

FIGURE 3

COMMUTING PATTERNS IN VIRGINIA'S URBAN CRESCENT



Source: "An Economic Geography of the United States: From Commutes to Megaregions," by Garrett Dash Nelson and Alasdair Rae (Nov. 30, 2016), https://figshare.com/articles/United_States_Commuters_and_Megaregions_data_for_GIS/4110156

Nothing prevents the Richmond and Hampton Roads metropolitan areas from marketing themselves as a megaregion and then behaving accordingly – for example, developing a super-regional airport midway between the two population centers, promoting and accelerating the widening of I-64, supporting the development of the Port of Virginia (though centered in Hampton Roads, it has one location in Richmond), developing a cooperative approach to high-speed rail and cooperating on regional-friendly legislation such as GO Virginia.

The federal government's Office of Planning and Budget is responsible for designating megaregions; however, being designated as a megaregion (or claiming to be one) yields no automatic benefits. Federal programs focus on metropolitan regions such as the Richmond metropolitan region rather than megaregions. Ultimately, some minor prestige may attach to the label "megaregion," but no stream of federal funding is tied to that designation. Consequently, a megaregion is as a megaregion does. Cooperative, forward-looking behavior that recognizes interdependence and the need for jointly derived solutions is the operational key.

What would a megaregion beginning in Baltimore and bending south to Hampton Roads look like? Table 4 reports population and gross regional product data for the four major components of such a region. In terms of GRP, this megaregion would be the third largest in the country, trailing only Los Angeles and New York (see Graph 1). Once again, however, one must recognize that this designation would be meaningless unless it were accompanied by coordinated, collaborative behavior in critical areas, such as transportation. Given that such cooperation has proven to be difficult inside Virginia (for example, between Richmond and Hampton Roads), it is fair to predict that it would be at least as challenging to achieve consensus and cooperation across several states and the District of Columbia.

Taking the long view, however, there is little mystery concerning where the process of urbanization is leading us. If this chapter is rewritten 25 years from today, then we could expect it to report evidence showing the Richmond and Hampton Roads metropolitan areas touching each other along the I-64 corridor and the Washington, D.C., and Richmond metropolitan areas approaching, if not touching, each other. Given this likelihood, it would be silly not to give thought to what such a megaregion should look like in terms of its governance.



TABLE 3

OUT-OF-METRO COMMUTING PATTERNS: RICHMOND AND HAMPTON ROADS, 2014

| Top 10 Out-of-Metro Places To Which Workers Commute Out-of-Region | | | |
|--|-------------------|-----------------------|-------------------|
| Richmond Metro | | Hampton Roads Metro | |
| | Number of Workers | | Number of Workers |
| Fairfax County | 15,463 | Fairfax County | 12,647 |
| Virginia Beach | 5,942 | Henrico County | 11,128 |
| Prince William County | 4,222 | Richmond | 7,514 |
| Newport News | 4,085 | Chesterfield County | 5,879 |
| Norfolk | 4,022 | Arlington County | 3,814 |
| Spotsylvania County | 3,697 | Prince William County | 3,263 |
| Chesapeake | 3,618 | Loudoun County | 2,753 |
| Loudoun County | 3,265 | Hanover County | 2,486 |
| James City County | 3,167 | Alexandria | 1,896 |
| Arlington County | 2,832 | Stafford County | 1,430 |
| Top 10 Out-of-Metro Places From Which Workers Come | | | |
| Richmond Metro | | Hampton Roads Metro | |
| Fairfax County | 8,592 | Chesterfield County | 6,668 |
| Virginia Beach | 7,504 | Fairfax County | 5,842 |
| Prince William County | 5,873 | Henrico County | 5,581 |
| Loudoun County | 4,639 | Prince William County | 4,348 |
| Newport News | 4,212 | Currituck County, NC | 3,910 |
| Norfolk | 4,059 | Richmond | 3,667 |
| Chesapeake | 3,780 | Loudoun County | 2,720 |
| Spotsylvania County | 3,356 | Middlesex County | 2,689 |
| Hampton | 3,040 | Pasquotank County, NC | 2,505 |
| Albemarle County | 2,357 | Accomack County | 2,450 |

Source: Virginia Employment Commission Origin-Destination Statistics, 2014

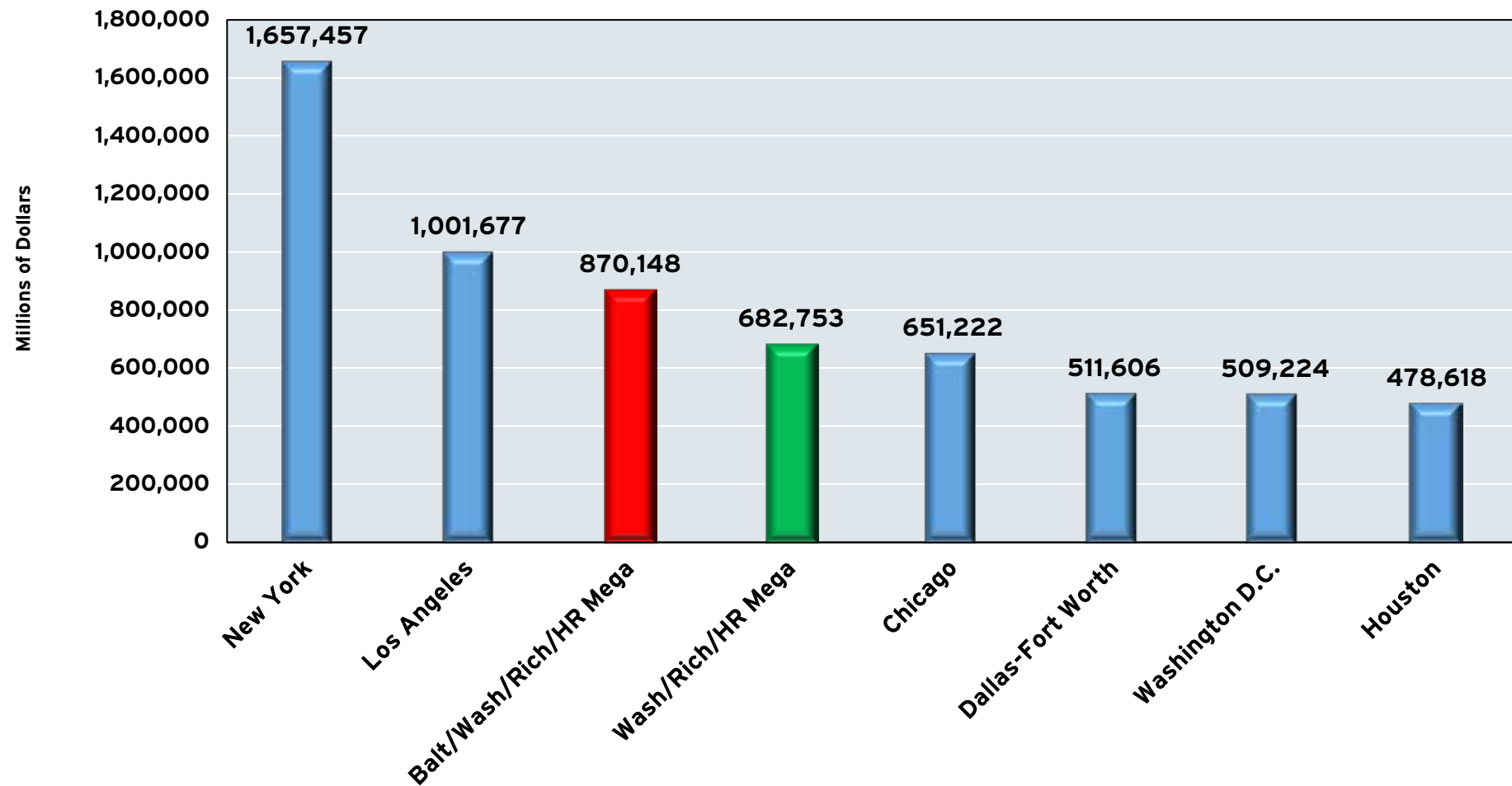
TABLE 4**CHARACTERISTICS OF A MID-ATLANTIC MEGAREGION: BALTIMORE TO HAMPTON ROADS, 2016**

| | Gross Regional Product (GRP) | Population (Estimate) |
|-------------------------|-------------------------------------|------------------------------|
| Baltimore | \$187,395,000,000 | 2,798,886 |
| Hampton Roads | \$92,827,000,000 | 1,726,907 |
| Richmond | \$80,702,000,000 | 1,281,708 |
| Washington, D.C. | \$509,224,000,000 | 6,131,977 |
| Totals | \$870,148,000,000 | 11,939,478 |

Sources: U.S. Census Bureau for population and Bureau of Economic Analysis for GRP

GRAPH 1

**GROSS REGIONAL PRODUCTS OF THE LARGEST METROPOLITAN REGIONS
IN THE UNITED STATES AND A VIRGINIA URBAN CRESCENT MEGAREGION, 2015**



Source: Bureau of Economic Analysis

Can We Learn From Others?

Aside from New York City, three outstanding examples of regional government in the United States are Portland, Minneapolis-St. Paul and Indianapolis. We will discuss each briefly to give readers what could well be a taste of the future.

PORTLAND

Portland is the country's only MSA to have gone as far as establishing a general-purpose, regionally elected governing body. "Metro," as this elected government is known, serves more than 1.5 million people in a metropolitan area with a population of almost 2.4 million. Metro encompasses the city of Portland and 23 other cities. The cities and counties maintain their own local governments, but Metro provides regionwide planning and coordination to manage growth, infrastructure and development issues that cross jurisdictional boundaries. It does the transportation planning; manages 17,000 acres of parks, trails and natural areas; and operates attractions such as the Oregon Zoo, Oregon Convention Center, Portland Expo Center and Portland Center for the Arts. It plans and oversees the region's solid waste and recycling programs.

Portland is a medium-sized city – the nation's 25th-largest metro area in terms of population. Oft-referenced publications such as "Places Rated"⁸ consistently assign it high rankings, citing its regional transit system, the walkability of its urban areas and its environmental consciousness, in addition to conventional amenities and many attractive job opportunities. Portland provides evidence that regions can flourish with a regional government as an overlay to local governments.

Even so, it should be noted that financial savings associated with Portland's particular model of regional government have never really been documented. Indeed, given the notably progressive political bent of the city of Portland's citizenry and leadership, regional government has turned out to be a vehicle for extending a high-tax, high-service model to a broader

range of cities and towns than otherwise probably would have been the case.

MINNEAPOLIS AND ST. PAUL

The twin cities of Minneapolis and St. Paul are distinct governmental units in Minnesota. Minneapolis (population 407,000) is the county seat of Hennepin County, which includes 44 other cities. St. Paul (population 297,000) is the county seat of Ramsey County. Together, the two cities usually are referred to as the Twin Cities – hence the name of their major league baseball team, the Minnesota Twins. The metropolitan region includes seven counties as well, and the metropolitan area population exceeds 3.28 million.

St. Paul maintains a unique neighborhood governance system whereby it is divided into 17 city districts, each of which has a council funded by the city, and exercises significant powers, especially on land-use issues. The overlay of the regional government structure of the Twin Cities metropolitan area is an almost 50-year-old Metropolitan Council whose members are appointed by the governor. The council deals with the region's public transportation, sewage treatment, regional and urban planning, housing, and parks and trails. The enabling state legislation provides that the Metropolitan Council shall "provide a framework for regional systems including aviation, transportation, parks and open spaces, water quality and water management."⁹ The Metropolitan Council boasts that it offers a variety of public services at lower-unit costs than comparable cities, and there is some evidence in favor of this view.

INDIANAPOLIS

Indianapolis (population 858,000, but almost 2 million in the metropolitan area) has a complex form of governance known as "Unigov" that came about in 1970 when the city consolidated with the government of Marion County and 11 towns. While local governments maintain some of their own municipal services and identities, including police and schools, Unigov provides consolidated services not unlike Portland and the Twin Cities.

⁸ www.bestplaces.net.

⁹ <https://metrocouncil.org>.

The Indianapolis experience is unique in that it has been the subject of a comprehensive study and evaluation: “40 Years after Unigov: Indianapolis and Marion County’s Experience with Consolidated Government” (Jeff Wachter, May 2014, Center for Government Research, www.cgr.org). Wachter concluded that “Unigov-impacted communities in Indianapolis are in a better position going forward – the economy is stronger, the tax base is broader, and the city’s reputation is greater.” Noting that some of the initial impact of Unigov may be declining, Wachter makes the important point that “the benefit of consolidation might not have been dependent on unified government as much as on a unified vision for the region’s future.”

Final Observations

The experience of Indianapolis underlines an important point: Cities and counties do not need to establish formal regional governmental structures to cooperate. More important are the attitudes of the participants and their willingness to collaborate.

Given the rapid pace of urbanization along the mid-Atlantic coast and the likely continued growth of the federal government, it is easy to forecast that in 25 years, Virginia’s urban crescent will constitute a continuous band of population and economic activity with no rural interruptions. A salient question is how this urban swath should be governed. Some regional and multiregional governmental solutions surely must be considered. Portland, the Twin Cities and Indianapolis provide some guidance in this regard.

Aside from natural tensions between localities arising from regional consolidation and political motivations, Virginia’s almost notorious status as a Dillon Rule state may prove to be the largest barrier to regionalization. Insofar as municipal sovereignty is concerned, compared to states across the country, localities within Virginia are significantly disadvantaged due to the Commonwealth’s long history of Dillon Rule jurisprudence and, perhaps most relevant to this discussion, the denial of several local governmental consolidations throughout the 20th century. In light of the fact that Indianapolis, the Twin Cities and Portland are not

strictly subject to the same red tape as municipalities in Virginia, it would seem that any attempt at regionalization in the Commonwealth would necessitate one of two things: an imaginative solution similar to Unigov, where towns can consolidate services creatively while still maintaining enough separation to circumvent the Dillon Rule, or at minimum a reduction in how broadly Virginia applies the Dillon Rule to certain aspects of municipal sovereignty.

If notable Virginians such as Mr. Jefferson were in residence today, would they insist that Virginia governmental laws, structures and traditions, some of which date to before the American Revolution, be maintained, regardless of their relevance to today’s challenges or their cost effectiveness? We venture this observation: If these revered individuals were as astute and perceptive as history records, then transplanted to 2017, they would be supporters and advocates of innovative regional governance structures. They would wish to maintain local contact and control wherever plausible, but simultaneously encourage and implement regional solutions to challenges that no longer respect city and county boundaries.

APPENDIX A

SUCCESSFUL CONSOLIDATIONS OF LOCAL GOVERNMENTS IN VIRGINIA

| Units of Government Involved | Name of Consolidated Government | Merger Effective Date |
|---|---------------------------------|-----------------------|
| Richmond (city) Manchester (city) | City of Richmond | 1910 |
| Waynesboro (town) Basic City (town) | Town of Waynesboro | 1923 |
| Hampton (city) Phoebus (town) Elizabeth City (county) | City of Hampton | 1952 |
| Newport News (city) Warwick (county) | City of Newport News | 1958 |
| Virginia Beach (city) Princess Anne (county) | City of Virginia Beach | 1963 |
| South Norfolk (city) Norfolk (county) | City of Chesapeake | 1963 |
| Tazewell (town) North Tazewell (town) | Town of Tazewell | 1963 |
| Christiansburg (town) Cambria (town) | Town of Christiansburg | 1964 |
| Holland (town) Whaleyville (town) Nansemond (county) | City of Nansemond | 1972 |
| Suffolk (city) Nansemond (city) | City of Suffolk | 1974 |

DEFEATED CONSOLIDATIONS

| Units of Government Involved | Proposed Name of Consolidated Government | Year of Rejection |
|--|---|-------------------|
| Hampton (city) Newport News (city) Warwick (city) | City of Hampton Roads | 1956 |
| Richmond (city) Henrico (county) | City of Richmond | 1961 |
| Winchester (city) Frederick (county) | City of Winchester | 1969 |
| Roanoke (city) Roanoke (county) | Name of city to be determined by voters. | 1969 |
| Charlottesville (city) Albemarle (county) | Name of city to be determined by voters. | 1970 |
| Bristol (city) Washington (county) | Name of city to be determined by voters. | 1971 |
| Front Royal (town) Warren (county) | Front Royal - city or county form to be determined by voters. | 1976 |
| Pulaski (town) Dublin (town) Pulaski (county) | County of Pulaski | 1983 |
| Staunton (city) Augusta (county) | Consolidated County of Augusta and Tier City of Staunton | 1984 |
| Covington (city) Clifton Forge (city) Alleghany (county) | City of Alleghany Highlands | 1987 |
| Emporia (city) Greensville (county) | City of Emporia | 1987 |
| Roanoke (city) Roanoke (county) | Roanoke Metropolitan Government | 1990 |
| Clifton Forge (city) Alleghany (county) | City of Alleghany | 1991 |
| Bedford (city) Bedford (county) | City of Bedford and Shire of Bedford | 1995 |
| Source: Virginia Commission on Local Government | | |





