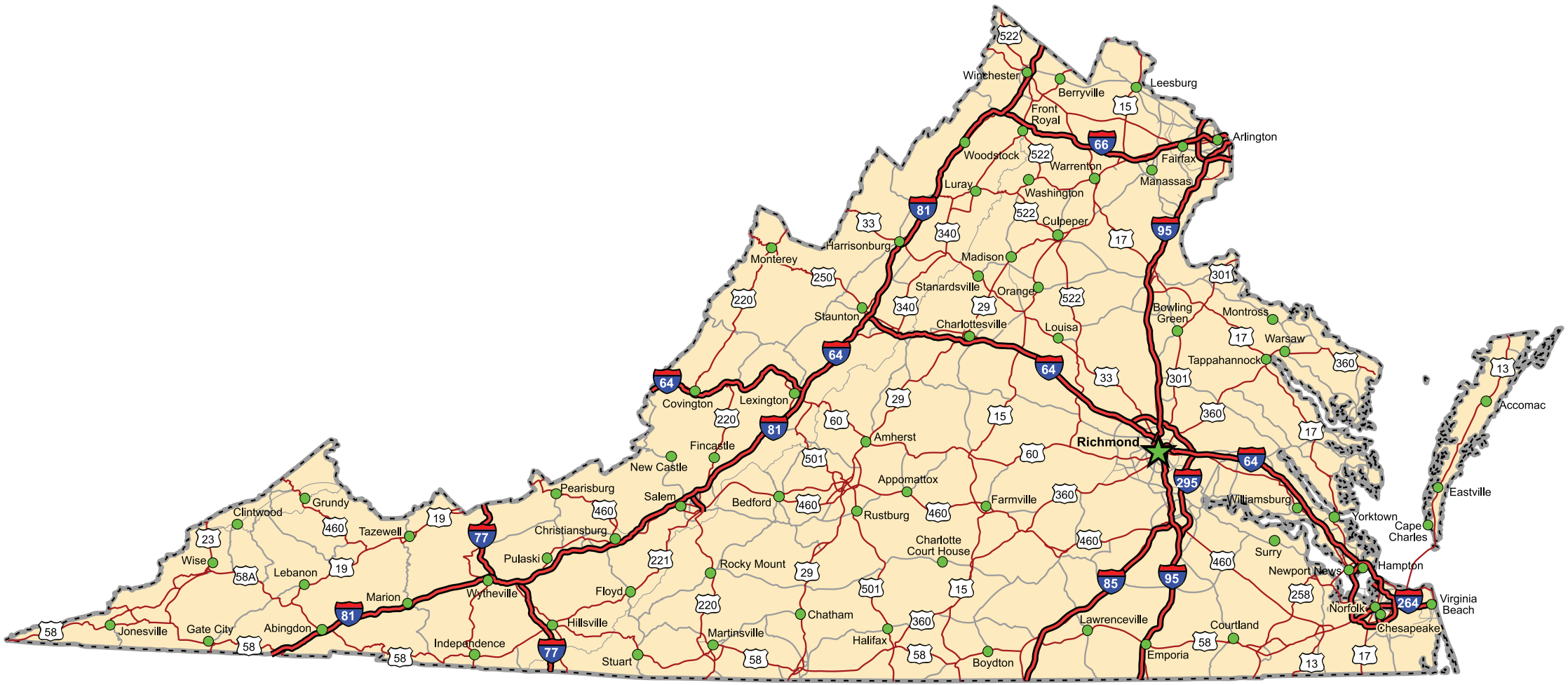




2018 State of the Commonwealth Report

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



Dear Reader:

This is Old Dominion University's fourth State of the Commonwealth Report. While it represents the work of many people connected in various ways to the university, the report does not constitute an official viewpoint of Old Dominion, its president, John R. Broderick, the Board of Visitors, the Strome College of Business or the generous donors who support the activities of the Dragas Center for Economic Analysis and Policy.

The report maintains the goal of stimulating thought and discussion that ultimately will make Virginia an even better place to live. The recent improvements in the Commonwealth's economic performance present an opportunity to make wise investments to sustain the long-term economic health of Virginia.

The 2018 report is divided into six parts:

Virginia Breezes Along, but Are There Storm Clouds on the Horizon?

After an anemic recovery from the Great Recession and sequestration, Virginia's economy picked up the pace in 2018 and is likely to improve in 2019. We should not, however, grow complacent. There are storm clouds on the horizon. The challenge now is to enact wise policies to foster and sustain economic growth while preparing for the next eventual downturn.

Moving Forward: Growth Improves for Virginia's Metropolitan Areas

2017 was the first year since 2006 that each of Virginia's metropolitan areas exhibited positive economic growth from the preceding year. The uneven economic performance of Virginia's metros cannot easily be attributed to one specific factor. The challenge is how to stimulate development in all areas of the Commonwealth.

The Promise and Peril of Medicaid Expansion for the Commonwealth of Virginia

Virginia will expand Medicaid, a health insurance program for low-income adults and children, on Jan. 1, 2019. Medicaid expansion will reduce the number of uninsured, allow Medicaid recipients to work more and offer health care providers a measure of relief with regard to uncompensated care costs. The future costs of expansion, however, remain uncertain.

A Commonwealth Coming Together or Growing Apart?

We shed light on the diversities of circumstances and outcomes that exist in today's Virginia. The distributions of income and wealth in the Commonwealth provide important information about the extent to which Virginians share an economic destiny.

Much Ado About Nothing? Virginia's "Kings Dominion Law"

In 1986, Virginia passed into law a requirement that public schools cannot open until after Labor Day unless they met specific conditions for a waiver. In 2017, over 50 percent of Virginia elementary, middle and high school students attended schools that opened prior to Labor Day. We ask whether there is evidence to support the commonly offered arguments for and against the Virginia "Kings Dominion law."

Sin Taxes and Alcohol Consumption in Virginia

How does the Commonwealth tax alcohol? We look at the taxation of beer, wine and distilled spirits and the role of Virginia's Alcoholic Beverage Control Authority. We investigate whether levying taxes on alcohol is an appropriate method of raising revenue.

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

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Steve Daniel	Feng Lian		

All four State of the Commonwealth reports are available at www.ceapodu.com. If you have comments or suggestions, please email us at rmcnab@odu.edu.

Sincerely,



Robert M. McNab
Director, Dragas Center for Economic Analysis and Policy
Professor of Economics, Department of Economics
Strome College of Business
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VIRGINIA BREEZES ALONG, BUT ARE THERE STORM CLOUDS ON THE HORIZON?

*After climbing a great hill, one only finds
that there are many more hills to climb. I
have taken a moment here to rest, to steal
a view of the glorious vista that surrounds
me, to look back on the distance I have come.
But I can only rest for a moment, for with
freedom comes responsibilities, and I dare
not linger, for my long walk is not ended.*

– Nelson Mandela



For six consecutive years since the end of the Great Recession, real (after-inflation) economic growth in Virginia lagged that of the United States. The twin hammers of the recession and federal budget sequestration fell heavily on the Commonwealth. Job creation lagged neighboring states, Virginians left in greater numbers in search of superior economic opportunities and perceptions of the business climate fell precipitously. Naysayers argued that Virginia's time had passed and that the Commonwealth was no longer open for business. We could only look wistfully on the fortunes of Georgia, North Carolina and Texas and wonder how it all went wrong.

While some pessimism was warranted, Virginia finally appears to have turned the proverbial economic corner and has been accelerating in 2018. Federal government spending, which is responsible for more than 30 percent of the Virginia economy, is rising. Job creation continues to improve, tourism continues to grow and the housing sector is showing robust price growth.

State government revenue collections rose during the 2017-18 fiscal year (FY) and through the second quarter of FY 2019. The Commonwealth wisely added to its "rainy day" fund to bolster its bond rating and increase its ability to weather inevitable future economic storms.

Virginia is poised for continued growth into 2019. The unemployment rate is nearing 3 percent and the labor force continues to expand. The Port of Virginia is expected to eclipse last year's record for cargo traffic, although it must contend with increasing competition from other ports. The Department of Defense (DOD) base budget grew considerably in FY 2018 and again in FY 2019, creating new demands for labor, especially in Hampton Roads and Northern Virginia. Efforts to improve the business climate have borne fruit, with a top-five ranking by CNBC in 2018. Virginia is, in fact, open for business.

Opportunities, however, are not without challenges. Economic growth continues to be unevenly distributed across the Commonwealth. Medicaid expansion, which will improve health outcomes of new enrollees and lower uncompensated care costs to health care providers, will constitute a net economic benefit to Virginia's budget. On the other hand, Medicaid expansion may also increase the long-term financial risks associated with the Commonwealth's budget because of the possible unreliability of federal funding to support the expansion.

Though Virginia continues to be an attractive destination for international migrants, it recently has struggled to retain its residents. The opioid crisis continues to plague the Commonwealth and the nation. Further, our labor force participation rate remains low when compared to the period prior to the Great Recession – about one-third of working-age residents are no longer actively participating in the labor force.

Virginia, for better or worse, is impacted more by the vagaries of the federal government than many of its neighbors. The continuing trade conflict with China will adversely impact the operations of the Port of Virginia and all those who use the Port, including Virginia farmers.

The federal government's decision to increase spending and cut taxes is fueling growth in the short run but has also added to the federal debt. We must recognize that the current fiscal habits of the federal government are unsustainable and that, at some point, a retrenchment of spending and taxes must come. When this occurs, Virginia's economic dependence on the federal government will once again prove problematic.

After an anemic recovery from the Great Recession and sequestration, Virginia's economy picked up the pace in 2018 and is likely to continue to improve more rapidly in 2019. Many standard economic indicators are not only pointing in the right direction, but also are at or near record levels. We should not, however, grow complacent. There are storm clouds on the horizon. The challenge now is to continue to enact wise policies to foster and sustain economic growth while preparing for the next eventual downturn. No tree grows to the sky, and every business cycle comes to an end.

Reconciling the prospects for growth in the short term with the uncertainty of the long term is a primary task we undertake in this chapter. We will examine these sometimes puzzling pieces of data and provide a more focused picture of the state of the Commonwealth and what policies will likely work best for Virginia in the years ahead.

Growth Picks Up In 2018

Gross domestic product (GDP) is the headline measure of economic performance in the United States and the Commonwealth. It places a dollar value on 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 remains the most commonly used benchmark of the value of overall economic activity. We should note that the GDP data on the state level arrive with some lag. The data for the second quarter of 2018 did not arrive until November 2018 and, as always, these numbers are subject to revision.

Table 1 presents annual GDP for Virginia in nominal and real (inflation-adjusted) dollars. We focus on real GDP, as it removes the influence of price inflation from our discussion. We can compute a compound average growth rate (CAGR) to obtain an annual average rate of growth from 2006 to 2007.¹ **Virginia's real GDP grew at an annual average rate of only 0.7 percent between 2006 and 2017. Even if we only focus on**

¹ The compound average growth rate can be determined by the following: $CAGR = ((\text{Final Period}/\text{Initial Period})^{1/(\text{number of periods})}) - 1$.

the last five years, the average annual GDP growth rate was a mere 0.9 percent from 2013 to 2017. To say that the economic performance of the Commonwealth was underwhelming in the early years of this decade might be an understatement.

TABLE 1

VIRGINIA'S REAL GROSS DOMESTIC PRODUCT AND ANNUAL GROWTH RATES, 2006-2017

Year	Nominal GDP	Real GDP	Real GDP Growth
2006	\$379,180	\$405,682	2.4%
2007	\$392,553	\$408,148	0.6%
2008	\$398,817	\$407,227	-0.2%
2009	\$407,302	\$407,302	0.0%
2010	\$420,862	\$416,903	2.4%
2011	\$429,174	\$419,724	0.7%
2012	\$441,144	\$422,269	0.6%
2013	\$449,235	\$422,275	0.0%
2014	\$459,242	\$422,957	0.2%
2015	\$479,669	\$430,768	1.8%
2016	\$491,221	\$432,862	0.5%
2017	\$508,662	\$441,494	2.0%

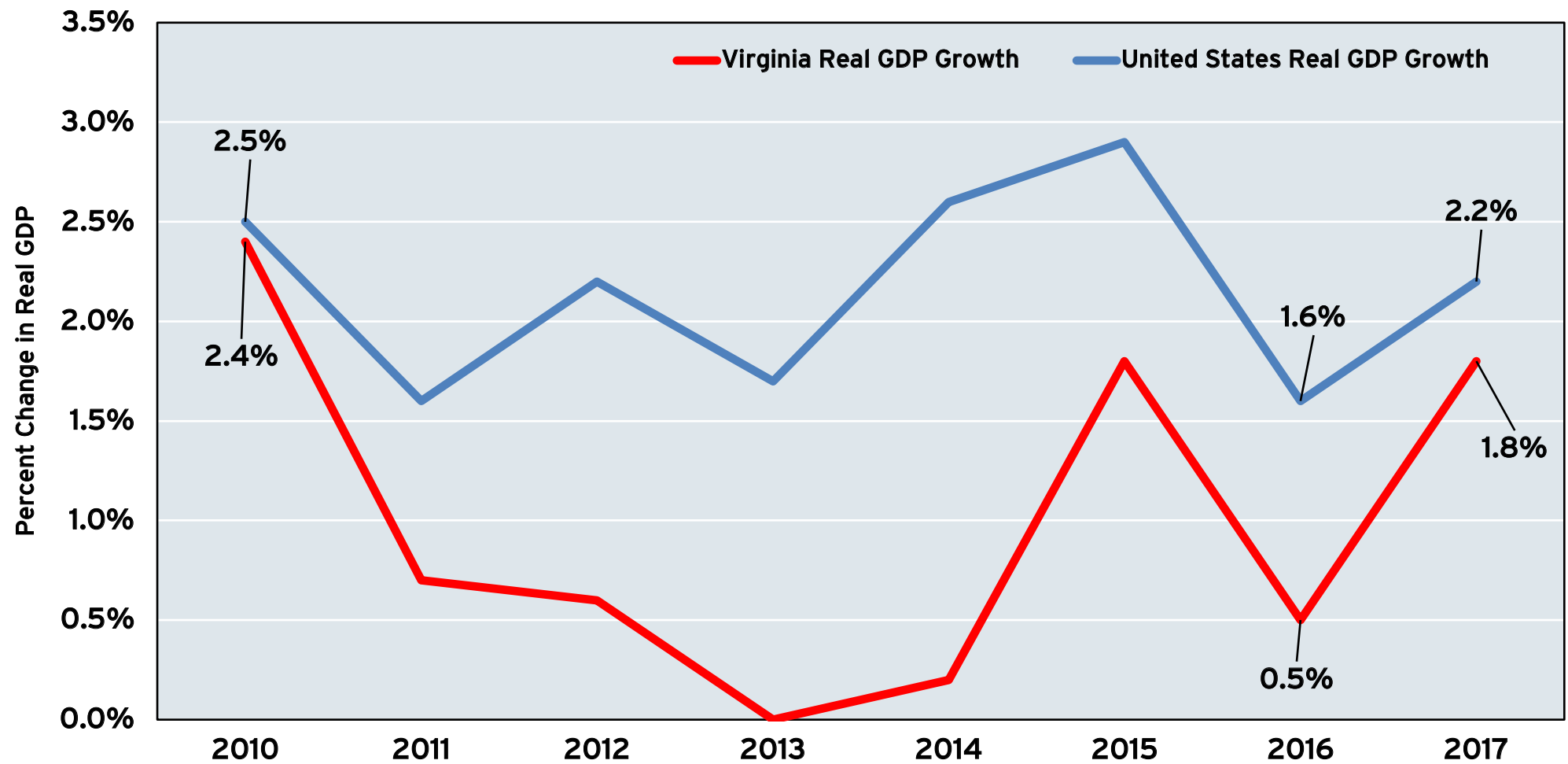
Source: Bureau of Economic Analysis, 2018

Graph 1 compares the Commonwealth's economic performance with that of the United States from 2010 to 2017. The conclusion is clear: Real GDP growth for the U.S. was higher than that for Virginia, on average, in each year this decade. However, Virginia's economic performance did improve in 2017, with the Commonwealth's real growth rate approaching that of the U.S. Let's look at the data.

Graph 2 presents the annualized percentage change in quarterly real GDP from the first quarter of 2014 through the second quarter of 2018 for Virginia. The Commonwealth's economy vacillated between growth and contraction from the first quarter of 2014 to the first quarter of 2017. Since the second quarter of 2017, however, Virginia has grown for five consecutive quarters and appears to be poised to grow well into 2019.



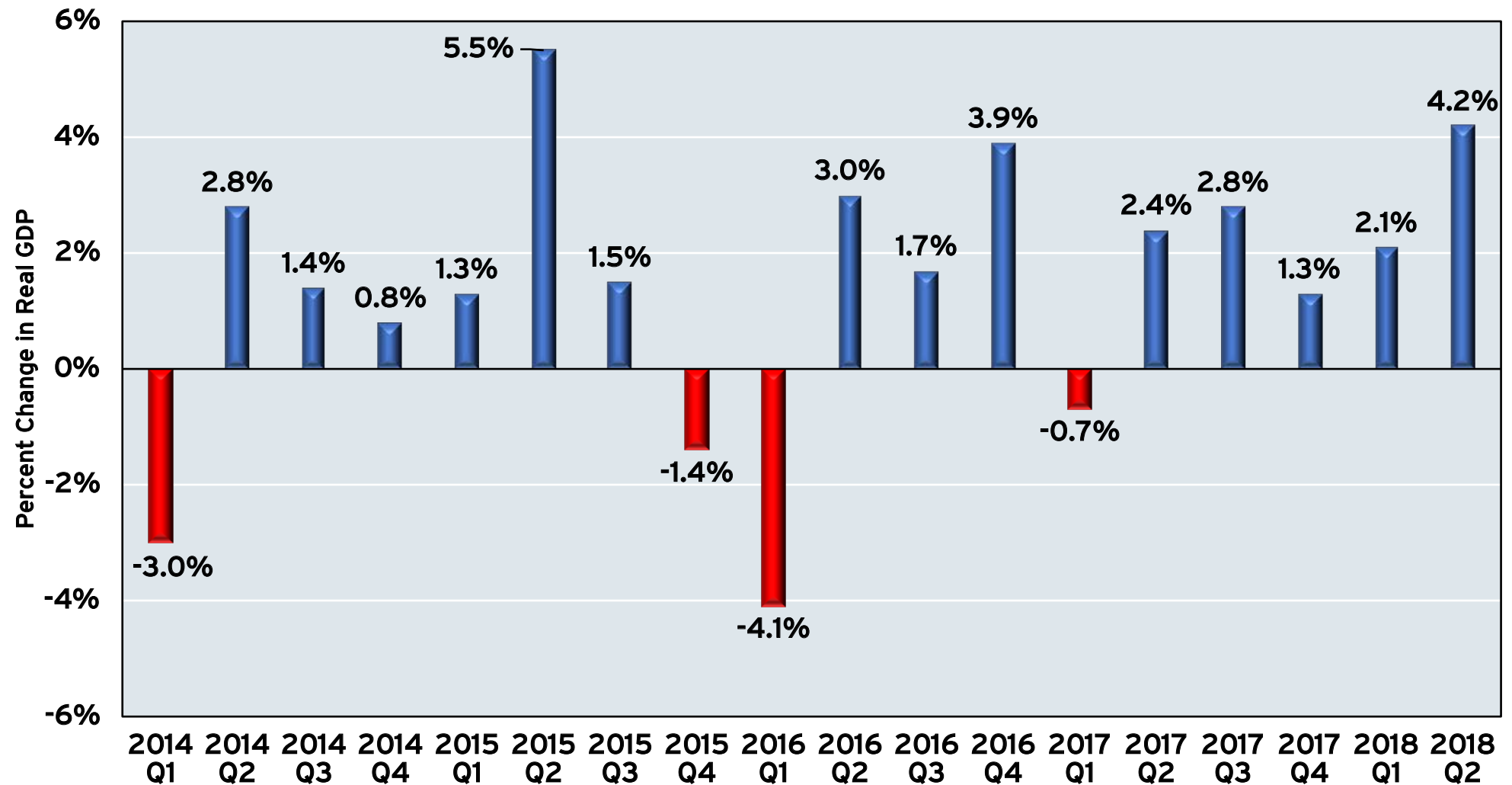
GRAPH 1

VIRGINIA AND THE UNITED STATES:
GROWTH OF REAL GDP, 2010-2017

Sources: Bureau of Economic Analysis and the Dragas Center for Economic Analysis and Policy, Old Dominion University, 2018

GRAPH 2

**VIRGINIA: ANNUALIZED PERCENTAGE CHANGE IN QUARTERLY REAL GDP,
1ST QUARTER 2014 TO 2ND QUARTER 2018**



Source: Bureau of Economic Analysis, 2018

Comparing the quarterly economic performance of the United States and Virginia from the first quarter of 2016 to the second quarter of 2018 yields some interesting insights. Table 2 illustrates that 2016 was a mixture of quarterly economic growth and contraction. Even though the Virginia economy contracted in the first quarter of 2017, what followed is not only several straight quarters of growth, but, more importantly, growth at a rate nearing that or equal to the United States. This is a remarkable change from the first six years of the decade where Virginia's overall economic performance has lagged that of the nation.

Drawing back, there now appears to be sufficient data for us to conclude that the Virginia economy has pulled itself out of the doldrums of the Great Recession and sequestration. The Commonwealth economy is not only growing, it is accelerating ahead.

Graph 3 presents data for the first half of 2018 as well as our forecasts for the second half of 2018 and 2019 for the United States and Virginia. U.S. economic growth surged in the second quarter of 2018, largely due to the impact of the Tax Cuts and Jobs Act of 2017 and the Bipartisan Budget Agreement of 2018. Second quarter 2018 growth also surged in Virginia due, in part, to increases in defense spending. However, after the second quarter of 2018, we expect that national economic growth will taper. We forecast that the U.S. and Virginia economies will grow at similar rates (subject to our usual caveats on economic shocks) through 2019.

That the Virginia economy is expected to perform as well as the U.S. economy is a significant change from earlier in this decade. Given the large increases in defense spending through September 2019, plus improved expectations due to the announcement of Amazon's HQ2 in Northern Virginia, we expect Virginia's growth will likely outperform the United States in 2019.

TABLE 2

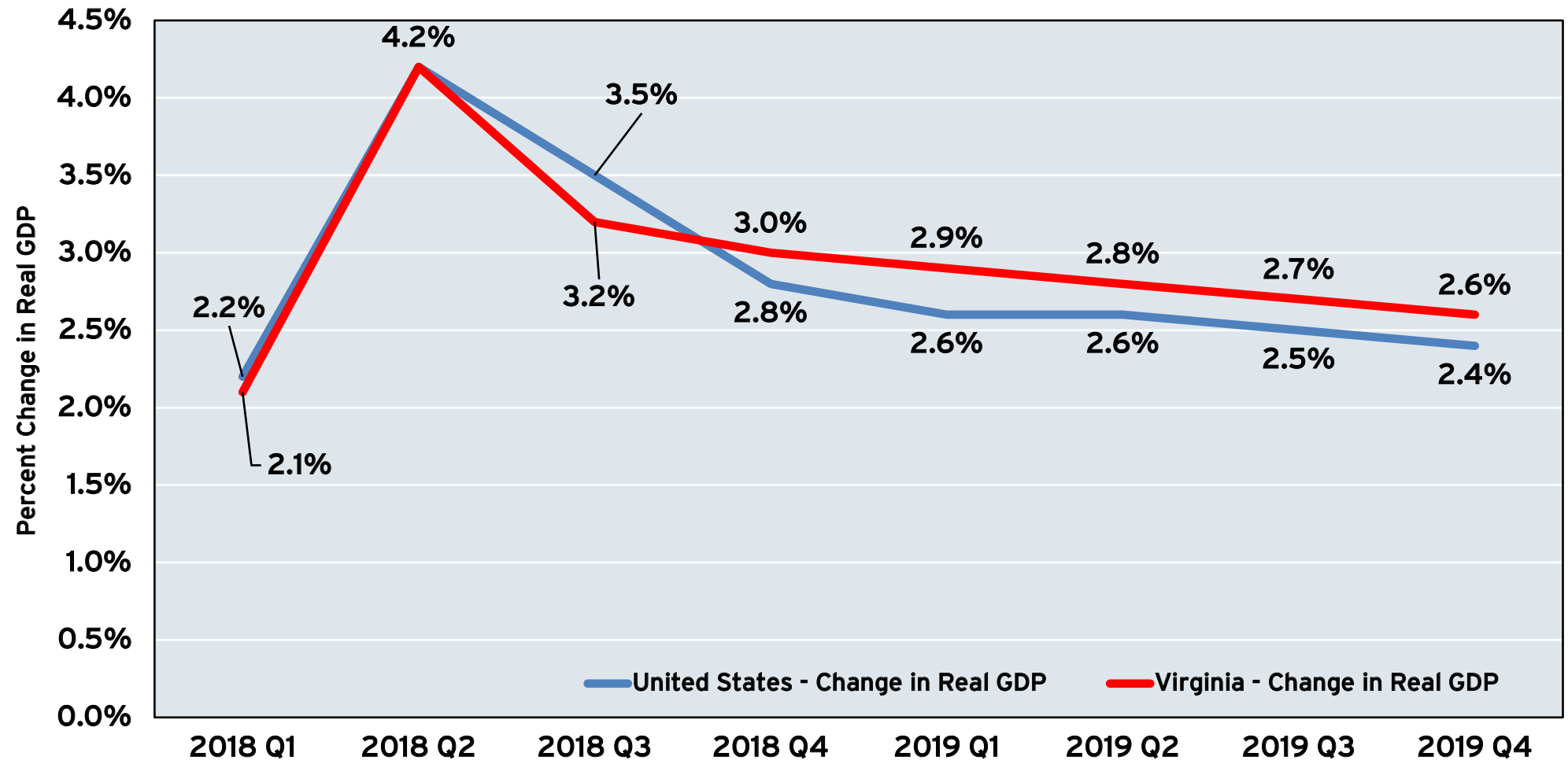
**VIRGINIA AND THE UNITED STATES:
ANNUALIZED CHANGE IN QUARTERLY REAL GROSS DOMESTIC
PRODUCT, 2016 Q1-2018 Q2**

Year	United States	Virginia
2016 Q1	1.5%	-4.1%
2016 Q2	2.3%	3.0%
2016 Q3	1.9%	1.7%
2016 Q4	1.8%	3.9%
2017 Q1	1.8%	-0.7%
2017 Q2	3.0%	2.4%
2017 Q3	2.8%	2.8%
2017 Q4	2.3%	1.3%
2018 Q1	2.2%	2.1%
2018 Q2	4.2%	4.2%

Source: Bureau of Economic Analysis, 2018 and Dragas Center for Economic Analysis and Policy. Real GDP is measured in millions of chained 2012 dollars, seasonally adjusted at annual rates. The data represent the annualized change in quarterly real GDP from the previous quarter.

GRAPH 3

**ACTUAL AND FORECASTED ANNUALIZED QUARTERLY REAL GDP GROWTH:
VIRGINIA AND THE UNITED STATES, 2018 Q1 TO 2019 Q4**



Source: Bureau of Economic Analysis, 2018, and the Dragas Center for Economic Analysis and Policy, Old Dominion University. U.S. third quarter 2018 real GDP is the second estimate, while Virginia second quarter 2018 is the advance estimate. U.S. fourth quarter 2018 to fourth quarter 2019, and Virginia third quarter 2018 to fourth quarter 2019, are our forecasts.

Federal Spending Rises, But Will It Last?

One of the main drivers of Virginia's economic engine is federal government spending. Not only has Virginia consistently ranked among the top five states in terms of federal spending as a percentage of state GDP, but also it ranked first in terms of federal spending per capita in FY 2015.² About 30 percent of economic activity in the Commonwealth can be attributed to the activities of the federal government.

While income transfers to individuals are a part of the overall activity of the federal government in Virginia, these programs are largely driven by law. Social Security payments, for example, may be influenced by decisions about cost-of-living adjustments, but these payments are largely outside the purview of the annual budgeting process. Discretionary spending, on the other hand, is typically drafted, debated, passed by Congress and signed into law on an annual basis.³

An award is defined as money the federal government has promised to pay a recipient. Funding may be awarded to a company, organization, government or individual. An obligation is a binding agreement between the federal government and the recipient of the award to spend an award now or in the future.

Table 3 illustrates how awards from the federal government flow into the Commonwealth. Federal contract awards are typically the largest category, followed by direct payment awards to individuals. Total federal awards per capita in FY 2018 were approximately \$12,000 in Virginia, slightly more than the \$11,360 per capita in Maryland and significantly higher than the \$6,800 in awards per capita in North Carolina.

TABLE 3

NOMINAL FEDERAL AWARDS IN VIRGINIA: BILLIONS OF NOMINAL DOLLARS, FISCAL YEARS 2016-2018*

Year	FY 2016	FY 2017	FY 2018
Contracts	\$50.6	\$52.9	\$51.7
Direct Payments	\$28.3	\$32.8	\$35.5
Grants	\$9.0	\$11.3	\$12.1
Other Financial Assistance	\$0.3	\$1.7	\$1.7
Loans	0.001	\$0.5	\$1.2
Total	\$88.3	\$99.2	\$102.0

Source: USAspending.com. Data are current as of Dec. 2, 2018, and are subject to revision. We caution that the FY 2018 data are likely to be revised, as the fiscal year concluded on Sept. 30, 2018. An award is a promise by the federal government to pay a recipient and an obligation is a binding agreement for the federal government to pay part or all of an award.

Graph 4 illustrates total federal awards, DOD awards and non-DOD awards made to individuals or organizations in Virginia from FY 2008 to FY 2018. Between FY 2008 and FY 2011, DOD awards stagnated and then actually declined between FY 2011 and FY 2015. Federal budget sequestration and the subsequent caps on discretionary spending clearly negatively affected DOD awards in Virginia. However, because non-DOD award increases were greater than DOD award decreases from FY 2009 to FY 2011, total federal spending increased in Virginia.

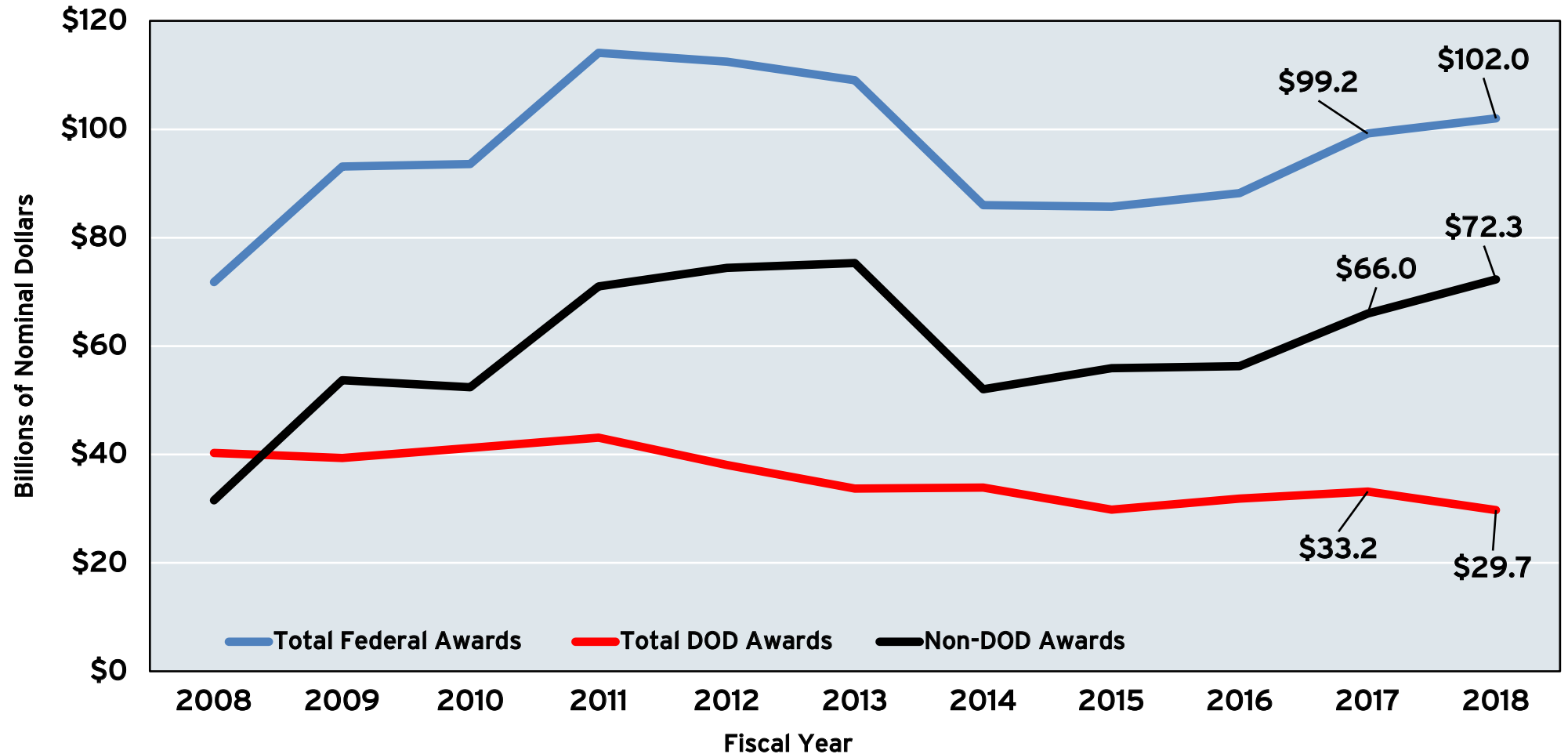
From FY 2012 through FY 2014, total federal awards declined and did not grow significantly in FY 2015 and FY 2016. It should be no surprise that the uptick in federal awards in FY 2017 and FY 2018 is closely aligned with increases in the Commonwealth's economic performance. The ebbs and flows of total federal spending this decade in Virginia are clearly correlated with the performance of the Virginia economy discussed earlier in this chapter.

² "Federal Spending in the States (2017)," The Council of State Government. http://knowledgecenter.csg.org/kc/system/files/2017_CFFR_Report_3.pdf.

³ We recognize there are multiyear appropriations (shipbuilding, for example), but the majority of discretionary appropriations are for a specific fiscal year.

GRAPH 4

**NOMINAL TOTAL FEDERAL AWARDS, DOD AWARDS AND NON-DOD AWARDS:
BILLIONS OF NOMINAL DOLLARS, VIRGINIA, FY 2008 TO FY 2018**



Source: USAspending.com. Data are current as of Dec. 2, 2018, and may be subject to revision.

Federal contract awards in Virginia totaled \$51.7 billion in FY 2018 and accounted for almost 51 percent of all federal awards in the Commonwealth. Virginia also ranked second in the nation in total federal contract awards in FY 2018, behind only California. Of the \$51.7 billion of federal contract awards in Virginia in FY 2018, almost \$30 billion came from the DOD.

Graph 5 illustrates the evolution of nominal federal, DOD and non-DOD contracts in Virginia from FY 2008 to FY 2017. The impact of budget sequestration is clearly apparent, with the declines in DOD contracts from FY 2012 to FY 2015. The upswing in contracting activity in FY 2016 and FY 2017 is good news for those metropolitan areas in Virginia that have a large federal presence, especially Hampton Roads and Northern Virginia. As FY 2018 may not yet be closed out, we expect that contract awards for this year will increase over the coming months.

Recent increases in federal spending have been and will continue to be a boon to the Commonwealth's economy. In the short term, increased federal spending will boost Virginia's economic performance, but the question remains, for how long? Graph 6 displays the Congressional Budget Office's projections of the federal deficit from FY 2018 through FY 2028. While the Tax Cuts and Jobs Act of 2017 reduced corporate and personal taxes and the Bipartisan Budget Agreement of 2018 increased federal discretionary spending, the consequence will be a rapid deterioration in the fiscal position of the federal government. Even the president's Office of Management and Budget's FY 2018 Mid-Session Review acknowledged that federal deficits will likely exceed \$1 trillion in FY 2019.⁴

The rapid increases in the federal deficit and, therefore, gross federal debt, should be of concern. Deficits do matter, and the fiscal position of the federal government is clearly unsustainable over the long run. Whether it is the end of the current economic expansion or an unforeseen turn of events in financial markets, the federal government will have to, at some point, address its fiscal imbalance. In all likelihood, this turn of events will lead to reductions in federal spending and increases in federal taxes, neither of which will bode well for the Commonwealth.

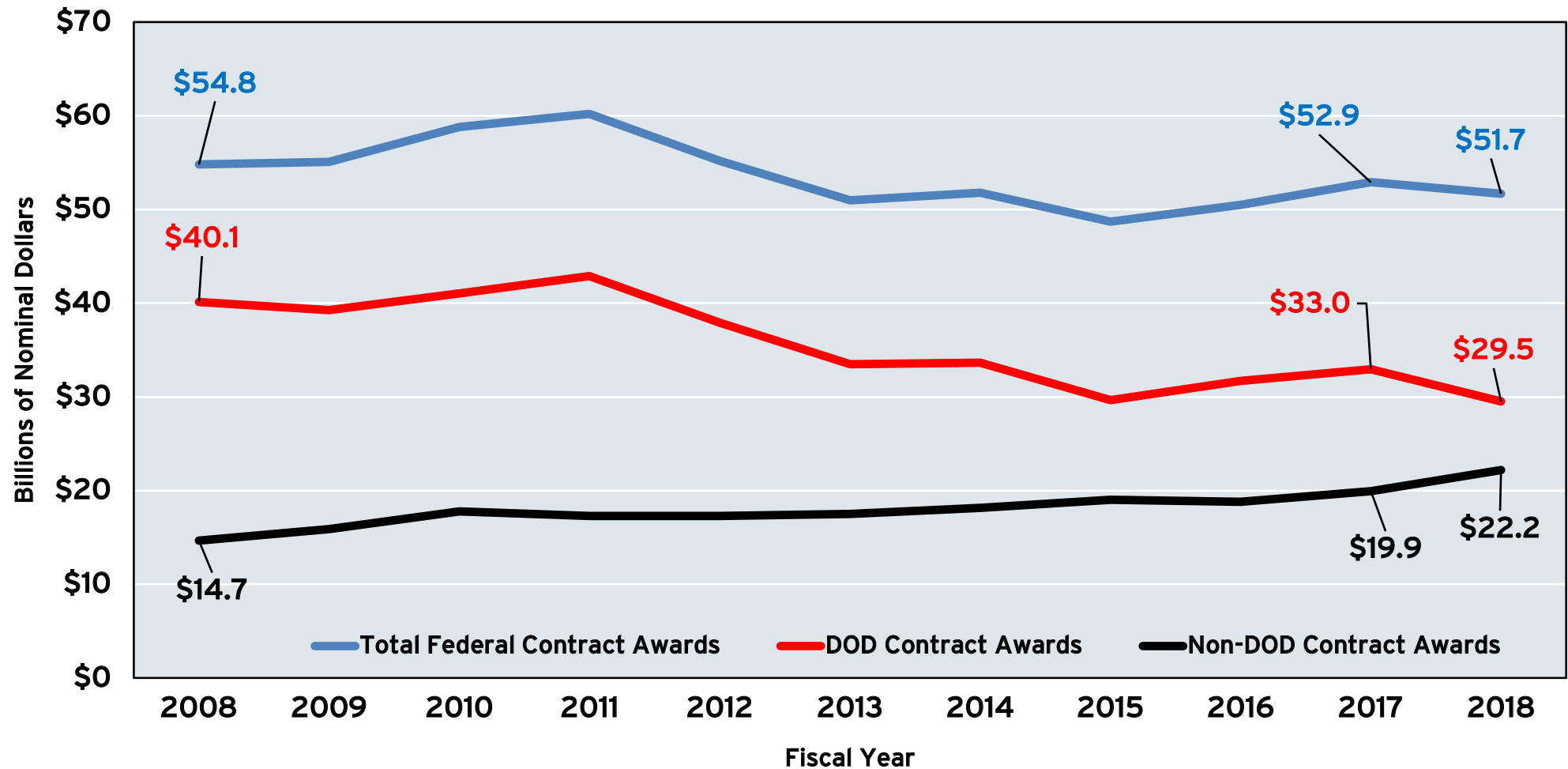
Federal spending thus constitutes a blessing and a curse for Virginia. Increases in federal spending provide fuel for the Commonwealth's economic engine, but budget sequestration illustrated that federal spending can also act as a brake on economic activity. With approximately 30 percent of economic activity in the Commonwealth tied to the federal government, much of the economic fate of Virginia is determined by politics in the District of Columbia. Our challenge is to leverage the strengths of federal spending, even while fostering a climate that promotes growth in the private sector.



⁴ Office of Management and Budget, 2018 Mid-Session Review, Table S-1 Budget Totals, <https://www.whitehouse.gov/wp-content/uploads/2018/07/19msr.pdf>.

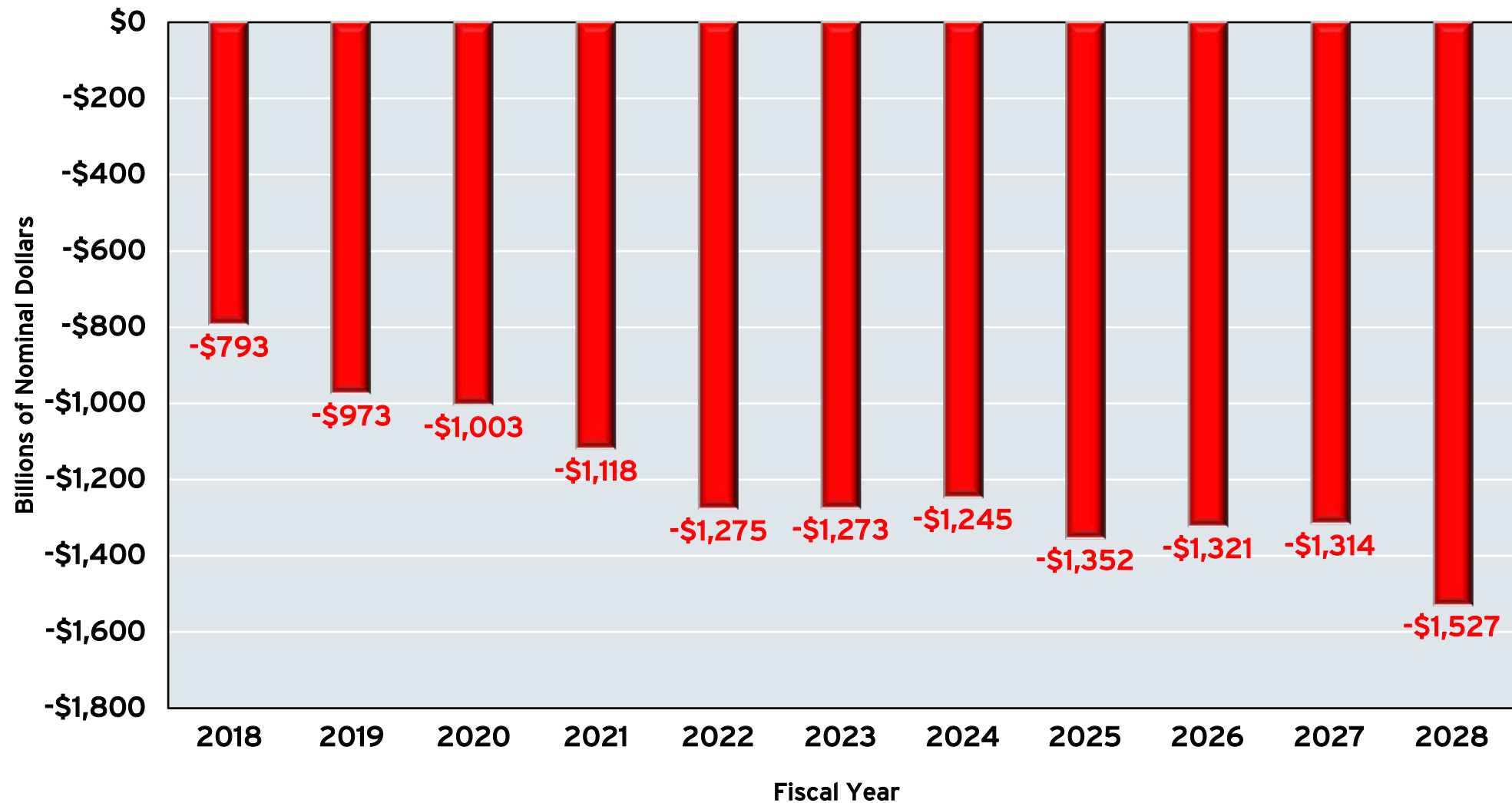
GRAPH 5

**NOMINAL TOTAL FEDERAL CONTRACT AWARDS, DOD CONTRACT AWARDS AND NON-DOD CONTRACT AWARDS:
BILLIONS OF NOMINAL DOLLARS, VIRGINIA, FY 2008 TO FY 2018**



Source: USAspending.com. Data are current as of Dec. 2, 2018, and may be subject to revision.

GRAPH 6

**PROJECTED FEDERAL DEFICITS:
BILLIONS OF NOMINAL DOLLARS, FY 2018 TO FY 2028**

Source: Congressional Budget Office, "The 2018 Long-Term Budget Outlook, 2018"

Virginia Rising: Comparisons To Other States

The story is now familiar: The twin blows of the Great Recession and sequestration contributed significantly to the poor economic performance of the Commonwealth over the last decade. Table 4 illustrates that Virginia's economic performance, as measured by growth in real GDP, fell from 19th in 2010 to a low of 45th in 2014. Virginia ranked 37th in 2016 and improved to 19th in 2017. Virginia's relative economic performance has not been something to cheer about this decade.

What should also be clear from Table 4 is that some states (Alaska, North Dakota) experienced natural resource booms and busts this decade. When oil and natural gas prices were high, these state economies expanded rapidly, only to contract when oil and natural gas prices fell. It takes no stretch of the imagination to note the fortunes of Virginia were similarly tied to the ebb and flow of federal government spending.

Table 5 presents the growth in quarterly real GDP from the first quarter of 2016 through the second quarter of 2018. The quarterly data show that Virginia's economic performance was uneven relative to other states in 2015 and into the first quarter of 2017. Starting with the second quarter of 2017, however, Virginia rose in the rankings, vaulting from 35th in the first quarter of 2017 to 14th in the second quarter of 2018. Virginia's steady rise in the rankings lends credence to the argument that it has finally regained the economic ground lost earlier in the decade.

Of course, Virginia's improvement in economic performance should not be entirely attributed to increases in federal government spending. While no measure of business climate is perfect, CNBC annually scores all 50 states on more than 60 measures of competitiveness. A state's rank may fluctuate year to year, and the trend illustrates the business climate in a state relative to other states. Table 6 shows that Virginia consistently ranked in the top three from 2007 to 2012 and then proceeded to decline

in the business rankings through 2016. It appears, however, that efforts to improve the climate in Virginia are paying off as the downward trend has reversed, and the Commonwealth was fourth in the latest edition of the CNBC rankings.

TABLE 4
ANNUAL REAL GDP GROWTH AND REAL GDP GROWTH RANKS, 2010-2017

Year	Virginia Rank	Highest-performing State	Lowest-performing State
2010	19 (2.7%)	North Dakota (4.6%)	Wyoming (-3.8%)
2011	34 (1.0%)	North Dakota (11.3%)	Louisiana (-5.4%)
2012	28 (0.8%)	North Dakota (22.4%)	Wyoming (-2.4%)
2013	35 (0.4%)	Texas (4.3%)	Alaska (-5.1%)
2014	45 (-0.2%)	Delaware (7.7%)	Alaska (-2.8%)
2015	28 (1.9%)	Oregon (5.2%)	North Dakota (-3.0%)
2016	37 (0.2%)	Oregon (4.7%)	North Dakota (-6.5%)
2017	19 (2.0%)	Washington (4.7%)	Louisiana (-1.1%)

Source: Bureau of Economic Analysis, Real Gross Domestic Product by State. Annual percent change in Real GDP in parentheses. Data current as of Nov. 2018 and subject to revision.

TABLE 5

ANNUALIZED QUARTERLY REAL GDP GROWTH AND REAL GDP GROWTH RANKS, 2016 Q1 TO 2018 Q1

Year	Virginia	Highest Performing State	Lowest Performing State
2016 Q1	43 (-4.1%)	New York (10.6%)	South Dakota (-13.4%)
2016 Q2	21 (3.0%)	Kansas (8.0%)	Wyoming (-13.7%)
2016 Q3	24 (1.7%)	Minnesota (7.4%)	Wyoming (-6.2%)
2016 Q4	8 (3.9%)	Washington (6.8%)	Wyoming (-3.5%)
2017 Q1	35 (-0.7%)	New York (7.0%)	North Dakota (-7.6%)
2017 Q2	25 (2.4%)	Wyoming (12.9%)	Delaware (-5.7%)
2017 Q3	21 (2.8%)	New Hampshire (7.8%)	Iowa (-3.7%)
2017 Q4	22 (1.3%)	Idaho (6.2%)	Delaware (-6.1%)
2018 Q1	19 (2.1%)	Washington (7.8%)	Alaska (-5.0%)
2018 Q2	14 (4.2%)	Texas (6.0%)	New Mexico (2.7%)

Source: Bureau of Economic Analysis, Real Gross Domestic Product by State. Annualized percent change from preceding period, estimates released November 14, 2018.

TABLE 6

CNBC, AMERICA'S TOP STATES FOR BUSINESS, 2007-2018

Year	Virginia	Highest-performing State	Lowest-performing State
2007	1	Virginia	Alaska
2008	2	Texas	Alaska
2009	1	Virginia	Alaska
2010	2	Texas	Alaska
2011	1	Virginia	Rhode Island
2012	3	Texas	Rhode Island
2013	5	South Dakota	Hawaii
2014	8	Georgia	Rhode Island
2015	12	Minnesota	Hawaii
2016	13	Utah	Rhode Island
2017	7	Washington	West Virginia
2018	4	Texas	Alaska

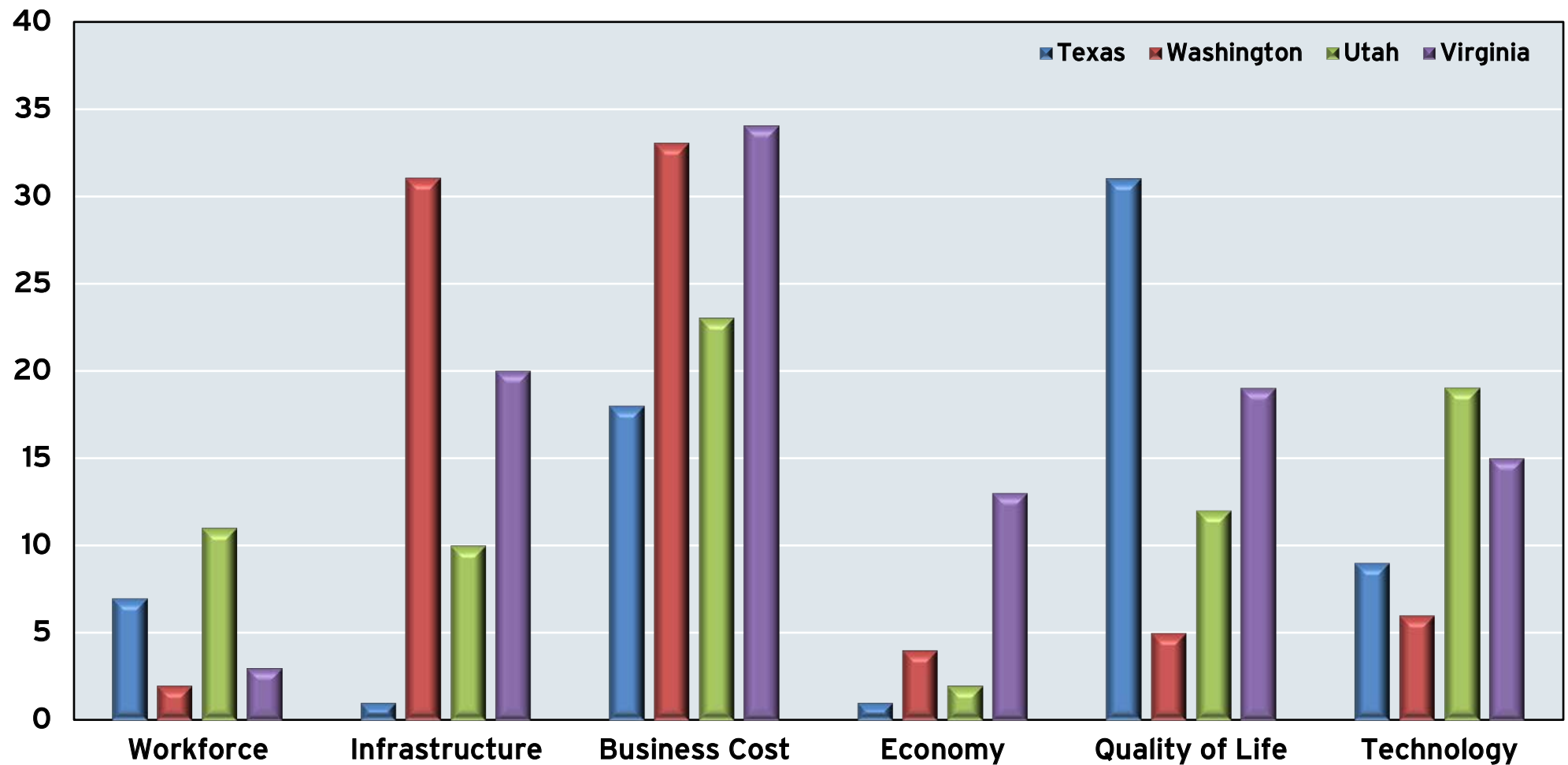
Source: CNBC, "America's Top States for Business, Various Years"

Yet, the Commonwealth should not rest on its laurels. In Graph 7, we present the individual ranks for the top four states in the 2018 CNBC rankings. Lower ranks reflect more desirable rankings. The Commonwealth performs relatively well in the workforce category, but is only among the top 20 states for economic performance, infrastructure, quality of life and technology. Virginia ranked 34th in the cost of doing business, illustrating that work still needs to be done to build upon the Commonwealth's recent surge in growth.⁵

A consistent story emerges from the data. Virginia's relative economic performance lagged in the first part of the decade. The recent recovery can be partially attributed to increases in federal spending and improvements in the business climate. If Virginia is to continue to improve its economic fortunes, then it must address its sometimes-antiquated tax system, maintain its competitive advantage in workforce development and make wise investments in public infrastructure.

⁵ We recognize that the cost of doing business in Virginia may be biased upward due to the relatively high costs of doing business in Northern Virginia. Certainly, this index is not reflective of the lower costs of doing business in more rural areas of the Commonwealth.

GRAPH 7
CNBC BUSINESS RANKINGS BY CATEGORY: TOP FOUR STATES, 2018



Source: CNBC, "America's Top States for Business, 2018"

Sectoral Growth In Virginia

Economic activity in Virginia results from the efforts of individuals and businesses in a variety of sectors. We can assess the contributions of each sector to overall economic activity in the Commonwealth to discern how the economy is evolving over time. As illustrated in Table 7, the contribution of private industries to real GDP, for example, grew from 80.3 percent in 2000 to 81.8 percent in 2017. Undoubtedly, private-sector

contributions to real GDP are growing, suggesting that the Virginia economy is diversifying.⁶

Table 7 also provides the sectoral contributions to real GDP for 2000, 2010 and 2017. Two sectors – finance, insurance, real estate, rental and leasing, and professional business services – accounted for nearly 40 percent of economic activity in the Commonwealth in 2017. Government and government enterprises accounted for another 18 percent of real GDP in 2017.

TABLE 7

SECTORAL CONTRIBUTIONS TO REAL GDP: VIRGINIA, 2000, 2010 AND 2017

Industry	2000	2010	2017
Agriculture, forestry, fishing and hunting	0.4%	0.3%	0.3%
Mining, quarrying and oil and gas extraction	0.7%	0.6%	0.5%
Utilities	2.1%	1.6%	1.4%
Construction	6.3%	3.7%	3.9%
Manufacturing	11.6%	9.9%	8.6%
Wholesale trade	4.5%	4.0%	4.3%
Retail trade	5.5%	5.1%	5.6%
Transportation and warehousing	2.6%	2.4%	2.4%
Information	4.1%	4.4%	3.8%
Finance, insurance, real estate, rental and leasing	16.7%	18.1%	18.9%
Professional and business services	13.7%	18.7%	19.9%
Educational services, health care and social assistance	5.6%	6.7%	7.1%
Arts, entertainment, recreation, accommodation and food services	3.5%	3.0%	3.0%
Government and government enterprises	19.8%	19.0%	18.2%
Addendum: total private industries	80.3%	81.0%	81.8%

Source: Bureau of Economic Analysis, "Annual GDP by State, 2018"

⁶ We recognize that federal transfer payments to individuals (Social Security), federal payments for medical services (Medicare and Medicaid) and federal contracts to private businesses will increase the sectoral contributions of private businesses, even though the origination of this activity is the federal government.

From 1997 to 2016, government and government enterprises was the largest sector in terms of economic activity in Virginia. However, in 2017, the professional and business services sector and the finance, insurance, real estate, rental and leasing sector eclipsed the government and government enterprises sector. The smaller share of the government and government enterprises sector was due less to a decline in overall economic activity and more to the faster rates of growth in the other two sectors.

Another way to analyze each industry sector's contribution to real GDP is to examine its percentage of total employment. Table 8 provides the total employment of each sector and its share of total nonfarm employment in 2000, 2010 and 2017. These numbers echo the story told in the contributions to real GDP data. In 2000 and 2010, the government sector was the largest employer in the Commonwealth. By 2017, however, the professional and business services sector employment had a larger share of total nonfarm employment than the government sector.

TABLE 8
SECTOR EMPLOYMENT AS A PERCENT OF TOTAL NONFARM EMPLOYMENT:
VIRGINIA, 2000, 2010 AND 2017

Industry	2000	2010	2017
Forestry, fishing and related activities	0.3%	0.3%	0.3%
Mining, quarrying and oil and gas extraction	0.3%	0.3%	0.3%
Utilities	0.3%	0.2%	0.2%
Construction	6.4%	5.7%	5.5%
Manufacturing	8.3%	5.1%	4.8%
Wholesale trade	2.8%	2.5%	2.4%
Retail trade	11.0%	9.9%	9.6%
Transportation and warehousing	3.1%	2.8%	3.6%
Information	2.9%	1.9%	1.6%
Finance, insurance, real estate, rental and leasing	6.8%	8.3%	8.9%
Professional and business services	15.9%	17.9%	18.1%
Educational services, health care and social assistance	8.7%	11.1%	11.7%
Arts, entertainment, recreation, accommodation and food services	7.9%	8.5%	9.3%
Government and government enterprises	18.3%	18.4%	16.9%
Addendum: total nonfarm employment	4,337,959	4,689,327	5,151,514

Source: SA25N Total Full-Time and Part-Time Employment by NAICS Industry. Note that farm employment was 61,192 in 2000, 53,862 in 2010 and 48,859 in 2017.

Table 9 sheds light on the growth of professional and business services. Within this sector, employment grew rapidly in the professional, scientific and technical services sub-sector from 2000 to 2010, though it grew at a slower pace from 2010 to 2017. Administrative and support services grew from 2000 to 2010 and increased at a faster pace from 2010 to 2017. Management of companies and enterprises, while growing absolutely over time, has fallen as a percentage of nonfarm employment. One might expect this category to grow slower than total nonfarm employment, as these jobs tend to be highly skilled and well compensated.

Let's compare this to the government and government enterprises sector. Federal, state and local government employment were all higher in 2017 than 2000; however, military employment declined dramatically over this period. Military employment fell from approximately 165,000 in 2000 to about 152,000 in 2010, to approximately 134,000 in 2017. The gains in federal, state and local employment offset these losses, but overall the sector grew slower over the period and thus fell as a percentage of total nonfarm employment.

The composition of the Virginia economy has been shifting slowly toward private-sector activity, in large part due to stagnant federal government spending. The gains in professional and business services and the finance, insurance, real estate, rental and leasing sector have helped diversify economic activity in the Commonwealth. The recent increases in federal spending, however temporary, will also help lift economic growth, but military and federal employment is a shrinking slice of the overall economic pie. In some respects, it appears that Virginia is improving its economic footing by becoming less dependent on federal government spending. Time will tell if the Commonwealth can take advantage of this opportunity to bolster the foundations of private-sector growth.

TABLE 9

**SELECTED SECTOR EMPLOYMENT AS A PERCENT OF TOTAL
NONFARM EMPLOYMENT: VIRGINIA, 2000, 2010 AND 2017**

Industry	2000	2010	2017
Professional and business services	15.9%	17.9%	18.1%
Professional, scientific and technical services	372,566 (8.5%)	508,235 (10.7%)	555,510 (10.7%)
Management of companies and enterprises	72,978 (1.7%)	76,370 (1.6%)	79,502 (1.5%)
Administrative and support services	252,888 (5.7%)	266,387 (5.6%)	308,188 (5.9%)
Government and government enterprises	18.3%	18.4%	16.9%
Federal civilian	165,746 (3.8%)	191,161 (4.0%)	197,619 (3.8%)
Military	168,189 (3.8%)	152,360 (3.2%)	137,423 (2.6%)
State government	151,445 (3.4%)	156,188 (3.3%)	165,450 (3.2%)
Local government	321,759 (7.3%)	374,578 (7.9%)	378,432 (7.3%)
Addendum: total nonfarm employment	4,337,959	4,689,327	5,151,514

Source: SA25N Total Full-Time and Part-Time Employment by NAICS Industry

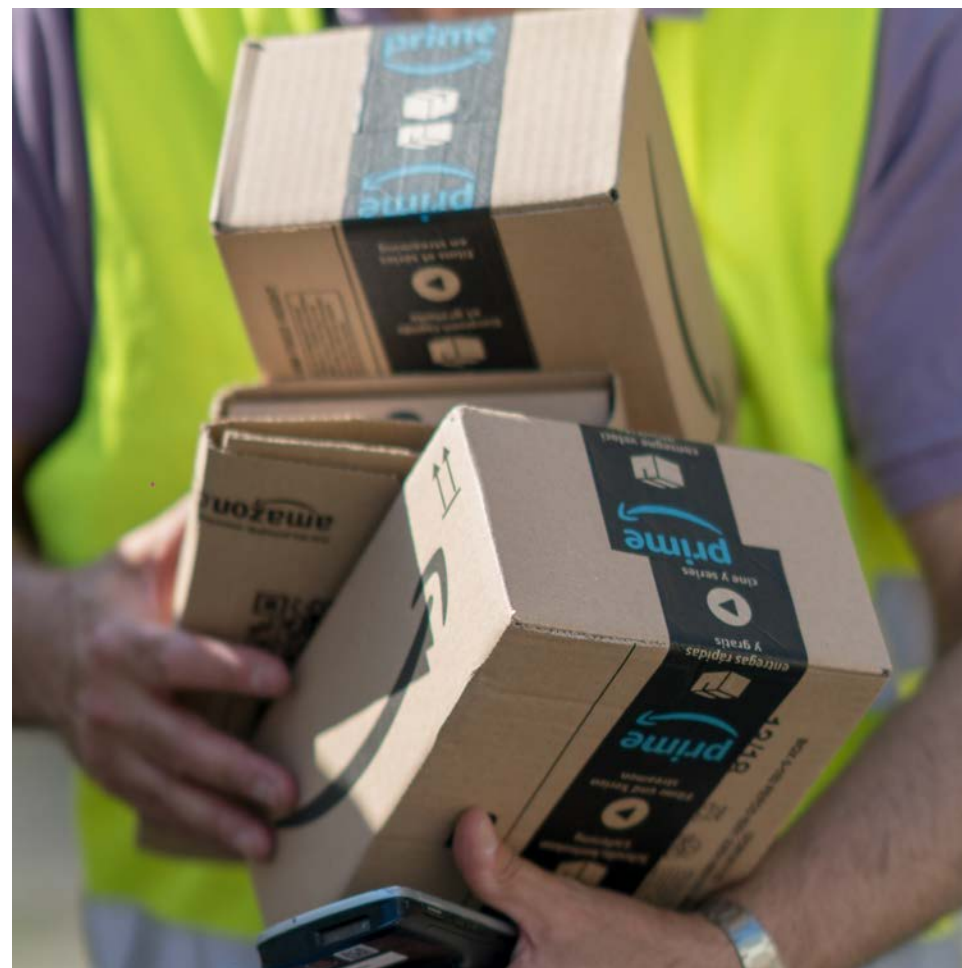
Labor Markets Continue To Improve

With the increases in overall economic activity in 2017 and into 2018, it should be no surprise that labor market conditions have improved as well. Graph 8 illustrates the growth in the seasonally adjusted labor force and individual employment from January 2007 to August 2018 for Virginia. One can clearly see the impact of the Great Recession on the size of the labor force and individual employment. Following the trough of the Great Recession in 2010, the gap between the two series has narrowed, at times, for different reasons.

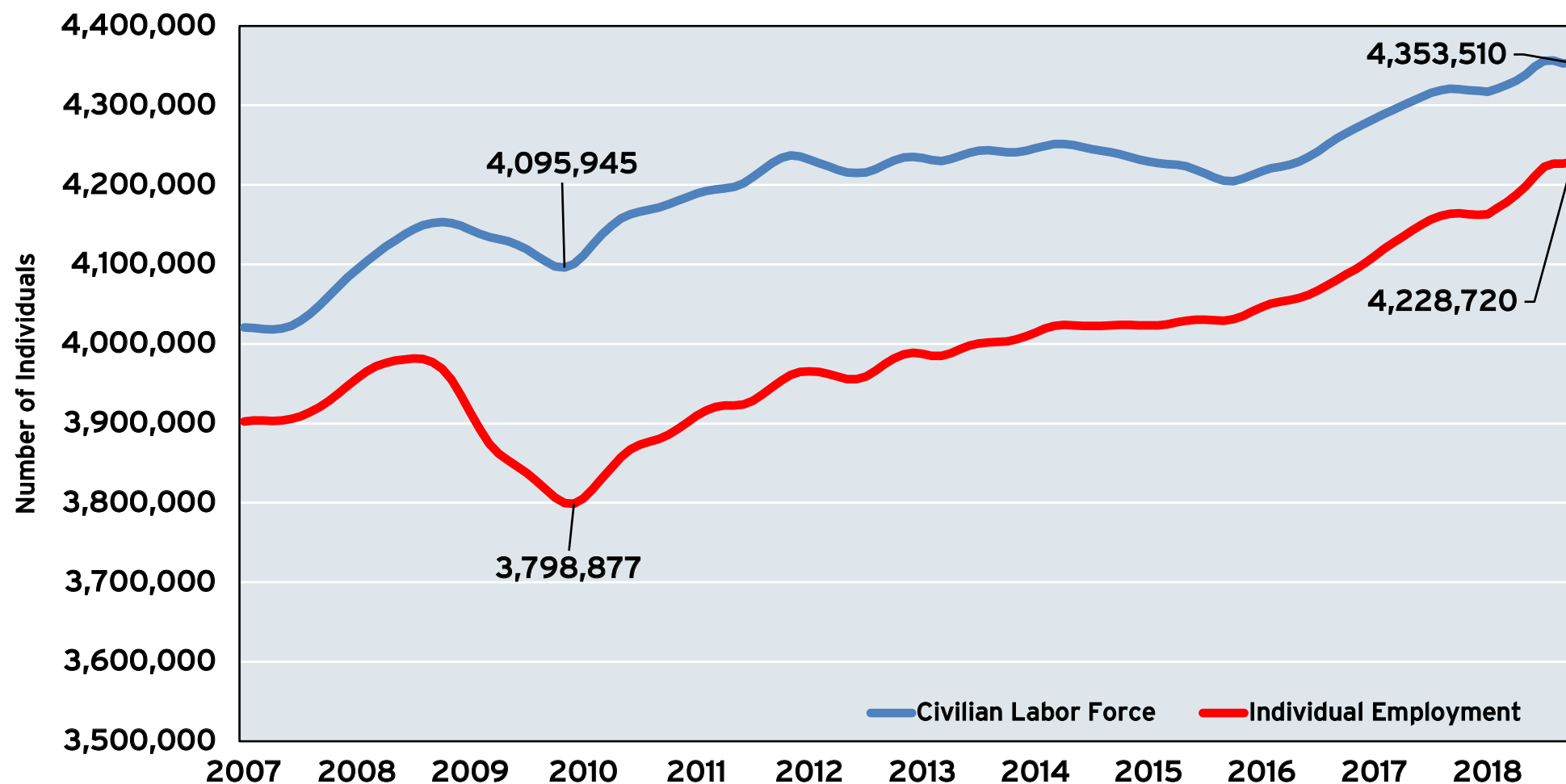
In the wake of sequestration, the civilian labor force declined into the fall of 2015. After that, more Virginians joined the labor force and the series has trended upward for the last three years. On the other hand, the individual employment series has continued to move upward since the trough of the recession. In 2018, individual employment grew at a more rapid rate than the labor force, continuing to narrow the gap between the two indicators of the overall health of the labor force.

There were approximately 4.36 million people in the Commonwealth's civilian labor force in October 2018. This represented a 3.5 percent gain from the doldrums of October 2015 and 0.8 percent from October 2017. The good news is that people were finding jobs. Individual employment also rose during this period. Employment growth was 4.9 percent from October 2015 to October 2018 and 1.5 percent from October 2017 to October 2018.

Because gains in individual employment outpaced gains in the labor force, Virginia's unemployment rate has fallen from a postrecession high of 7.5 percent in February 2010 to a seasonally adjusted post-recession low of 2.9 percent in October 2018 (Graph 9). Virginia's unemployment rate has not been this low since 2007 and, given the prospects for continued economic growth, is likely to trend even lower into 2019. The challenge now is to find qualified individuals, given that Virginia's unemployment rate is near what most economists would consider full employment.



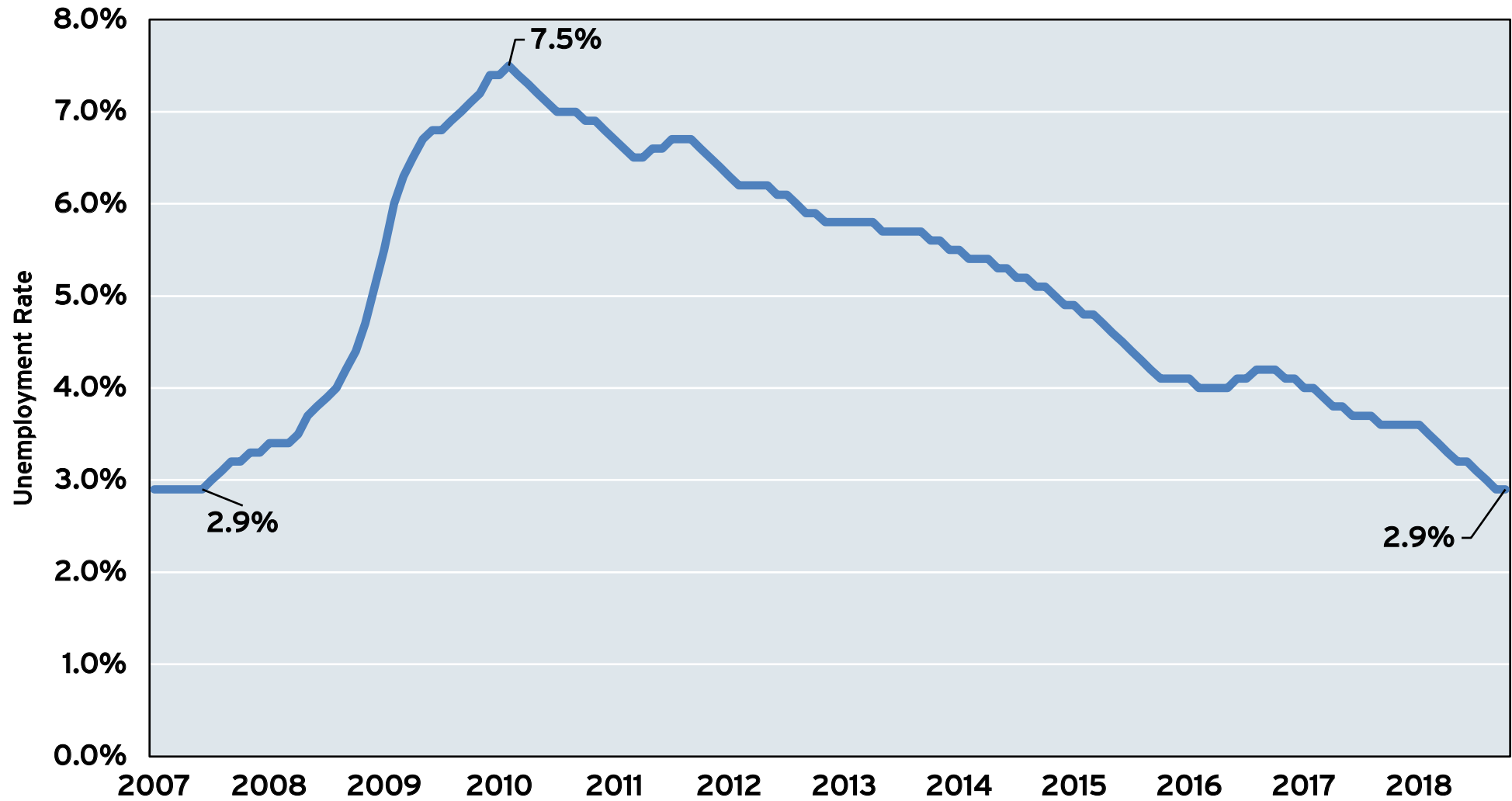
GRAPH 8

**SEASONALLY ADJUSTED LABOR FORCE AND CIVILIAN INDIVIDUAL EMPLOYMENT:
VIRGINIA, JANUARY 2005 TO OCTOBER 2018**

Source: Bureau of Labor Statistics, 2018

GRAPH 9

**SEASONALLY ADJUSTED UNEMPLOYMENT RATE:
VIRGINIA, JANUARY 2005 TO AUGUST 2018**



Source: Bureau of Labor Statistics, 2018

Nonfarm Payrolls (Jobs)

As with individual employment, nonfarm payrolls (jobs) continued to expand in 2017 and into 2018. Graph 10 illustrates the number of jobs in the Commonwealth from January 2007 to October 2018. The good news is that nonfarm payrolls expanded by 1.8 percent from October 2017 to October 2018, reinforcing the narrative of an expanding Virginia economy.

In Graph 11, we compare the year-over-year change in jobs for Virginia and the United States. Virginia's job growth was as strong (if not stronger) than the United States prior to the Great Recession, and the job losses in the Commonwealth were not as significant as in the nation. After the recession, however, job growth in the United States, for the most part, outpaced that of the Commonwealth. In 2018, it appears that job growth in Virginia has accelerated and is approaching that of the United States.

If labor markets are indeed tightening in the Commonwealth, then we would reasonably expect that earnings would increase and likely outpace inflation.⁷ We thus are interested in *real* average hourly earnings because real earnings control for the impact inflation has on our analysis. Graph 12 presents real average hourly earnings for Virginia and the United States for the period January 2007 to October 2018.

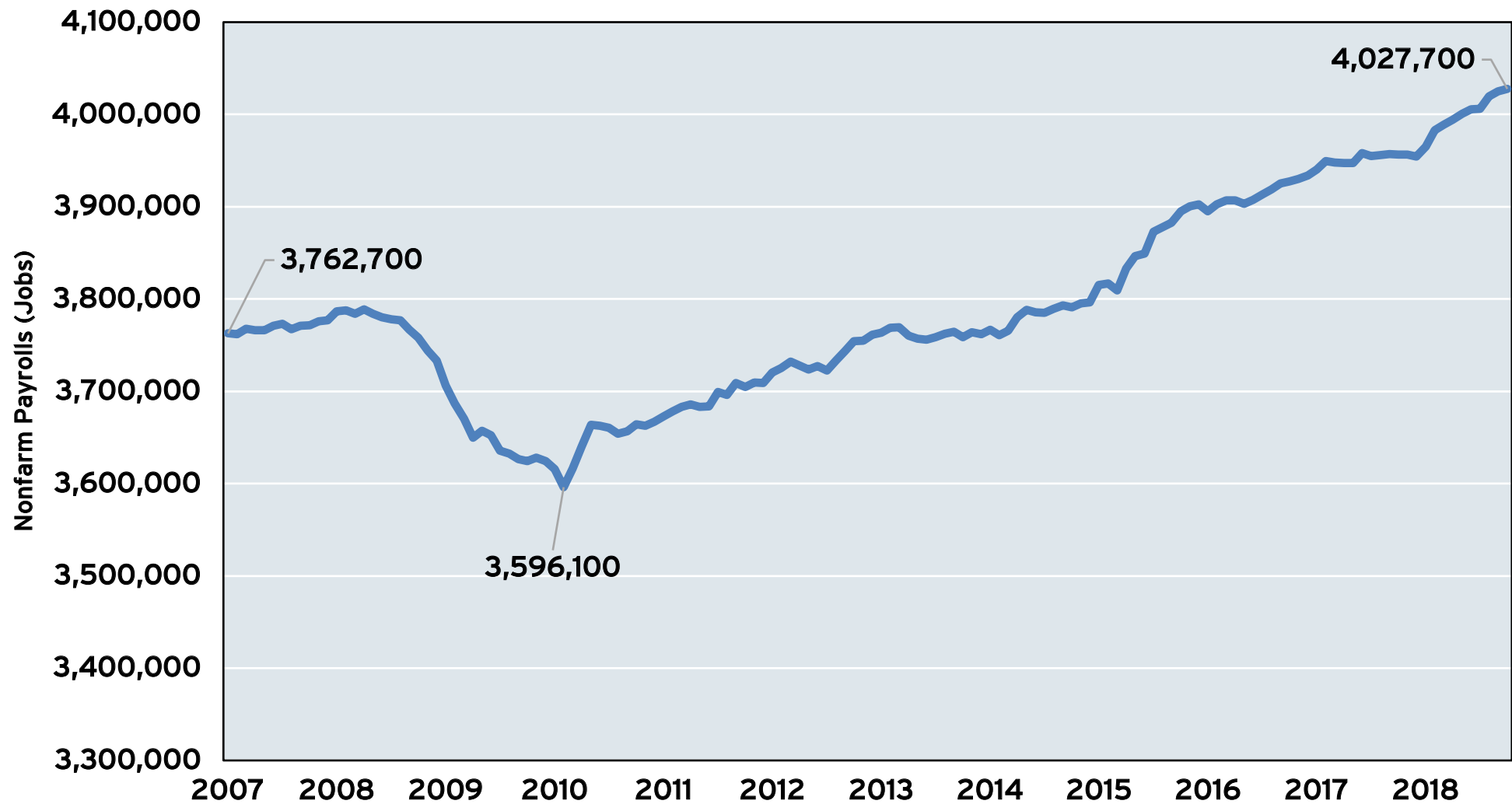
An immediate observation is that real hourly earnings were higher in Virginia compared to the U.S. between January 2007 and October 2018. Not only were real average hourly earnings higher in Virginia, but earnings also grew faster in Virginia than the U.S. this decade. Recently, real average hourly earnings grew by 0.7 percent in the Commonwealth from October 2017 to October 2018, slightly faster than the nation as a whole. Over the same period, real average hourly earnings increased by 0.5 percent for the United States.

One possible constraint on the ability of the United States and Virginia to sustain the current economic expansion is labor markets that are near what most economists would consider to be full employment. Anecdotal reports suggest that employers are resorting to poaching employees instead of filling positions from the ranks of the unemployed. The rises in real average hourly earnings are another signal of the tightness of the Commonwealth's labor markets.



⁷ Average hourly earnings reflect not only changes in hourly and incentive wages rates, but also variable factors such as overtime and late-shift work. For further information, see <https://www.bls.gov/opub/hom/pdf/ces-20110307.pdf>.

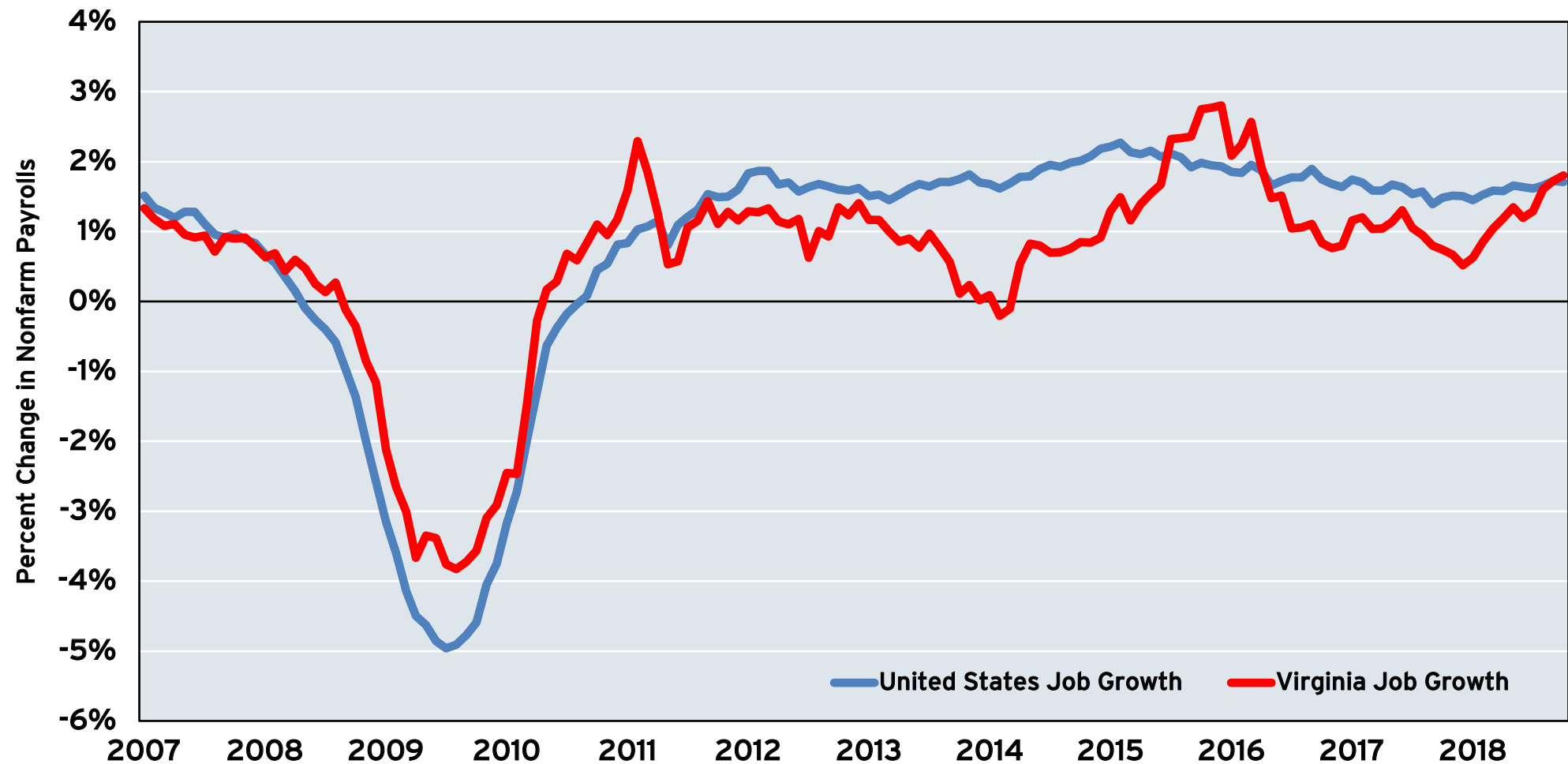
GRAPH 10
SEASONALLY ADJUSTED NONFARM PAYROLLS:
VIRGINIA, JANUARY 2007 TO OCTOBER 2018



Source: Bureau of Labor Statistics, 2018

GRAPH 11

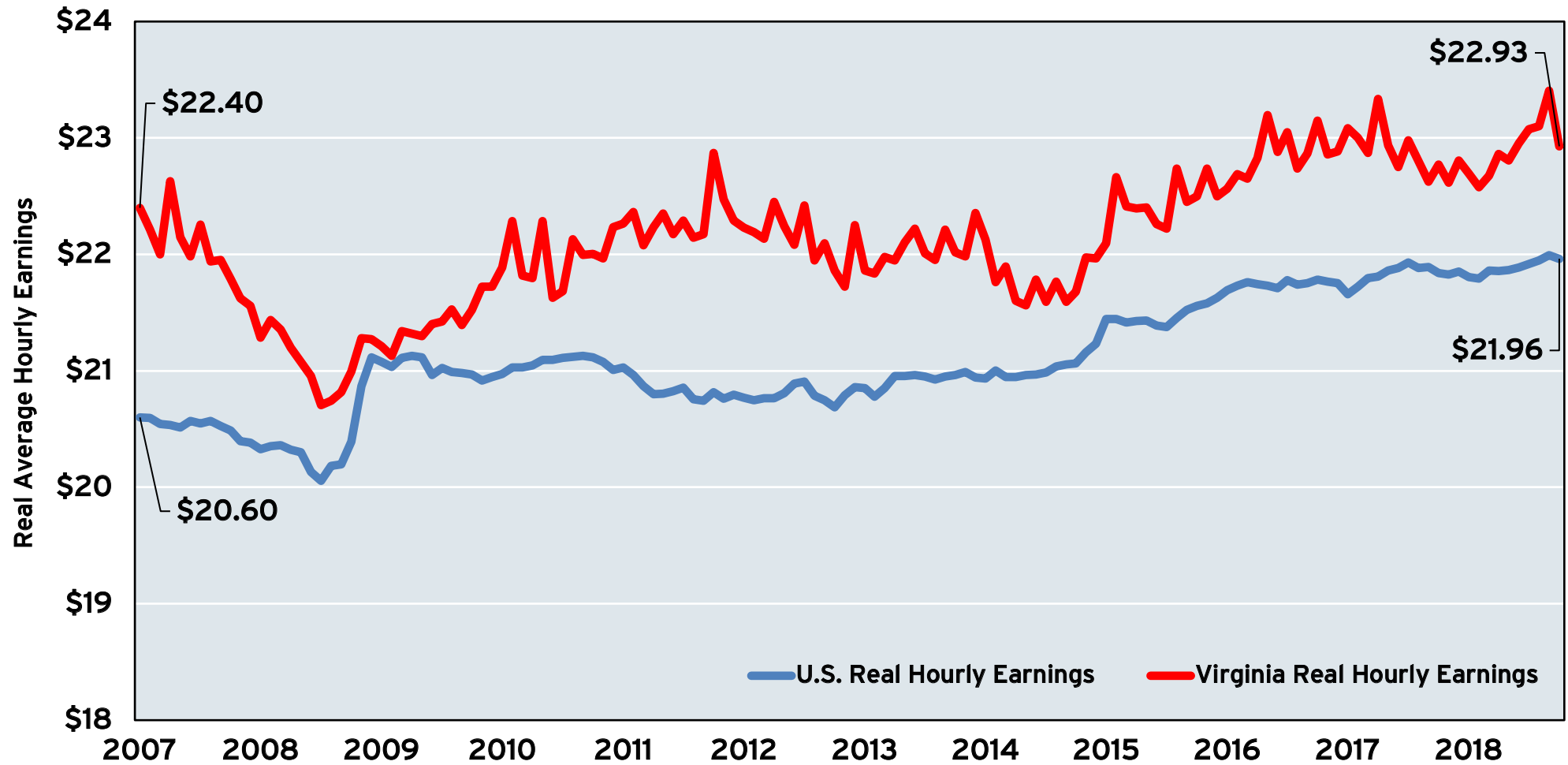
**YEAR-OVER-YEAR CHANGE:
SEASONALLY ADJUSTED NONFARM PAYROLLS FOR THE
UNITED STATES AND VIRGINIA, JANUARY 2007 TO OCTOBER 2018**



Source: Bureau of Labor Statistics, 2018

GRAPH 12

**SEASONALLY ADJUSTED REAL AVERAGE HOURLY EARNINGS:
UNITED STATES AND VIRGINIA, JANUARY 2007 TO OCTOBER 2018**



Source: Bureau of Labor Statistics, 2018. The Consumer Price Index for All Urban Consumers is used to obtain real average hourly earnings and is indexed to be 100 in January 2007.

Labor Force Participation

The civilian labor force represents those individuals who are employed or who are seeking employment. Disaffected workers who have abandoned attempts to secure gainful employment are not included in the labor force, employment and unemployment data. Labor force participation, which is a percentage of the working-age (19 to 64) population that is employed or unemployed and seeking employment, typically falls during economic contractions and rises during economic expansions. Graph 13 presents labor force participation rates for the U.S. and Virginia.

One immediate observation is that labor force participation has declined in the aftermath of the Great Recession and has not recovered to prerecession levels in the ensuing economic expansion. The long-term decline in labor force participation rates represents an economic puzzle, with demographic change (baby-boomer retirements), dependence on government benefits structural employment (jobs exist, but workers are not qualified to fill them) and the opioid crisis all considered as potential contributing factors. Contrary to some arguments, part-time employment and “gig economy” employment does not appear to be a contributing factor. In any case, real earnings growth has not yet been enough to pull many disaffected workers back into the labor force.

One perspective is that the demand for labor has shifted over the previous decades in favor of highly skilled labor and will be likely to do so over the coming decade.⁸ While manufacturing’s share of GDP has remained relatively steady, manufacturing employment has fallen due to significant improvements in worker productivity. Fewer workers can produce more output, and this trend is likely to accelerate as automation accelerates in the manufacturing and service industries. Automation may have eliminated jobs within an industry in the past, but workers could retrain within the industry. Automation now appears to be eliminating entire industries, to the benefit of consumers and businesses but the detriment of the workers who now must learn new skills for different industries.

Another perspective is that the supply of labor is no longer as responsive to increases in real earnings as it was in the past. Disaffected workers may have high reservation wages due to their ability to cobble together cash income with public benefits. These workers may also be in poorer health due to “diseases of despair” and are effectively unemployable in many industries due to substance abuse.⁹ A not-so-uncommon complaint by employers in manufacturing and transportation industries in Hampton Roads, for example, is that skilled workers are in short supply and many who apply for work are disqualified due to substance abuse.

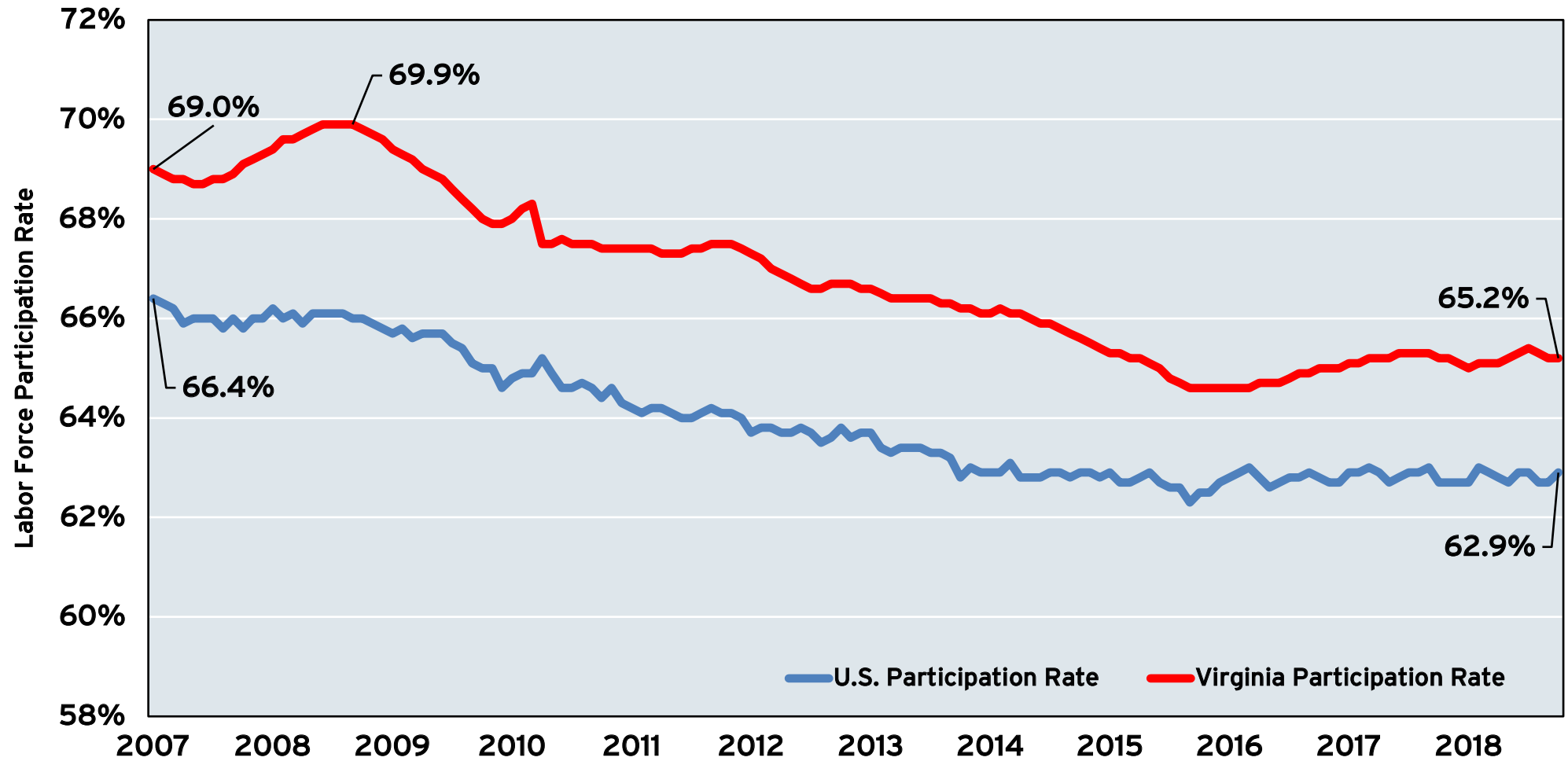
Labor force participation rates also vary across the Commonwealth. Figure 1 displays the labor force participation rates by locality in 2017. Labor force participation rates are markedly lower in southwestern Virginia, with some counties observing participation rates below 50 percent. The highest labor force participation rates are those above 70 percent, seen in Northern Virginia, Richmond and parts of Hampton Roads.

⁸ Eleanor Krause and Isabel Sawhill, 2017, “What we know and don’t know about declining labor force participation: A review,” The Brookings Institution.

⁹ <https://www.brookings.edu/bpea-articles/mortality-and-morbidity-in-the-21st-century>.

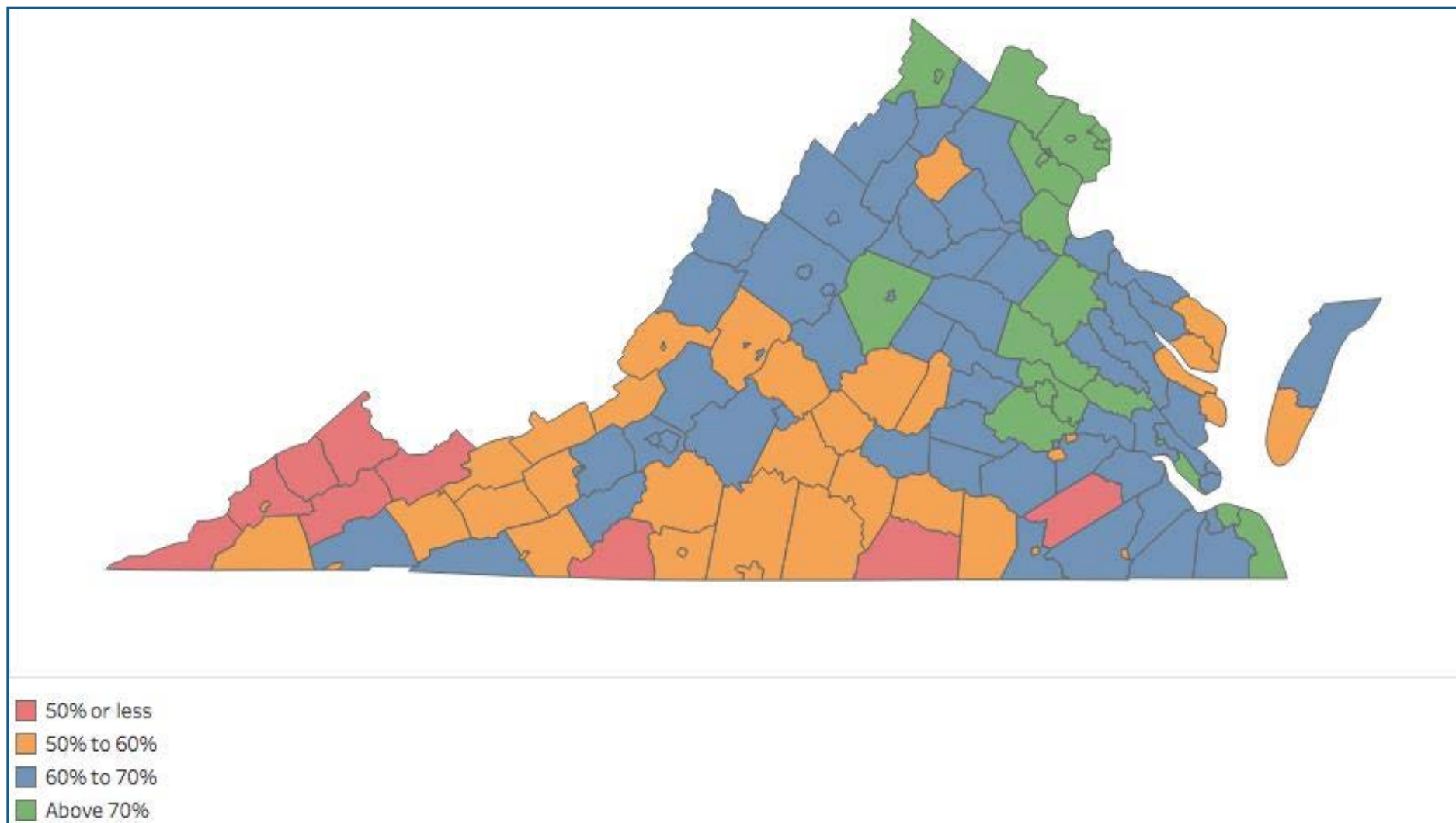
GRAPH 13

LABOR FORCE PARTICIPATION RATES: UNITED STATES AND VIRGINIA,
JANUARY 2007 TO OCTOBER 2018



Source: Bureau of Labor Statistics, 2018

FIGURE 1
LABOR FORCE PARTICIPATION RATES BY LOCALITY, 2017



Source: U.S. Census Bureau, American Community Survey, 2017, 1-Year Estimates

Table 10 lists the top five and bottom five localities in terms of labor force participation rates. The variation of rates across the state is the result of changing industry sectors' contributions, discussed earlier in the chapter. The growth in business, finance and real estate sector contributions since 2007 reflects the high labor force participation rates in Northern Virginia, Richmond and Hampton Roads, while the decline in coal mining, manufacturing and construction has contributed to the low participation rates in southwestern Virginia.

TABLE 10
LABOR FORCE PARTICIPATION RATES
FOR SELECTED LOCALITIES, 2017

Top 5	Labor Force Participation Rate, 2017	Change in Labor Force Participation Rate, 2011-2017
Arlington County	80.7%	-4.6%
Alexandria	80.5%	-2.8%
Loudoun County	80.2%	-4.1%
Falls Church	78.2%	-5.2%
Norfolk	77.3%	-4.7%
Bottom 5	Labor Force Participation Rate, 2017	Change in Labor Force Participation Rate, 2011-2017
Buchanan County	36.1%	-18.5%
Dickenson County	36.8%	-15.1%
Lee County	42.7%	-19.4%
Wise County	43.4%	-22.5%
Tazewell County	46.1%	-12.0%

Source: U.S. Census Bureau, American Community Survey, 2017, 1-Year Estimates



Amazon Is Coming: What We Know, What Is Uncertain

On Nov. 13, 2018, Gov. Ralph Northam announced that Amazon had selected Virginia as one of the two sites for its second headquarters, commonly referred to as “HQ2.” HQ2 will be located in Arlington County and Alexandria, and Amazon is expected to create more than 25,000 jobs over the coming decade. The expectation is that the initial construction and site development will occur in Pentagon City and Crystal City. Northam noted, “This is a big win for Virginia – I’m proud Amazon recognizes the tremendous assets the Commonwealth has to offer and plans to deepen its roots here.”

We recognize that the Commonwealth will provide incentives for Amazon to locate a portion of its HQ2 in Virginia (the other site being in New York). While proponents of the effort to attract Amazon have pointed to the likely creation of high-wage jobs, opponents have argued that public subsidies should not be used to the benefit of private corporations. Wisconsin, for example, has promised to provide Foxconn, which pledged to invest \$10 billion in an LCD manufacturing plant, with an estimated \$4 billion in subsidies for the promised benefit of 13,000 jobs. Recently, Foxconn announced that the number of expected jobs may actually be fewer than 4,000. The estimated subsidy per job has risen, some argue, to more than \$300,000.¹⁰

At first glance, the \$550 million in workforce cash grants for 25,000 jobs, infrastructure investments in Arlington County and Alexandria, and a \$1 billion Virginia Tech innovation campus might draw similar (if not as costly) comparisons to the Foxconn package. However, we note that the Commonwealth has wisely included language to mitigate the risks associated with the Amazon HQ2 incentive package. In fact, the language suggests that Virginia may “claw back” incentives if Amazon underperforms its jobs creation targets, one of many significant differences from the Wisconsin-Foxconn incentive program.

How, then, will Amazon’s HQ2 impact Virginia? First, it is unlikely that job creation will be limited solely to Amazon. At first, construction employment will rise as new buildings are constructed and existing buildings are renovated at the National Landing site. As construction employment tapers in the coming years, Amazon’s employment is likely to rise, and the average and median wages of these jobs are expected to be higher than the region’s average. It is reasonable to expect that for every job created by Amazon, at least 0.5 to 1.5 jobs will be indirectly created in the regional economy. Even a conservative estimate suggests that the location of HQ2 will lead to the overall creation of almost 40,000 jobs, and a more optimistic estimate is well over 60,000 jobs. The difficulty in assessing how HQ2 will affect the Commonwealth lies not only in the number of jobs created, but also on the number of firms that decide to co-locate in Northern Virginia as part of an innovation cluster. As the number of indirect jobs created increases, the per-job-created incentive costs will decline, increasing the return on investment for the Commonwealth.

Undoubtedly, HQ2 will also present challenges for local governments. A recent report by the Metropolitan Washington Council of Governments estimated that the region needs 235,000 more housing units by 2025 to keep pace with expected job growth,¹¹ an estimate created prior to the HQ2 announcement. In the relatively more urbanized cities and counties of the Washington, D.C., metropolitan area, average real household incomes have risen steadily since 2000.¹² Why? Existing residents are moving up the income ladder and job creation is attracting new, higher-income residents to the area. Adding new jobs from Amazon and associated firms that are relatively high-income would likely continue the appreciation of housing prices. As lower- and middle-income individuals are “squeezed” out of residential housing and into rental housing, rents are likely to increase across the region. Residents clearly trade distance for housing cost, leading to some of the longest commuting times in the nation. We want to clearly state that this challenge would occur even if Amazon had not selected National Landing as its site for the Virginia portion of HQ2.

¹⁰ <https://www.forbes.com/sites/jeffreydorfman/2017/09/06/government-incentives-to-attract-jobs-are-terrible-deals-for-taxpayers/#41dd1b96eff6>.

¹¹ <https://www.mwcog.org/documents/2018/09/12/regional-housing-memo-to-cog-board-cog-board-affordable-housing-housing>.

¹² Urban Institute, October 23, 2018. “What HQ2 could mean for the Washington region’s housing market, in 7 charts.” <https://apps.urban.org/features/amazon-hq2-washington-housing-charts>.

Given these uncertainties, can we determine the economic impact of Amazon HQ2? To generate reasonable estimates of economic impact, we would not only need to assume the number of jobs created by Amazon but also the indirect jobs associated with the construction and operation of HQ2. It is likely that the total number of jobs (direct and indirect) will near, if not exceed, 40,000. The overall increase in economic activity associated with HQ2 is also expected to lead to firm creation and relocation. In other words, entrepreneurs will start new firms around HQ2 and other firms will relocate to be near HQ2. We argue that this is the most uncertain part of the estimates of the economic impact of HQ2 in Northern Virginia. If HQ2 leads to an innovation – information technology cluster due to entrepreneurial activity and firm relocation – then the Commonwealth’s incentives will almost certainly look paltry in comparison. We have observed this effect with other large technology firms and are optimistic that, given wise investments in higher education and public infrastructure, it is entirely possible it will occur. Quantifying the scope of this emerging cluster and the benefits for the Commonwealth, however, would require significant assumptions about how many and what types of firms are created and relocate to the Commonwealth. Even with these uncertainties, however, we are optimistic that Amazon will spur increased job creation, tax revenues and economic growth in the Commonwealth.

What should Virginia do in the interim? We continue to advocate for wise investments in public infrastructure, education, and a favorable business climate. Amazon’s decision may spur increased attention and funding, which would have positive spillovers in attracting other businesses to the Commonwealth. Virginia should focus on creating a climate that leads to improved investments in broadband infrastructure, so firms can locate in other areas of the state that are reasonably close to HQ2 but sufficiently far away that the cost of doing business is lower. Amazon’s HQ2 presents a unique opportunity for the Commonwealth to build its reputation as an innovative state that is a welcoming home for business.

Final Thoughts

For the first time this decade, Virginia is poised to grow robustly for two (if not more) consecutive years. Rising economic activity is reflected in increases in general fund tax collections, individual employment, jobs and, finally, real average hourly earnings. The Commonwealth’s fiscal situation has improved (in part due to windfalls from the Tax Cuts and Jobs Act’s changes to the federal tax structure) and the reserve fund is appreciably higher than anytime this decade. One might survey the economic data and conclude that not only is Virginia back, but that it is back with a vengeance.

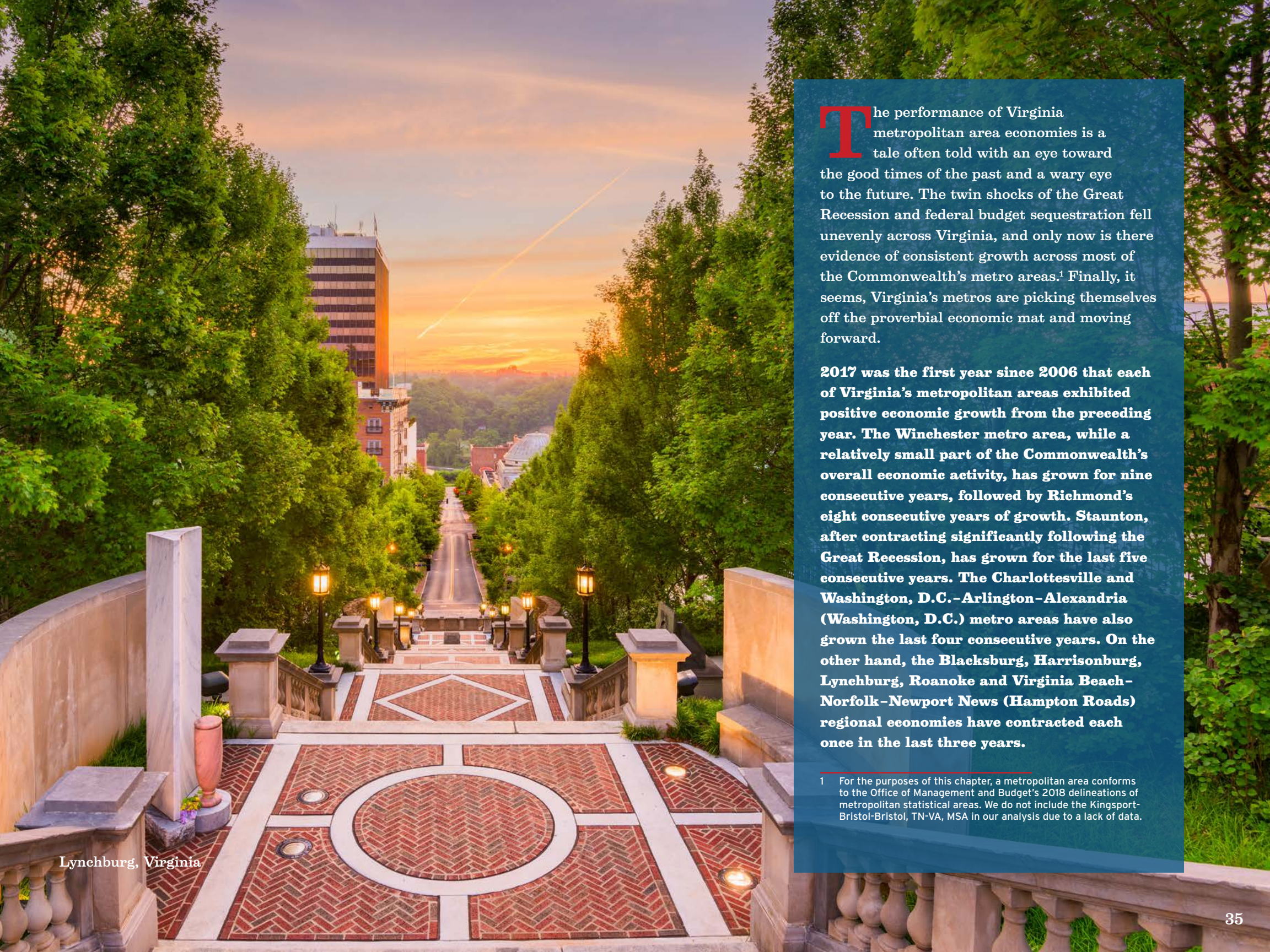
The Book of Job contains a verse appropriate for the Commonwealth: “The Lord giveth and the Lord taketh away.” Increases in federal government spending have provided a short-term boost to economic growth in the United States and Virginia. A divided Congress, ongoing investigations and a decelerating international economy make the future less certain. The debt ceiling suspension expires on March 1, 2019, and the Budget Control Act’s discretionary spending caps return on Oct. 1, 2019. Those who stridently argued that sequestration would never happen because Congress would never act in such a harmful way should not assume that history will not repeat itself in 2019.

Virginia succeeded in attracting Amazon and even though there are substantial future costs involved, taken as a whole, this is a good development for the Commonwealth. Yet, Virginia must also be wary of giving away the store to attract new firms. Rather than expending public funds to subsidize the activities of private firms, it would be more prudent to improve the regulatory climate, reform the tax system and make wise investments in infrastructure, rural broadband and K-12 education. Now is not the time to rest on our laurels and proclaim that our policies are a success. One hill has been climbed and now new hills await.

MOVING FORWARD: GROWTH IMPROVES FOR VIRGINIA'S METROPOLITAN AREAS

It's about how hard you can get hit and keep moving forward. How much you can take and keep moving forward. That's how winning is done.

– Rocky Balboa, 2006



Lynchburg, Virginia

The performance of Virginia metropolitan area economies is a tale often told with an eye toward the good times of the past and a wary eye to the future. The twin shocks of the Great Recession and federal budget sequestration fell unevenly across Virginia, and only now is there evidence of consistent growth across most of the Commonwealth's metro areas.¹ Finally, it seems, Virginia's metros are picking themselves off the proverbial economic mat and moving forward.

2017 was the first year since 2006 that each of Virginia's metropolitan areas exhibited positive economic growth from the preceding year. The Winchester metro area, while a relatively small part of the Commonwealth's overall economic activity, has grown for nine consecutive years, followed by Richmond's eight consecutive years of growth. Staunton, after contracting significantly following the Great Recession, has grown for the last five consecutive years. The Charlottesville and Washington, D.C.-Arlington-Alexandria (Washington, D.C.) metro areas have also grown the last four consecutive years. On the other hand, the Blacksburg, Harrisonburg, Lynchburg, Roanoke and Virginia Beach-Norfolk-Newport News (Hampton Roads) regional economies have contracted each once in the last three years.

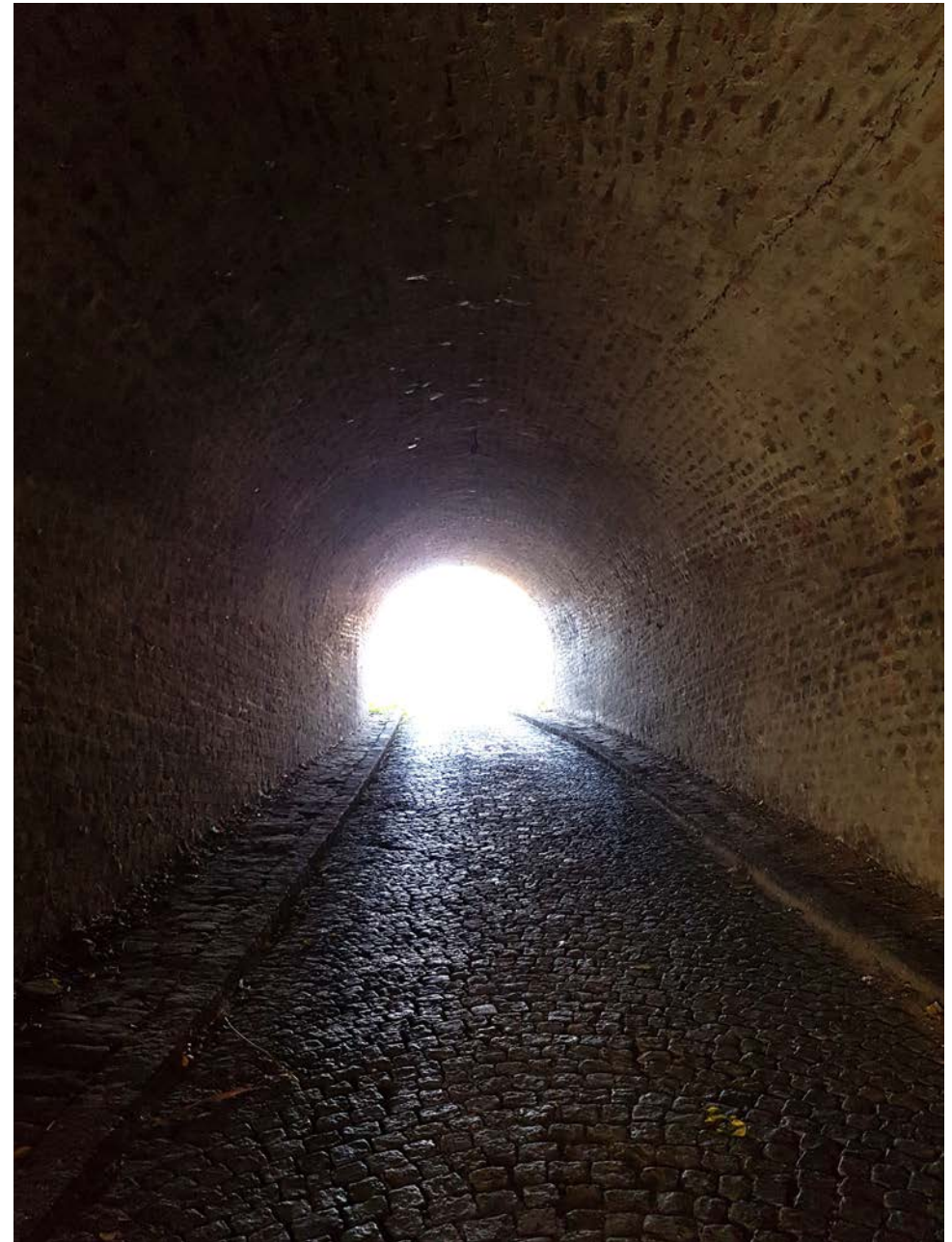
¹ For the purposes of this chapter, a metropolitan area conforms to the Office of Management and Budget's 2018 delineations of metropolitan statistical areas. We do not include the Kingsport-Bristol-Bristol, TN-VA, MSA in our analysis due to a lack of data.

Table 1 presents real (inflation-adjusted) rates of growth for gross domestic product (GDP), a measure of economic activity. The U.S. Department of Commerce's Bureau of Economic Analysis (BEA) produces the national, state and metropolitan area estimates of GDP, which provide benchmarks for economic activity over time. These estimates, especially those for 2017, should be viewed with a dash of caution.

Why? The BEA released the "advance" estimates for metropolitan area GDP for 2017 in September 2018. The next revision to these estimates will be in September 2019, when the BEA releases the advance estimates for 2018. With such a lag, we advise the reader to examine the long-term trend and focus less on the estimate for a specific year, which could well change in the next revision.

If we examine the data from 2010 to 2017, a story of anemic growth emerges. While the United States grew, on average, by 2.1 percent over this period, Virginia's average growth was only 0.8 percent.² This is not surprising, given that no metropolitan area in Virginia exceeded 2 percent average growth, although Charlottesville, Richmond and Winchester came close at 1.9 percent. Several metro areas, including Harrisonburg, Lynchburg, Roanoke and Hampton Roads, did not appreciably grow at all from 2010 to 2017. Staunton's economy contracted on average, but this was primarily due to the significant declines in economic activity in 2011 and 2012.

The uneven economic performance of Virginia's metropolitan areas can not be readily attributed to one specific factor. Growth lagged in Hampton Roads due to federal budget sequestration and anemic private-sector job creation. Other metro areas have struggled to cope with long-term structural changes in the composition of the Commonwealth economy, including the decline in coal and other natural resources. **The good news is that the proverbial light at the end of the tunnel no longer seems to be a freight train.**



² We estimate the Compound Average Growth Rate (CAGR), which is the average annual growth rate between two periods.

TABLE 1

REAL (INFLATION-ADJUSTED) GROSS DOMESTIC PRODUCT: YEAR-ON-YEAR RATES OF GROWTH, 2010-2017

	Blacksburg	Charlottesville	Harrisonburg	Lynchburg	Richmond	Roanoke	Staunton	Winchester	Virginia Beach - Norfolk - Newport News	Washington-Arlington-Alexandria	Virginia	United States
2010	1.2%	3.3%	3.6%	2.5%	1.7%	-1.5%	3.0%	2.9%	-1.6%	3.8%	2.4%	2.6%
2011	1.4%	1.0%	-0.9%	-1.8%	0.8%	-1.0%	-6.8%	1.9%	0.3%	1.5%	0.7%	1.6%
2012	7.6%	2.7%	-0.9%	-0.9%	2.8%	0.4%	-7.6%	1.3%	-0.8%	0.5%	0.6%	2.2%
2013	-1.0%	-0.5%	-0.4%	0.0%	1.3%	-0.1%	1.7%	1.4%	-0.6%	-0.8%	0.0%	1.8%
2014	2.3%	3.7%	-0.1%	-0.2%	1.0%	-0.3%	0.8%	0.9%	-0.3%	0.5%	0.2%	2.5%
2015	1.3%	3.7%	2.9%	-0.5%	3.7%	2.4%	2.0%	3.7%	2.6%	2.0%	1.8%	2.9%
2016	-0.7%	0.5%	-0.1%	0.8%	1.1%	-1.6%	0.0%	1.6%	-1.3%	1.8%	0.5%	1.6%
2017	0.6%	2.3%	0.7%	2.4%	2.6%	0.0%	1.5%	2.7%	1.0%	2.1%	2.0%	2.2%
CAGR	1.6%	1.9%	0.1%	0.0%	1.9%	0.0%	-1.3%	1.9%	0.1%	1.1%	0.8%	2.1%

Source: Bureau of Economic Analysis, 2018. Base year for real GDP is 2009 for metropolitan areas and Virginia. Base year for real GDP for the United States is 2012. CAGR is the Compound Annual Growth Rate.

Individual Employment In Virginia's Metropolitan Areas

Are more people working in Virginia's metropolitan areas? There are two broad measures we can examine to answer this question: individual employment and nonfarm payrolls (jobs). Employment data capture responses by individuals to the question of whether they are employed, looking for work or have abandoned attempts at finding employment. Nonfarm payroll data measure the number of jobs there are in an economy. A person who has two jobs would appear once in the employment

data but twice in the jobs data.³ Let's look first at the individual employment data.

The Bureau of Labor Statistics (BLS) asks people about their employment status. If an individual is employed or looking for work, then the BLS reports that he or she is in the labor force. Graph 1 illustrates labor force growth in 2016, 2017 and 2018, and compares January 2017 through October 2017 to January 2018 through October 2018. The average growth in the labor force across Virginia's metro areas was 0.5 percent for 2016, 1.3 percent for 2017 and 1.1 percent through October 2018.

The labor force increased in 2018 in all the metropolitan areas, except for Blacksburg. Charlottesville's average labor force from January to October 2018 was 3.0 percent larger than for the same period in 2017. Winchester also grew robustly, experiencing a 2.5 percent increase in the labor force

³ The Current Population Survey (CPS) covers households and asks whether an individual was employed or actively seeking employment. The Current Establishment 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.

year-to-date. Blacksburg, on the other hand, saw its average labor force contract by 0.4 percent year-to-date when compared to the same period in 2017. It is not entirely clear why that occurred since this metro's largest employer, Virginia Tech, was expanding. The three largest metropolitan areas (Hampton, Roads, Richmond and Washington, D.C.) have all observed slower rates of labor force growth in 2018. A possible explanation is that real wages have not yet risen sufficiently to improve labor force participation. Simply put, individuals who have remained outside the labor force may require higher wages to pull them back into actively searching for employment.

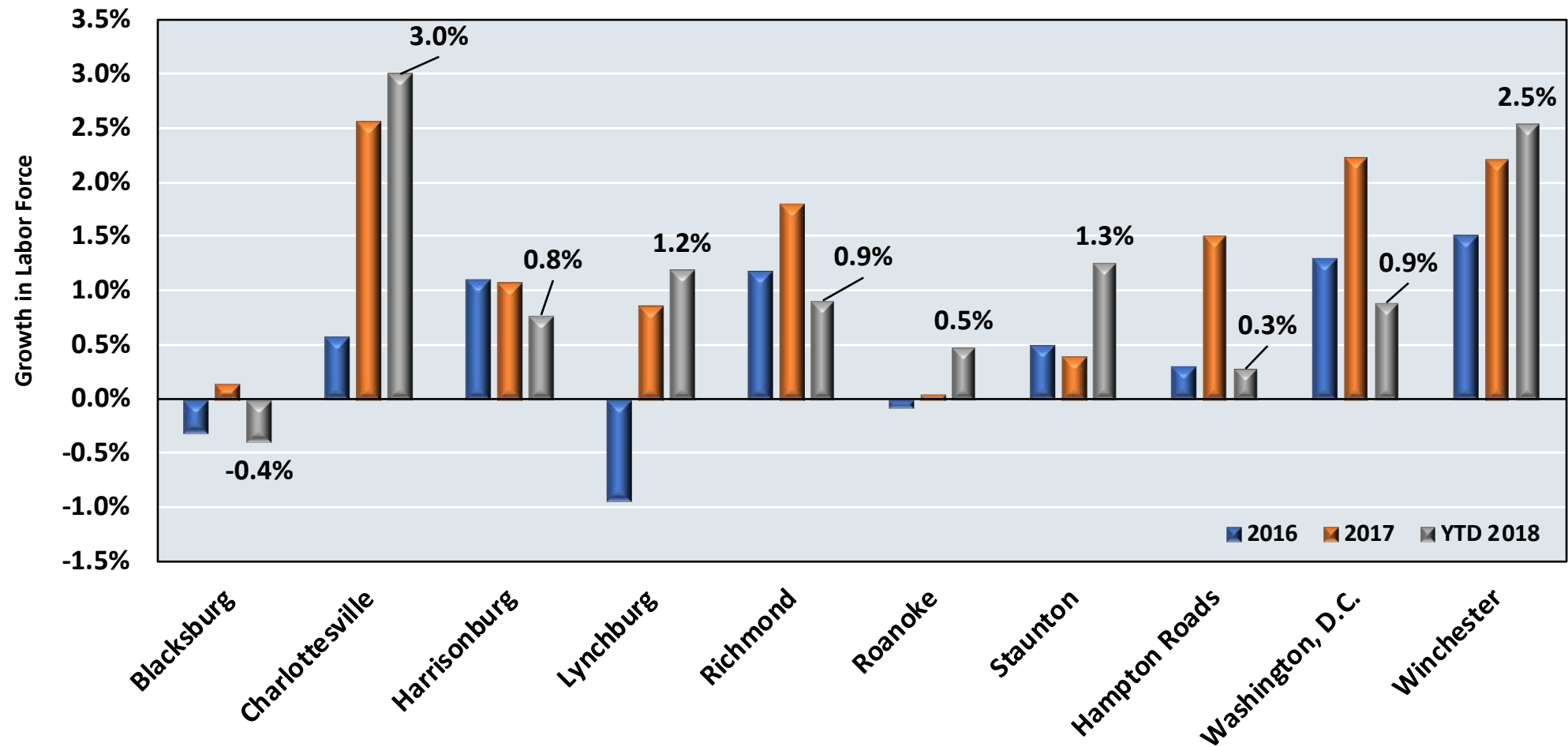
Graph 2 reports individual employment by metropolitan area and reinforces the narrative that economic conditions are improving at the metro level in Virginia. Individual employment continues to grow in each of the Commonwealth's metro areas, with seven metros growing faster from January 2018 to October 2018 than over the same period in 2017. This suggests that qualified employees are increasingly scarce and that employers will have to increase real wages to attract new employees.

Hampton Roads has slowed from 2 percent growth in 2017 to 1.2 percent growth year-to-date in 2018. Reported employment growth has also slowed year-to-date in Richmond. However, even with the slowdowns in year-to-date employment growth, Virginia's metros employed more people in 2017 than in 2016. The same conclusion applies when we compare 2018 year-to-date employment with 2017 year-to-date employment.

The unemployment rate rises and falls depending on the size of the labor force and the number of employed and unemployed in the labor force. Except for Blacksburg, where the labor force contracted, metropolitan area labor forces have grown in 2018 when compared to the same period in 2017. Individual employment has grown for all metro areas and (excepting Blacksburg) at a faster rate than the labor force. In other words, a higher percentage of the labor force is employed, and thus unemployment rates have fallen as a result. Graph 3, which compares the unemployment rates in October 2017 and 2018, provides a bit of good news. While there is debate about what is the level of full employment, it should be clear from Graph 3 that most (if not all) of the Commonwealth's metropolitan areas are near full employment. Growing the labor force is necessary for continued economic growth, else employment growth will slow because almost all qualified individuals are already employed.

More people are working in Virginia's metropolitan areas than at any other time in history. The upticks in labor force and individual employment are signals that a broader recovery may be underway among the metros, especially if we compare 2018 to previous years. Care must be taken, however, in that the Commonwealth's performance is not evenly distributed across its metro areas. What may appear to be a story of robust gains in the labor force and individual employment at the state level may not apply to every metro area.

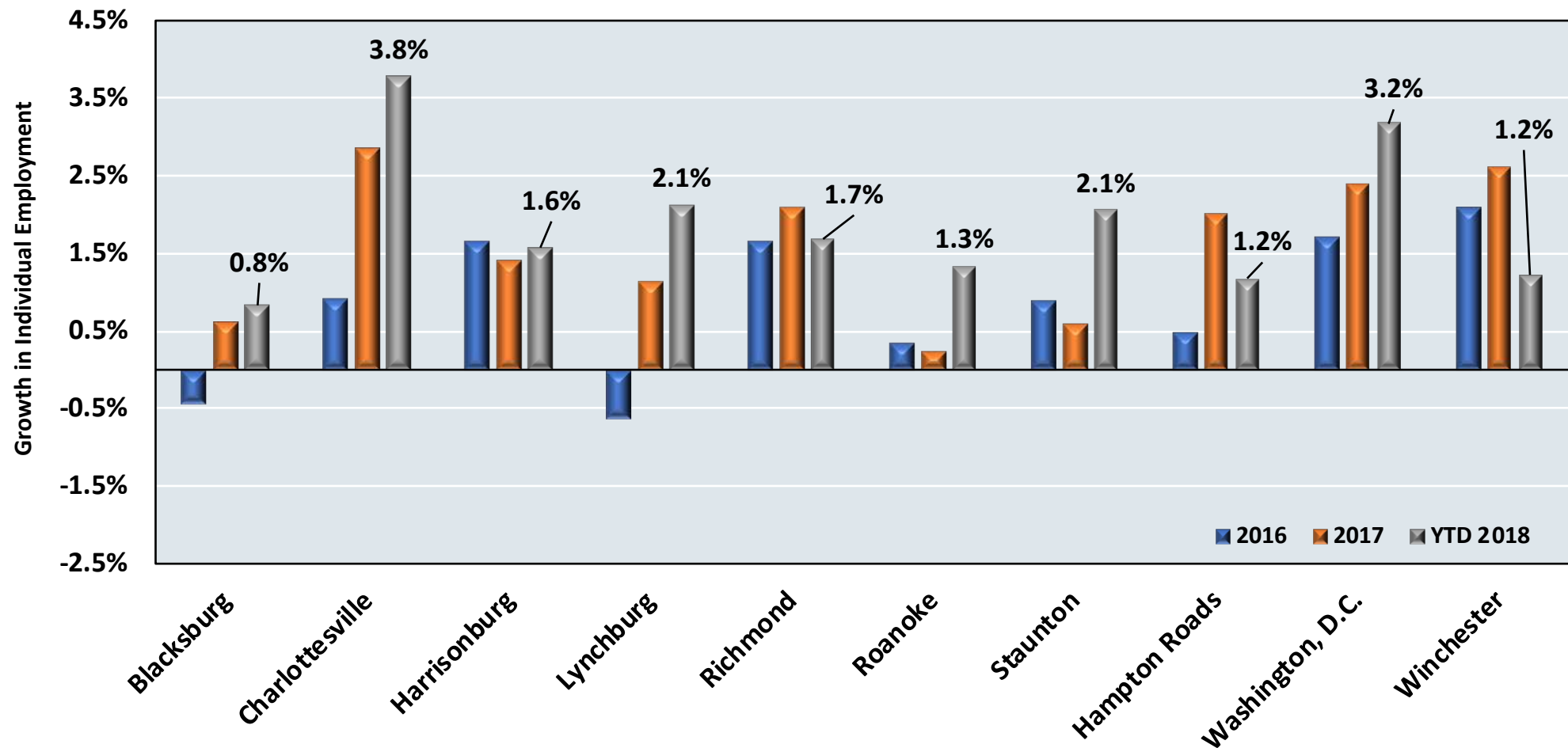
GRAPH 1
LABOR FORCE GROWTH:
VIRGINIA'S METROPOLITAN STATISTICAL AREAS, 2016, 2017 AND 2018 YEAR-TO-DATE



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data. Growth rates in 2016 and 2017 are calculated using the annual averages for 2015, 2016 and 2017. Year-to-date 2018 is calculated by comparing average labor force from January through October 2017 to average labor force from January through October 2018.

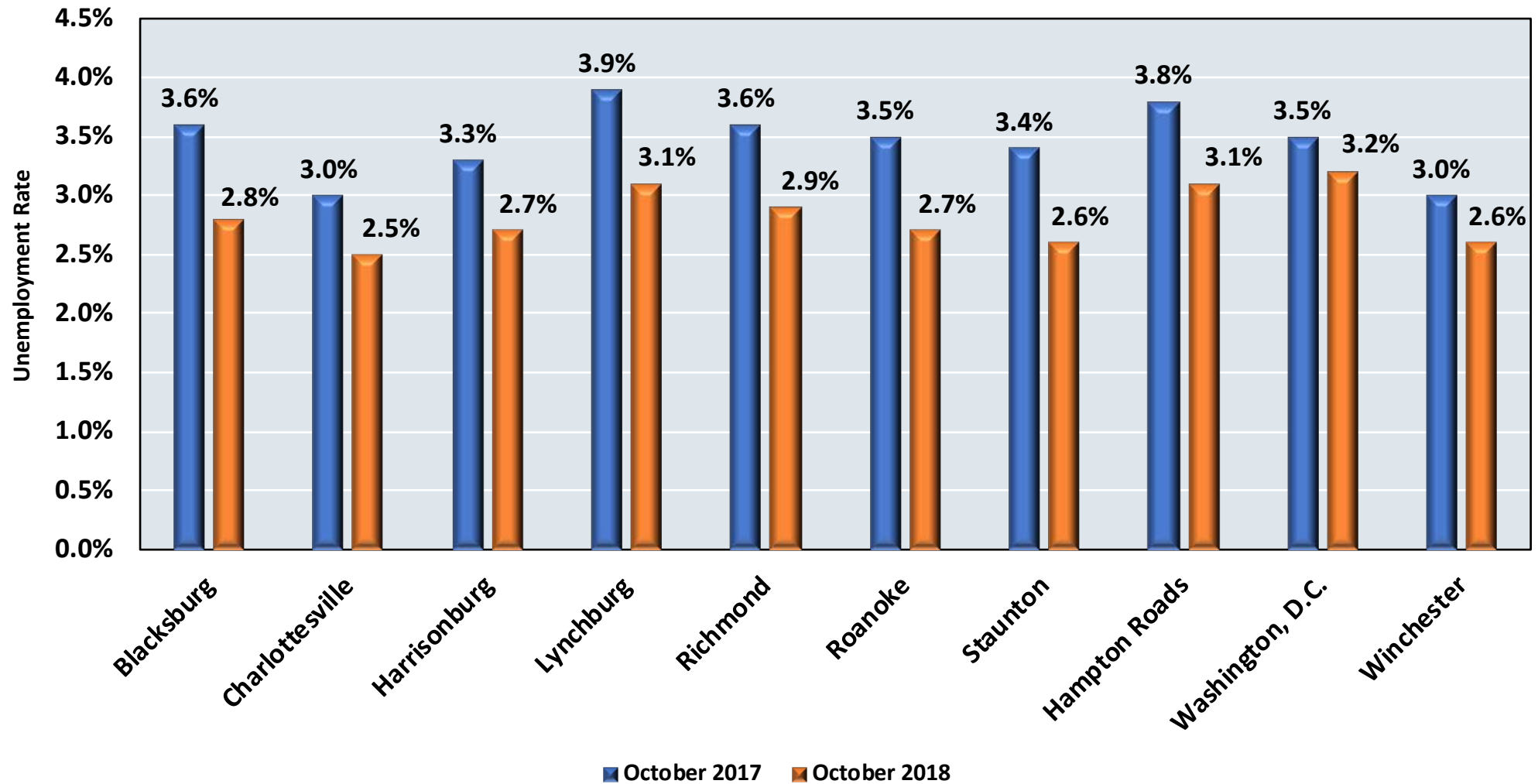
GRAPH 2

**GROWTH IN INDIVIDUAL EMPLOYMENT:
VIRGINIA'S METROPOLITAN STATISTICAL AREAS, 2016, 2017 AND 2018 YEAR-TO-DATE**



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data. Growth rates in 2016 and 2017 are calculated using the annual averages for 2015, 2016 and 2017. Year-to-date 2018 is calculated by comparing average labor force from January through October 2017 to average labor force from January through October 2018.

GRAPH 3
UNEMPLOYMENT RATE:
VIRGINIA'S METROPOLITAN STATISTICAL AREAS, OCTOBER 2017 AND OCTOBER 2018



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data.

Are There More Jobs In Virginia's Metropolitan Areas?

Job creation in 2016 was lackluster for the most part. While 2017 provided some measure of good news, robust job growth was limited to a handful of metro areas. To date, each metro has created jobs in 2018, but, as with individual employment, job growth remains uneven.

The most accurate estimates of job growth come from the BLS Quarterly Census of Employment and Wages (QCEW). The QCEW captures about 98 percent of all wage and salary jobs in the United States, where jobs are defined as full- or part-time positions that are covered by state and federal unemployment insurance law. A drawback of the QCEW is that the data arrive with a significant lag, usually five to six months after the end of the quarter.

Table 2 presents job growth for the metropolitan areas in Virginia for 2016 and 2017. Also shown is the job growth rate for the first quarter of 2018 compared to the same period in 2017. Job growth numbers in 2016 and 2017 provide a mixed bag in that no clear story emerges from the data. Job growth accelerated in Charlottesville, Lynchburg and Hampton Roads but decelerated in Harrisonburg, Richmond, Winchester and Northern Virginia. Two metro areas, Roanoke and Staunton, lost jobs in 2017.

The first quarter of 2018 presents a stronger picture of job growth. The number of jobs increased in each of Virginia's metropolitan areas. Blacksburg's job growth surged in the first quarter of 2018 after a relatively anemic performance in 2016 and 2017. This creates the somewhat puzzling observation that while the labor force contracted in Blacksburg, a higher percentage of individuals remaining in the labor force were gainfully employed. Job growth also accelerated in Hampton Roads and Winchester in the first quarter of 2018 and maintained the same pace in Harrisonburg. Job growth, however, slowed in the other metro areas, again illustrating the uneven nature of the continuing expansion in the Commonwealth.

TABLE 2

JOB GROWTH IN 2016, 2017 AND 2018 Q1

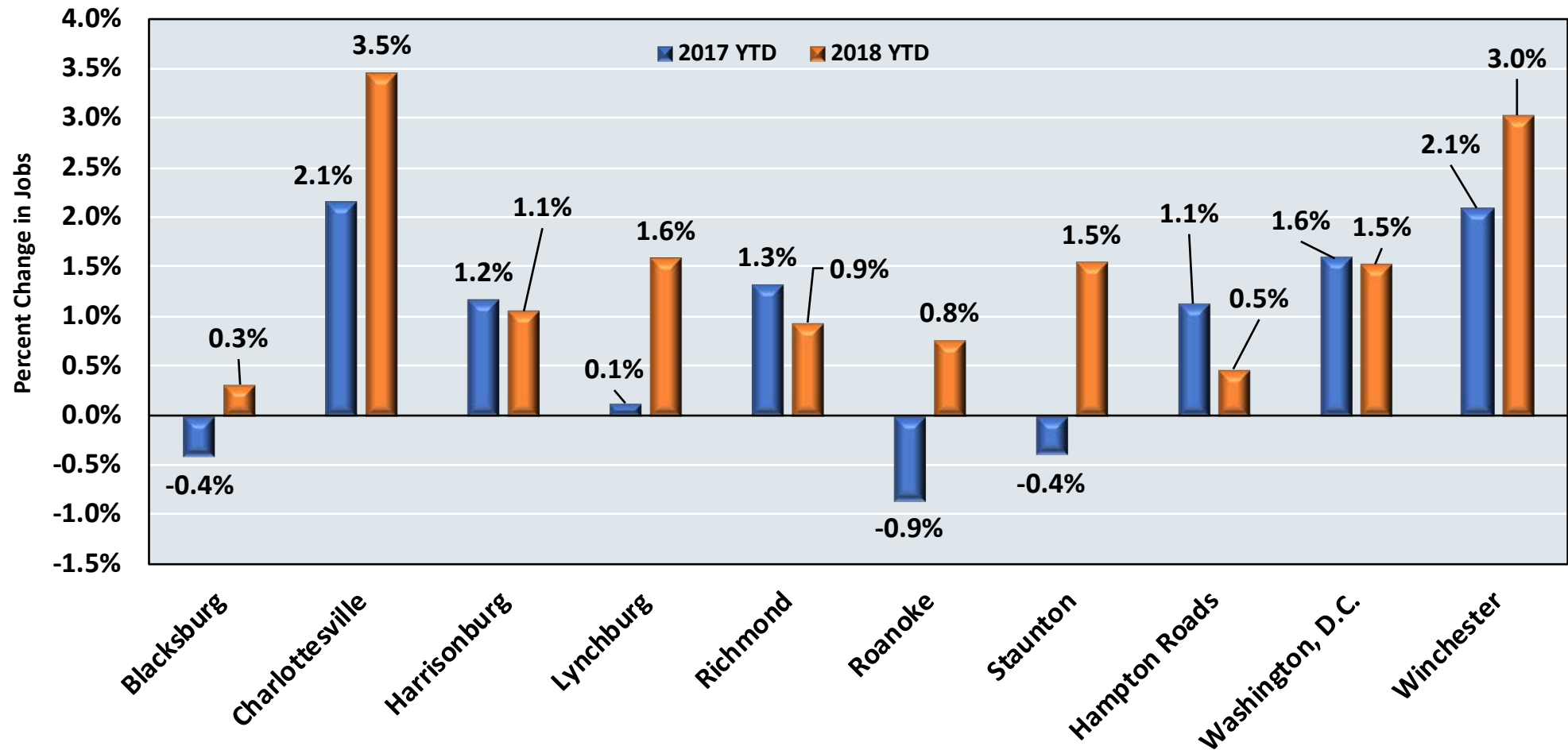
	2016	2017	First Quarter 2018
Blacksburg	0.1%	0.1%	1.6%
Charlottesville	1.4%	2.2%	1.8%
Harrisonburg	3.6%	1.2%	1.2%
Lynchburg	0.0%	0.7%	0.3%
Richmond	1.7%	1.3%	0.7%
Roanoke	0.8%	-0.5%	0.3%
Staunton	1.5%	-0.5%	0.8%
Hampton Roads	0.6%	1.1%	1.5%
Washington, D.C.	1.6%	1.2%	0.9%
Winchester	2.1%	2.0%	2.1%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018. Metropolitan statistical areas.

While the QCEW presents the most accurate jobs data, it is, as previously noted, subject to considerable lag. We can examine the BLS's Current Establishment Survey (CES), which uses a sample of employers to estimate job gains and losses in the United States. While the CES is more current than the QCEW, it may be less accurate and subject to significant revisions, as it relies on a sample of employers in contrast to the QCEW, which captures almost all employers in the country.

We present year-to-date job growth through October of 2017 and 2018 in Graph 4. The CES data show job growth in each of Virginia's metro areas. The data suggest that job growth has surged in Charlottesville and was stronger in 2018 than 2017 in the Blacksburg, Lynchburg, Roanoke, Staunton and Winchester metros. While job growth decelerated in Harrisonburg, Richmond and Hampton Roads, it remains positive. The slight decline in job growth in Washington, D.C., from 1.6 to 1.5 percent is not sufficiently significant to label it a slowdown. **The good news is straightforward: Each of Virginia's metros has experienced job growth in 2018.**

GRAPH 4
YEAR-TO-DATE AUGUST JOB GROWTH IN VIRGINIA'S METROPOLITAN STATISTICAL AREAS



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data. Year-to-date growth rates are calculated by comparing average labor force from January through October of the current year to average labor force from January to October of the preceding year.

The Hampton Roads, Northern Virginia and Richmond regions account for over 80 percent of metropolitan jobs and over 70 percent of all jobs in the Commonwealth. Strong job growth in these metro areas typically translates into strong job growth for the Commonwealth as a whole. Hampton Roads has finally recovered all the jobs it lost due to the Great Recession and defense sequestration, but private-sector job creation remains anemic. The slowdown in job growth in Hampton Roads and Richmond could be interpreted as a warning sign of slowing growth in the Commonwealth. However, while job growth has slowed in these metros in 2018, it remains positive. Slow and steady progress, in this case, may win the day.

There are possible explanations for slowing job growth in the larger metropolitan areas. First, economic activity may be slowing. The growth in individual employment data, however, suggests otherwise. Second, job growth may be slowing because employers are unable to find qualified employees to fill vacant positions. Reports from employers suggest this may be the case. National-level data indicate that voluntary job quits were at a postrecession high in the fall of 2018. The number of open positions in the U.S. was not only at a postrecession high in 2018, but it was also greater than the number of unemployed. In other words, there were more open positions than people looking for work. With unemployment around 3 percent at the state level and below 3 percent in some metro areas, we suspect that what is playing out at the national level has echoes at the metro level in the Commonwealth.

Another possible explanation is that the jobs data do not yet accurately reflect metropolitan area economic conditions. Individual payroll withholding is approximately 64 percent of state general fund revenues and may be a superior indicator of the health of the labor market in the Commonwealth. The Virginia Department of Taxation reported that payroll withholding from July 1, 2017, to March 31, 2018, rose 3.6 percent over the same period the previous year.⁴

Three possibilities emerge from this discussion: existing employees are earning more, employment is growing, or a combination of the two. As we will discuss later in the chapter, the gains in taxable sales mirror the reported gains in payroll withholding and individual employment. It would

thus appear that the jobs data might be revised upward in the coming months and that the regional economies are performing better than the jobs data might suggest.

Metro Area Wages

Politicians of every stripe campaign on the promise of higher wages. While the U.S. economy is amid the second-longest economic expansion since the end of World War II, wage growth has been relatively tepid. Virginia's metros seem to be following this pattern.

We again turn to the QCEW to obtain the most accurate estimates of wage growth. Table 3 presents growth in total nominal wages from 2015 through the first quarter of 2018. 2015 saw rapid nominal wage growth across the Commonwealth's metropolitan areas, except for Lynchburg. The years 2016 and 2017, however, paint a more muddled picture. Nominal wage growth slowed appreciably in 2016. While Winchester posted a 4 percent gain in total wages in 2016, total wage growth was below 2 percent in Blacksburg, Lynchburg and Hampton Roads.

In 2017, however, there were upticks in total wage growth. Total wages grew by 6 percent in Charlottesville and over 5 percent in Winchester. Every other metropolitan area, except Roanoke, saw total wage growth near or exceeding 3 percent in 2017. Roanoke, on the other hand, saw total wages grow by only 0.9 percent last year. Total wages grew in 2017 but, as with previous years, the growth was not evenly distributed across the metro areas.

The picture that emerges for 2018, however, suggests that total wages are climbing across all the metropolitan areas. Blacksburg experienced a 9.1 percent increase in total wages in the first quarter of 2018, while Charlottesville, Harrisonburg, Staunton, Winchester and Northern Virginia all saw wages increase by about 4 percent or more in the first quarter of 2018. Even though total wages grew the slowest in Lynchburg and Roanoke, total wage growth was still greater than 2 percent in these metro areas.

⁴ https://www.finance.virginia.gov/media/governorvirginiagov/secretary-of-finance/pdf/master-revenue-reports/September-2018-Revenue-Letter-10-11-18_.pdf.

The good news is that the gains in employment and jobs appear to be reflected in the wage data. We should expect, given the tightness of labor markets in many metropolitan areas, for wage gains to increase in the latter half of 2018.

TABLE 3

**GROWTH IN TOTAL WAGES IN VIRGINIA'S METROPOLITAN AREAS,
2015, 2016, 2017 AND 2018 Q1**

	2015	2016	2017	2018 Q1
Blacksburg	3.6%	1.2%	2.9%	9.1%
Charlottesville	8.4%	2.0%	6.0%	4.2%
Harrisonburg	4.7%	3.3%	3.1%	5.9%
Lynchburg	1.2%	1.9%	3.8%	2.3%
Richmond	5.5%	2.5%	4.7%	3.0%
Roanoke	4.0%	2.4%	0.9%	2.7%
Staunton	3.9%	3.5%	3.1%	4.0%
Hampton Roads	5.0%	1.2%	3.8%	3.4%
Washington, D.C.	4.6%	2.9%	4.2%	4.2%
Winchester	4.6%	4.0%	5.1%	3.9%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018. Data reflect year-over-year percentage change, except for 2018 Q1, which represents the percentage change from 2017 Q1. Virginia metropolitan statistical areas.

Is wage growth due to increased work effort or an actual rise in wages? For Virginia, average weekly work hours decreased slightly from 34.9 hours in October 2017 to 34.4 hours in October 2018. Average hourly earnings also increased from \$27.73 in October 2017 to \$28.62 in October 2018. For the Commonwealth, the increases in average weekly work effort and average hourly earnings resulted in an increase in average weekly earnings from about \$968 in October 2017 to \$985 in October 2018. In other words, people are earning more not only because they are working more, but also because average earnings have risen over the past year.

Graph 5 presents average weekly hours by metropolitan area. Increases in average weekly work effort will, if average earnings remain constant,

lead to increases in average weekly earnings. The Charlottesville metro area observed the largest decline in average weekly work hours from October 2017 to October 2018. The Harrisonburg and Washington, D.C., metro areas also saw a decline in average work hours. If an individual, for example, moves to a higher-paying job, he or she may work less to earn the same (or more) pay. If we, on the other hand, see broad declines in hours worked across the metro areas, this could be a signal that employers are cutting back hours. So far, there is no evidence that this is occurring in the Commonwealth.

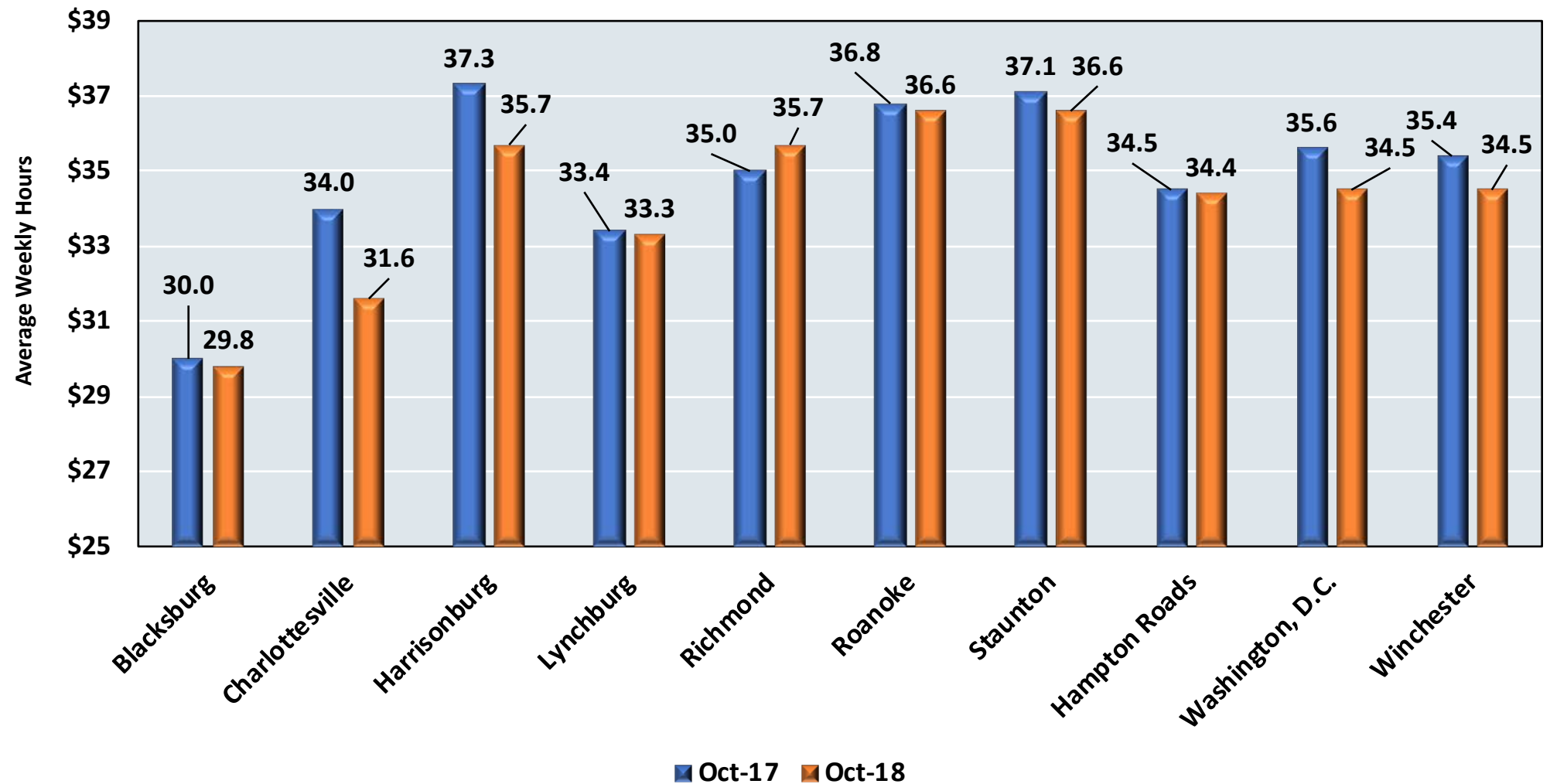
Graph 6 presents average hourly earnings for October 2017 and October 2018. Roanoke and Staunton saw the largest gains in average hourly earnings, followed by Charlottesville and the Washington, D.C., metro area. Average hourly earnings did decline in four of Virginia's metropolitan areas, suggesting that tighter labor markets have yet to affect average hourly earnings in these metro areas.

Graph 7 illustrates the percentage change in average weekly earnings between October 2017 and 2018. The picture is somewhat muddled. In Blacksburg, hours and earnings declined, so average weekly earnings declined as a result. In Roanoke, while hours declined slightly, earnings rose substantially, so average weekly earnings rose from October 2017 to October 2018. We surmise that economic conditions are not equal across the Commonwealth. Low unemployment rates have yet to result in significant increases in weekly wages, possibly leading some Virginians to conclude that the recovery has left them behind.

Does a clearer picture emerge from the labor market data? Some metropolitan areas are indeed growing. For these metros, individual employment is rising, job creation is surging and average weekly earnings are outpacing inflation. Richmond, Roanoke and Staunton are an example of these positive labor market dynamics. For other metros, the picture is less clear. In some cases, average hours worked have declined, suggesting employers may be cutting back hours in these metros in response to unfavorable economic conditions. It remains to be seen whether the jobs data are lagging other indicators or whether some metros are indeed slowing down.

GRAPH 5

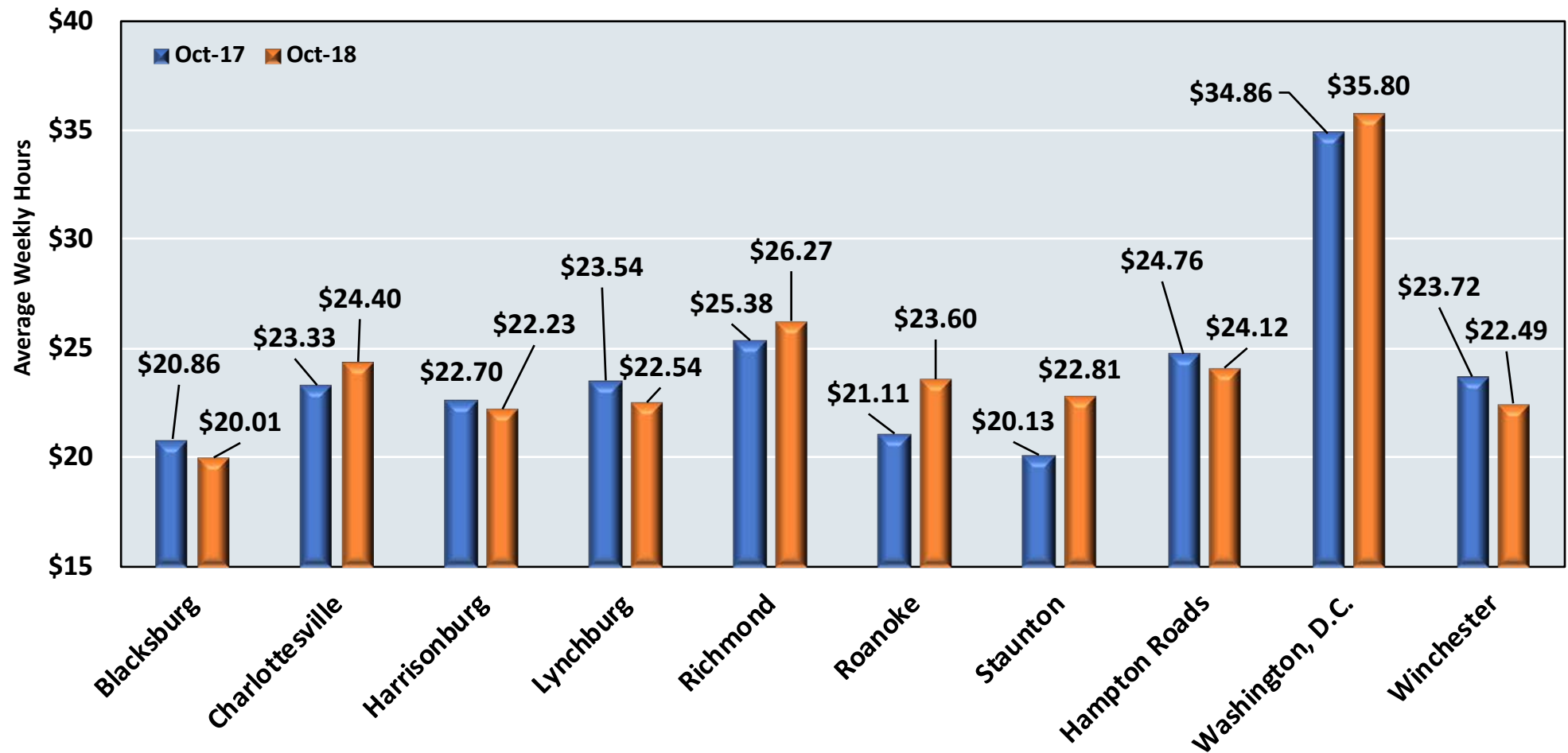
AVERAGE WEEKLY WORK HOURS IN VIRGINIA'S METROPOLITAN AREAS, OCTOBER 2017 AND OCTOBER 2018



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data. Private nonfarm payroll employees only.

GRAPH 6

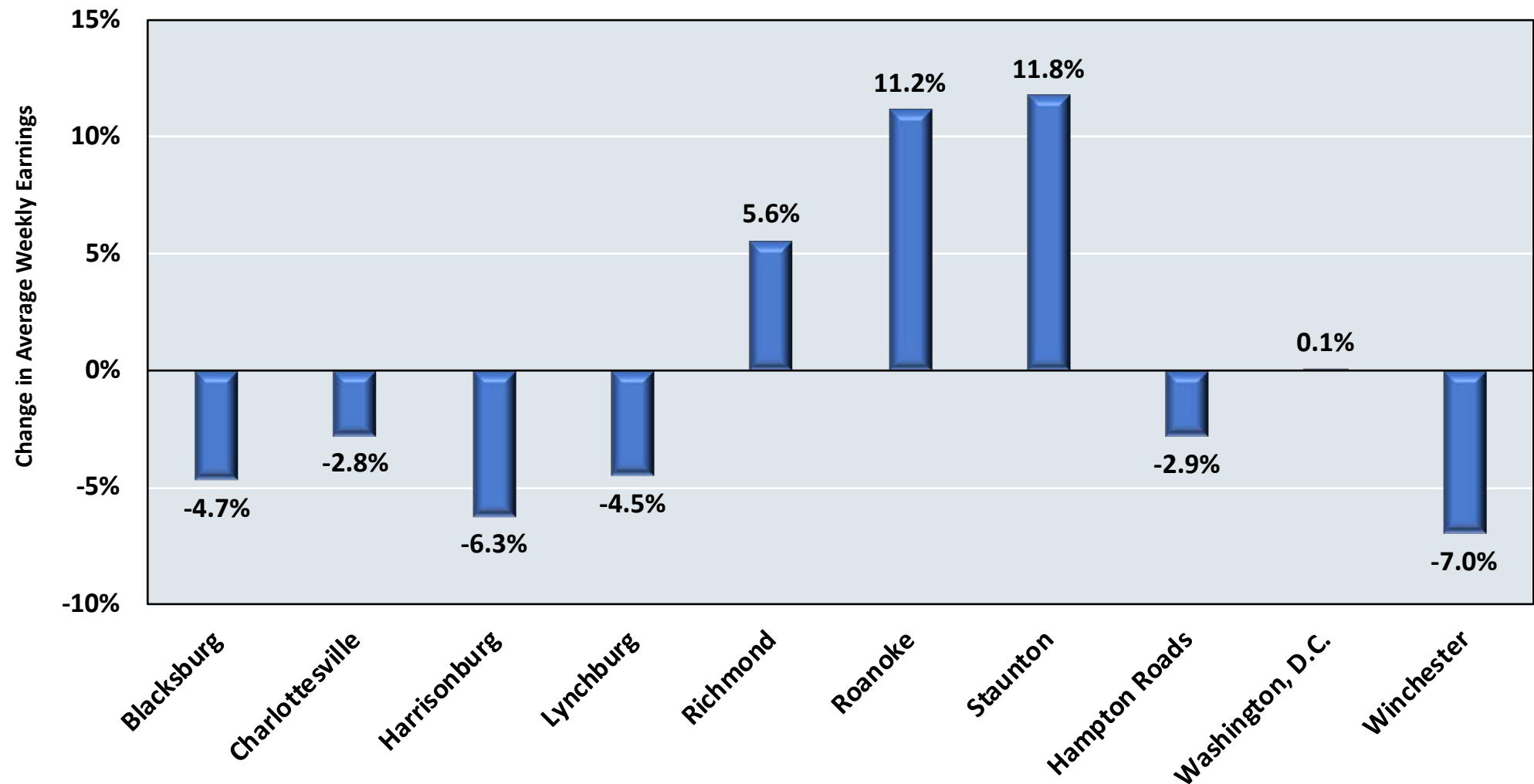
AVERAGE HOURLY EARNINGS FOR VIRGINIA'S METROPOLITAN AREAS, OCTOBER 2017 AND OCTOBER 2018



Source: Bureau of Labor Statistics and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Non-seasonally adjusted data. Private nonfarm payroll employees only.

GRAPH 7

**PERCENT GROWTH IN AVERAGE WEEKLY EARNINGS FOR VIRGINIA'S METROPOLITAN AREAS,
OCTOBER 2017 TO OCTOBER 2018**



Source: Bureau of Labor Statistics, October 2018. Establishment, non-seasonally adjusted data reflect average weekly earnings for private nonfarm payrolls.

Federal Employment And Wages

Virginia's relationship with the federal government has historically been mixed. More recently, however, this relationship has drawn scrutiny and questions as to whether it is still beneficial for the Commonwealth to be so tightly yoked to the fortunes of the federal government.

Virginia has typically entered recessions later than the United States, experienced less of an economic impact from economic downturns, emerged earlier from previous recessions than the nation and grown more robustly over the succeeding business cycle. Yet, the recovery from the Great Recession has been relatively slow when compared to the U.S. Sequestration, which followed the recession, had a disproportionate impact on the Commonwealth due to its ties to the federal government.

A primary source of fuel for the Commonwealth's economic engine has been the large federal presence in Virginia and, more specifically, in Hampton Roads and Northern Virginia. At the end of the first quarter of 2018, the Washington, D.C., metropolitan area had approximately 361,000 federal civilian employees, down about 5,300 (1.4 percent) from the end of the first quarter of 2017.⁵ Hampton Roads, on the other hand, had 57,000 federal civilian employees at the end of the first quarter of 2018, a slight increase of 0.5 percent from the end of the first quarter of 2017. The Richmond region had almost 17,000 federal civilian employees, a slight decrease from the first quarter of 2017. It should be noted that active-duty military personnel are not included in the federal civilian employment statistics.

Table 4 presents employment data for the federal government for each of the metropolitan areas in the Commonwealth from 2015 through the first quarter of 2018. Outside of the Washington, D.C., Hampton Roads and Richmond metro areas, the number of federal civilian employees is relatively small. A potential concern is the decline in federal employees in the Washington, D.C., metro area from 2017 Q1 to 2018 Q1. If this trend continues, it could potentially slow economic growth in this region.

⁵ Following Bureau of Labor Statistics convention, we compare employment in the third month of the quarter with the third month of the same quarter in the previous year. We obtain the data from the Quarterly Census of Employment and Wages for all industries and all establishment sizes.

	2015	2016	2017	2018 Q1
Blacksburg	452	451	446	425
Charlottesville	1,397	1,406	1,423	1,443
Harrisonburg	346	350	345	355
Lynchburg	560	552	559	551
Richmond	16,729	17,095	17,054	16,907
Roanoke	3,841	3,798	3,822	3,798
Staunton	256	272	272	298
Hampton Roads	56,034	57,019	57,007	57,000
Washington, D.C.	363,953	367,229	366,893	361,425
Winchester	1,973	2,020	2,160	2,350

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018. Virginia metropolitan statistical areas.

Table 5 presents federal civilian employment as a percentage of total nonfarm employment. The Washington, D.C., metropolitan area, not surprisingly, has the highest percentage of federal civilian employees in total nonfarm payrolls, followed by Hampton Roads and the Winchester metro area. While the absolute number of federal civilian employees is small in Winchester when compared to Hampton Roads, Northern Virginia, Richmond or Roanoke as a percentage of all jobs, federal civilian employees constitute a greater percentage of payrolls in Winchester than Richmond or Roanoke.

TABLE 5**FEDERAL CIVILIAN EMPLOYMENT AS A PERCENT OF TOTAL
NONFARM EMPLOYMENT, 2015-2018 Q1**

	2015	2016	2017	2018 Q1
Blacksburg	0.7%	0.7%	0.6%	0.6%
Charlottesville	1.3%	1.3%	1.3%	1.3%
Harrisonburg	0.6%	0.6%	0.5%	0.5%
Lynchburg	0.6%	0.6%	0.6%	0.6%
Richmond	2.7%	2.7%	2.7%	2.7%
Roanoke	2.6%	2.5%	2.5%	2.5%
Staunton	0.5%	0.6%	0.6%	0.6%
Hampton Roads	7.7%	7.8%	7.7%	7.7%
Washington, D.C.	12.0%	11.9%	11.8%	11.7%
Winchester	3.4%	3.4%	3.6%	3.9%

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018. Virginia metropolitan statistical areas.

Table 6 presents the average nominal wages of federal civilian employees between 2015 and 2017 and provides the average wages for all employees in 2017 as a basis of comparison. Federal civilian employees earn more, on average, in every metropolitan area in Virginia. In Winchester, for example, federal employees, on average, earn nearly twice the annual average wage. In fact, except for Lynchburg and Staunton, federal employees' average pay was 50 percent higher than the average pay of all employees in 2017. The announced federal pay freeze for 2019 will undoubtedly erode the value of federal wages in real terms but these wages will still, on average, be higher than for the average job in the metro areas. Of course, if the federal civilian pay freeze is sustained over a prolonged period, the relative pay advantage of federal civilian jobs would shrink relative to other jobs in the private sector.

TABLE 6**AVERAGE NOMINAL WAGES OF FEDERAL CIVILIAN EMPLOYEES,
2015-2017**

	2015	2016	2017	2017 All Employees
Blacksburg	\$65,524	\$64,685	\$65,719	\$41,253
Charlottesville	\$84,089	\$84,871	\$86,925	\$51,354
Harrisonburg	\$61,867	\$60,236	\$61,367	\$39,453
Lynchburg	\$58,262	\$55,754	\$56,132	\$41,565
Richmond	\$74,252	\$75,045	\$77,858	\$52,194
Roanoke	\$71,494	\$72,475	\$73,055	\$43,040
Staunton	\$54,722	\$54,931	\$56,858	\$40,429
Hampton Roads	\$73,302	\$74,280	\$76,821	\$46,425
Washington, D.C.	\$105,652	\$108,135	\$111,066	\$74,613
Winchester	\$84,907	\$87,851	\$90,013	\$44,798

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018. Virginia metropolitan statistical areas.

Taxable Sales

Another viable measure of economic activity is taxable sales. More than two-thirds of 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 \$369 billion of goods and services in 2017, or about \$43,500 per person.⁶ This is about \$2,600 higher than the average American, not surprising since household income is higher in Virginia than the United States.

6 Bureau of Economic Analysis, Personal Consumption Expenditures by State, Oct. 4, 2018.

Unfortunately, we do not have recent data on consumption spending within Virginia's metropolitan areas. We do have data on taxable sales within the metros. While not perfect, as taxable sales will understate some forms of consumption spending, it is a useful indicator of economic conditions at the metropolitan level.

Taxable sales growth predictably rises during business cycle expansions and falls during contractions. However, taxable sales growth usually leads the business cycle, and this makes it a valuable leading indicator of future economic conditions. This is a valuable attribute and an important reason why we present the data on taxable sales growth for the Commonwealth's metro areas.

At the time of publication, data were only available for the metropolitan areas through July 2018. Taxable sales data are highly seasonal and so it is important when comparing across time to ensure that the time periods

are consistent. Table 7 presents average taxable sales growth rates for January through July. We include 2006 to compare prerecession growth with growth in 2015 through 2018.

Two things stand out. First, taxable sales growth between 2017 and 2018 was positive. The data lend support to the argument that Virginia's metropolitan areas are growing, though at different rates. Second, some metros are eclipsing prerecession growth levels in 2018.

Blacksburg's taxable sales have jumped in 2018. Lynchburg and Roanoke taxable sales are also growing at a faster rate in 2018 compared to 2017, and taxable sales in Hampton Roads have increased at an average rate of 4.2 percent in 2018, following a similar performance in 2017. The data suggest that economic growth is indeed picking up in Hampton Roads and that the advance GDP estimates for 2017 are likely to be revised upwards.

TABLE 7

AVERAGE GROWTH IN TAXABLE SALES (CAGR), JANUARY TO JULY OF EACH YEAR

	2006	2015	2016	2017	2018
Blacksburg	2.6%	3.3%	2.3%	2.5%	4.4%
Charlottesville	5.4%	1.9%	2.6%	1.6%	1.7%
Harrisonburg	2.0%	2.8%	1.8%	1.3%	1.5%
Lynchburg	3.7%	3.0%	1.8%	1.7%	3.2%
Richmond	1.3%	2.2%	2.3%	2.0%	1.5%
Roanoke	2.9%	3.2%	2.2%	2.4%	3.9%
Staunton	2.4%	2.8%	2.3%	2.4%	2.6%
Hampton Roads	4.0%	3.8%	4.1%	4.2%	4.2%
Winchester	1.9%	3.0%	2.7%	2.1%	2.6%
Northern Virginia	1.8%	2.6%	3.3%	2.4%	2.4%
Virginia	2.4%	2.8%	3.2%	2.5%	2.8%

Source: Center for Economic and Policy Studies, Weldon Cooper Center for Public Service, University of Virginia. CAGR, the Compound Average Growth Rate, is calculated for each year.

Final Thoughts

The uneven growth among Virginia's regional economies over the last decade is emblematic of the struggle to create economic opportunities across the state. The economic data suggest the Harrisonburg metropolitan area may be slowing down. Two of the larger metros, Richmond and Northern Virginia, are growing but at a slower pace than earlier in the decade. This is a change of pace, and given the amount of overall economic activity in these two metro areas, may pose a challenge for the Commonwealth.

Federal employees, who play a large role in the Northern Virginia economy, face headwinds with a pay freeze in 2019 and continued attempts to reduce overall federal employment. Southwest Virginia continues to struggle with a decline in the reliance on coal and other natural resources. Underlying all of this is the continuing opioid crisis, which continues to challenge policymakers, citizens and employers alike.

Not all the news is bad. Increases in defense spending will drive economic growth in Hampton Roads and may alleviate some of the downward pressure in Northern Virginia. Charlottesville continues to grow, in large part due to the presence of the University of Virginia. Richmond, while growing at a slower pace this year, continues to benefit from the #RVA campaign. Virginia's winning bid for part of Amazon's HQ2 will spur economic growth in Northern Virginia. It may also increase the scarcity of housing and spur increased demands for transportation infrastructure. These demands present, however, opportunities for increased growth over time. Much of the United States internet traffic runs through Virginia and the construction of Amazon's HQ2 will undoubtedly burnish the Commonwealth's reputation as an innovation-friendly state.

Employment and jobs are up in most of the metropolitan areas, although growth is uneven so far in 2018. Unemployment rates are below 3 percent in some metro areas and this is reflected in gains in average weekly wages. Taxable sales have continued to grow and, in some areas, have eclipsed growth rates observed prior to the Great Recession. Economic growth may be uneven, but it appears that, for the most part, the metro areas are pushing themselves off the mat and moving ahead.

Each year we ask what the future holds. Increases in federal spending through September 2019 are likely to boost the fortunes of those metropolitan areas closely tied to the federal government. Political uncertainty in Washington, D.C., has yet to harm economic prospects in the country and, just perhaps, uncertainty is the "new normal" for firms in Virginia. The prospects for 2018 remain positive and, barring an unexpected shock, should remain positive well into 2019.

Virginia can act to improve regional outcomes. We offer the following suggestions. Targeted investments in infrastructure are necessary to promote economic development and attract new businesses. Improving the quality of education, including investments in physical infrastructure, is necessary to produce a workforce that can compete in an increasingly globalized economy. Virginia's antiquated tax structure must be reformed to compete with neighboring states. Regulatory relief, or at least regulatory clarity, is a necessary component of economic growth. Lastly, regional collaboration should not just be a slogan. Virginia should continue to promote regional collaborations through efforts like GO Virginia. These recommendations may not be new, but until Virginia acts, they bear repeating.



Norfolk, Virginia

THE PROMISE AND PERIL OF MEDICAID EXPANSION FOR THE COMMONWEALTH OF VIRGINIA

We are very excited about having the opportunity to provide them with a pathway to coverage, so they can get the coverage that they need and get healthier, so they can pursue opportunities that they deserve for themselves and their families.

– Dr. Jennifer Lee, Director, Virginia
Department of Medical Assistance
Services

A stethoscope and various pills (pink, white, black, and red) are scattered on a white surface. The word "Medicaid" is written in large, bold, black letters across the bottom of the image.

Medicaid

On July 1, 2018, after years of heated debate, Virginia became the 33rd state (along with the District of Columbia) to sign an expansion of Medicaid coverage into law. Effective Jan. 1, 2019, the Commonwealth will expand Medicaid eligibility to childless adults and increase how much Medicaid recipients can earn without losing their health insurance. The question is no longer whether Virginia should expand Medicaid, but rather what will be the impact of Medicaid expansion on the Commonwealth.

Medicaid is a joint program between the federal government and the states to provide health coverage for low-income individuals in the United States. Medicaid operates in conjunction with another federal-state partnership, the Children's Health Insurance Program (CHIP), which aims to improve children's health insurance coverage and outcomes. Almost 73 million Americans were enrolled in Medicaid and CHIP in May 2018, with about 1 million of those enrollees residing in Virginia.¹ Medicaid is one of the largest payers for health services in the U.S.; total spending topped \$550 billion in 2016.

¹ <https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-enrollment-data/monthly-reports/index.html>

State participation in the Medicaid program is voluntary, although every state participates. Why, then, has expanding the Medicaid program generated such heated debate? In 2012, the U.S. Supreme Court ruled that the federal government could not coerce states to expand Medicaid.² The choice of whether and when to expand would be left to individual states. Some chose immediately to expand and others, including Virginia, opted to study the merits of expansion. To incentivize states to enroll new participants, the federal government initially covered 100 percent of the cost of new enrollees. In 2019, the federal government will reimburse expansion states for 93 percent of the cost of new enrollees, a share which will decline to, and remain at, 90 percent in 2020 and beyond. This is a much higher rate of reimbursement than the 50/50 split for existing Medicaid enrollees in Virginia.

More than 750,000 Virginia residents, or about 9 percent of the state's population, lacked health insurance in 2016.³ Of those with health insurance in the Commonwealth, 12 percent received their insurance through Tricare, a health care program of the U.S. Department of Defense Military Health System, or the Department of Veterans Affairs (VA) in 2016, more than twice the national average. Only Alaska and Hawaii, which are far less populous than Virginia, had a higher percentage of their population covered by Tricare or the VA. The large federal presence in Virginia may mute the impact of Medicaid expansion compared to other states.

We expect that between 120,000 and 170,000 newly eligible adults ages 19 to 65 will enroll in Medicaid once expansion is fully implemented. Annual uncompensated care costs for charity care and bad-debt expenses will decline as a result, and the financial viability of hospitals will improve over time. The work effort of existing enrollees will likely increase, and Medicaid expansion will undoubtedly have a positive effect on the Commonwealth's budget. As the effort to identify and enroll newly eligible Virginians increases, so will the economic impact of Medicaid expansion in Virginia.

Even with Medicaid expansion, however, around 500,000 Virginians will remain without health insurance, as they will exceed the income eligibility threshold for Medicaid expansion enrollment. Even among those who are income-eligible, not all will enroll. Along with the large number of people remaining without insurance, we caution that if the federal government were to lower its reimbursement share of new Medicaid expansion enrollees to that of existing Medicaid enrollees, the costs of expansion to the Commonwealth could increase substantially if new enrollees remained on the program.

In this chapter, we will look at how Medicaid expansion may affect health insurance coverage and health care in Virginia. We'll consider opposing views, the history of health insurance, current eligibility, future eligibility under expansion and the financial impact. Medicaid expansion offers promise to low-income residents who currently may not have health insurance, but it may also increase the fiscal risk to the Commonwealth's budget.

The impact of Medicaid expansion on Virginians is not merely an academic question. Recently, Ann Lewis of Accomack County lost feeling in her hands and feet. As the numbness continued to spread, she decided to go to the hospital. While there, Lewis could only think of one thing: the cost of her health care. "All I could do was cry," she recalled. "I thought, 'What am I going to do? I can't afford all this.'" She was then transported to Maryland, where the cost of her care was written off by the hospital as charity care. Although doctors recommended an extended stay in a rehabilitation facility upon discharge, Lewis went home because she couldn't afford rehabilitation services. Unable to return to her nursing assistant job, due to her condition, she remains unemployed.⁴

² National Federation of Independent Business v. Sebelius, 567 U.S. 519 (2012).

³ The Virginia portion of the Virginia Beach-Norfolk metropolitan statistical area includes the counties of Gloucester, Isle of Wight, James City, Mathews and York and the cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach and Williamsburg.

⁴ <https://www.delmarvanow.com/story/news/2018/05/14/how-virginia-medicaid-expansion-would-affect-accomack-county/541626002>.

Two Sides Of The Debate

Detractors of expansion contend that the Medicaid program is poorly run, inefficient and an unwise use of the public purse. They also argue that the costs of Medicaid expansion have swelled past predictions. This latter claim is true, both because Medicaid has attracted more users than forecasted, and the average cost per user has exceeded expectations. New enrollments have outpaced Congressional Budget Office estimates by more than 50 percent. Costs per new Medicaid participant have been up to 50 percent higher than the projections by the Centers for Medicare & Medicaid Services. Even if the federal government continues to reimburse states for 90 percent of the costs associated with new enrollees, critics fear that costs will balloon at the federal and state level.⁵

Supporters, however, note that state expenditures per newly eligible Medicaid recipient fell by 6.9 percent in 2016, and are expected to decline further as states gain experience, and services for individuals with less urgent health problems increase. Further, multiple states have found that their health-related and criminal justice expenditures have declined because of increased Medicaid coverage.⁶ Proponents also cite numerous empirical studies showing Medicaid expansion increases the scope of insurance coverage, produces demonstrably healthier individuals and has minimal or no adverse labor market participation effects.⁷ These effects appear to be more pronounced in poorer communities.

Accidents Of History: Health Insurance In The United States

Constant change has been the trademark of health insurance in the United States over the past 150 years. Historian John Murray found that by the mid-1800s, employers, unions and fraternal organizations had established “sickness funds” as a form of insurance. Employees would typically contribute 1 percent of their weekly wages to the sickness funds, which would then pay sick or disabled employees up to 60 percent of their lost wages. By 1890, there were more than 1,300 such funds, and Murray estimates that 20 percent of industrial workers belonged to a sickness fund in the early 1900s. While not health insurance per se, these funds provided workers with a semblance of indemnity coverage.

In the late 1920s, to encourage patients to pay their bills, hospitals started offering plans where medical payments would be forgiven if one paid a monthly fee, eventually evolving into the modern Blue Cross system.⁸ Blue Shield, established in 1939, mirrored the expansion of the Blue Cross system, although the Blue Shield program paid consumers, who were then responsible for paying physicians.

During World War II, the federal government instituted wage and price controls, along with rationing, in an attempt to control inflation and redirect resources to the war effort. Facing labor shortages as the conscription of men increased over the course of the war, firms increasingly turned to women, leading to a significant rise in female labor force participation. The rising strength of unions led to demands for additional forms of compensation, including the provision of health insurance. By 1944, the National War Labor Board exempted employer-sponsored health insurance from wage controls, and the Internal Revenue Service (IRS) ruled that employees did not have to pay income taxes on premiums paid by employers. These factors combined so that firms,

⁵ See Henry J. Kaiser Family Foundation, March 28, 2018, and Mercatus Center, Charles Blahous, June 28, 2017, for more details.

⁶ See Henry J. Kaiser Family Foundation, March 28, 2018, and Center on Budget and Policy Priorities, Judith Solomon, Jan. 24, 2017, for study details.

⁷ Laura Antonisse, Rachel Garfield, Robin Rudowitz and Samantha Artiga, “The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review,” Henry J. Kaiser Family Foundation (March 28, 2018), www.kff.org/medicaid/issue-brief/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review-march-2018.

⁸ Blumberg, Alex and Davidson, Adam, “Accidents of History Created U.S. Health System,” NPR special series “Planet Money,” Oct. 22, 2009, <https://www.npr.org/templates/story/story.php?storyId=114045132>.

constrained in their ability to offer workers higher wages, increased other forms of compensation, including employer-sponsored health insurance. One anonymous employer noted, “It was a case of paying the money to insurance for their employees or to Uncle Sam in taxes.”⁹

While precise historical data on private health insurance coverage are difficult to come by, Michael Morrissey notes in his 2008 book “Health Insurance” that coverage by any type of private provider rapidly increased during and after World War II. As we illustrate in Graph 1, 9.1 percent of Americans had some form of private health insurance in 1940, a percentage vaulting to 50.6 by 1950.

Almost every president since World War II has called for reforms to the health insurance system in the United States. Most recently, the 2010 Patient Protection and Affordable Care Act (PPACA), otherwise known as Obamacare, attempted to strike a balance between private health insurance and public intervention in the marketplace. Obamacare allowed states to expand Medicaid coverage with higher federal rates of reimbursement, created health insurance marketplaces where individuals could compare plan costs and benefits across standardized plans, offered a federal tax credit for those earning between 100 and 400 percent of the Federal Poverty Level (FPL), prevented denial of coverage based on pre-existing conditions, and allowed young adults up to age 26 to remain on family policies. One of the most unpopular provisions of Obamacare was the mandate requiring individuals to purchase health insurance or face a financial penalty. The 2017 Tax Cuts and Jobs Act, however, reduced the penalty to zero, effectively eliminating the individual mandate as of Jan. 1, 2019.

Having health insurance, however, does not mean that one is immune from health care costs. A 2016 survey conducted by the Kaiser Family Foundation and The New York Times found that 20 percent of respondents had problems paying medical bills in the past year and, for those without health insurance, over 50 percent reported difficulty paying medical bills. One study from 2011 claimed that up to 26 percent

of bankruptcies filed by low-income households could be related to out-of-pocket medical costs.¹⁰ A recent analysis, featured in a New England Journal of Medicine article, argued the belief that a significant percentage of bankruptcies resulting from medical costs is overstated, and hospitalizations were responsible for about 6 percent of bankruptcies among the uninsured population.¹¹ The article’s authors also found, not surprisingly, that hospitalizations increased out-of-pocket spending on health care, which led to higher levels of medical debt and a decrease in employment and income.

Critics of the U.S. health care system often argue that the Canadian system operates with lower costs and better outcomes. While 100 percent of Canadians have health insurance, not all services are covered, so individuals do have out-of-pocket expenses, and health needs may not always guarantee prompt access to care. The 2017 edition of “Waiting Your Turn,” a report by the Fraser Institute, a Canadian think tank, found that wait times for medically necessary treatments reached the highest recorded levels in 2017. The median wait time from a general practitioner’s initial referral to a specialist to final receipt of treatment was over 21 weeks. Canadians could also expect to wait about four weeks for an ultrasound or a computed tomography (CT) scan and almost 11 weeks for a magnetic resonance imaging (MRI) scan. Every health care system has tradeoffs but the United States currently spends substantially more per capita on medical care than any other country in the world.¹²

Americans are generally unsatisfied with the state of the health care system but are happy with their doctors. **More than 70 percent of Americans responded in a February 2018 Gallup poll that the U.S. health care system is in a “state of crisis” or “has major problems.”**¹³ Yet, when asked about their personal health care experience, three-quarters of employed Americans said their health care was “excellent” or “good.” These responses are like Americans’ perceptions of Congress versus their individual representative or senator: unhappy with the institution but satisfied at the personal level.

9 Gordon, Colin, 2003, *Dead on Arrival: The Politics of Health Care in Twentieth-Century America*, Princeton: Princeton University Press.

10 “The Burden of Medical Debt: January 2016 Results from the Kaiser Family Foundation/New York Times Medical Bills Survey,” released January 2016, and Gross, T. and Notowidigdo, M.J., (2011), “Health insurance and the consumer bankruptcy decision: Evidence from expansions of Medicaid,” *Journal of Public Economics*, 95(7), 767-778.

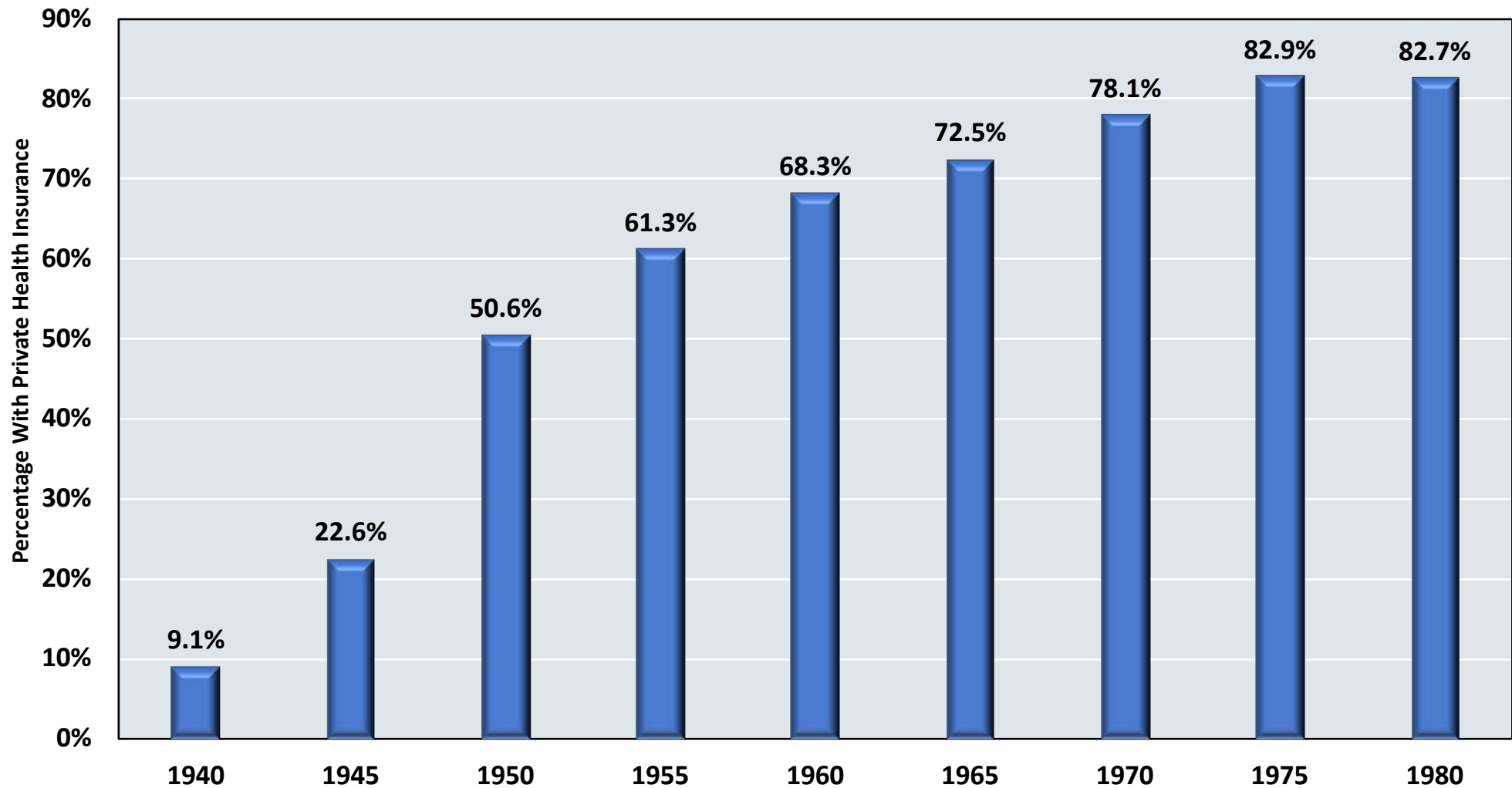
11 “Myth and Measurement - The Case of Medical Bankruptcies,” Carlos Dobkin, Amy Finkelstein, Raymond Kluender, and Matthew J. Notowidigdo, (2018), *New England Journal of Medicine* 378: 1076-1078.

12 Susan Brink, “What Country Spends the Most (and Least On Health Care Per Person?” NPR (April 20, 2017), www.npr.org/sections/goatsandsoda/2017/04/20/524774195/what-country-spends-the-most-and-least-on-health-care-per-person.

13 <http://news.gallup.com/poll/226607/news-americans-satisfaction-healthcare.aspx>.

GRAPH 1

PERCENT OF POPULATION WITH SOME FORM OF PRIVATE HEALTH INSURANCE: UNITED STATES, 1940-1980



Source: Michael Morrissey, 2008, "Health Insurance, Second Edition," Chicago: Health Administration Press

Who Has Health Insurance?

Today, the U.S. Census Bureau tracks not only how many Americans have health insurance, but also what types of organizations provide that insurance. Reflecting the fact that some people may have been covered by more than one type of health insurance during the year, Table 1 shows that in 2016, the majority of Americans had some form of health insurance through their employer. Another 14 percent directly purchased a plan through a private insurer or the Obamacare Marketplace exchanges. Nearly 40 percent of Americans received health insurance through Medicare (17.2 percent) or Medicaid (21.1 percent). About 5 percent of Americans received health insurance through either Tricare or the VA. Lastly, 8.9 percent of Americans were uninsured in 2016.

Insured rates vary within the United States. As illustrated in Table 2, Massachusetts reported the highest percentage of the population with any type of health insurance coverage in 2016, followed by Vermont, Hawaii, the District of Columbia and Iowa. Two of the top five, the District of Columbia and Massachusetts,¹⁴ have an individual mandate that requires residents to purchase a health insurance plan or face a financial penalty. New Jersey is scheduled to implement an individual mandate in 2019, followed by Vermont in 2020. Several other states, including California, Washington and Minnesota, are discussing whether to require an individual mandate for health insurance.

Virginia ranked 34th out of the 50 states and the District of Columbia with respect to the percentage of its population that had health insurance coverage. Among more populous states, California (ranked 22nd) and New York (ranked 15th) had higher rates of coverage compared to Florida (ranked 47th) and Texas (ranked 51st), in part because of the decision of California and New York to expand Medicaid in 2014.

¹⁴ The Massachusetts individual mandate has been in effect for a decade.

TABLE 1

HEALTH INSURANCE COVERAGE IN THE UNITED STATES: NUMBERS AND RATES, 2013 AND 2016 (IN THOUSANDS)

	2013 Number	2013 Rate	2016 Number	2016 Rate	Percentage Point Change from 2013 to 2016
Any Health Plan	269,474	85.2%	294,466	91.1%	+5.9%
Employer-based	168,850	53.4%	174,550	54.0%	+0.6%
Direct-purchase	37,398	11.8%	45,194	14.0%	+2.2%
Medicare	50,888	16.1%	55,602	17.2%	+1.1%
Medicaid	57,177	18.1%	68,129	21.1%	+3.0%
Military Health Care	16,149	5.1%	17,096	5.3%	+0.2%
Uninsured	46,654	14.8%	28,661	8.9%	-5.9%
Total	316,129	--	323,127	--	--

Source: Estimates based on the 2016 American Community Survey and 2013 American Community Survey one-year microdata. Total population of the United is used for this table. Only 0.50 of respondents stated that they only had Indian Health Service insurance and are excluded from the table. Percentages may not sum to 100 percent as individuals may have more than one type of health insurance. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error is in relation to the size of the estimate, the less reliable the estimate. The margins of error for the estimates are available upon request.

TABLE 2**HEALTH INSURANCE COVERAGE: TOP FIVE STATES, VIRGINIA AND BOTTOM FIVE STATES RANKED BY PERCENTAGE OF POPULATION REPORTING ANY HEALTH INSURANCE COVERAGE, 2016**

Rank	State	Total Population	Number of Insured	Percentage Insured	Number of Uninsured	Percentage Uninsured	Expanded Medicaid
1	Massachusetts	6,811,885	6,639,121	97.5%	172,764	2.5%	2014
2	Vermont	624,594	602,470	96.5%	22,124	3.5%	2014
3	Hawaii	1,428,557	1,377,287	96.4%	51,270	3.6%	2014
4	District of Columbia	681,170	653,488	95.9%	27,682	4.1%	2014
5	Iowa	3,134,693	3,004,519	95.8%	130,174	4.2%	2014
34	Virginia	8,411,808	7,659,348	91.1%	752,460	9.0%	2019
47	Florida	20,612,439	17,935,011	87.0%	2,677,428	13.0%	No
48	Georgia	10,310,371	8,925,297	86.6%	1,385,074	13.4%	No
49	Oklahoma	3,923,561	3,367,352	85.8%	556,209	14.2%	No
50	Alaska	741,894	635,232	85.6%	106,662	14.4%	No
51	Texas	27,862,596	23,083,054	82.8%	4,779,542	17.2%	No

Source: U.S. Census Bureau, 2016 American Community Survey – estimates based the 2016 American Community Survey one-year microdata. Iowa obtained a Section 1115 waiver for 2014 but switched to the more common ACA expansion in 2015. Iowa transitioned its entire Medicaid program to managed care in 2016. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

Health insurance rates also vary by race in the United States and Virginia (Graph 2). A lower percentage of the African-American population in the Commonwealth reported not having health insurance in 2016 compared to the nation. The uninsured rate among Asian-Americans was one-half a percentage point higher in Virginia than the U.S. in 2016, while whites were essentially uninsured at the same rate. The American Indian/Alaskan Native population is numerically small in Virginia and enjoys higher rates of health insurance coverage than the United States as a whole.

Within Virginia, health insurance coverage rates vary by locality. Figure 1 illustrates that uninsured rates tend to be lower in urbanized areas, including much of Northern Virginia, Richmond and Hampton Roads. Rural areas tend to have higher rates of uninsured. Lower rates also prevail along the I-95 corridor in central Virginia. Table 3 illustrates the disparities in coverage between the 10 highest and 10 lowest localities for the percentage of uninsured in the Commonwealth.

In Roanoke, the Carilion Clinic's chief financial officer estimates the hospital will have to pay about \$27.6 million a year in new taxes once Medicaid expansion takes place. Don Halliwill, however, cannot yet determine how much the clinic will earn from the expansion, but believes it will outweigh the new taxes. "It's going to help our patients, our physicians and staff. And it's going to help the economy," he said. "Any money that comes in is going to be spent. And for us, 100 percent of money coming in is spent here. Whatever the number is, it stands to be significant for us and our communities."

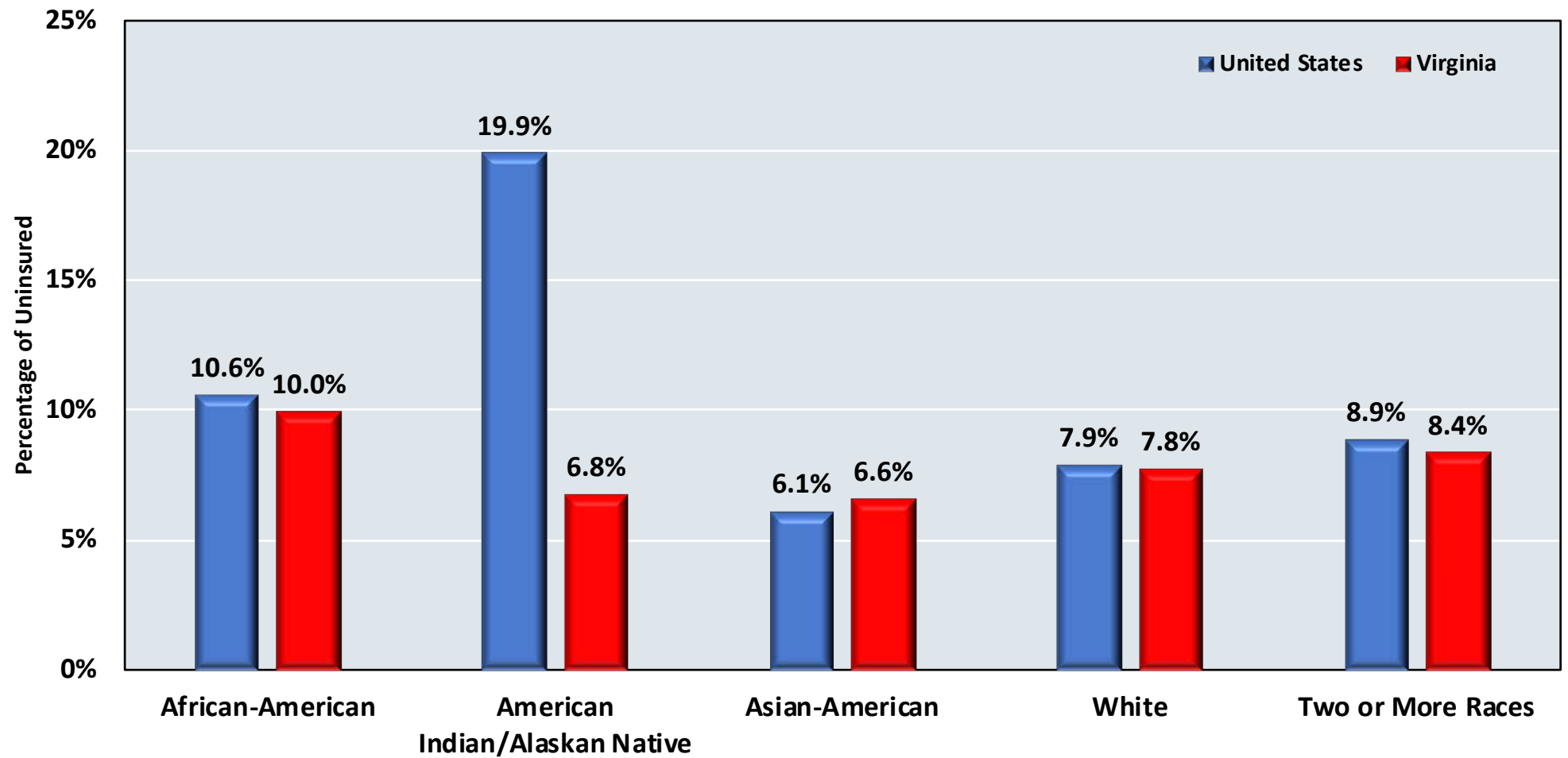
Halliwill added: "It is a victory for our communities and a victory for our patients, but boy, it's complicated. We know the direction and what has been stated as the intentions. But how it will play out, we just don't know."¹⁵

In 2016, the Commonwealth's uninsured rate of 9.0 percent was slightly higher than the nation's 8.9 percent uninsured rate. **In Virginia, 12.1 percent of the population was insured through Tricare or the VA, and a higher percentage of individuals received their health insurance through their employer or union in Virginia than the nation.** The share of Virginians who directly purchased insurance (where one directly buys private insurance, including marketplace exchanges) or obtained it through Medicare was about the same as the nation. Another difference between the Commonwealth and the U.S. was that only 11.8 percent of Virginians received health insurance through Medicaid, compared to 21.1 percent of the population of the United States (see Graph 3).

Why is a smaller percentage of Virginians covered by Medicaid than the U.S. population as a whole? The most straightforward explanation is simple: Virginia was consistently ranked among the strictest states with regard to Medicaid eligibility. Prior to the implementation of Medicaid expansion, Virginia's income and other requirements presented a significant challenge for low-income individuals seeking to enroll in Medicaid. If it's harder to enroll and maintain enrollment, then a smaller number and percentage of the population will receive health insurance through Medicaid. We expect, with Medicaid expansion, that a significant number of people who were previously denied enrollment will now find themselves eligible to enroll in Medicaid in Virginia.

¹⁵ https://www.roanoke.com/business/news/roanoke/carilion-views-medicaid-expansion-as-victory-for-community-and-patients/article_d63f9214-01c6-59a4-8d42-e4a0d8e7a023.html.

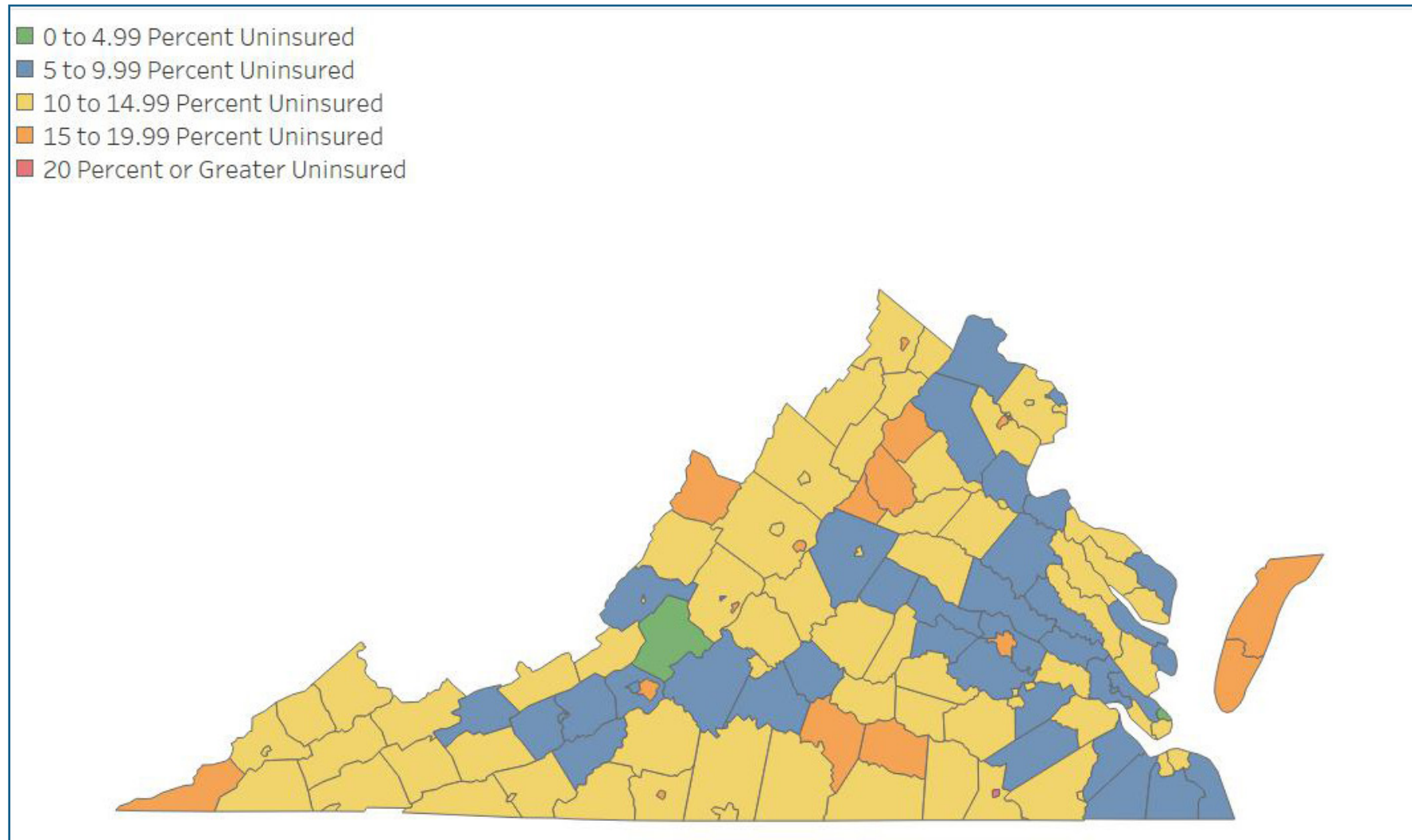
GRAPH 2
UNINSURED RATE BY RACE: UNITED STATES AND VIRGINIA, 2016



Source: U.S. Census Bureau, 2016 American Community Survey - estimates based the 2016 American Community Survey one-year microdata. Data on other races (not elsewhere classified) and other Pacific Islanders are not included. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

FIGURE 1

**HEALTH INSURANCE COVERAGE:
VIRGINIA COUNTIES AND CITIES - POPULATION REPORTING ANY HEALTH INSURANCE COVERAGE, 2012-2016**



Sources: 2012-2016 American Community Survey, U.S. Census, Table B27001, and the Dragas Center for Economic Analysis and Policy, Old Dominion University (civilian noninstitutional population instead of total population). Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

TABLE 3

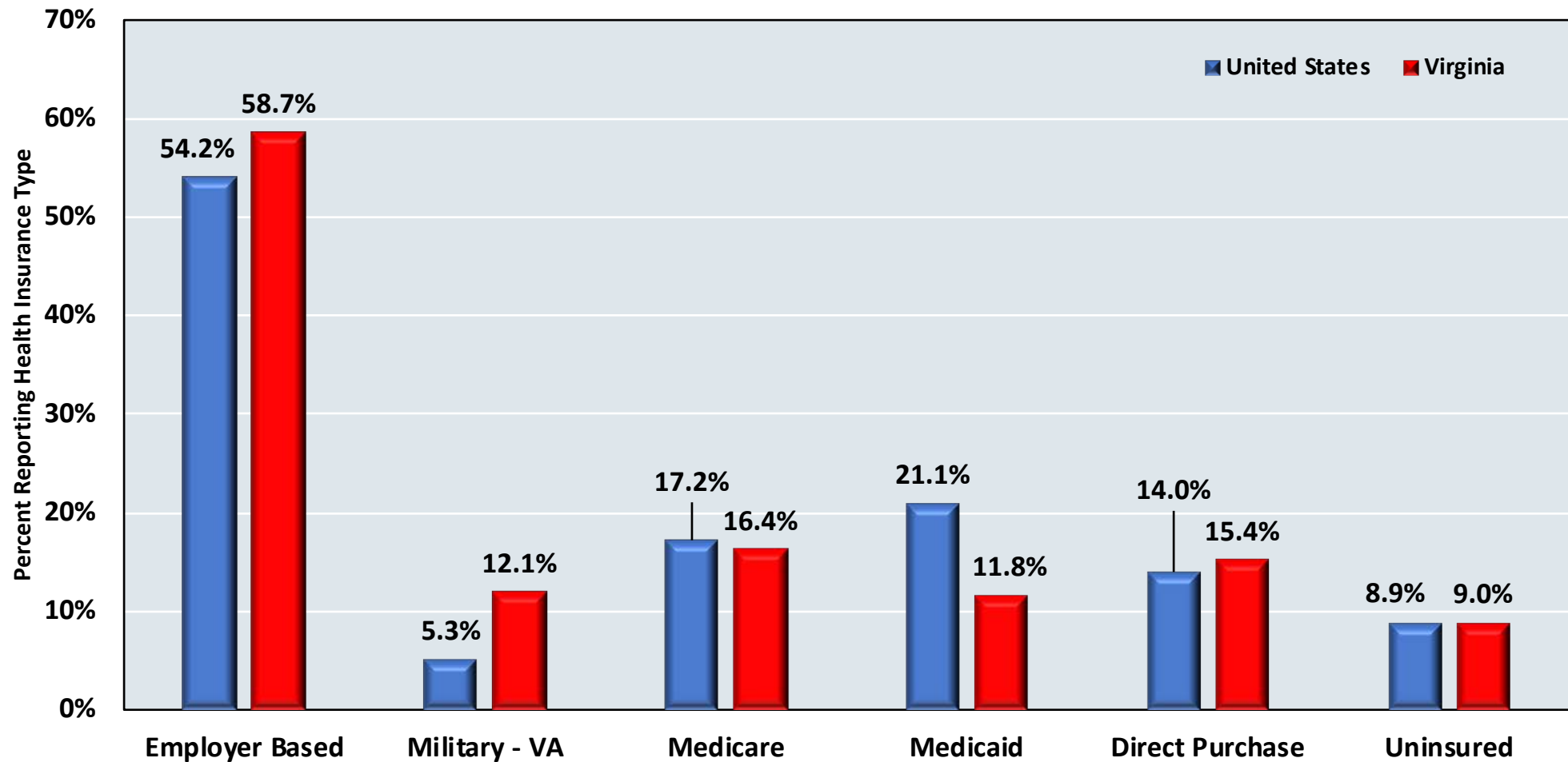
**HEALTH INSURANCE COVERAGE: TOP 10 AND BOTTOM 10 VIRGINIA COUNTIES AND CITIES - POPULATION REPORTING ANY
HEALTH INSURANCE COVERAGE, 2012-2016**

	Total Population	Insured		Uninsured	
		Estimate	Percentage	Estimate	Percentage
Falls Church	13,520	13,066	96.6%	454	3.4%
Poquoson	11,864	11,401	96.1%	463	3.9%
Botetourt County	32,914	31,272	95.0%	1,642	5.0%
Williamsburg	14,825	14,050	94.8%	775	5.2%
Goochland County	20,746	19,587	94.4%	1,159	5.6%
Hanover County	101,502	95,746	94.3%	5,756	5.7%
York County	63,499	59,714	94.0%	3,785	6.0%
New Kent County	19,473	18,247	93.7%	1,226	6.3%
Roanoke County	92,050	86,014	93.4%	6,036	6.6%
Montgomery County	96,586	89,929	93.1%	6,657	6.9%
Charlotte County	12,100	10,155	83.9%	1,945	16.1%
Lunenburg County	11,496	9,639	83.9%	1,857	16.2%
Winchester	27,102	22,619	83.5%	4,483	16.5%
Northampton County	11,799	9,835	83.4%	1,964	16.7%
Martinsville	13,190	10,985	83.3%	2,205	16.7%
Accomack County	32,677	26,811	82.1%	5,866	18.0%
Buena Vista	6,532	5,319	81.4%	1,213	18.6%
Manassas	41,121	33,403	81.2%	7,718	18.8%
Emporia	5,349	4,172	78.0%	1,177	22.0%
Manassas Park	15,786	12,260	77.7%	3,526	22.3%

Sources: 2012-2016 American Community Survey, U.S. Census, Table B27001, and the Dragas Center for Economic Analysis and Policy, Old Dominion University (civilian noninstitutional population instead of total population). Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

GRAPH 3

HEALTH CARE COVERAGE TYPES FOR ALL INDIVIDUALS: UNITED STATES AND VIRGINIA, 2016



Source: Estimates based on the 2016 American Community Survey one-year microdata. Only 0.50 and 0.06 percent of respondents for the U.S. and Virginia stated that they only had Indian Health Service insurance and are excluded from the graph. Percentages may not sum to 100 percent, as individuals may have more than one type of health insurance. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

Who Is Currently Eligible For Medicaid In Virginia?

Until Jan. 1, 2019, the Virginia Medicaid program is limited to residents of the Commonwealth who are U.S. citizens, permanent residents or legal residents in need of health insurance. To qualify, individuals must be pregnant, a parent or relative caretaker of a dependent child or children under age 19, under age 21 and in foster care, in a nursing facility, blind, disabled or age 65 years or older.¹⁶ Nondisabled adults without children will not be eligible to enroll in Virginia's Medicaid program until 2019. Although at this printing in December 2018, recruitment efforts are already underway and people are enrolling to take advantage of Medicaid expansion on Jan. 1, 2019.

Who can enroll in Medicaid in the Commonwealth is determined, in part, by household income. Virginia sets income eligibility guidelines relative to the Federal Poverty Level (FPL), which are determined by the U.S. Department of Health and Human Services.¹⁷ The income eligibility thresholds for each category of Medicaid eligibility are based on these poverty levels (Table 4).

Currently, Virginia's income guidelines are the same across all localities for pregnant women and children under the age of 19, in that countable income cannot exceed 148 percent of FPL. For the aged, blind and disabled, countable income cannot exceed 80 percent of FPL.

Parents and caretakers of children under the age of 18 who qualify in the category of Low Income Families with Children (LIFC), however, face income guidelines that depend on where they live.¹⁸ **The LIFC income guidelines can cause confusion and may deter work effort. As illustrated in Figure 2, the parents of a family of three with countable income of around \$10,000 a year would likely be eligible for Medicaid in Montgomery County, but the parents would become ineligible if they moved to any nearby county. The child in the household would likely**

remain covered through Virginia's version of the Children's Health Insurance Program (CHIP).

TABLE 4				
2018 FEDERAL POVERTY LEVEL AND MEDICAID INCOME ELIGIBILITY GUIDELINES				
Number of Persons in Household	Annual Federal Poverty Levels	Pregnant Women and Children*	Aged, Blind and Disabled Adults	FAMIS and FAMIS Plus
Percent of FPL	--	148%	80%	205%
1	\$12,140	\$17,968	\$9,712	\$24,887
2	\$16,460	\$24,361	\$13,168	\$33,743
3	\$20,780	\$30,755	\$16,632	\$42,599
4	\$25,100	\$37,148	\$20,080	\$51,455
5	\$29,420	\$43,542	\$23,536	\$60,311
6	\$33,740	\$49,936	\$26,992	\$69,167

Sources: Federal Poverty Guidelines, U.S. Department of Health and Human Services and Virginia DMAS. For households with more than six persons, add \$4,320 per individual to the FPL. *For pregnant women who qualify for Medicaid only with more than six persons, add \$6,394 per individual. FAMIS and FAMIS Plus are Virginia's CHIP programs for households where income exceeds 148 percent of FPL, add \$8,856 per additional household member. Table includes 5 percent income disregard for children, parents and pregnant women.

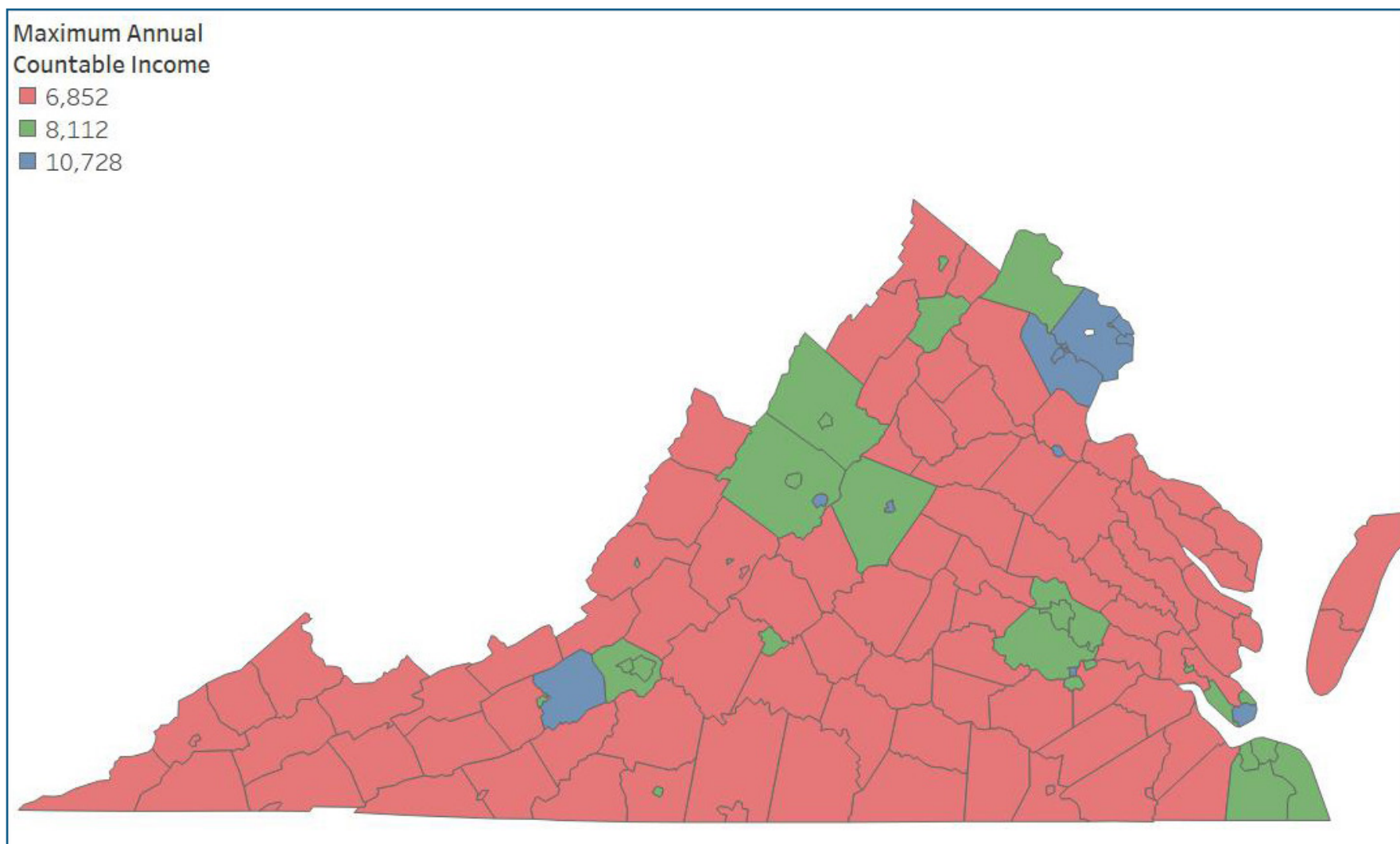
¹⁶ Individuals who receive Social Security Disability Income (<https://www.ssa.gov/benefits/disability>) may be eligible to enroll in Medicaid, <https://www.healthcare.gov/people-with-disabilities/ssi-and-medicaid>.

¹⁷ <https://aspe.hhs.gov/poverty-guidelines>.

¹⁸ Virginia Department of Medical Assistance Services, "Medical Assistance Eligibility Policy & Guidance," Chapter 4 (May 2018).

FIGURE 2

**MEDICAID INCOME ELIGIBILITY GUIDELINES FOR LOW-INCOME FAMILIES WITH CHILDREN:
ESTIMATED MAXIMUM ANNUAL COUNTABLE INCOME FOR FAMILY OF THREE, EFFECTIVE JULY 1, 2018**



Source: Virginia Department of Medical Assistance Services, "Medical Assistance Eligibility Policy & Guidance," Chapter 4 (July 2018), Appendix 5. Annual countable income is determined by the geographical income category monthly income guideline plus the 5 percent FPL Disregard. For a family of three, the 5 percent FPL Disregard is \$87 per month.

Who Will Be Eligible To Enroll Once Expansion Occurs In Virginia?

On Jan. 1, 2019, nondisabled adults with countable incomes up to 138 percent of the FPL will become eligible to enroll in the Virginia Medicaid program. The income thresholds for disabled adults and low-income families will also adjust upward. **To say that this is a significant change in eligibility is an understatement.**

A single, childless, nondisabled adult who is ineligible for Medicaid in 2018 could earn up to \$16,754 and be eligible for Medicaid in 2019. For a single, disabled adult, the income limit rises from \$9,712 in 2018 to \$16,754 in 2019. Families will also see a rise in income limits. **The parents of a family of three in Charlottesville, for example, who currently make \$12,000 a year and are ineligible for Medicaid in 2018, may be able to earn up to \$28,677 in 2019 and still possibly be eligible to enroll in Medicaid (see Table 5).**¹⁹

TABLE 5

2018 FEDERAL POVERTY LEVEL AND EXPANSION INCOME LIMITS BY HOUSEHOLD

Number of Persons in Household	Federal Poverty Level	Medicaid Enrollees as of Jan. 1, 2019 (138 percent of FPL)
1	\$12,140	\$16,754
2	\$16,460	\$22,715
3	\$20,780	\$28,677
4	\$25,100	\$34,638
5	\$29,420	\$40,600
6	\$33,740	\$46,562

Sources: Federal Poverty Guidelines, U.S. Department of Health and Human Services and Coverva.org/ expansion. For households with more than six persons, add \$4,320 per individual to the FPL.

Who Among The Nonelderly Has Insurance In Virginia?

People who are 65 or older are automatically eligible for Medicare, even if they continue to carry private health insurance. While some individuals 65 or older may qualify for Medicaid (as it offers benefits such as nursing home care and personal care services), these “dual eligibles” already have health insurance through Medicare. This is important since Medicaid only pays after Medicare, private-employer group health plans and Medicare supplements have paid.²⁰ A person who has Medicare and qualifies for Medicaid would not be considered as transitioning from uninsured status to insured status.

About 744,000 residents of the Commonwealth of Virginia under the age of 65 lacked health insurance coverage in 2016 (see Table 6). Of this number, almost 641,000 were adults and approximately 103,000 were under the age of 19.

There were about 259,000 adults who lacked health insurance and earned less than 138 percent of the Federal Poverty Level in 2016, making them the target group for Medicaid expansion. **Surprisingly, 57,000 Virginians under the age of 19 lacked health insurance even though their households earned less than 200 percent of the poverty limit. In many cases, these children would likely be eligible for Medicaid or Virginia’s FAMIS or FAMIS Plus programs. It appears that some children may fall through the cracks in the system.**

¹⁹ The LIFC program will remain for those families that meet the eligibility guidelines. Children are typically covered through CHIP and subject to different income qualification guidelines.

²⁰ <https://www.medicare.gov/your-medicare-costs/help-paying-costs/medicaid/medicaid.html>.

TABLE 6

NUMBER OF UNINSURED UNDER 65 BY FEDERAL POVERTY CATEGORY: VIRGINIA, 2016

	Adults	Minors	Total
	(19 to 64 Years)	(0 to 18 Years)	
Less than 100% of FPL	188,560	24,470	213,030
100% to 138% of FPL	70,627	11,895	82,522
139% to 400% of FPL	287,280	52,862	340,142
Greater than 400% of FPL	94,228	13,875	108,103
Total	640,695	103,102	743,797

Source: Estimates based the 2016 American Community Survey one-year microdata. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

Our estimates, of course, are subject to debate. We do not adjust the population estimates for potential underreporting of CHIP and SNAP (Supplemental Nutrition Assistance Program) populations.²¹ We also do not examine how many individuals may transition from the Obamacare Marketplace (where they receive subsidies from the federal government) to Medicaid. DMAS, for example, estimated that approximately 60,000 people would transition from other health care (marketplace and own-purchase) to Medicaid.²² As these individuals already have insurance, we do not include them in our estimates of the impact of Medicaid expansion. **If anything, our estimates serve as a lower bound of the impact of Medicaid expansion on the uninsured in Virginia.**

Martha Harding's case was recently highlighted by the Virginia Poverty Law Center. She cares for four grandchildren, who are on Medicaid. She works in a minimum-wage administrative job. "I don't have insurance, and I worry about what would happen to my grandchildren if I get sick or hurt and can't work. Hardworking people like me, age 55 to 64, have a difficult time because we are not yet able to get Medicare due to age, and can't go on Medicaid because we try to earn money to take care of our families."²³

Focusing On The Working-Age Population In Virginia

As many lower-income people who are disabled, pregnant or children may already qualify for Medicaid, the impact of Medicaid expansion is likely to be highest among working-age adults. Expansion, however, does not mean that these individuals will be automatically enrolled in Medicaid. They will need to actively seek to enroll in the program. Based upon the behavior of the uninsured in other states where Medicaid previously expanded, we know not all eligible individuals will enroll. The additional requirement that nondisabled adults must work or volunteer may deter some from enrolling in Medicaid, though we note that the legal status of such a requirement remains questionable at the time of writing.

Table 7 illustrates that the uninsured rate for the working-age (19-64) population in Virginia was 12.3 percent in 2016. The uninsured rate of the working-age population is higher, as one might expect, than the entire population of Virginia, where only 9 percent of the population was uninsured. **About 11 percent of Virginia's working-age population receives health insurance through Tricare or the VA, two and one-half times that of the nation.** A higher percentage was covered by employer-based group health insurance plans, and a lower percentage was covered by Medicare relative to the entire population. Within the Commonwealth's

²¹ <https://www.census.gov/content/dam/Census/library/working-papers/2011/demo/improving-the-validity-of-the-medicaid-chip-estimates-on-the-acs.pdf>.

²² DMAS estimates of Medicaid expansion with October 2018 start date, received by email on May 21, 2018.

²³ <https://vplc.org/virginians-cant-wait>.

nonelderly population, only 6.9 percent were covered by Medicaid, compared to 15.4 percent for the United States. Two factors may explain the lower share of Medicaid in Virginia: first, Virginia has yet to expand Medicaid, and second, Virginia currently has some of the most onerous eligibility requirements in the United States.

TABLE 7		
VIRGINIA AND UNITED STATES HEALTH INSURANCE PROVIDER DISTRIBUTION: INDIVIDUALS AGES 19-64, 2016		
Type of Insurance	United States	Virginia
Employer-based	60.6%	64.2%
Tricare	2.5%	8.4%
Medicaid	15.4%	6.9%
Direct Purchase	12.0%	13.2%
Veterans Affairs	1.7%	2.7%
Medicare	4.0%	3.5%
Indian Health Service	0.5%	0.1%
Uninsured	12.6%	12.3%

Source: Estimates based the 2016 American Community Survey one-year microdata. Sample only includes individuals between the ages of 19 and 64. Percentages may not sum to 100 percent, as individuals may have more than one type of health insurance. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

Estimating The Take-Up Rate Of Medicaid

What percentage of the eligible population can we reasonably expect to take up, or enroll in, Medicaid on or after Jan. 1, 2019? To answer this question, we draw upon the experience of Maryland and West Virginia, states that expanded Medicaid in 2014.

In both states, the insured rate increased after Medicaid expansion. By comparing the insured rate in 2013 with the insured rate in 2016, we can estimate the take-up rate. The take-up rate is an estimate of the percentage of individuals who acquired health insurance from 2013 to 2016. To make matters slightly more complicated, take-up rates vary by state and income category.

Maryland and West Virginia started out at different points. In 2013, a higher percentage of the population of Maryland reported having health insurance than West Virginia.²⁴ Because where you start often determines where you finish, the estimated take-up rates for Maryland and West Virginia are quite different.

As shown in Table 8, Maryland’s take-up rate was almost 30 percent for those earning less than 100 percent of the poverty level. For those earning between 100 and 138 percent of the poverty level, the take-up rate was about 46 percent. What does this mean? If you earned less than 100 percent of the poverty level in Maryland, you were 30 percent more likely to have health insurance in 2016 when compared to 2013.

A similar but more significant story emerges from West Virginia. For those earning less than 100 percent of the poverty level, the take-up rate was almost 63 percent. The take-up rate was even higher for those with incomes between 100 and 138 percent of the poverty level, about 68 percent. Why the higher take-up rates? A contributing factor was the starting point, in which a lower percentage of West Virginia’s population was uninsured prior to Medicaid expansion.

24 For Maryland, in 2013, 73.4 percent of those earning less than 100 percent of FPL and 69.6 percent of those between 100 and 138 percent of FPL reported having health insurance. For West Virginia, 64.1 percent of those earning less than 100 percent of FPL and 62.9 percent of those between 100 and 138 percent of FPL reported having health insurance.

TABLE 8

ESTIMATED TAKE-UP RATES FOR MARYLAND AND WEST VIRGINIA, 2016

	Maryland		West Virginia	
	Less than 100% of FPL	100% to 138% of FPL	Less than 100% of FPL	100% to 138% of FPL
Estimated Take-up Rate	29.9%	45.5%	62.5%	67.6%

Source: 2016 American Community Survey one-year microdata. Sample only includes adults between ages 19 and 65. The take-up rate is determined by the rise in the percentage of individuals reporting any health insurance coverage in each year relative to the percentage of individuals reporting health insurance coverage in 2013. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

Drawing upon the experience of Maryland and West Virginia, we estimate the take-up rate for Medicaid expansion in the Commonwealth of Virginia will be 44 percent for people with incomes of less than 100 percent of FPL and 55 percent for those with incomes between 100 and 138 percent of FPL.

Some might argue that these take-up rates are too low. In 2016, the Urban Institute estimated a take-up rate of 56.8 percent for a potential Medicaid expansion in Virginia.²⁵ In 2017, the Virginia Department of Medical Assistance Services (DMAS) projected take-up rates and enrollment for Medicaid expansion in Virginia. DMAS estimated that 85 percent of eligible (and interested) adults with incomes between 0 and 138 percent of FPL would enroll due to Medicaid expansion.²⁶ Of the 370,000 adults without insurance and sufficiently low incomes, 238,544 would enroll in Medicaid and 60,000 would transfer from other health insurance plans. From this, we obtain a take-up rate of 64.5 percent.²⁷

Of course, these are only estimates. We don't know exactly how many people will enroll in Virginia because the Commonwealth is different from other states. The variations in health insurance coverage at the local level suggest that the impact of expansion will be higher in Southwest Virginia,

for example, than Northern Virginia, Richmond or Hampton Roads. Every estimate is fraught with uncertainty, and the best course of action is to present a range of outcomes.

How Many Will Enroll After Medicaid Expansion In Virginia?

Table 9 presents low, medium and high estimates of Medicaid enrollment in Virginia after Medicaid expansion.

Low estimates: If newly eligible individuals in Virginia sign up for Medicaid at the estimated low take-up rates, about 121,000 additional adults will enroll in Medicaid. Of these, we estimate that about 83,000 will have incomes less than 100 percent of FPL and about 37,000 will have incomes between 100 and 138 percent of FPL.

Medium estimates: If newly eligible individuals acquire Medicaid insurance at the estimated medium take-up rates, 147,000 additional adults will enroll in Medicaid. Of this number, about 107,000 will have incomes less than 100 percent of FPL and 40,000 will have incomes between 100 and 138 percent of FPL.

High estimates: Lastly, if newly eligible individuals join at the estimated high take-up rates, about 167,000 additional Virginians will enroll in Medicaid – around 122,000 with incomes less than 100 percent of FPL and 45,000 with incomes between 100 and 138 percent of FPL.

Regardless of one's assumptions about take-up rates, Medicaid expansion will not result in every eligible person enrolling in Medicaid. **Between 92,000 and 138,000 working-age adults in the Commonwealth who might be eligible for Medicaid may not enroll. Some of these**

²⁵ Buettgens, M. and Kenney, G.M., "What if More States Expanded Medicaid in 2017? Changes in Eligibility, Enrollment, and the Uninsured," (2016) Urban Institute.

²⁶ DMAS estimated that 370,000 adults with incomes between 0 and 138 percent of FPL did not have insurance and 22.8 percent would remain ineligible for Medicaid; 5,000 of the remaining individuals would never enroll. Given an 85 percent take-up rate for these remaining individuals, 238,544 of 370,000 would enroll and 60,000 other individuals would transition from other insurance plans.

²⁷ We recognize that the Urban Institute and DMAS's absolute estimates are higher, as both used ACS data adjusted for underreporting of SNAP recipients and other factors. In the interests of transparency and replicability, we have chosen not to adjust the ACS data at this time.

individuals may never enroll, others may lack information about Medicaid and some may be deterred by proposed work requirements. Contrary to some public perceptions, however, many adult Medicaid enrollees already work. **In fact, the increased income eligibility limits may result in increased work effort by existing Medicaid recipients, who will be able to earn more without endangering their enrollment.**²⁸

Lastly, Medicaid expansion does not address those who make more than 138 percent of the poverty level. Including all income groups, the number

of uninsured in Virginia will range between 473,000 and 519,000. Many of these people earn between 139 and 400 percent of the federal poverty level and are eligible for the marketplace. We must also recognize that reductions in outreach funding from the federal government may dampen enrollment of Medicaid expansion and the Obamacare Marketplace exchanges over time.

TABLE 9

ESTIMATED IMPACT OF MEDICAID EXPANSION IN VIRGINIA, ADULTS AGES 19-64

Income Group	Total Uninsured Adults	Low Take-Up		Medium Take-Up		High Take-Up	
		Newly Insured	Remaining Uninsured	Newly Insured	Remaining Uninsured	Newly Insured	Remaining Uninsured
Less than 100% of FPL	188,560	82,742	105,818	107,102	81,458	121,567	66,993
100% to 138% of FPL	70,627	38,640	31,987	40,116	30,511	45,534	25,093
139% to 400% of FPL	287,280	0	287,280	0	287,280	0	287,280
Greater than 400% of FPL	94,228	0	94,228	0	94,228	0	94,228
Totals	640,695	121,382	519,313	147,218	493,477	167,101	473,594

Source: 2016 American Community Survey one-year microdata files. Low estimate based on take-up in Maryland/West Virginia post-ACA expansion, medium estimate based on take-up in Buettgens and Kenney (2016) and high estimate based on DMAS 2017 estimate. Data are based on a sample and are subject to sampling variability. The margins of error for the estimates are available upon request.

²⁸ "Kaiser Family Foundation: Distribution of the Nonelderly with Medicaid by Family Work Status," <https://www.kff.org/medicaid/state-indicator/distribution-by-employment-status-4>. For further discussion regarding Medicaid work requirements, who is affected, and impacts on enrollment, see "Medicaid and Work Requirements: New Guidance, State Waiver Details and Key Issues," Musumeci, M.B., Garfield, R. and Rudowitz, R. (January 16, 2018). Retrieved online May 31, 2018, from <https://www.kff.org/medicaid/issue-brief/medicaid-and-work-requirements-new-guidance-state-waiver-details-and-key-issues>.

There Is No Such Thing As A Free Lunch

As part of Obamacare, the federal government match rate for expansion population costs (otherwise known as the Federal Medical Assistance Percentage, or FMAP) was 100 percent for 2014 to 2016. In other words, the federal government reimbursed states for 100 percent of the direct costs of newly eligible enrollees during this period.

Since then, the federal government reimbursement rate has declined and will be 93 percent in 2019. The FMAP ratchets down to 90 percent for 2020 and subsequent years.²⁹ For \$1,000 in newly eligible enrollee costs in 2019, Virginia will bear \$70 of the amount, and the federal government will bear \$930. In 2020 and beyond, for the same amount of cost, Virginia will bear \$100 and the federal government will bear \$900. To many, this seems too good a deal to pass up, but there are worries about the future.

Part of the hesitance to adopt the Medicaid expansion has been the lower FMAP rates states receive on previously eligible Medicaid enrollees and fears that future law changes might result in the newly eligible Medicaid enrollees receiving the current FMAP rates. With the current historically high federal budget deficits and debt, it is quite likely (if not guaranteed) that future federal spending will have to change, and likely in ways that shift more fiduciary burdens to the states. Current enrollee FMAP rates are adjusted each year, based on state per capita income relative to the national rate, where states with comparatively higher per capita incomes receive lower FMAP percentages. For fiscal years 2010-2018, Virginia is subject to an FMAP rate of 50 percent for its current Medicaid-enrolled citizens.³⁰ The federal government matches Virginia's expenditure dollar-for-dollar.

While Virginia has been criticized in the past for being one of the more restrictive states with respect to Medicaid eligibility, this policy choice has worked to the financial advantage of the Commonwealth's budget. More

generous states which had previously allowed low-income, nondisabled, nonelderly adults to enroll in Medicaid received reduced reimbursements compared to states which chose to expand Medicaid in 2014 and beyond. By 2020, however, the matching rate will be equal for enrollees in the expansion income category across states.³¹ Virginia, on the other hand, having previously been excluded from this group, will now be able to count all newly eligible enrollees with incomes 138 percent or less of FPL eligible for higher FMAP reimbursement. Obviously, receiving 90 percent reimbursement for newly eligible enrollees versus 50 percent is to Virginia's benefit.

Table 10 includes estimates for the possible cost per enrollee and cost overall for Virginia from 2019 to 2021 if the Medicaid expansion incurs costs comparable to those of current enrollees. We continue to use our previous take-up rate estimates of 44 percent for people with incomes less than 100 percent of FPL and 55 percent for those with incomes between 100 and 138 percent of FPL. We also assume that costs per enrollee will continue at the 2 percent rate observed from 2007 to 2013.³² In the first scenario, we front-load the number of newly eligible individuals estimated to enroll in Medicaid into 2019. One can think of this scenario in terms of estimating the upper limit of costs and imposing the full costs of Medicaid expansion in Virginia in 2019. In the second scenario, we mirror the take-up of Medicaid in Maryland and West Virginia, and the costs are fully realized by 2021.

For the newly eligible enrollees in Virginia, we estimate that costs to the Commonwealth will range from about \$30 million to \$90 million in 2019, depending on one's assumptions about the take-up rate. By 2021, the Commonwealth will incur costs between \$96 million and \$133 million for new Medicaid enrollees. **We caution that if federal reimbursement rates for newly eligible enrollees dropped to the 50 percent rate for currently enrolled participants, the estimated costs in Table 10 could multiply by a factor of five, depending on the take-up rate of Medicaid expansion.**

²⁹ Medicaid's Federal Medical Assistance Percentage (FMAP) Congressional Research Service report 7-5700 by Mitchell, A., Feb. 9, 2016.

³⁰ State Health Facts: Federal Medical Assistance Percentage (FMAP) for Medicaid and Multiplier, retrieved March 6, 2018, from <https://www.kff.org/medicaid/state-indicator/federal-matching-rate-and-multiplier>.

³¹ Congressional Research Service, 2018, Medicaid's Federal Medical Assistance Percentage (FMAP).

³² "Medicaid at a Glance" by the Virginia Department of Medical Assistance Services, http://dmas.virginia.gov/Content_atchs/atchs/MAG%20FMAP_1_13_17_.pdf.

TABLE 10

ESTIMATES OF STATE COSTS FOR MEDICAID ENROLLEES IN VIRGINIA

Year	Total Cost per Enrollee	Virginia's Cost per Enrollee		All Medicaid Expansion Occurs in 2019			Gradual Expansion of Medicaid*		
		Current Enrollee Cost	Newly Eligible Cost	Low Take-up Estimate	Medium Take-up Estimate	High Take-up Estimate	Low Take-up Estimate	Medium Take-up Estimate	High Take-up Estimate
2018	\$7,479	\$3,739							
2019	\$7,628	\$3,814	\$534	\$64,813,802	\$78,609,610	\$89,226,546	\$29,185,788	\$35,398,068	\$40,178,896
2020	\$7,781	\$3,890	\$778	\$94,442,969	\$114,545,432	\$130,015,824	\$84,083,749	\$101,981,222	\$115,754,704
2021	\$7,936	\$3,968	\$794	\$96,331,828	\$116,836,340	\$132,616,140	\$96,331,828	\$116,836,340	\$132,616,140

Source: Kaiser Medicaid Spending Per Enrollee (full or partial benefit) for FY 2014. 2015 and after are per-enrollee cost estimates based on the 2007-2013 yearly average change of 2 percent from DMAS "Medicaid at a Glance." FMAP rates are 50 percent per current enrollee and are 93 percent and 90 percent for new enrollees for 2019, 2020 and beyond, respectively. *Cost estimates assume take-up rates that mirror the three-year time profile of Maryland and West Virginia expansion enrollees; not all who eventually signed up for Medicaid in these states did so directly after initial eligibility in January 2014. ACS one-year microfile data.

Uncompensated Care And The Financial Impact Of Medicaid Expansion

Prior to Obamacare, most states did not extend Medicaid insurance to low-income, nondisabled, childless adults under the age of 65. As the 1986 Emergency Medical Treatment & Labor Act forbade hospitals to turn away patients from emergency departments based on the ability to pay, one intent of Obamacare was to reduce the amount of uncompensated care provided by hospitals.³³ The numbers of uninsured are associated with lower hospital margins,³⁴ so one can reasonably argue that uncompensated care costs are not fully passed on by hospitals to other parties. Two recent studies found that when comparing Medicaid expansion states to nonexpansion states, uncompensated care costs drop from between 1 and 1.7 percent.^{35, 36}

Examples abound of how uncompensated care and bad-debt costs reduce the bottom line for hospitals in the Commonwealth. The Virginia Health Information System is a source for valuable information on the financial performance of hospitals throughout Virginia.³⁷ During the 2015-16 fiscal year, Virginia hospitals incurred significant costs for charity care and bad debts. Bon Secours Mary Immaculate Hospital in Newport News reported \$25.7 million in charity care costs and \$10.2 million in bad debts. Bon Secours Richmond Community Hospital reported \$17.5 million in charity care and \$13.1 million in bad debts. Sentara Northern Virginia Medical Center incurred \$51 million in charity care and \$46.9 million in bad-debt expenses. Smyth County Community Hospital likewise incurred \$6.2 million in charity care but only about \$670,000 in bad-debt expenses.

During the 2015-16 fiscal year, estimated financial assistance topped \$600 million, while bad-debt expenses exceeded \$540 million.³⁸ Even though some may argue that the costs of charity care and bad debts are overstated, as these costs are based on the full price of hospital services, we should be able to agree that uncompensated care and bad-debt costs

33 "Emergency Medical Treatment and Labor Act (EMTALA)," Centers for Medicare & Medicaid Services, retrieved online March 13, 2013, from <https://www.cms.gov/Regulations-and-Guidance/Legislation/EMTALA/index.html>.

34 Garthwaite, C., Gross, T. and Notowidigdo, M.J. (2018), "Hospitals as insurers of last resort," *American Economic Journal: Applied Economics*, 10(1), 1-39.

35 Dranove, D., Garthwaite, C. and Ody, C. (2016), "Uncompensated care decreased at hospitals in Medicaid expansion states but not at hospitals in nonexpansion states," *Health Affairs*, 35(8), 1471-1479.

36 "How Has the ACA Changed Finances for Different Types of Hospitals? Updated Insights from 2015 Cost Report Data," Blauvin, F. (April 2017), Urban Institute.

37 http://www.vhi.org/hospital_region.asp.

38 <http://www.vhha.com/research/wp-content/uploads/sites/18/2018/01/VHHA-2018-Community-Benefit-Report-Final.pdf>.

negatively affected the bottom line of hospitals in Virginia. Twenty-three percent of Virginia's acute care hospitals and 40 percent of rural acute care hospitals had negative operating margins during the 2015-16 fiscal year, according to the Virginia Health Information System.

It stands to reason that if these costs are being incurred for specific patients without payment, additional revenues must be generated from those who are able or willing to pay to cover these uncompensated costs. Whether these costs are paid eventually by other patients, insurance companies, hospitals or governments, it should be clear that uncompensated care is a burden on the health care system.

Reductions in uncompensated care costs can be substantial as people move from uninsured to insured status, with one estimate suggesting savings may reach \$800 per newly insured individual.³⁹ Using this estimate, Medicaid expansion in Virginia could reduce direct annual uncompensated care costs between \$100 million and \$135 million. Another estimate suggests that uncompensated care costs can drop by 40 percent or more in expansion versus nonexpansion states.⁴⁰ Such a drop would result in annual savings in the hundreds of millions of dollars to providers in the Commonwealth. Regardless of which estimate one uses, a reduction in uncompensated costs and, indirectly, bad debts will improve financial outcomes for health care providers.

Final Thoughts

Virginia's decision to expand Medicaid will undoubtedly impact the overall picture of health care insurance and services. We estimate that of the approximately 640,000 adults ages 19 to 64 without health insurance in the Commonwealth, about 120,000 to 170,000 will become eligible and enroll in Medicaid expansion. Uncompensated care costs will decrease, but the demand for health care services will increase, creating a higher demand for emergency department services and primary care physicians.

Expanding Medicaid in Virginia will not increase insurance coverage rates to 100 percent. Our estimates suggest that uninsured rates will drop over time, and about 500,000 adults may remain without health insurance. Approximately 400,000 of these adults earn more than 138 percent of the poverty level. Increasing health insurance subsidies for these individuals may be one policy option, but it would involve substantial costs. The political climate certainly does not appear to favor an expansion of Obamacare subsidies at this point in time.

We should not blithely assume that the federal government will continue to reimburse Virginia in perpetuity for new enrollees at a higher rate than existing enrollees. A reduction in the FMAP, or an economic downturn that places significant pressure on the Commonwealth's budget, could result in a retrenchment of Medicaid eligibility and an increase in the uninsured rate. **Simply put, if the federal government were to reduce its reimbursement rate for new enrollees to 50 percent, the cost of Medicaid to the Virginia budget could increase by \$500 million, depending on the number of new enrollees.**

Although state legislators wisely included a rider in the Medicaid expansion law that would remove newly covered enrollees if federal reimbursements fell, it would likely be politically unpopular to remove enrollees from the program.⁴¹ The effort to enroll newly eligible individuals may not only boost initial enrollments but also strategically (some would argue) increase the political and social costs of removing enrollees from Medicaid. In effect, as enrollments increase, policymakers may become

³⁹ Garthwaite, C., Gross, T. and Notowidigdo, M.J. (2018), "Hospitals as insurers of last resort," American Economic Journal: Applied Economics, 10(1), 1-39.

⁴⁰ http://ccf.georgetown.edu/wp-content/uploads/2016/05/Medicaid_hospitals-clinics-June-2016.pdf.

⁴¹ Item 303, No. 5, p. 309, <https://budget.lis.virginia.gov/get/budget/3619>.

increasingly constrained in their ability to adjust program requirements. In the event of an economic downturn that led to a decline in federal reimbursements and state revenues, legislators may be faced with a difficult choice: more significant cuts to other parts of the Commonwealth's budget, raise taxes to sustain programs, or a combination of the two.

In the end, if the intent of Medicaid expansion is to lower the number of uninsured among Virginia's most vulnerable residents, it will likely succeed in that goal. Medicaid expansion will not only improve the health outcomes for new enrollees, but current and prospective enrollees may also be able to earn more income without it threatening their eligibility – a boon to the economy. The more successful the Commonwealth is in enrolling newly eligible residents, the larger the potential decline in uncompensated care costs. This, in part, explains why S&P Global Ratings recently stated that Medicaid expansion would be “credit positive” for Virginia's hospitals.⁴² Finally, the federal government will bear most of the cost of new enrollees, which will be a net benefit to the state budget.

Medicaid expansion costs, however, will not be negligible, and there is a risk that costs could increase substantially in the future. The Commonwealth could mitigate some of the financial risks by setting aside some or all of the current tax windfall resulting from the Tax Cuts and Jobs Act of 2017. Avoiding the temptation to return all this windfall to taxpayers is important, as we are likely closer to the next recession than farther away from it. Investing in enrollment efforts and administrative capability at the state and local level will be necessary to cope with the influx of new enrollees.

Medicaid expansion will neither be free nor easy, but likely will result in a net positive economic benefit for the Commonwealth of Virginia. Now that the debate is over, the work associated with expansion begins in earnest.



⁴² https://www.richmond.com/news/virginia/government-politics/general-assembly/s-p-finds-medicaid-expansion-positive-for-va-hospitals-credit/article_27c9eb6d-d076-5759-8bd2-b546d3011194.html.

That no free government, nor the blessings of liberty, can be preserved to any people, but by a firm adherence to justice, moderation, temperance, frugality, and virtue; by frequent recurrence to fundamental principles; and by the recognition by all citizens that they have duties as well as rights, and that such rights cannot be enjoyed save in a society where law is respected and due process is observed.

– Constitution of the Commonwealth of Virginia, Article I, Section 15

A COMMONWEALTH COMING TOGETHER OR GROWING APART?



Virginia, honoring a venerable English tradition, fashions itself a Commonwealth. Only Kentucky, Massachusetts and Pennsylvania lay similar claims. Historically, Commonwealth status has implied that government and public affairs are conducted democratically with an eye toward the common good – that the collective welfare of all citizens should provide the guiding behavioral principle for public policy.

Cynics might argue that the notion of a Commonwealth does not apply in the case of Virginia today. Economic opportunity appears to be concentrated in Northern Virginia, Richmond and Hampton Roads. Rural areas, especially in southwestern Virginia, are adversely impacted by the decline of coal, an opioid crisis and underinvestment in public education. Political party identification now seems to be synonymous with where you live, with urban areas tending to vote Democratic and rural areas tending to lean Republican. Do we live in a Commonwealth or are we growing apart? Over the coming years, will Virginia become, in effect, two states, sharing a name but not a destiny?

Before we address this question, however, it is appropriate to note that the Commonwealth ideal never meant to imply precise equality of socioeconomic circumstances and outcomes for all Virginians. Instead, the notion of a Commonwealth has focused on shared values, such as democratically elected governments

that exercise demonstrated concern for one's fellow human beings. This philosophical approach recognizes that Virginia is a large and remarkably diverse state. Should we expect a resident of Jonesville in Lee County (a city located on a meridian of longitude slightly west of Detroit, Michigan) to have the same preferences and outcomes as someone living 500 miles east along the ocean in Virginia Beach?¹ Should jobs and incomes in Fairfax County's McLean be expected to match those in Danville, one of Virginia's distinctive independent cities?

They don't, and they won't. We should not expect uniformity among the citizens of Virginia. The challenge is to craft efficient and effective policies that adapt to local conditions while promoting the welfare of the Commonwealth at large. Not an easy task.

In this chapter, we shed light on the extent to which diversities of circumstances and outcomes exist in today's Virginia. We can neither critique nor promote effective policies without having accurate information about those policies at arm's reach. The distributions of income and wealth in Virginia provide important information about the extent to which there is a shared economic destiny. Over the course of this and coming reports, we will delve into what makes Virginia unique and how it can prosper in the coming years.

Our approach is to divide Virginia into regions to highlight geographic differences and then drill down within each region to see how a variety of people are faring with respect to key social and economic indicators. At the very least, we will find that the impressive diversity of topography that exists in Virginia carries over to economic, demographic and social characteristics.

Out Of Many Regions, One Commonwealth

There are many ways to divide Virginia to highlight its regions. In fact, some confusion arises because of the proliferation of administrative, statistical and other subdivisions of the Commonwealth. Virginia

comprises 95 counties and 38 independent cities that are distinct from each other. There are also numerous other divisions, including administrative districts, planning districts, public health districts, judicial circuits and districts, and multiple others reflecting service districts of state government.² The federal government also classifies many of Virginia's cities and counties by metropolitan statistical areas (MSA) or micropolitan statistical areas (MiSA), as well as census districts, among others.

For purposes of our analysis, we focus on the nine descriptive regions designated by GO Virginia. They hold the advantage of being easy to identify in terms of the areas they represent, even though they mix urban and rural regions. Figure 1 identifies the nine regions.

GO Virginia is a bipartisan, business-led economic development initiative designed to improve the ways in which Virginia's diverse regions collaborate on economic and workforce development activities. GO Virginia, with funding from the General Assembly, provides incentives to business, education and government to encourage their participation in programs that will generate more high-paying, private-sector jobs. The organization's Growth & Opportunity Board, made up of senior business leaders, oversees regional councils that are responsible for recommending the allocation of funds to the most promising and productive projects.

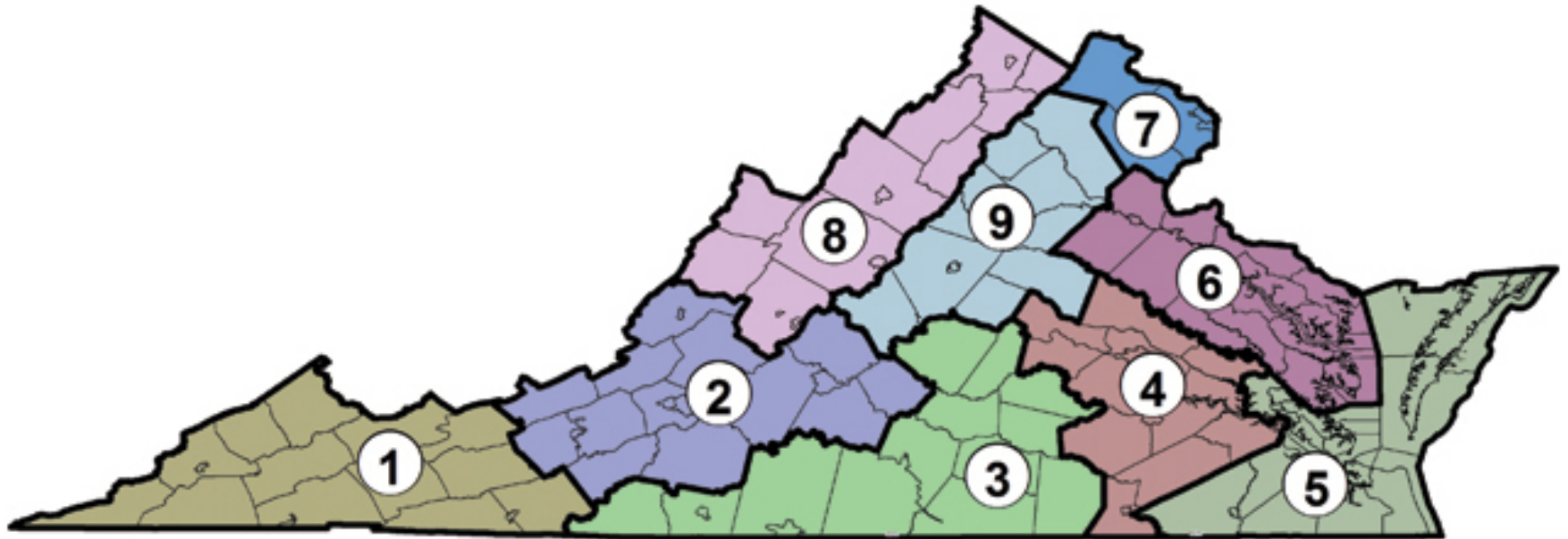
GO Virginia effectively has been in operation since April 2016 when the General Assembly approved the concept and provided initial funding. The organization's first round of project grants were awarded in December 2017. GO Virginia's promise is immense. Whether it actually will be able to alter the Commonwealth's growth path remains to be seen.

¹ Measured by miles, Jonesville is closer to nine other state capitals than it is to Richmond.

² A description of these various divisions and others can be found in Issue Insight, Regional Analysis and Refinement: Government Service Delivery Regions, Council on Virginia's Future, No. 8, March 2015.

FIGURE 1
THE NINE GO VIRGINIA REGIONS

1. Southwest
2. West Central
3. Southside
4. South Central
5. Hampton Roads and the Eastern Shore
6. Eastern
7. Northern
8. Valley
9. Central



Source: GO Virginia, www.govirginia.org

Demographic Change

Virginia is currently the 12th most populous state in the nation with a 2017 estimated population of 8,470,020. Virginia's population ranking in the U.S. has waxed and waned, in large part due to economic circumstance. In the 1870 census, Virginia ranked as the 10th most populous state; however, by 1930, the Commonwealth had declined to the 20th most populous state in the nation. The advent of World War II and rapid expansion of the federal government led to an influx of people to Virginia, increasing the population at a much faster rate than many other states.

More recently, Virginia has continued to grow, albeit slowly. From 2010 to 2017, the population increased by 475,218 or about 5.9 percent. While this represents an absolute increase in the population, the annual rate of population growth has tapered off in the current decade to its slowest rate of increase since the 1920s (see Graph 1). The Weldon Cooper Center's Demographics Research Group at the University of Virginia estimates that Virginia will continue to grow steadily in the coming years and by 2030 become the 11th-largest state. By 2040, our state is predicted to be home to more than 10 million people – which would make it the 10th-largest state.

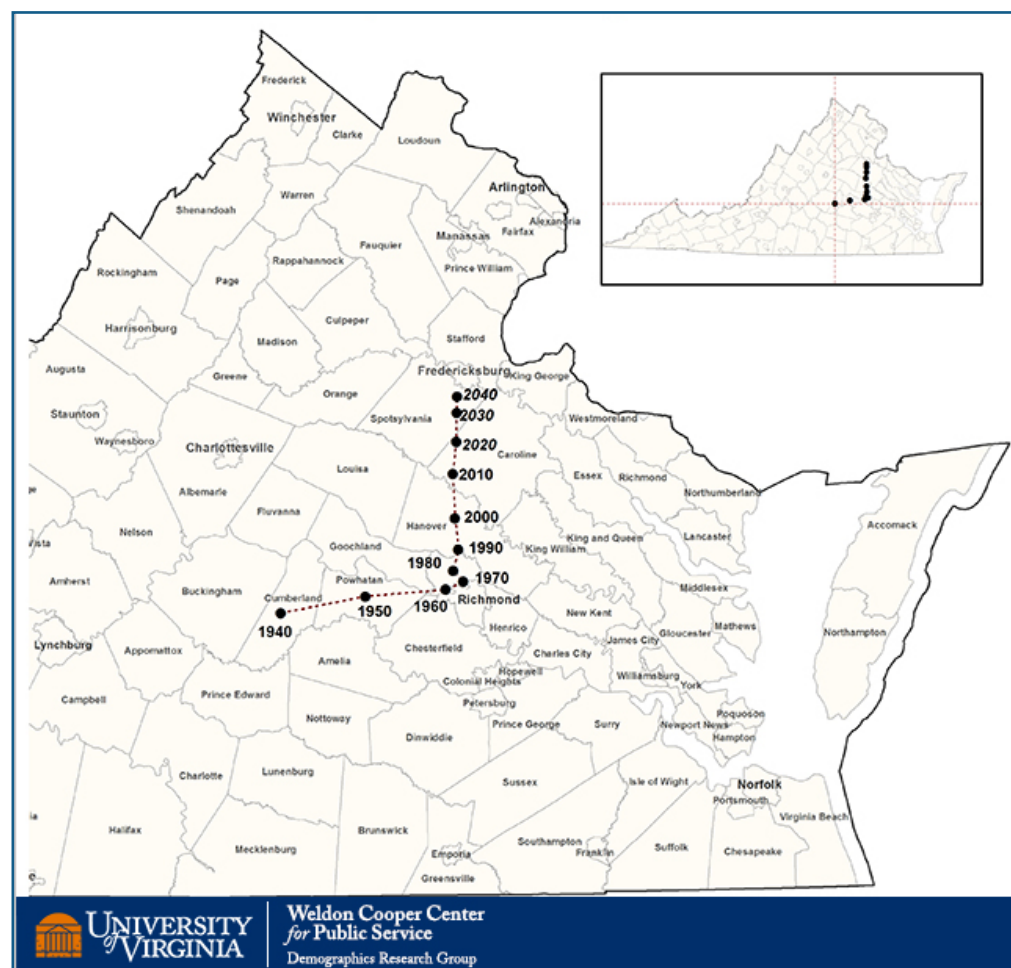
While Virginia's population has grown in recent decades, all areas of the Commonwealth have not been growing equally fast and, indeed, some (mostly in the south and southwest areas of Virginia) have lost population. In the 2000s, 103 cities and counties increased in population while 30 localities declined in size.³ Forty-nine localities in Virginia grew by 10 percent or more in the 2000s. **This decade, however, 72 cities and counties have grown while 61 have become smaller. Only 13 localities in the Commonwealth have grown by 10 percent or more this decade, a sign of slowing population growth.**

Figure 2 reveals that the geographic center of Virginia's population also moved eastward from the 1940s to the 1970s, but then began a dramatic shift northward. By 2040, that center will be near Fredericksburg. At that time, half the state's population will live in Northern Virginia, which we define as the area bordered on the south by Fredericksburg, on the north

by the Potomac River and on the west by the Shenandoah Valley. Some observers refer to the northernmost sector of the state with the most population as NOVA, Northern Virginia, and the remainder of the state as ROVA, the rest of Virginia.

FIGURE 2

CENTER OF POPULATION FOR VIRGINIA, 1940-2040



Source: University of Virginia Weldon Cooper Center for Public Service, StatCh@t, June 26, 2017

³ One locality, Newport News, remained essentially unchanged in population from the 2000 to 2010 Census.

Nearly 80 percent of Virginia's estimated 2017 population lives in five regions: Eastern, Hampton Roads-Eastern Shore, Northern, South Central and West Central. As illustrated in Table 1, two regions, Southside and Southwest, lost population this decade, while three others (Valley, Hampton Roads and West Central) grew slower than the Commonwealth as a whole. The double-digit growth in the Northern region continued to pull the population center of Virginia toward Fredericksburg.

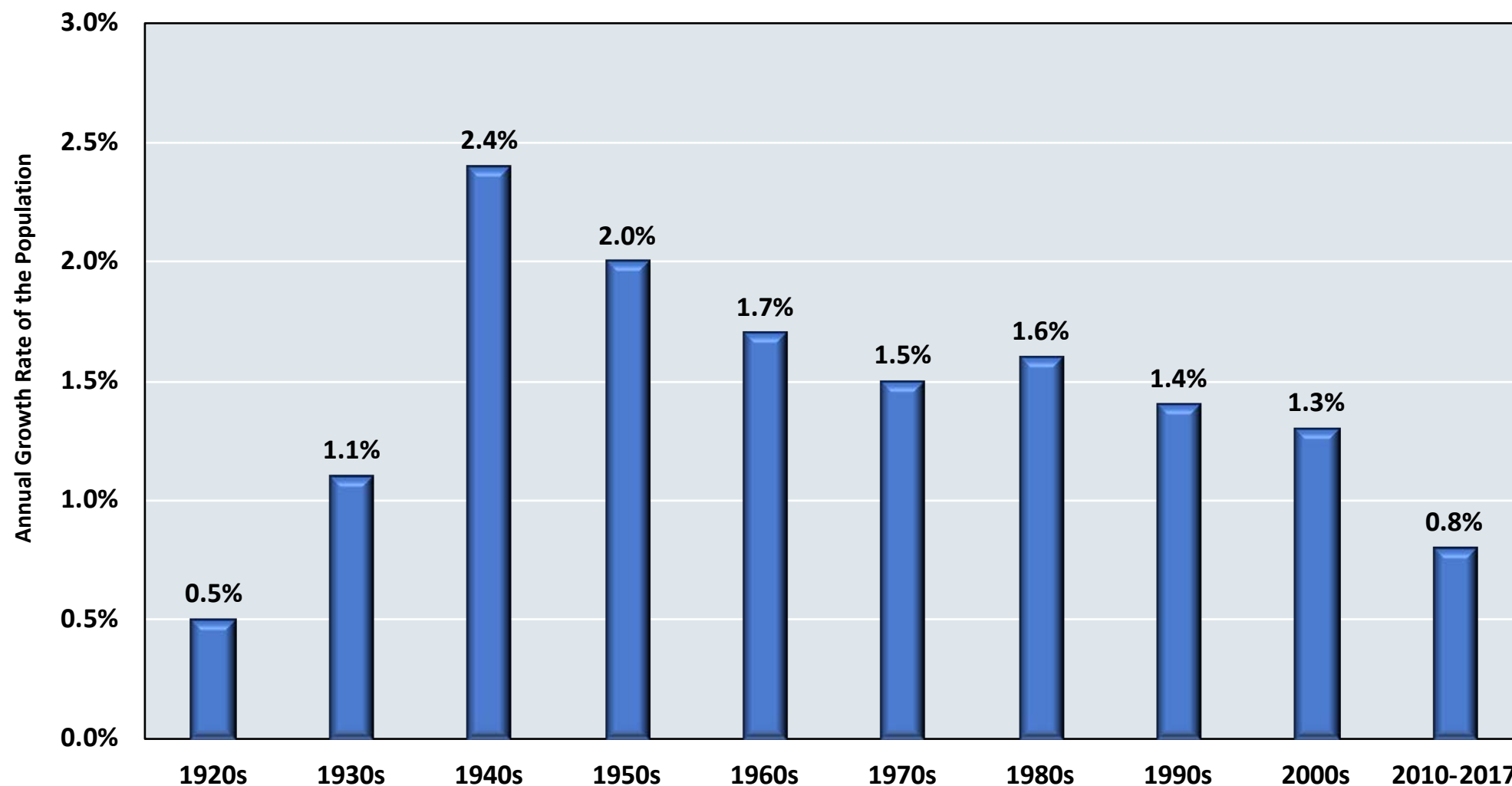
Figure 3 provides a visual picture of population growth rates. Red and orange represent those counties and cities that lost population from 2010 to 2017. Yellow represents those localities with moderate increases in population, while green and blue represent those localities with more robust population growth. Buchanan County, for example, represented in red, lost about 8.7 percent of its population from 2010 to 2017. On the other hand, Loudoun County, represented in blue, experienced population growth of approximately 26.8 percent over the same period.

More than 60 cities and counties experienced population declines this decade, including an almost solid swath of cities and counties stretching from Virginia's southern border meeting Ohio through to the midsection of the Commonwealth. If there is a lesson here, it is that population growth across Virginia has been very uneven in this decade. This, in turn, reflects the perceived presence or absence of economic opportunity.

Ten cities and counties accounted for 48 percent of Virginia's population in 2017 (Graph 2). Given current trends, it is reasonable to expect that a majority of the Commonwealth's residents will live in these 10 cities and counties by the 2020s. As the population of Virginia becomes increasingly concentrated in urban areas, the divide between urban and rural areas will increase, leading to less of a Commonwealth and more like two states sharing the same geographical designation.

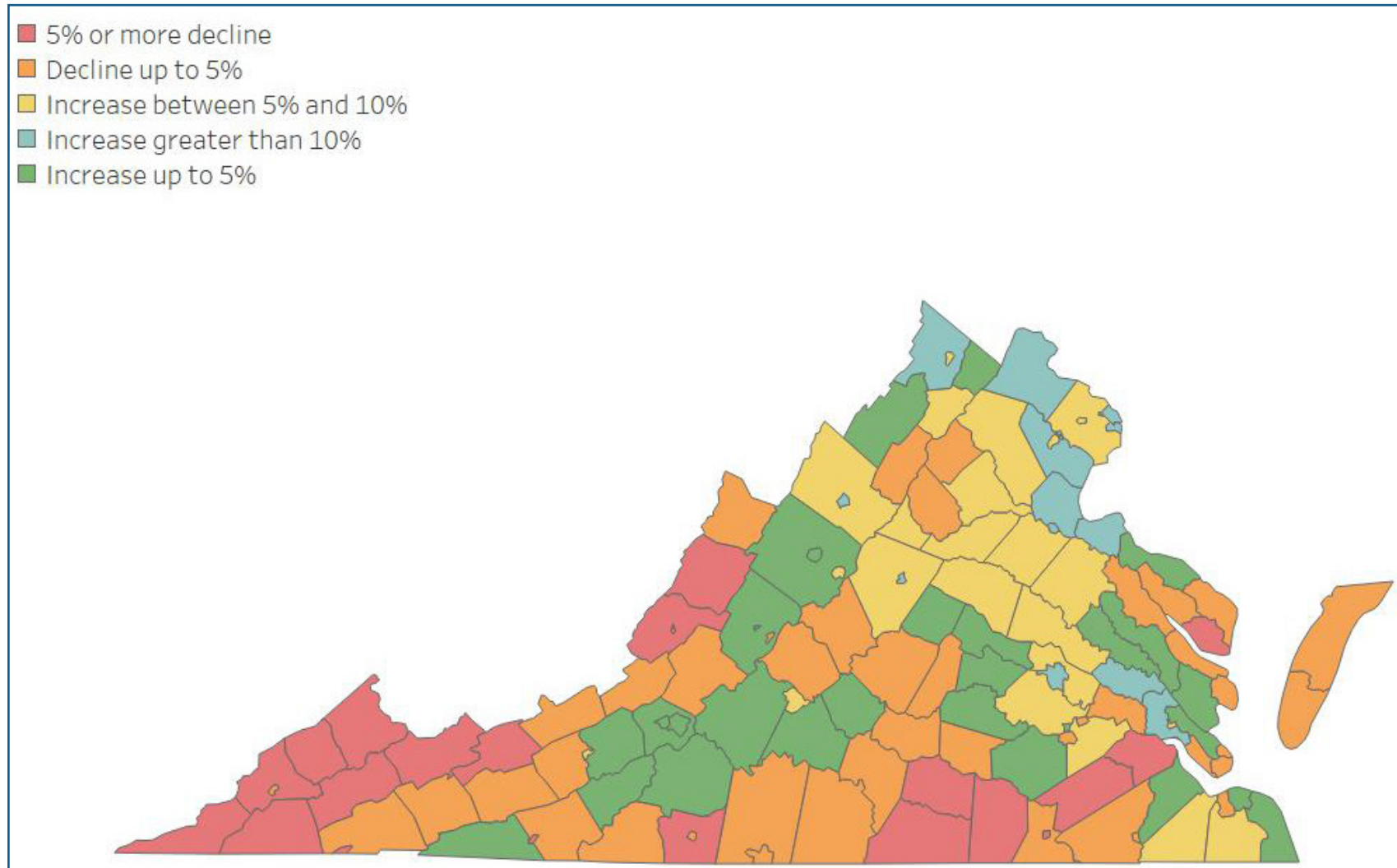
TABLE 1				
RECENT POPULATION GROWTH BY REGION: VIRGINIA, 2010-2017				
Region	April 1, 2010, Census	July 1, 2017, Estimate	Numeric Change	Percent Change
Southwest	401,745	381,647	-20,098	-5.00%
West Central	707,990	730,759	22,769	+3.22%
Southside	384,034	368,302	-15,732	-4.10%
South Central	981,199	1,039,423	58,224	+5.93%
Hampton Roads-Eastern Shore	1,715,524	1,759,886	44,362	+2.59%
Eastern	663,988	724,204	60,216	+9.07%
Northern	2,230,623	2,501,308	270,685	+12.13%
Valley	508,933	534,485	25,552	+5.02%
Central	400,766	430,006	29,240	+7.30%
Virginia Totals	7,994,802	8,470,020	475,218	+5.94%
Sources: U.S. Census Bureau, 2010 Decennial Census and 2017 Population Estimates, and the Dragas Center for Economic Analysis and Policy, Old Dominion University				

GRAPH 1
ANNUAL POPULATION GROWTH IN VIRGINIA, 1920-2017



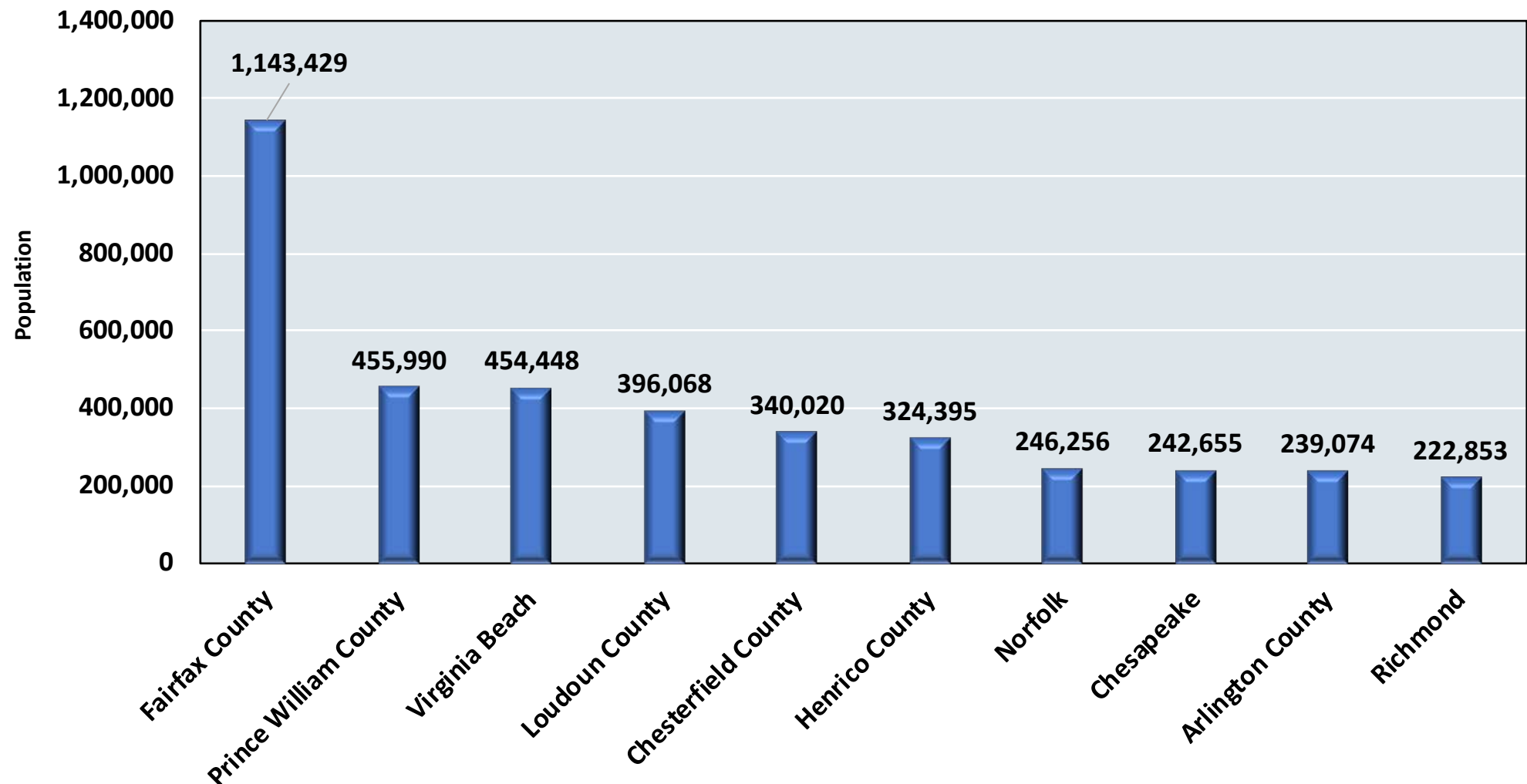
Sources: Demographic Research Group, University of Virginia and U.S. Census Estimates of the Components of Resident Population Change, April 1, 2010, to July 1, 2017

FIGURE 3
RECENT POPULATION CHANGE BY COUNTY: VIRGINIA, 2010-2017



Sources: U.S. Census Bureau, 2010 Decennial Census and 2017 Population Estimates, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

GRAPH 2
POPULATION OF THE 10 LARGEST CITIES AND COUNTIES: VIRGINIA, 2017



Sources: U.S. Census 2017 Population Estimates and the Dragas Center for Economic Analysis and Policy, Old Dominion University

Seeking Fortunes Elsewhere: Domestic Migration

While the population of Virginia grew 5.5 percent between 2010 and 2017, this overall increase masks a troubling development: Many Virginians are leaving and seeking their fortunes elsewhere. Since 2013, Virginia has experienced a net outflow of individuals to other states. In 2016-2017, the net outflow of residents to other domestic locations was 12,395. This is a significant change in circumstance for Virginia, which traditionally attracted more people from other states than it lost to them (Graph 3).

Why would more Virginians choose to leave than residents of other states decide to move here? While Virginia now *has more jobs* than prior to the Great Recession, other states have *higher rates of job growth*. One recent impediment to the growth of the Virginia economy is no mystery – stagnant federal spending, especially defense spending. Virginia ranks second among the states in terms of federal spending per person. Approximately 40 percent of this spending emanates from the Department of Defense.⁴ Plausibly, the recent upsurge of federal spending has the potential to reverse this flow.

The Internal Revenue Service (IRS) publishes annual data on domestic migration that we use to explore where new Virginians are coming from and where Virginians are going.⁵ Between 2015 and 2016, the largest inflows to Virginia from other states were from California, Florida, Maryland, New York, North Carolina and Texas. Outflows from Virginia were largely to the same set of states. More than 60,000 Virginians moved

to California, Florida, Georgia, Maryland, North Carolina and Texas between 2015 and 2016.

Putting this together paints a picture of net domestic migration (inflows minus outflows) for the Commonwealth. Figure 4 shows that net domestic migration is highest from New York (4,727), New Jersey (2,543), Maryland (2,534) and Pennsylvania (1,409). Net domestic migration is lowest to Florida (-8,762), North Carolina (-5,992), Texas (-4,480), Georgia (-2,233) and Tennessee (-2,151).

Between 2015 and 2016, 221,869 people moved to Virginia from other states and 241,099 Virginians moved to other states. All told, Virginia's net loss was 19,230. The Commonwealth is no longer as attractive a destination for residents of other states as it was in the past. The challenge will be to create jobs and opportunities to reverse this trend.

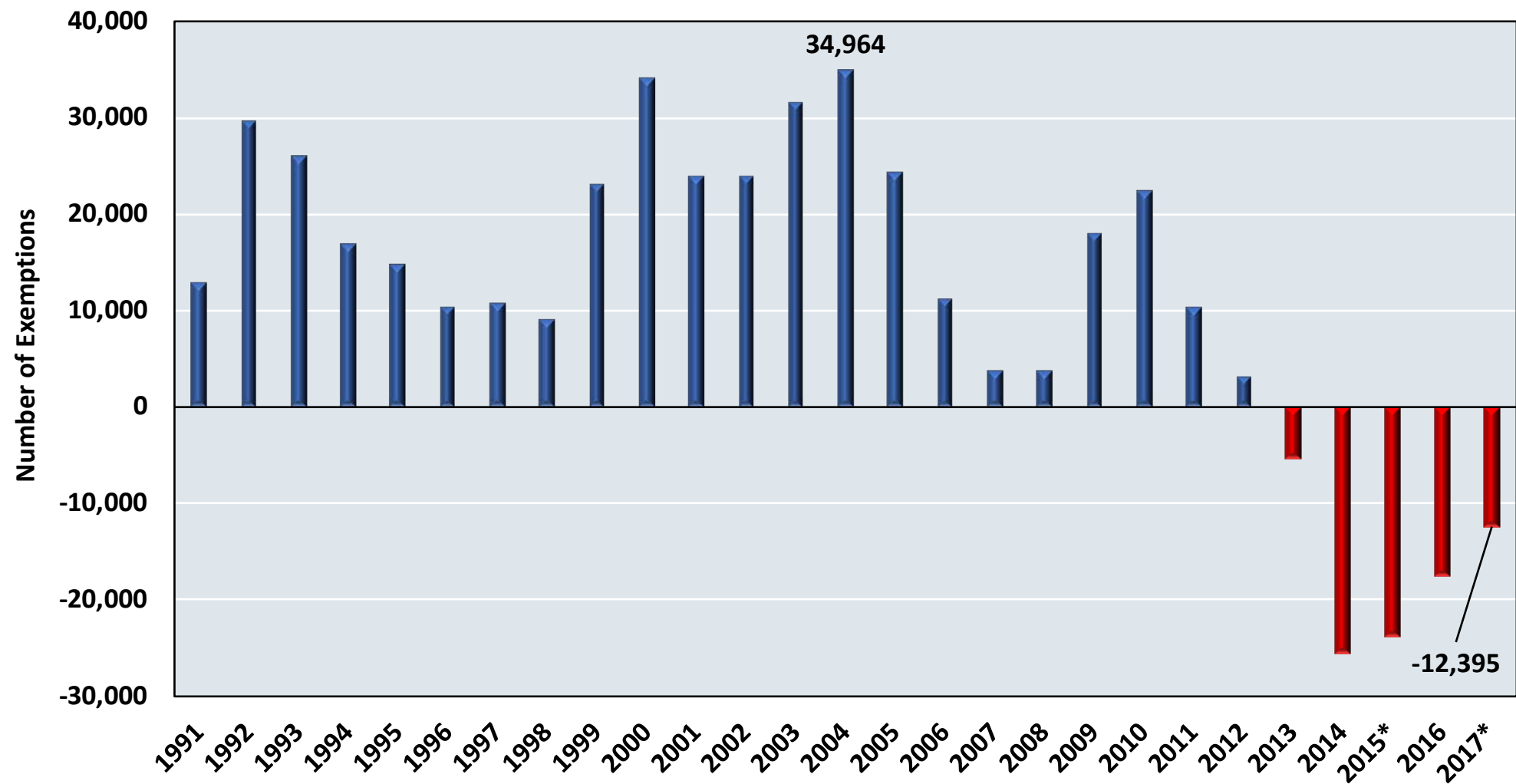
For localities in Virginia, the most recent data come from the U.S. Census through 2017. It should be no surprise that domestic outflows are the primary reason that many cities and counties have lost population this decade (Figure 5). While most of Northern Virginia and the Valley regions, for example, experienced positive net domestic migration, many other cities and counties have experienced outflows. Fairfax County, for example, lost over 79,000 residents to other domestic destinations between 2010 and 2017. The city of Alexandria also lost about 10,500 residents this decade. **Another perspective is that domestic outflows from Fairfax County, Hampton, Newport News and Virginia Beach this decade were greater in sum than the gains from all the other cities and counties combined.**

⁴ Joint Legislative Audit and Review Commission (June 2014), "Size and Impact of Federal Spending in Virginia," <http://jlarc.virginia.gov/pdfs/reports/Rpt455.pdf>.

⁵ A potential complication is the inflow and outflow of military personnel. To determine migration, the IRS compares two consecutive years of individual tax filings. If a person changes geographic location from one year to the next, they are considered a mover. A military service member stationed in Hampton Roads who did not change their filing address even though they physically moved would not show up as a migrant. A service member who did change their filing address upon moving to Hampton Roads would be considered a migrant if they moved from another county, state or country.

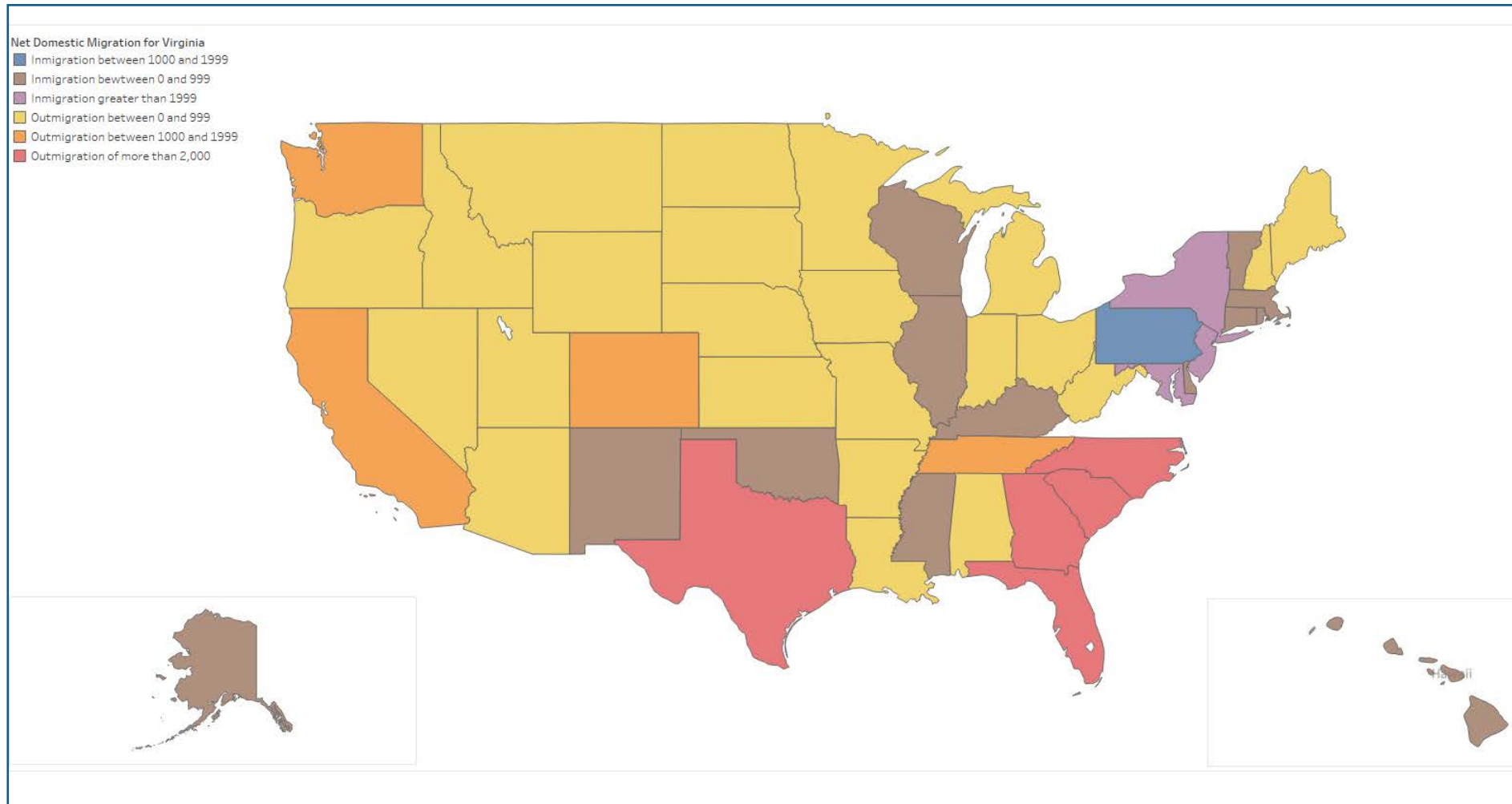
GRAPH 3

VIRGINIA NET DOMESTIC MIGRATION OF INDIVIDUALS, 1991-2017



Sources: University of Virginia Weldon Cooper Center (2017) and the Dragas Center for Economic Analysis and Policy, Old Dominion University. *All years based on Internal Revenue Service Statistics of Income Migration data, except for 2014-2015, which is based on U.S. Census Bureau state estimates due to a change in the IRS methodology. 2016-17 is also based on Census Bureau state estimates due to data availability.

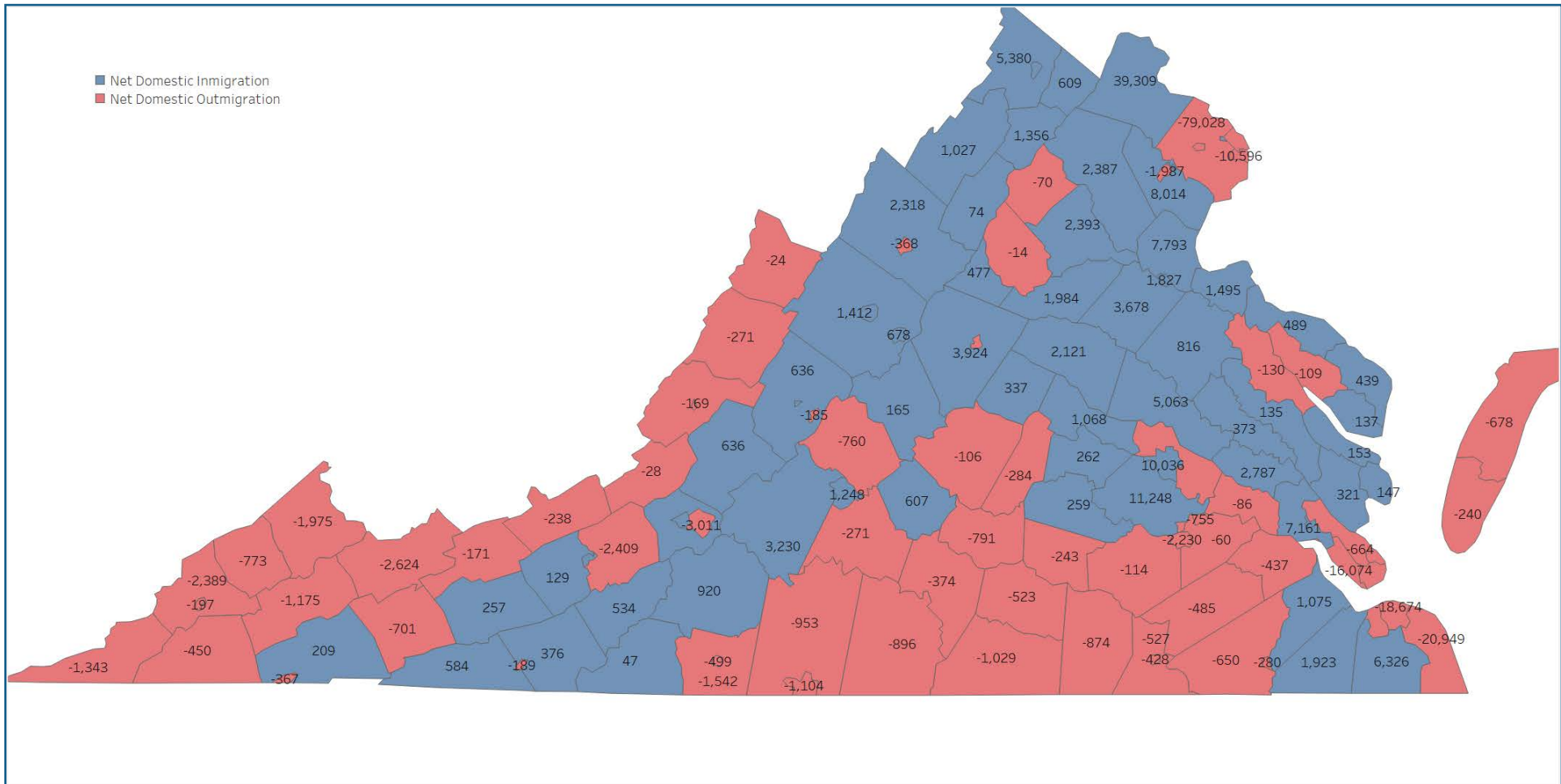
FIGURE 4
2015-2016 NET DOMESTIC MIGRATION FOR VIRGINIA



Sources: Internal Revenue Service, 2015-2016 Statistics of Income Migration Data, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

FIGURE 5

DOMESTIC MIGRATION, APRIL 1, 2010, TO JULY 1, 2017



Sources: U.S. Census Bureau, 2010 Decennial Census and 2017 Population Estimates, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

International Migration: Coming To The Commonwealth

With Virginia experiencing net negative domestic migration in recent years, how has it managed to grow in population? One reason is the natural increase in the population, while the other is net positive international migration. The Commonwealth, simply put, is a desirable destination for people starting a new life in the United States.

Graph 4 illustrates how domestic and international migration have fared this decade. The inflows from international migration have offset the recent outflows of Virginians to other states. In 2017, for example, while 12,395 Virginians left for other states, 33,365 new residents arrived from foreign locations. Overall net migration was positive, with 20,970 additional residents in the Commonwealth.

Yet, as with many other things, some regions of Virginia are faring better than others. Table 2 shows that Southwest and Southside lost population from 2016 to 2017 because deaths outnumbered births and net domestic out-migration was higher than net international migration. Hampton Roads-Eastern Shore lost almost 10,000 residents to other states, although international migration offset some of this outflow. Without international migration, Virginia would have grown much more slowly the last four years. Figure 6 illustrates net international migration by city and county from 2010 to 2017.

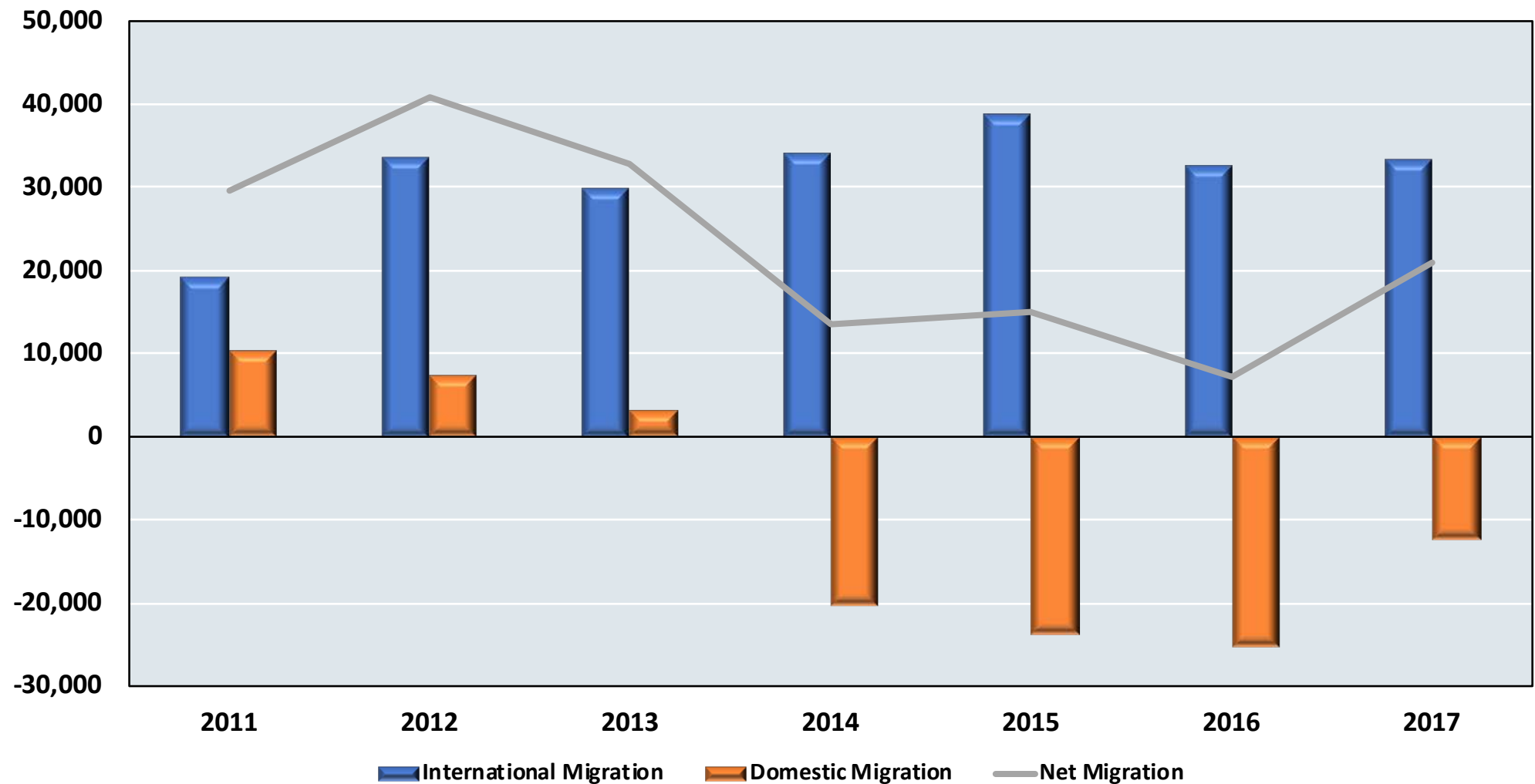
International migration varies across the Commonwealth. Areas that are economically attractive tend to pull people from other countries. Immigrant communities may attract foreign migrants as new arrivals seek out others with similar backgrounds and experiences. One only needs to sample the diversity of food in Northern Virginia, Richmond or Hampton Roads to grasp the impact that international migration has on our communities. A Commonwealth should serve as a place that people want to live and many people are leaving their countries to live in Virginia.

Given that international immigration has helped fuel the Commonwealth's economic engine, we are concerned about recent shifts in immigration policy. One consequence of the change in rhetoric and policy is a decline in international students. The National Science Foundation recently reported that the number of international students in the U.S. fell by 2.2 percent at the undergraduate level and 5.5 percent at the graduate level from fall 2016 to fall 2017.⁶ International students not only typically pay full tuition, but many desire to remain in the United States after completion of their education. Immigrants, for example, have founded around half of startups in the U.S. that are valued at more than \$1 billion. Whether through policy or rhetoric, curtailing these students not only places financial pressures on colleges and universities, but also undermines one of the foundations of economic growth for the United States.



⁶ <https://www.nsf.gov/statistics/2018/nsb20181/>.

GRAPH 4
DOMESTIC, INTERNATIONAL AND NET MIGRATION IN VIRGINIA, 2011-2017



Sources: U.S. Census Bureau, 2017 Population Estimates, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

TABLE 2

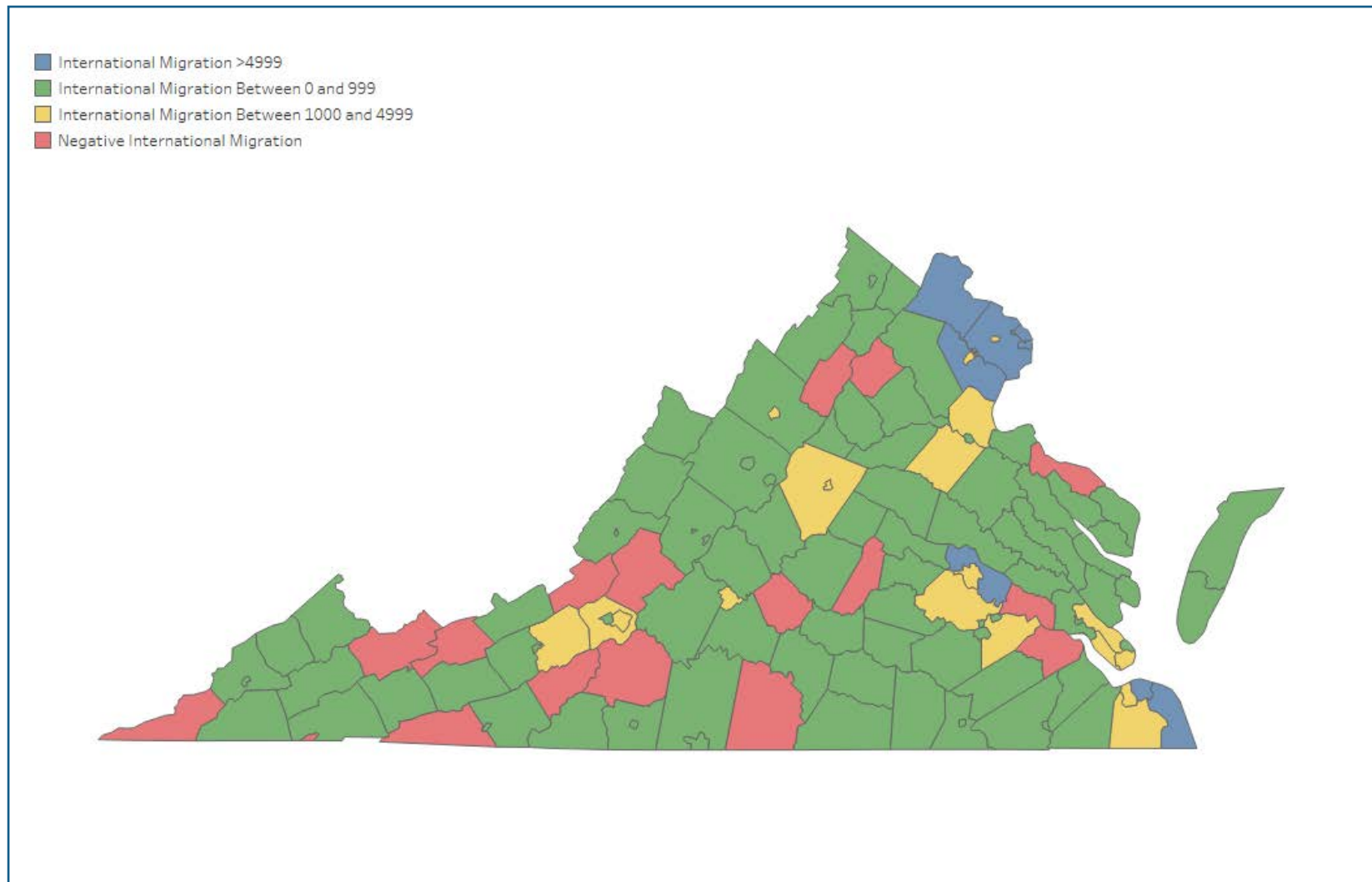
COMPONENTS OF TOTAL POPULATION CHANGE: VIRGINIA, 2017

Region	Natural Increase in the Population	Net Domestic Migration	Net International Migration	Total Change in the Population
Southwest	-1,528	-2,492	89	-3,931
West Central	293	-297	1,932	1,928
Southside	-1,255	-978	150	-2,083
South Central	3,073	3,642	2,870	9,585
Hampton Roads	7,462	-9,704	3,562	1,320
Eastern	2,737	3,883	1,293	7,913
Northern	22,077	-13,683	21,234	29,628
Valley	830	3,827	1,091	5,748
Central	1,040	3,407	1,144	5,591
Virginia Totals	34,729	-12,395	33,365	55,699

Sources: U.S. Census Bureau, Estimates of the Components of Resident Population Change, Various Years, and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Note that "Total Change in the Population" does not include the residual change that cannot be attributed to any specific demographic component.



FIGURE 6
INTERNATIONAL MIGRATION, APRIL 1, 2010, TO JULY 1, 2017



Sources: U.S. Census Bureau, Estimates of the Components of Resident Population Change, Various Years, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

Racial And Ethnic Characteristics

The Commonwealth and its regions are racially and ethnically diverse, more so than the United States and most states, where racial and ethnic groups often are confined to certain cities or regions. Racial and ethnic diversity does vary throughout Virginia, with Northern Virginia, Hampton Roads and the Eastern Shore being among the most diverse regions in the Commonwealth.

The U.S. Census Bureau produces annual estimates of the population and demographic characteristics through the American Community Survey (ACS). Graph 5 reveals that 73.3 percent of Americans identified themselves as white and 12.6 percent as African-American in 2016. About 5 percent classified themselves as Asian, while approximately 1 percent identified as American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander. About 3 percent identified themselves as being of two or more races. Of note, the percentage of individuals who identify as being of two or more races has increased over the last two decades.

According to the U.S. Census, an individual's response to racial questions is based upon self-identification. The Census Bureau does not instruct individuals which boxes to mark or heritage to claim on the Census products. People who identify with more than one race may choose to provide multiple races in response to the questions about race. Hispanic origin is defined by the U.S. Census Bureau as the heritage, nationality, lineage or country of birth of the individual or of the birth or person's parents or ancestors before arriving in the U.S. People who self-identify as Hispanic, Latino or Spanish may be of any race. The U.S. Census asks individuals to self-identify their race and whether they are of Hispanic-Latino origin.

In Graph 6, we show that 68.8 percent of Virginians classified themselves as white and 19.2 percent as African-American in 2016. About 6 percent classified themselves as Asian, while about 0.4 percent identified as American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander. Also, 3.4 percent of Virginians identified as being of two or more races. The number of Virginians identifying themselves as being of two or more races has also increased over time.

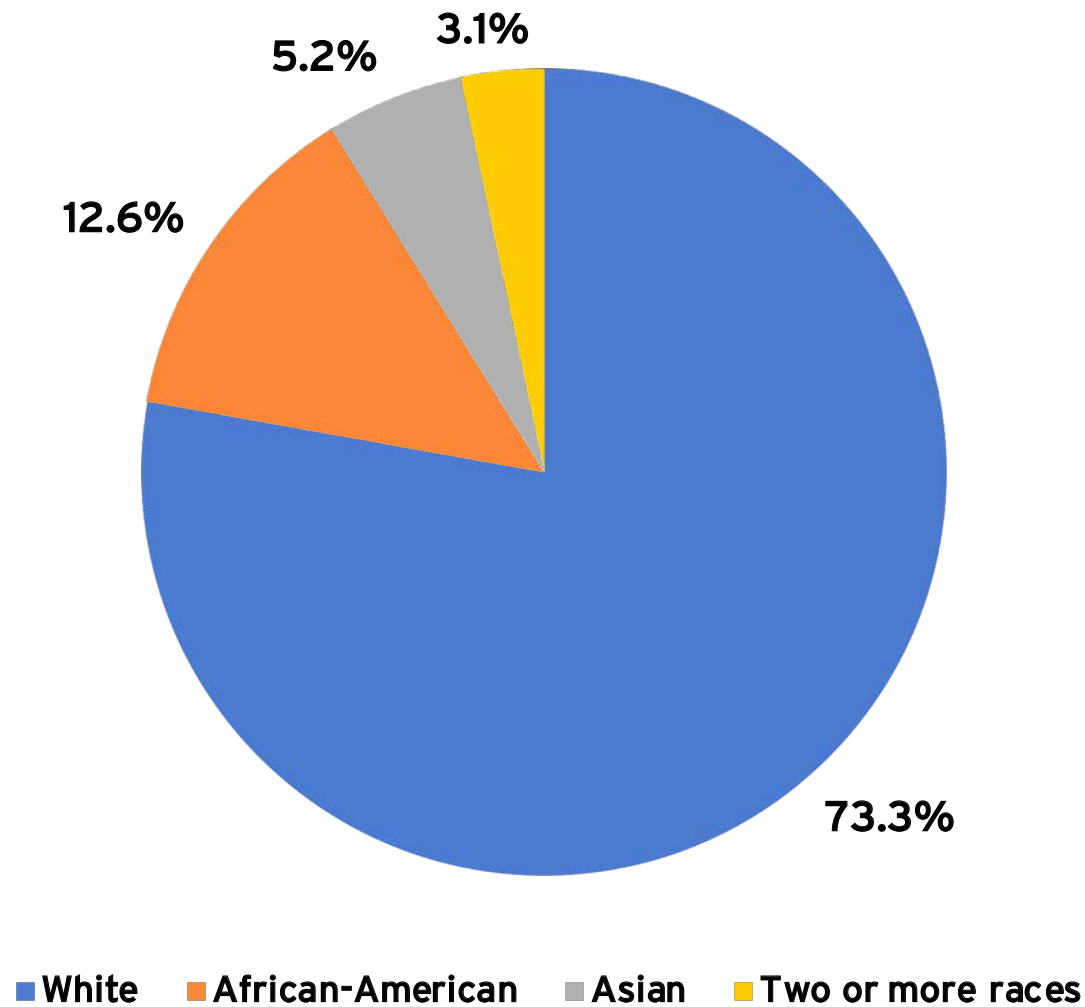
Table 3 provides regional details of Virginia's ethnic and racial diversity. The white population reaches a high of 95 percent in the Southwest and a low of 60 percent in Hampton Roads-Eastern Shore. Southside, Hampton Roads-Eastern Shore, Eastern and South Central claim the largest regional proportions of African-Americans. Figure 7 displays African-Americans as a percentage of the population by locality, illustrating how as one travels east in Virginia, the percentage of African-Americans in the population rises.

On a percentage basis, Northern Virginia claims more than three times as many Asian Virginians than the next closest region (South Central). Fairfax County has the largest proportion of Asian Virginians, followed by Loudoun County (Graph 7). The Southwest and Southside regions, on the other hand, are relatively less diverse.

Graph 8 illustrates the percentage of individuals classifying themselves as Hispanic-Latino by locality. As one tracks to the north and east, the percentage of the population that identifies as having Hispanic-Latino origin increases.

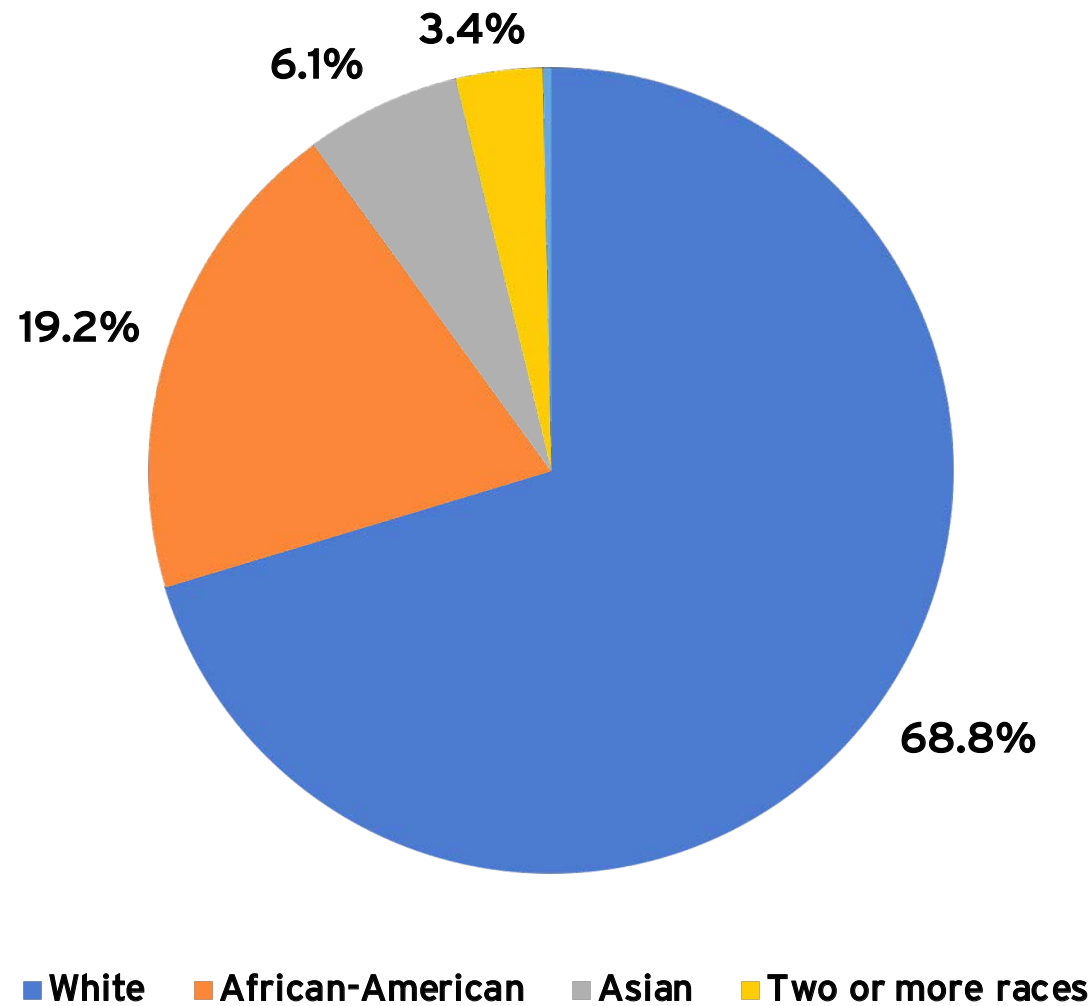
While an estimated 17.3 percent of Americans identified themselves as Hispanic-Latino, a much smaller percentage, 8.7 percent, of Virginians classified themselves in similar fashion in 2016. Among Virginia's regions, the proportion of the Hispanic population varies significantly, from a low of 1.7 percent in the Southwest to a high of 17.1 percent in Northern Virginia.

GRAPH 5
RACIAL COMPOSITION OF THE UNITED STATES, 2016



Source: U.S. Census Bureau, 2012-2016 American Community Survey. Hispanic-Latino individuals self-identify themselves within these categories. Percentages may not sum to 100 percent, as American Indian-Alaska Native and/or Other Pacific Islander are not shown.

GRAPH 6
RACIAL COMPOSITION OF VIRGINIA, 2016



Source: U.S. Census Bureau, 2012-2016 American Community Survey. Hispanic-Latino individuals self-identify themselves within these categories. Percentages may not sum to 100 percent, as American Indian-Alaska Native and/or Other Pacific Islander are not shown.

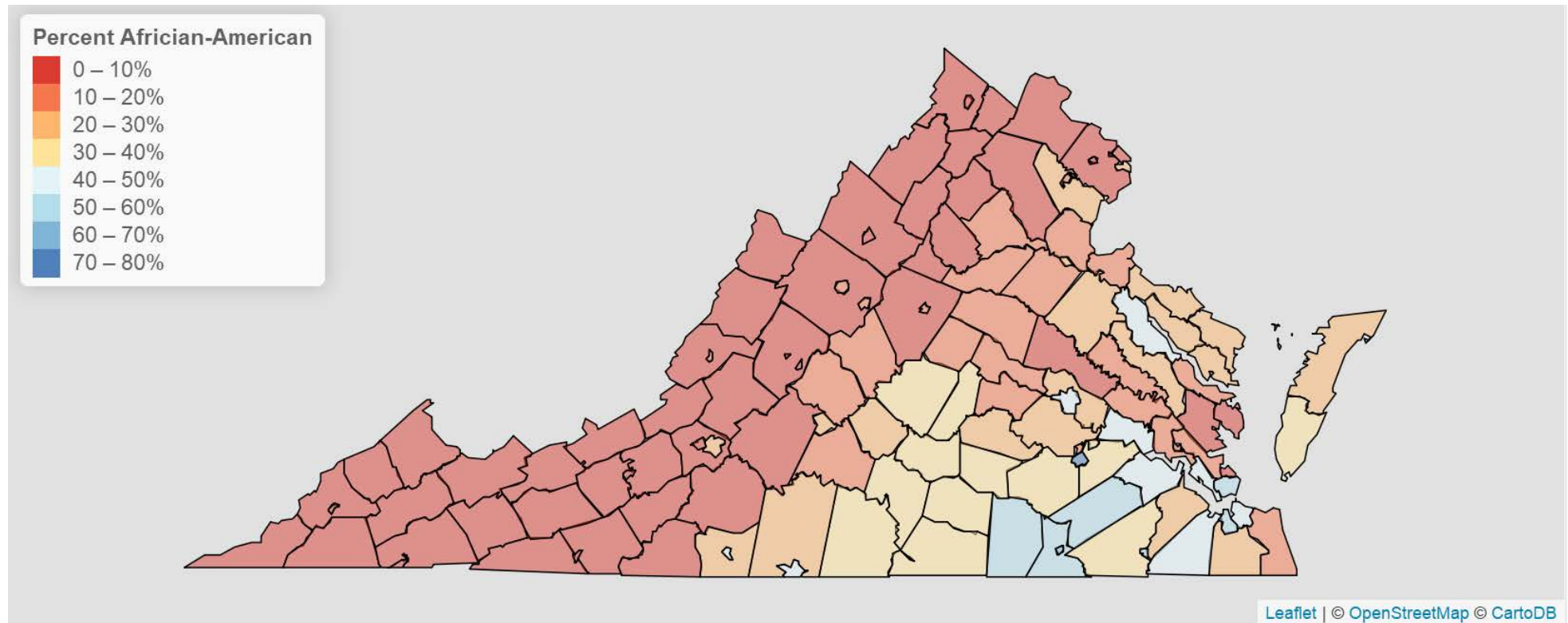
TABLE 3

RACIAL COMPOSITION OF VIRGINIA'S POPULATION BY REGIONS

Region	Total Population	White Alone		African-American Alone		Asian Alone		Other Races Alone		Two or More Races Alone	
Southwest	392,112	373,080	95.2%	10,771	2.8%	1,455	0.4%	517	0.1%	4,625	1.2%
West Central	725,993	590,975	81.4%	95,866	13.2%	16,358	2.3%	1,642	0.2%	16,333	2.3%
Southside	374,771	240,486	64.2%	119,683	31.9%	2,328	0.6%	791	0.2%	6,272	1.7%
South Central	1,015,658	655,024	64.5%	271,976	26.8%	40,627	4.0%	3,517	0.4%	27,804	2.7%
Hampton Roads	1,751,779	1,048,055	59.8%	541,869	30.9%	63,614	3.6%	6,931	0.4%	65,860	3.8%
Eastern	700,133	444,749	63.5%	196,327	28.0%	14,157	2.0%	3,305	0.5%	24,308	3.5%
Northern	2,410,710	1,549,816	64.3%	287,245	11.9%	346,492	14.4%	8,157	0.3%	109,716	4.6%
Valley	522,620	472,021	90.3%	24,465	4.7%	7,123	1.4%	1,341	0.3%	12,149	2.3%
Central	416,525	338,752	81.3%	48,150	11.6%	10,724	2.6%	1,241	0.3%	12,632	3.0%
Virginia Totals	8,310,301	5,712,958	68.8%	1,596,352	19.2%	502,878	6.1%	27,442	0.3%	279,699	3.4%

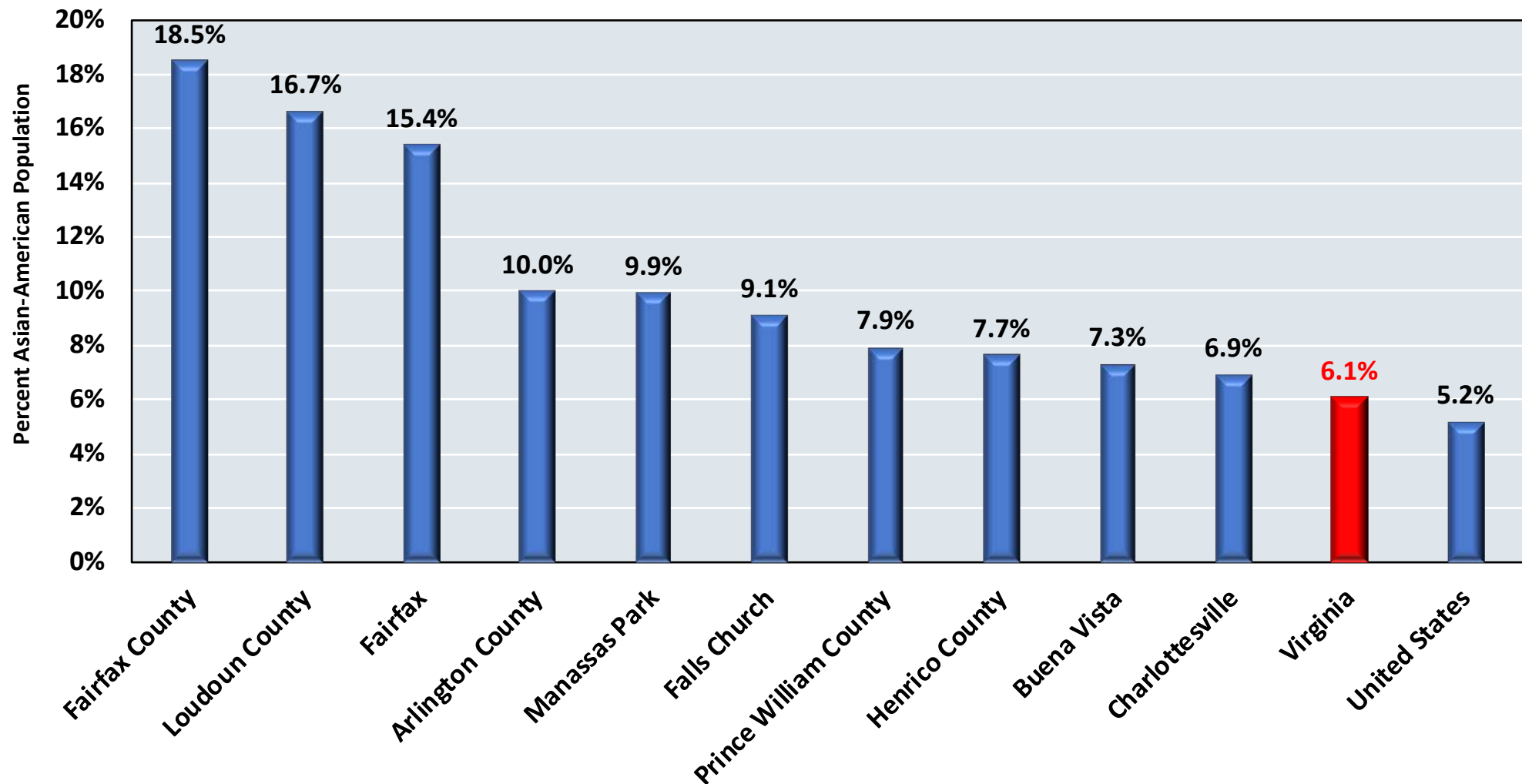
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates. The Hampton Roads GO Virginia district includes the Eastern Shore.

FIGURE 7
PERCENTAGE OF AFRICAN-AMERICAN POPULATION IN VIRGINIA COUNTIES AND CITIES, 2016



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

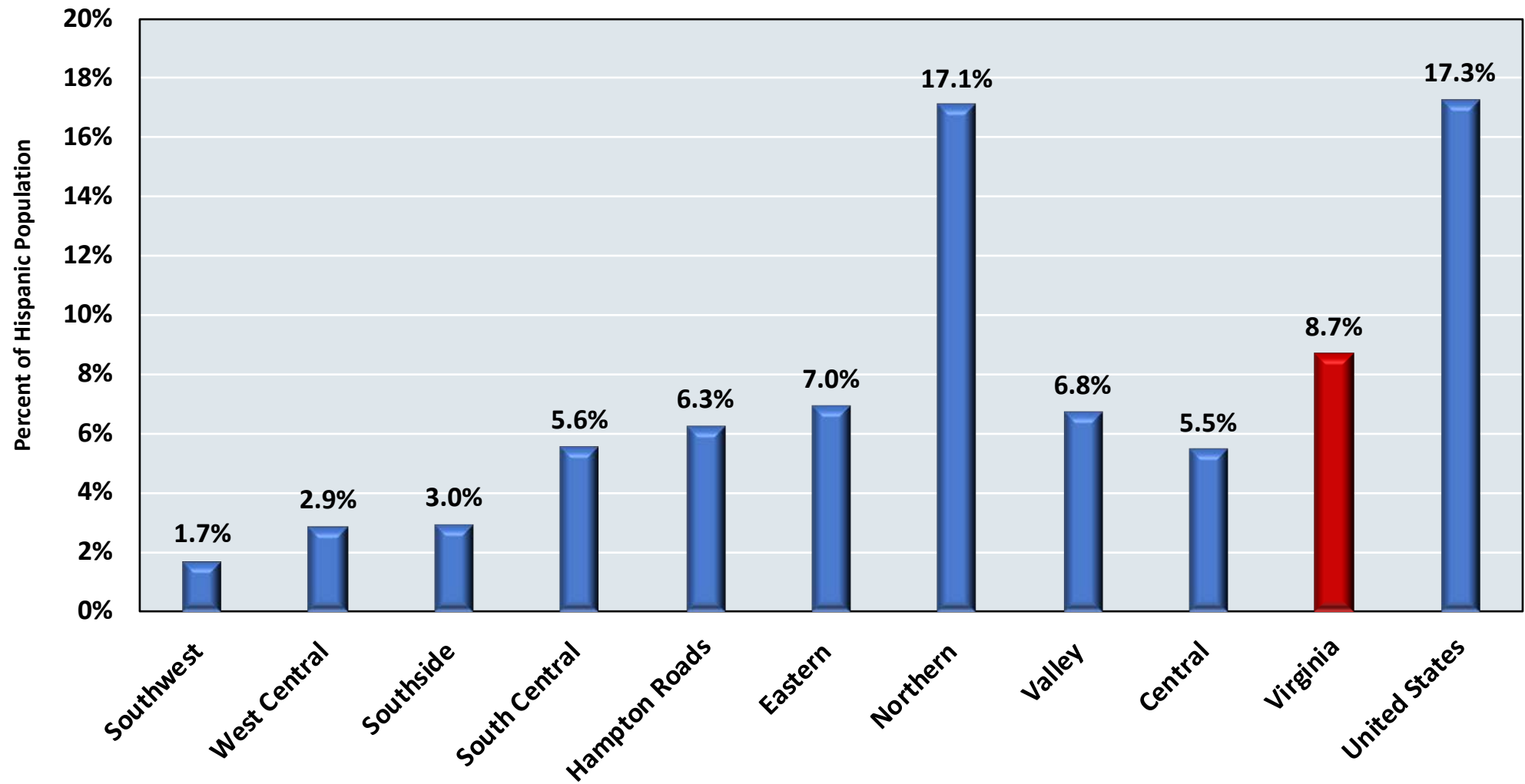
GRAPH 7

**PERCENTAGE OF ASIAN-AMERICAN POPULATION, VIRGINIA:
LARGEST 10 COUNTIES AND CITIES, 2016**

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

GRAPH 8

PERCENTAGE OF INDIVIDUALS WHO IDENTIFY AS OF HISPANIC-LATINO ORIGIN: VIRGINIA, 2016



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Thus, the Commonwealth is a diverse place, more diverse than the United States in terms of its representation of African-Americans and Asian-Americans, but less diverse in terms of its representation of Hispanics-Latinos. Whatever the difficulties Americans and Virginians of differing backgrounds have getting along with each other, these conditions have not deterred sundry individuals from deciding to reside in Virginia. It could be said that Virginia has turned out to be an amenable location for people of many different ethnic and racial backgrounds. In this sense, Virginia appears to have fulfilled at least some of the expectations of a Commonwealth.

The Economic Commonwealth

PER CAPITA INCOME

Per capita income is an approximate measure of the standard of living of a city, county or state. In 2017, Virginia ranked 12th among the states with a per capita income of \$54,244, which was 108 percent of the national average. Graph 9 displays income per capita for the U.S. and selected states.

The cost of living in each state, however, makes a difference. An individual living in Danville, for example, has a lower cost of living than a resident of New York, Los Angeles or Seattle. Virginia's relatively modest cost of living compared to California, New Jersey, New York and other high cost-of-living states enables it to pass by these states when we compute real per capita income adjusted for the cost of living. In Graph 10, we adjust state per capita income by regional price parities to obtain a cost-of-living adjusted state per capita income. The cost-of-living adjustment increases per capita income in relatively low cost-of-living states and decreases it in relatively high cost-of-living states. We obtain estimates of state per capita income that are on an equal cost-of-living basis.

What about income in the various regions of Virginia? The U.S. Census tracks median household income, which we present by region in Graph

11 and by locality in Figure 8. **Median household income in Northern Virginia is almost three times that of the Southwest region and twice that of the Valley. In general, as one tracks to the east and north, median household income increases. Undoubtedly, household income is not equally distributed in the Commonwealth. It should be no surprise that economic opportunities, as represented by median household income, are closely correlated with domestic migration. People, as economists are wont to say, follow jobs.**

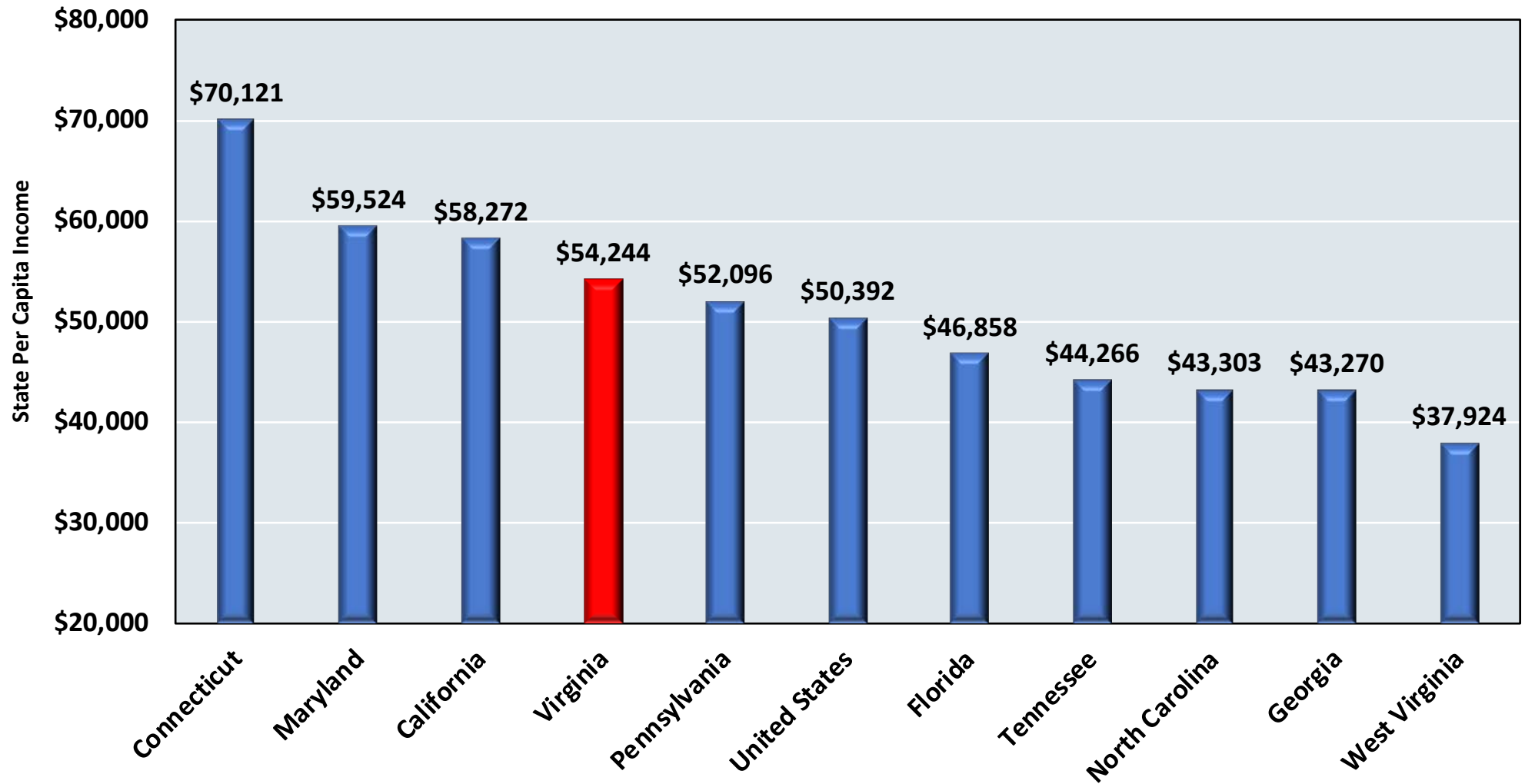
Once again, cost-of-living differentials can make a difference, but cost-of-living indexes are not produced by Virginia region. We estimate real per capita income for Virginia's regions by utilizing a cost-of-living index for a prominent jurisdiction within each region. In Northern Virginia, for example, we use the Washington, D.C., metropolitan region cost-of-living index as our proxy. The net effect of considering cost-of-living differences is to reduce income disparities, although none of the rankings of the regions change because of the cost-of-living adjustments. After taking the cost of living into account, Northern Virginia's real per capita income is only 17.3 percent higher than that of the Commonwealth, and 60.5 percent higher than that of Southwest Virginia. These still are very large disparities but are substantially smaller when regional cost-of-living differences are incorporated.⁷

As it is often said, everything is relative. Incomes are more equally distributed in Virginia than they are nationwide.⁸ Median household income in Virginia is higher than either New York or California, where incomes are burdened by some of the highest living costs in the country. One only needs to compare real estate prices in many urban areas of California, for example, to see that Virginia has a comparative advantage in the cost of living to many states with similar incomes.

⁷ Note that the regional cost of living in the Washington, D.C., region is estimated to be 18.6 percent higher than the national average. The differential between cities such as Alexandria and Arlington, and the state, however, exceeds 30 percent.

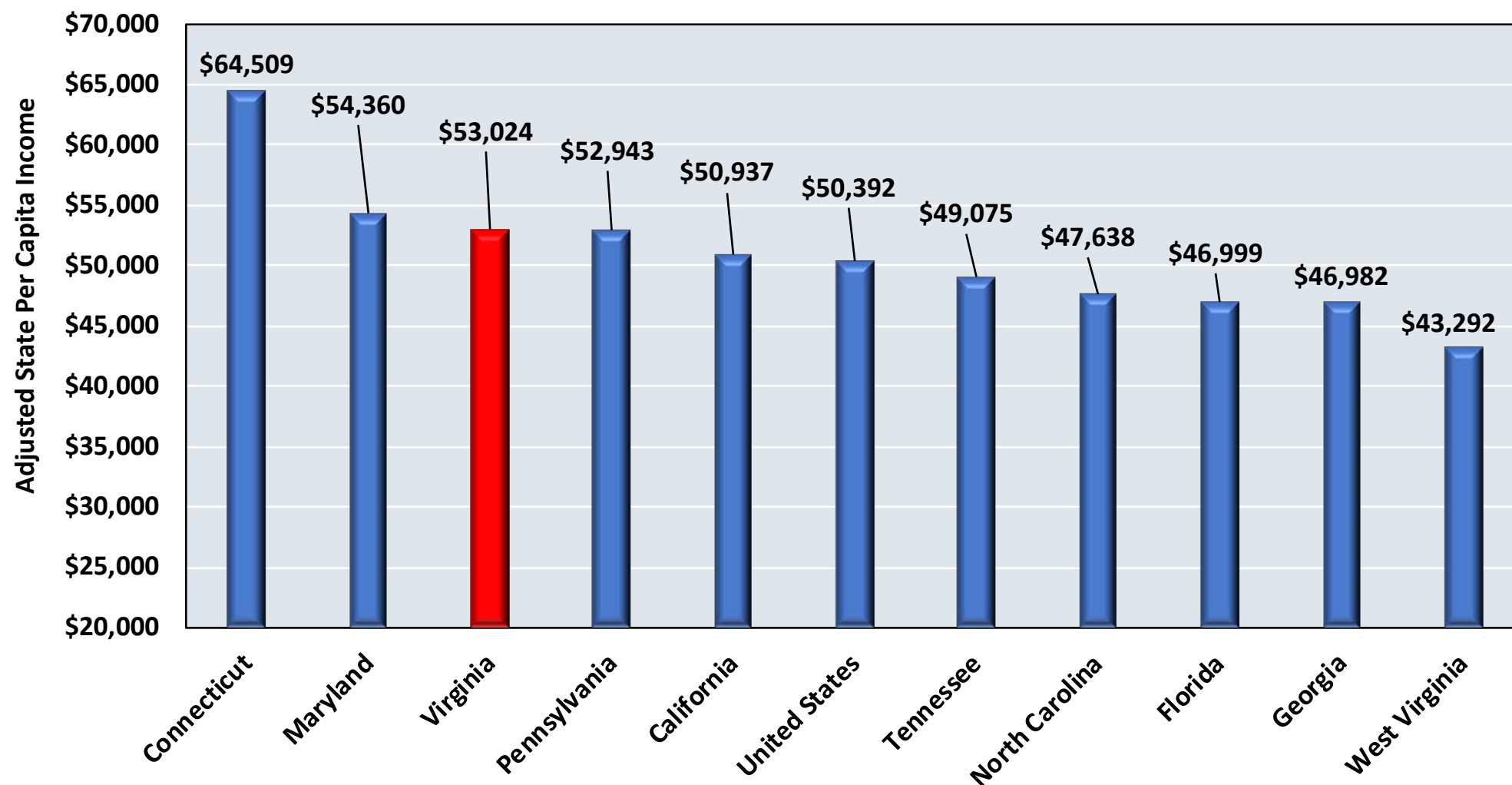
⁸ In the 2015 State of the Commonwealth Report, we reported that the Gini Coefficient for the distribution of income in Virginia was .4606, while it was .5994 in New York City and .4690 in the United States. (Higher values signify less equal distributions.)

GRAPH 9
STATE PER CAPITA INCOMES, 2017



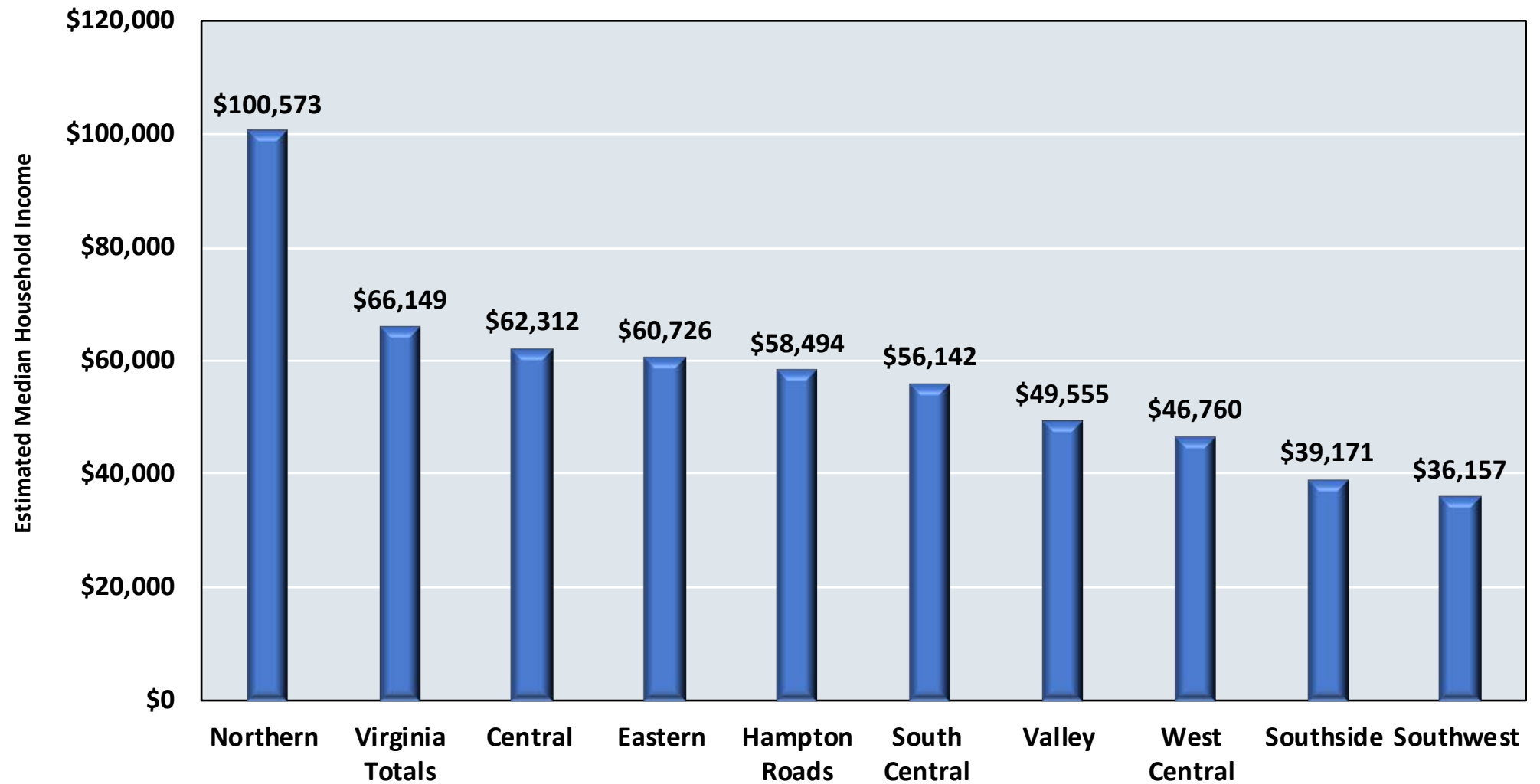
Source: Bureau of Economic Analysis

GRAPH 10
REAL PER CAPITA STATE INCOMES, 2017



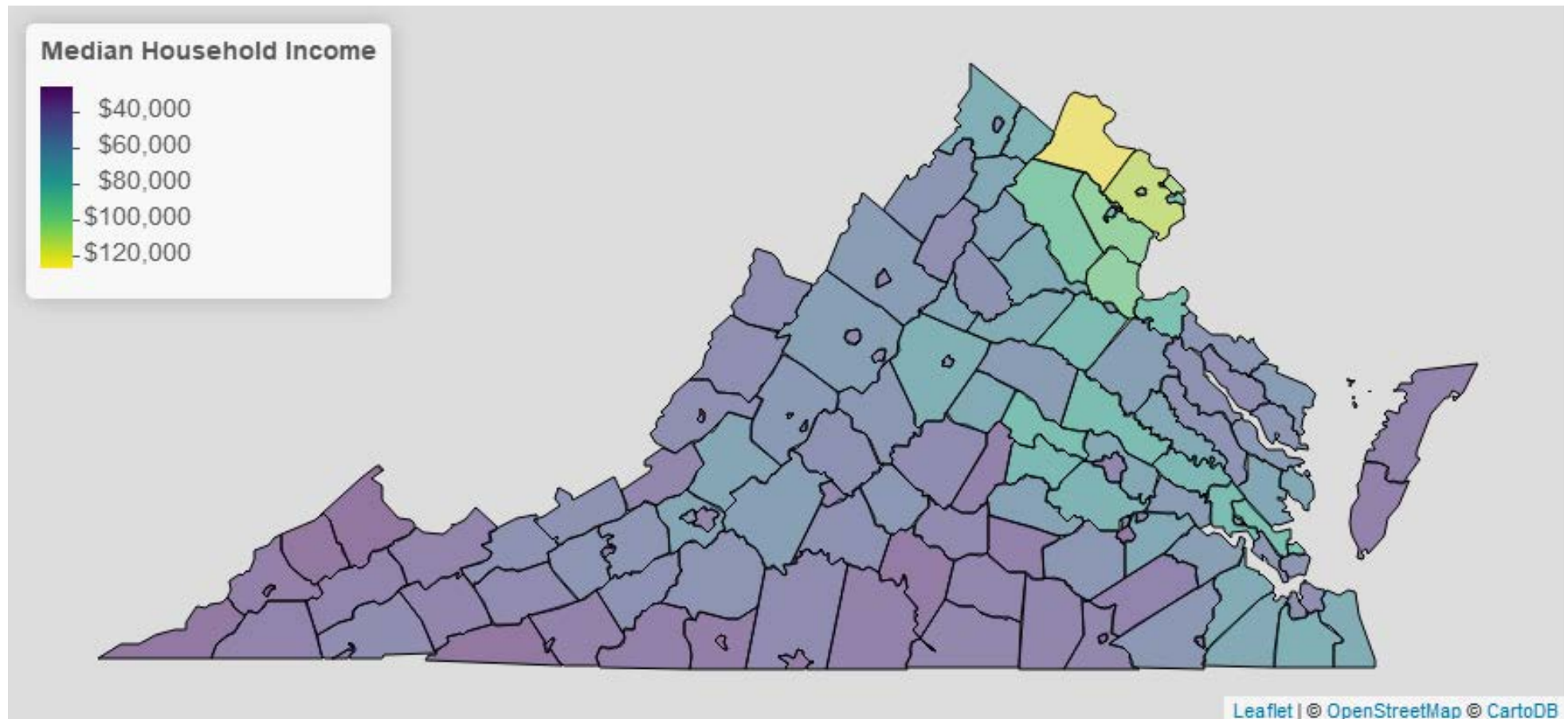
Source: Bureau of Economic Analysis, regional price parities by state for 2016

GRAPH 11
ESTIMATED MEDIAN HOUSEHOLD INCOME BY GO VIRGINIA REGION, 2016



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

FIGURE 8
MEDIAN HOUSEHOLD INCOME BY CITY AND COUNTY: VIRGINIA, 2016



Sources: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

PROPERTY VALUES

Most people know intuitively that the ownership of property is less equally distributed across individuals than their incomes. This phenomenon has important economic consequences in Virginia. Property constitutes one form of wealth and the “true value” of property as determined by the Virginia Department of Taxation is one criterion that often is used by the General Assembly to allocate funds to local and regional jurisdictions. The “true value” of property and estimates of adjusted gross income are the two variables used to determine the sizes of a variety of payments to local and regional governments, including aid to public schools.

In 2016, property values in Virginia were estimated to be \$1.16 trillion, with the Northern Virginia region accounting for almost 45 percent of all the real estate property valuation in the Commonwealth (Table 4). Values in the Northern Virginia region were estimated to be more than \$516 billion; this was 18 times the estimated property values in Southwest Virginia, 3.7 times those in the South Central region (dominated by Richmond) and 2.8 times those in the Hampton Roads-Eastern Shore region. As with income, property values are not equally distributed throughout Virginia.

TABLE 4

PROPERTY VALUES BY VIRGINIA REGION, 2016

Region	True Value of Real Estate	True Value of Public Service Corporations	Total Estimated True Value
Southwest	\$28,608,102,311	\$3,554,748,045	\$32,162,850,356
West Central	\$70,367,011,877	\$3,558,134,944	\$73,925,146,821
Southside	\$28,335,400,125	\$4,392,140,998	\$32,727,541,123
South Central	\$138,744,340,613	\$7,874,629,808	\$146,618,970,421
Hampton Roads	\$183,203,108,949	\$6,016,811,823	\$189,219,920,772
Eastern	\$66,213,229,920	\$2,375,318,142	\$68,588,548,062
Northern	\$516,576,910,380	\$9,885,636,242	\$526,462,546,622
Valley	\$59,784,205,249	\$4,840,702,990	\$64,624,908,239
Central	\$67,693,639,330	\$4,996,929,285	\$72,690,568,615
Virginia Totals	\$1,159,525,948,754	\$47,495,052,277	\$1,207,021,001,031

Sources: Virginia Department of Taxation, the 2016 Virginia Assessment/Sales Study, and the Dragas Center for Economic Analysis and Policy, Old Dominion University

ABILITY TO PAY FOR EDUCATION

The General Assembly has directed that the “true value” of property be used along with adjusted gross income and taxable retail sales to produce a “median composite index” that determines how the Virginia Department of Education distributes financial aid to local school districts.⁹ The index varies between 0 and .8. The lower the index, the greater the school district’s assessed need for financial support to enable it to meet the Standards of Quality (SOQ) that define minimum learning outcomes expected, if not required, in Virginia public schools.

Eight school districts recorded the highest .8 index, indicating lesser financial need: the cities of Alexandria, Arlington, Fairfax and Falls Church plus Bath, Goochland, Highland and Surry counties. The lowest index was recorded by Lee County (.1779), followed by Buena Vista (.1849), Scott (.1917) and Hopewell (.2032). Graph 12 provides a selection of median composite index values for school districts throughout Virginia.¹⁰ Graph 13 presents the average composite index by region, while Figure 9 illustrates the composite index by locality in Virginia.

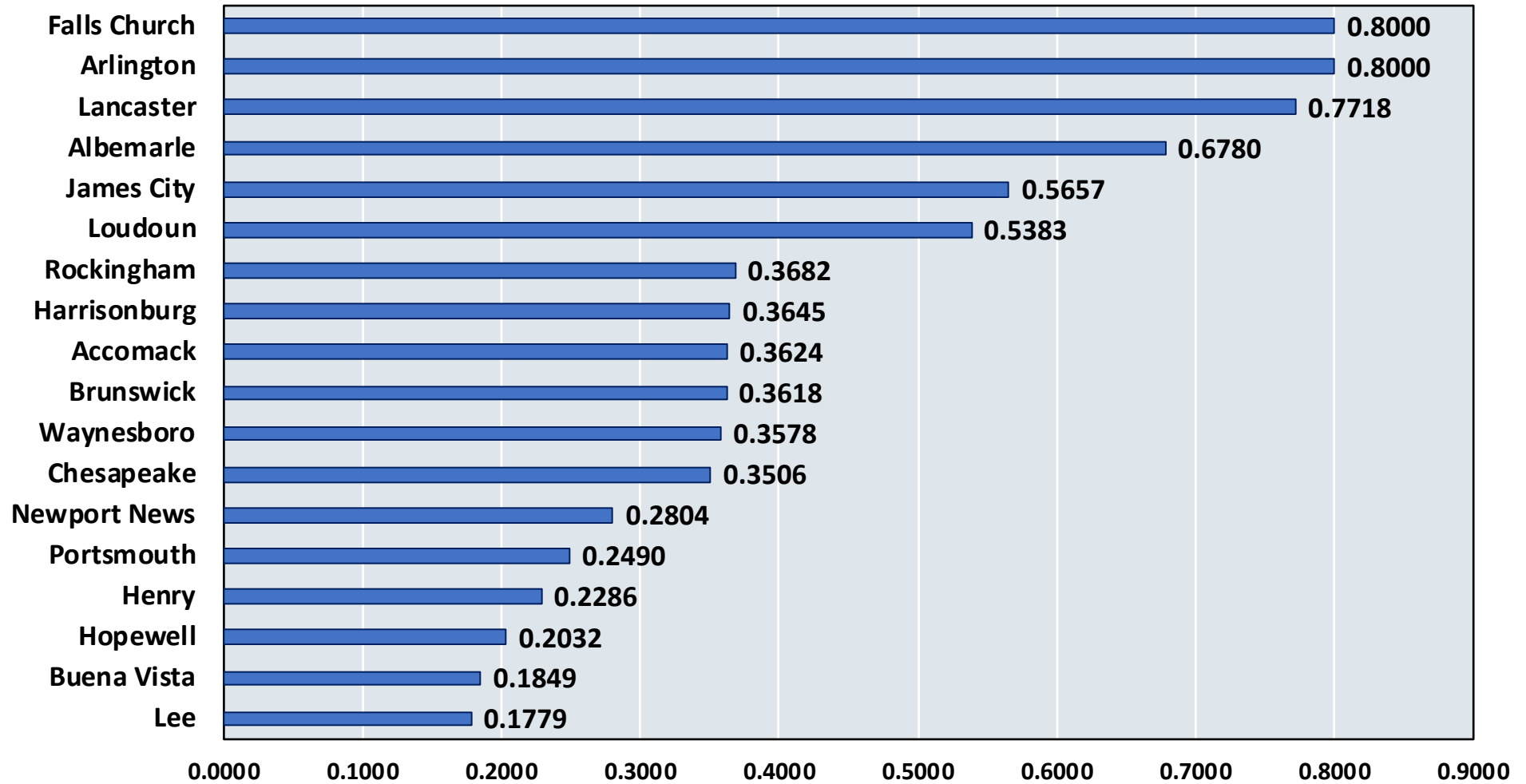


⁹ The Average Daily Composite Index, for example, is equal to $0.5 * ((\text{Local TV} / \text{Division ADM}) / (\text{Statewide Total TV} / \text{Statewide ADM})) + 0.4 * ((\text{Local AGI} / \text{Division ADM}) / (\text{State AGI} / \text{State ADM})) + 0.1 * ((\text{Local Taxable Sales} / \text{Division ADM}) / (\text{State Taxable Sales} / \text{State ADM}))$, where ADM = Average Daily Membership, AGI = Adjusted Gross Income, and TV = True Value of Property.

¹⁰ All of these composite index values include nonresident adjusted gross income. The Department of Education also computes indexes that exclude nonresident adjusted gross income.

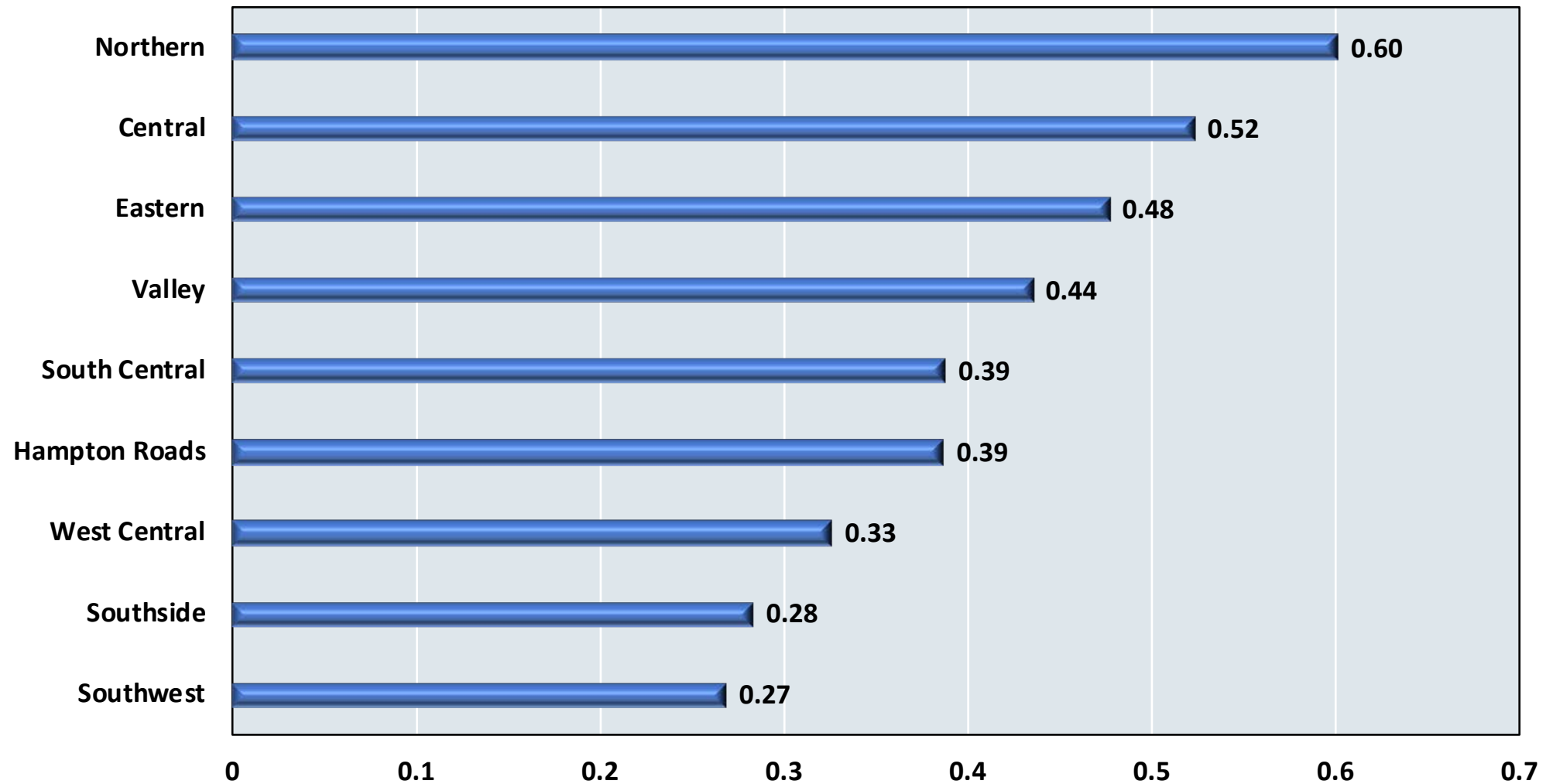
GRAPH 12

COMPOSITE INDEX VALUES FOR SELECTED VIRGINIA SCHOOL DISTRICTS, 2018-2020 VALUES



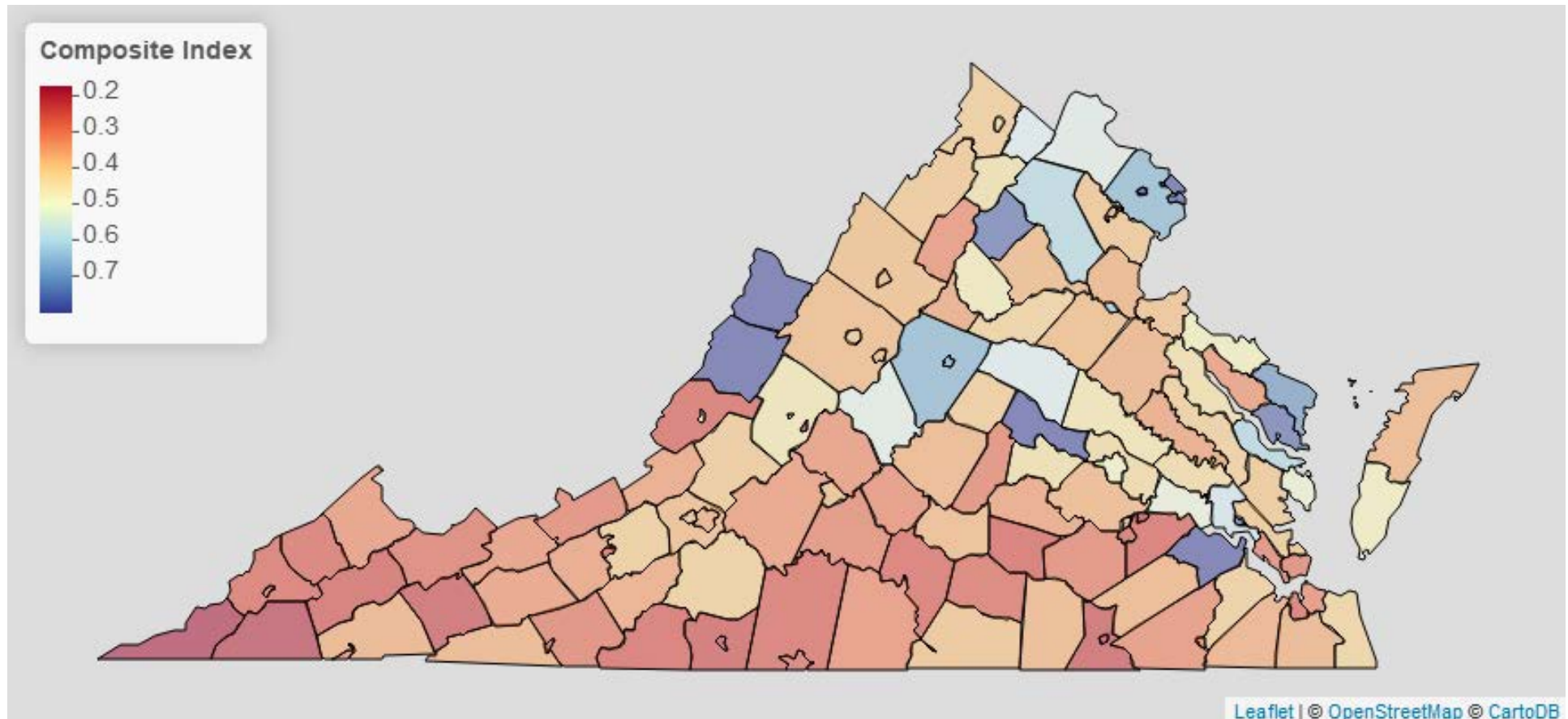
Source: Virginia Department of Education, "Composite Index of Local Ability to Pay, 2018-2020"

GRAPH 13

**MEAN COMPOSITE INDEXES OF LOCAL ABILITY TO PAY BY REGION:
VIRGINIA DEPARTMENT OF EDUCATION, 2016-2018**

Sources: Virginia Department of Education, "Composite Index of Local Ability to Pay, 2016-2028." Average index for divisions in each GO Virginia region by the Dragas Center for Economic Analysis and Policy, Old Dominion University.

FIGURE 9
COMPOSITE INDEXES OF LOCAL ABILITY TO PAY BY COUNTY:
VIRGINIA DEPARTMENT OF EDUCATION, 2016-2018



Sources: Virginia Department of Education, "Composite Index of Local Ability to Pay, 2016-2028" and the Dragas Center for Economic Analysis and Policy, Old Dominion University. In most cases, school divisions are geographically similar to counties.

NUTRITION

Some regard the absence of hunger as the mark of a civilized society. Feeding America, a nonprofit hunger relief organization, reports that 1 in 9 Virginians do not have enough to eat and that it would take more than \$468 million on an annual basis to feed them properly (www.feedingamerica.com). Whether or not one agrees with this assessment, data are available that record the number of students within the Commonwealth who are eligible for free and reduced-price school lunches and other nutritional programs available through the Virginia Department of Education's (VDOE) School Nutrition Programs.

The VDOE typically utilizes federal guidelines that establish eligibility for free and reduced-price meals in schools. In the 2018-19 school year, this means that children from families with annual incomes less than 185 percent of the federal poverty level are eligible. For a family of four, for example, this means a family income must be under \$32,630 (Federal Food and Nutrition Services, Document 2018-09679, May 8, 2018).

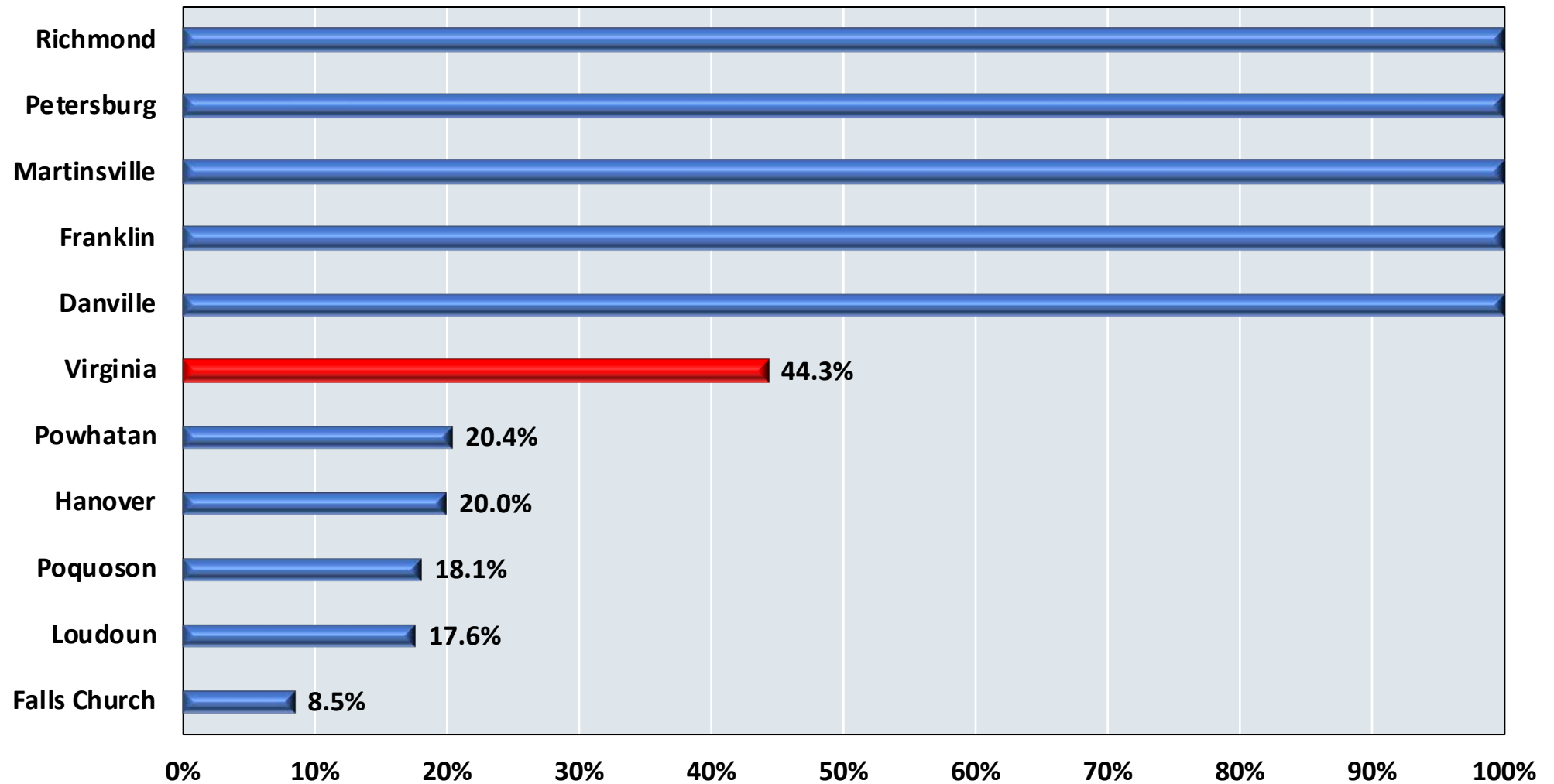
On a typical day, 49.8 million breakfasts, 1.5 million lunches and 1.4 million after-school snacks are served in Virginia public schools (Virginia Department of Education, 2018). Meals also are served in the summer. Approximately 44 percent of students were eligible for free and reduced-price lunch in Virginia's public schools during the 2017-18 school year. Graph 14 displays the five districts with the highest percentage of recipients of free and reduced-price lunch and the five districts with the lowest percentage of recipients, ranging from a low of about 8.5 percent in Falls Church to a high of 100 percent in Danville, Franklin, Martinsville, Petersburg and Richmond.

Graph 15 illustrates that profound differences exist among Virginia's regions in terms of the percentage of public school students who qualify under federal guidelines for free or reduced-price food at their public school. The percentage of students who qualify for free or reduced-price food in the Southside and Southwest regions is more than twice that in the Northern Virginia region. **Somewhat astonishing, however, is that more than 50 percent of students are eligible in five of the nine Virginia regions, including predominantly urban Hampton Roads, where more than 132,000 public school students are eligible.**



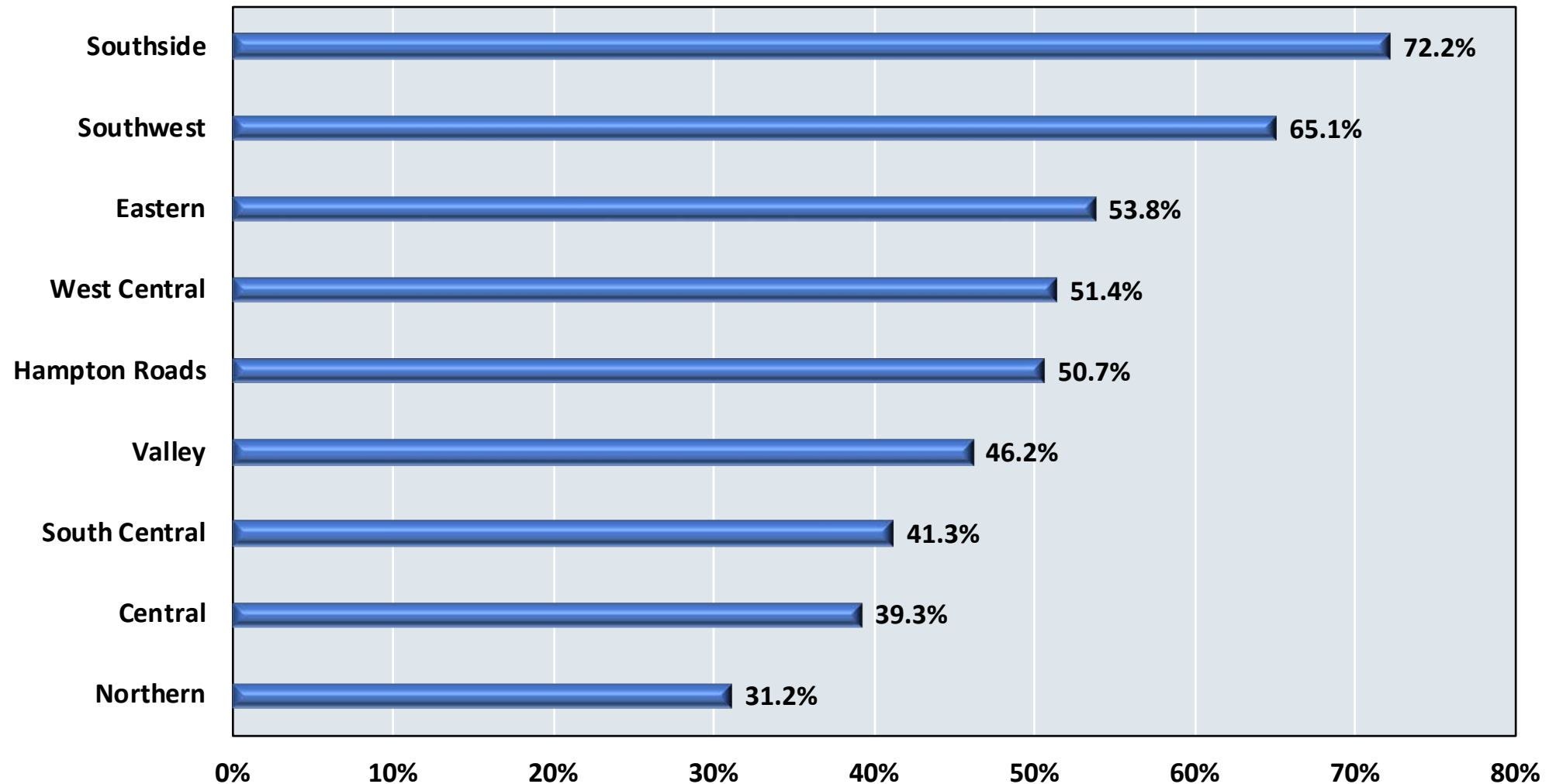
GRAPH 14

**PERCENTAGE OF STUDENTS ELIGIBLE FOR FREE AND REDUCED-PRICE LUNCH:
SELECTED VIRGINIA PUBLIC SCHOOL DIVISIONS, 2017-18 SCHOOL YEAR**



Source: Virginia Department of Education, School Year 2017-18, Free and Reduced Eligibility Report. We recognize that some schools with 100 percent free or reduced-price lunch participate in the U.S. Department of Agriculture's Community Eligibility Program, which provides free lunch to all students regardless of need. For more information see: <https://www.fns.usda.gov/school-meals/community-eligibility-provision>.

GRAPH 15

**PERCENTAGE OF STUDENTS WHO QUALIFY FOR FREE OR REDUCED-PRICE MEALS UNDER FEDERAL GUIDELINES:
VIRGINIA REGIONS, 2017**

Sources: Virginia Department of Education, School Year 2017-18, Free and Reduced Eligibility Report, and the Dragas Center for Economic Analysis and Policy, Old Dominion University. Data are for Department of Education regions that approximate GO Virginia regions.

Final Observations

Virginia is geographically and economically diverse. One's distance from Washington, D.C., the decline of industries such as coal, textiles and tobacco, and the stimulus of defense spending are among the most important reasons why we observe large variations in incomes and wealth throughout Virginia. Average real per capita income in Northern Virginia, for example, is almost 61 percent higher than the comparable figure in Southwest Virginia and about 11 percent higher than the next highest region, Central Virginia.

Population growth is both a cause and effect of income and wealth disparities. At least 40 Virginia towns, cities and counties lost population between 2010 and 2017. The geographic center of Virginia's population is marching northward almost coincident with I-95 at the rate of about 20 miles annually. Virginia's population continues to become more diverse, especially in its urban areas. While net domestic migration has been negative recently, international migration has helped offset the outflow of Virginians to other states.

To the extent that the concept of a Commonwealth is interpreted to mean that public policy metaphorically should ensure that no one in Virginia is left behind, selected state policies, especially those involving school funding, help reduce the impact of economic disparities. On the other hand, the Virginia income tax ranks in the lower middle among all states in terms of its income progressivity, and the Commonwealth's average level of Temporary Assistance for Needy Families benefit payments again places it roughly in the middle of the pack.

In coming years, this report will dive into economic life in Virginia. How have urban and rural areas fared in terms of jobs and income since the Great Recession? How are public schools faring in rural and urban communities? How can Virginia tap into its diverse population, geography and economic circumstances to strengthen the Commonwealth? Finding answers to these and other questions will help us examine ways to improve the common destiny of all Virginians.



MUCH ADO ABOUT NOTHING? VIRGINIA'S "KINGS DOMINION LAW"

Labor Day is a glorious holiday because your child will be going back to school the next day. It would have been called Independence Day, but that name was already taken.

– Bill Dodds, children's poet and novelist

In some states, the question of school calendars is being considered through an economic lens – not just with an eye toward their students' potential as future members of the workforce, but on the impact a shorter summer break might have on local tourism.

– Emily Richmond, The Atlantic
(Aug. 24, 2017)



If you are the parent of a child who attends public school in the eastern third of Virginia, then you may agree secretly with Bill Dodds (quoted on the previous page). Perhaps your patience is tested by your children at summer's end and you are more than ready to send them off to school. But alas, your child's school doesn't open until after Labor Day.

Why? Virginia's "Kings Dominion law."

In 1986, the Virginia General Assembly passed VA § 22.1-79.1, which requires that Virginia schools not open until after Labor Day, unless they meet specific conditions for a waiver.¹ The law is now commonly referred to in conversation and the media as the Kings Dominion law,² a reference to the amusement and theme park north of Richmond. The law is based neither on research concerning student performance nor on the need for agricultural labor. Instead, it reflects strong and persistent advocacy by the Commonwealth's travel and tourism industry, which believes the legislation is important to its financial welfare.

The theory was (and is) that amusement parks, hoteliers and restaurants in tourist destinations, and other tourist attractions

1 To read the full text and all waivers, please reference: Code of Virginia § 22.1-79.1, "Opening of the school year; approvals for certain alternative schedules," retrieved May 27, 2018, from <https://law.lis.virginia.gov/vacode/title22.1/chapter7/section22.1-79.1>.

2 For a recent example of the usage of the term "Kings Dominion law," see https://www.fredericksburg.com/news/education/fredericksburg-eyes-earlier-start-to-school-year-while-some-oppose/article_83a21fd7-001e-5899-9341-0b2ae9587491.html.

benefit significantly when Virginia's public schools do not open until after Labor Day. There are three parts to this hypothesis. First, the supposition is that tourist destinations in Virginia will attract incremental Labor Day business that otherwise they would lose if public schools opened earlier. Second, supporters believe that later public school openings enable tourist-oriented businesses to employ high school teenagers who otherwise might be forced to quit their jobs earlier because of their school responsibilities. Third, it is believed that schools can reduce air conditioning costs if they open after Labor Day.

The Kings Dominion law remains controversial and has faced recurring challenges since its enactment, with bills introduced in the General Assembly in each of the past eight years that would allow local control of start dates.³ During the 2018 legislative session, advocates for repeal introduced two bills in the House of Delegates that would have allowed public schools to decide on their own whether classes would start before or after Labor Day. One of the measures included a sweetener that would have required schools to give students a four-day Labor Day weekend.⁴ While both bills passed the House of Delegates, each failed in the Senate's Health and Education Committee. Thus, the post-Labor Day school opening requirement remains in force. However, as we will see, practically speaking, the law's requirement has been waived for almost 56 percent of all Virginia public school students. It is a virtual certainty that the law will remain a legislative issue in forthcoming sessions.

Virginia's Kings Dominion law contains important exceptions and the reality is that many public schools in the Commonwealth open prior to Labor Day. Figure 1, based on data from the Virginia Department of Education (VDOE) for the 2017-18 school year, illustrates that the divisions not receiving a waiver from the VDOE are heavily concentrated in eastern Virginia.

Who can receive a waiver? Waivers giving school divisions the option of an earlier start date are available to schools if they have been closed an average of eight days per year during any five of the last 10

years because of severe weather conditions, energy shortages, power failures or other emergency situations, or if they have innovative or experimental education programs. Still other possibilities exist, including a school division being granted a specific waiver by legislative action, or because it is surrounded by or located next to school divisions that do qualify for waivers.

Basing waiver eligibility on days when schools are closed, however, introduces a circumstance that economists often label "moral hazard" because it introduces adverse incentives. Virginia's waiver policy supplies an inducement for school divisions to cancel school days to ensure they qualify for a waiver. Even so, such cancellations do not diminish the total number of days that schools must be open (which is 180 days annually, or 990 hours), but redistribute them to earlier (or later) dates.

The Kings Dominion law and waiver system have led to very different school start (and thus, finish) dates, depending on where one lives in Virginia. For example, Buckingham County schools in central Virginia started classes on Aug. 3 for the 2017-18 school year, while Lancaster County on the Northern Neck started the day after Labor Day, Sept. 5.⁵

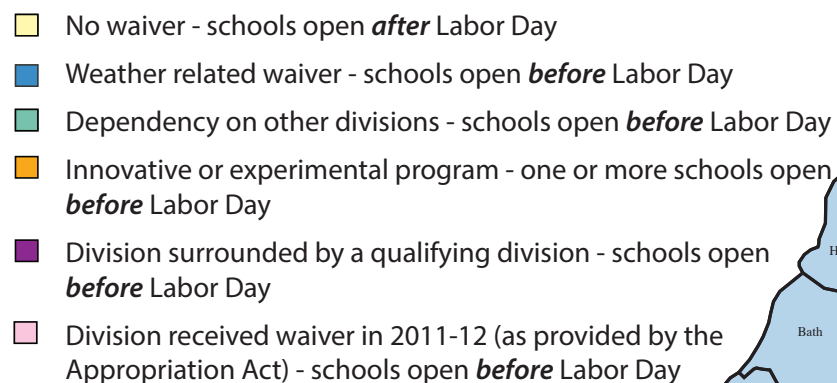
Graph 1 reveals that the percentage of schools in Virginia with a start date prior to Labor Day trended upward between 2001-02 and 2017-18. **More than 716,000 Virginia students, or 55.5 percent of all students, attended a school that started prior to Labor Day during the 2017-18 school year. In practice, the law requiring schools to start after Labor Day has already been repealed for a majority of students in the Commonwealth.**

3 Jessica Samuels (Feb. 15, 2017) "Schools still can't start before Labor Day," The Virginia Gazette, www.vagazette.com/news/va-vg-cns-school-calendar-0215-20170215-story.html.

4 Chelsea Jackson and Katie Bashista (Feb. 1, 2018), "All Virginia schools may get authority to open before Labor Day," Capital News Service, www.fredericksburg.com/news/all-virginia-schools-may-get-authority-to-open-before-labor/article_7d531a22-a311-59e2-845e-350f96925c3d.html.

5 Virginia Department of Education School Calendars for 2017-18, retrieved from the Virginia Department of Education website on May 26, 2018, from www.doe.virginia.gov/directories/sch__locales_schedules/_calendars.pdf.

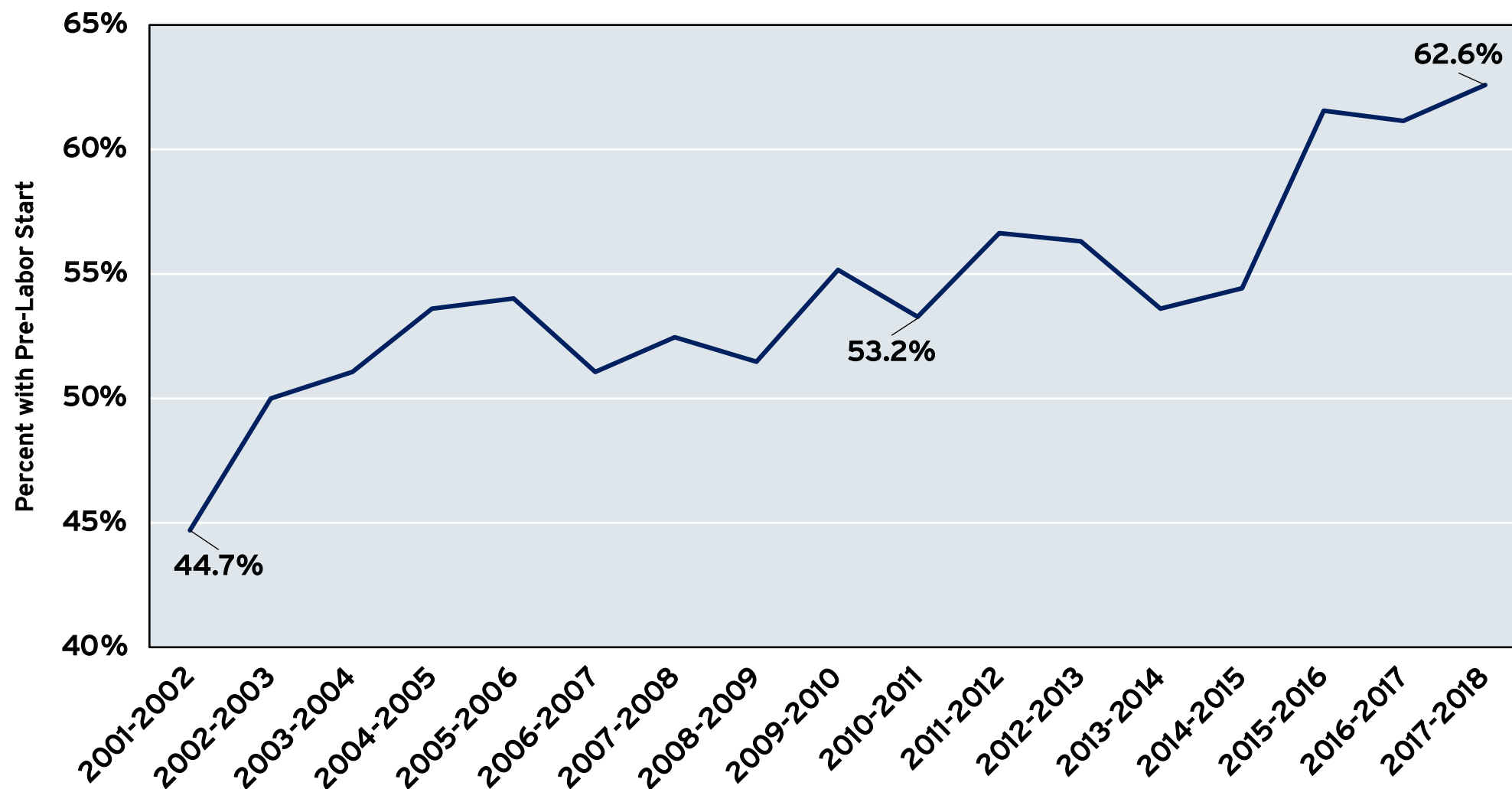
FIGURE 1



Source: Virginia Department of Education, 2018, http://www.doe.virginia.gov/boe/pre-labor-day_waiver/index.shtml

GRAPH 1

PERCENTAGE OF SCHOOLS IN VIRGINIA WITH A PRE-LABOR DAY START DATE, 2001-02 TO 2017-18



Source: Author analysis of school division start dates from 2001 to 2017, as furnished by the Virginia Department of Education

School Start Dates In The United States

When public schools should begin their academic year isn't a matter of debate only in Virginia. Figure 2 shows school start date mandates for each of the 50 states. Approximately two-thirds of U.S. states allow their school divisions to determine their own start dates. In contrast, a handful of states provide some division control, but require schools to start within specified ranges, such as Aug. 15-31. South Carolina, for example, requires schools to start no earlier than the third Monday in August. Finally, several states – including, of course, Virginia, but also Michigan, Wisconsin, Iowa, Minnesota and South Dakota – require some or all of their schools to start after Labor Day.

Maryland became the most recent state to join the “late start” club when Gov. Larry Hogan issued an executive order in 2016 delaying public school start dates to after Labor Day.⁶ The governor cited a 2013 Maryland Board of Revenue Estimates conclusion that an extra week of summer would add \$74.3 million in economic activity to the state, generating \$7.7 million in additional tax revenue.⁷ This followed a 2000 Texas study showing that early school start dates would result in the loss of \$332 million in economic activity,⁸ a 2002 South Carolina study that estimated a \$180 million loss in economic activity⁹ and a 2008 Tennessee study whose comparable estimated loss was \$189 million.¹⁰ Since then, a 2016 Michigan study has appeared with a rather modest \$20 million loss estimate.¹¹

In this chapter, we review and analyze some of the common arguments both for and against the Kings Dominion law as well as distinctive conditions within Virginia that must be considered. The most commonly

cited benefit of requiring a post-Labor Day public school start date is straightforward: It is helpful to the Commonwealth's travel and tourism industry, which accounts for approximately \$24 billion in annual Virginia spending and in the process generates 230,000 jobs in the Commonwealth.¹²

The industry argues that when families have the opportunity to do so, many opt to take vacations around Labor Day, patronage that would be lost if school divisions were to open prior to Labor Day. Second, some argue that travel and tourism companies are dependent on high school-age workers for the summer season. Thus, if school were to start prior to Labor Day, these teenagers most likely would not be available for extended holiday weekend work assignments. A third rationale is that there may be utility savings when schools open later because air conditioning is needed less after Labor Day.¹³

Few things of consequence ever occur without accompanying costs. Here too, this applies. Three potential negative impacts to student outcomes are important to consider when public schools do not open until after Labor Day. First, it is possible that high school graduation rates fall at schools that open after Labor Day. This is because Virginia law does not require students who have not yet graduated to attend school after they have reached age 18. Later school start dates mean a slightly larger proportion of students will reach age 18 during the school year and therefore be eligible to drop out, if they so choose.

Second, Standards of Learning (SOL) test scores are administered during fixed windows of time in each school year.¹⁴ If the school year does not begin until after Labor Day, then students will have fewer days in class prior to the SOL examinations and plausibly might not achieve as well as a consequence.¹⁵

6 <https://governor.maryland.gov/wp-content/uploads/2016/10/EO.01.01.2016.13.pdf>.

7 Bureau of Revenue Estimates, State of Maryland, “Economic Impact of a Post-Labor Day Start Date for Maryland Public Schools” (Aug. 14, 2013).

8 Susan Combs, Texas Comptroller of Public Accounts, “An Economic Analysis of the Changing School Start Date in Texas” (December 2000).

9 Stephan C. Morse, “South Carolina Early School Start Dates and the South Carolina Travel and Tourism Industries: An Analysis of Economic & Tax Revenue Impacts” (August 2002).

10 Stephan C. Morse, “Post Labor Day School Starts in Tennessee: An Analysis of the Economic and Tax Revenue Impacts on Tennessee Travel and Tourism Industry” (January 2008).

11 Anderson Economic Group, “The School Year Calendar and Tourism in Michigan” (Sept. 8, 2016).

12 Virginia Tourism Corporation, “Economic Impact of Travel: 2016 Economic Impact of Domestic Travel on Virginia,” retrieved May 27, 2018, from www.vatc.org/research/economicimpact. Most economists believe the corporation's estimates are on the high side.

13 Jennifer Radcliffe, “Texas Schools' Later Start Means Big Savings on Utilities,” Houston Chronicle (Aug. 21, 2008), www.chron.com/neighborhood/pearland-news/article/Texas-schools-later-start-means-big-savings-on-1780115.php.

14 As an example, the “2017-2018 Virginia SOL Assessments: Test Administration Dates,” www.doe.virginia.gov/administrators/superintendents_memos/2017/065-17a.pdf.

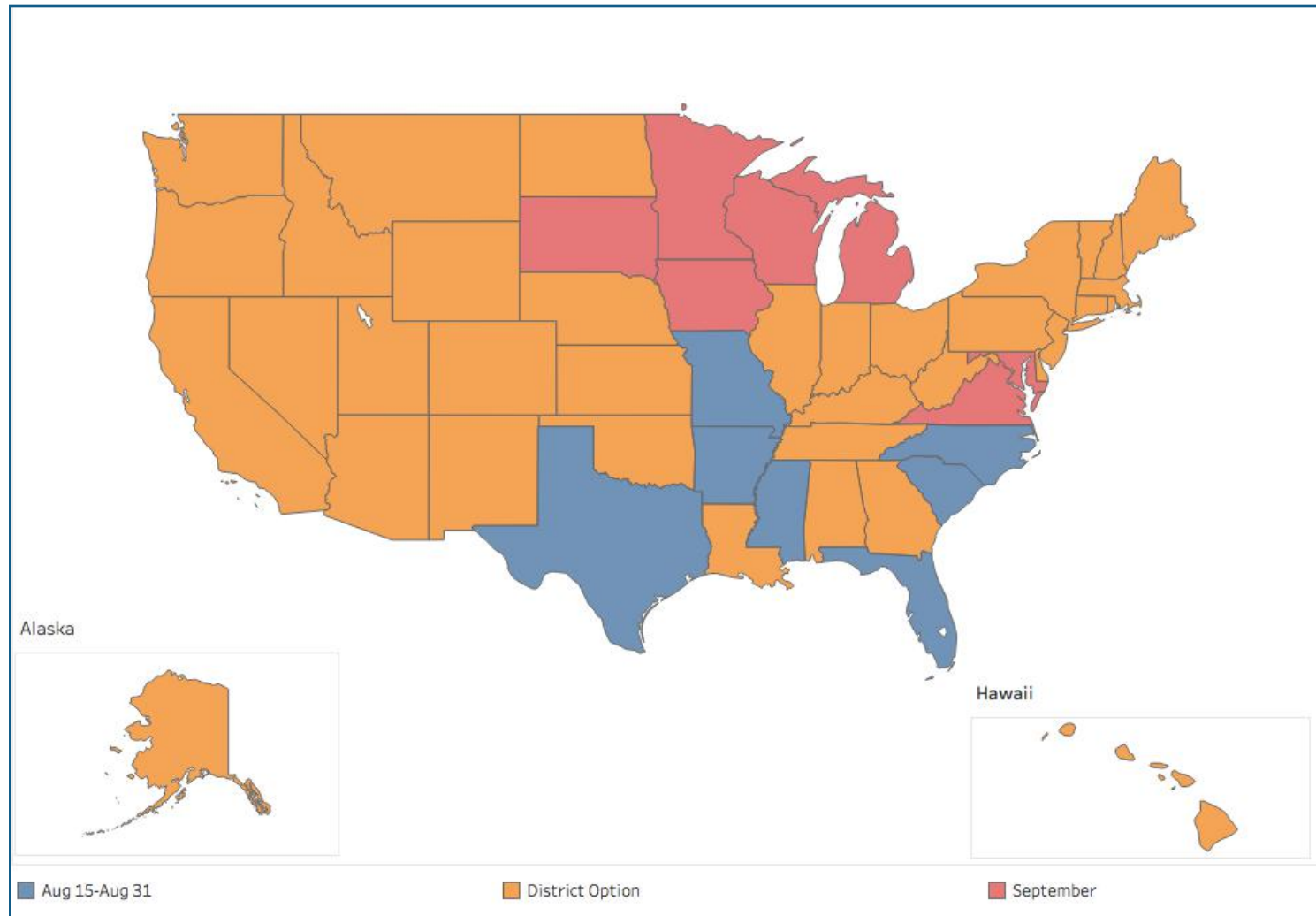
15 It remains an open question whether SOL scores in themselves should be the goal of schooling, as they may not necessarily coincide with college/workforce preparedness or preparation for students to live normal, well-adjusted lives. See www.washingtonpost.com/news/answer-sheet/wp/2014/08/01/what-do-standardized-tests-actually-test-for-one-assessment.

Third, students who take national examinations, such as the Scholastic Aptitude Test (SAT) or the American College Test (ACT), likewise have fewer days in class prior to taking these exams and there may be a negative achievement effect attached to this.

In this chapter, we provide empirical evidence from Virginia relating to each of these propositions. We also shed light upon the economic impact that pre-Labor Day school openings might have on the Commonwealth's travel and tourism industry. **Our analysis reveals that the Kings Dominion law has not significantly impacted school graduation rates, student retention or test scores. Further, repealing the law would not have a very large negative impact on Virginia's travel and tourism industry. We estimate that if the Kings Dominion law were repealed, the Commonwealth would lose only about \$37.5 million in tourism spending, even after accounting for the economic ripple effects of tourism expenditures inside Virginia. In 2016, this constituted only one-sixth of 1 percent of reported total tourism expenditures and an almost invisible .000076 percent of the value of the Commonwealth's gross domestic product.**



FIGURE 2
MANDATED PUBLIC SCHOOL START DATES: THE 50 STATES, FISCAL YEAR 2017



Source: Education Commission of the States

A Look At The Evidence Concerning Student Performance

Let's begin our analysis by clarifying the nature of our data set. The work we present below is based on the performance of students in 130 of Virginia's 132 public school divisions.¹⁶ During the 2016-17 school year, there were approximately 1.29 million full-time students in these school divisions, with approximately 49.7 percent identifying as white, 15.1 percent as Hispanic, 6.8 percent as Asian and 22.6 percent as black. We examine school division performance data for each school division for every year in the 10-year time interval 2007-08 through 2016-17. Therefore, we have $130 * 10 = 1,300$ potential observations. Non-reporting of data, or the minimal presence of a particular ethnic group in a school division, eliminated some school divisions from being included in our analysis in specific years.¹⁷

Our focus on these school divisions is designed to estimate the impact of early or late school opening dates on five academic performance variables: (1) on-time graduation rates, (2) dropout rates, (3) standardized test scores, (4) SOL pass rates and (5) end of course (EOC) examinations.

RELATIONSHIP OF PRE-LABOR DAY STARTS TO ON-TIME GRADUATION RATES

One of the more important arguments against starting after Labor Day is that later starts might negatively impact student retention and graduation rates. According to the Code of Virginia, compulsory attendance is required up to the student's 18th birthday.¹⁸ Given the enrollment provisions, it is possible that some students will turn 18 as early as Sept. 30 of their senior year.¹⁹ One can imagine the thought process of some of the students who fall into this category. If they perceive that they have little chance of graduating, or they already are earning what they consider to be significant income, then they will be more likely to drop out.

We rely upon a common statistical technique known as multiple linear regression to focus on the determinants of school division graduation rates. Our aim is to assess the impact of the start date of a student's school division (pre-Labor Day or not) on the on-time graduation rate²⁰ of the school division. However, it is clear that factors in addition to school start dates influence graduation rates, and so we also explore the influence of several other variables on the on-time graduation rate: (1) annual per student spending in the student's school division, (2) the presence of economically disadvantaged students in the school division,²¹ (3) the gender of students in the school division and (4) the ethnic background of the school division's students.

Graph 2 presents the results. The 0.54 coefficient for the "all students" variable tells us that a pre-Labor Day start date would increase the graduation rate of all students in a school division by .54 percent. The horizontal line bracketing the 0.54 number provides information that helps

¹⁶ Because we focus on 130 of Virginia's 132 school divisions, our sample is almost identical to the population of school divisions. In such an instance, conventional error statistics function primarily as measures of variability rather than as measures of statistical significance.

¹⁷ Thus, we have 1,253 school division observations that apply to all students; 1,248 that focus on economically disadvantaged students; 321 that focus on Asian students; 1,025 that focus on black students; 596 that focus on Hispanic students; 1,251 that focus on female students; and 1,249 that focus on male students.

¹⁸ Code of Virginia § 22.1-254: "Compulsory attendance required; excuses and waivers; alternative education program attendance; exemptions from article" states that "every parent, guardian, or other person in the Commonwealth having control or charge of any child who will have reached the fifth birthday on or before September 30 of any school year and who has not passed the eighteenth birthday shall, during the period of each year the public schools are in session and for the same number of days and hours per day as the public schools, cause such child to attend a public school or a private, denominational, or parochial school or have such child taught by a tutor or teacher of qualifications prescribed by the Board of Education and approved by the division superintendent, or provide for home instruction of such child," retrieved online May 28, 2018, from <https://law.lis.virginia.gov/vacode/22.1-254>.

¹⁹ Students who were born on Sept. 30 and enter school on their fifth birthday would turn 18 on Sept. 30 of their senior year, assuming normal progress through the school grades. At that point, they could not be legally compelled to remain in school.

²⁰ In Virginia, the on-time graduation rate is defined as the number of students who have graduated within four years after entering high school, divided by a quantity that consists of the number of students who entered four years earlier plus the number who transferred into the school division minus the number who transferred out of the school division, www.doe.virginia.gov/statistics_reports/graduation_completion/cohort_reports/calculating.pdf.

²¹ Per the Virginia Department of Education website, a student is considered economically disadvantaged if he/she meets any one of the following: 1) is eligible for free/reduced-price meals, 2) receives Temporary Assistance for Needy Families, 3) is eligible for Medicaid or 4) is identified as either migrant or experiencing homelessness, www.doe.virginia.gov/statistics_reports/research_data/data_elements.shtml#disadvantage.

us understand how confident we can be in the precision of this estimate. Suppose we were able to find data for 2017-18, 2018-19 and other years, and then performed the same analysis. How confident can we be that we would once again end up with the value 0.54? We utilize a conventional 5 percent level of statistical significance in this regard. The horizontal bracket tells us that if we found a new sample of years and performed the same analysis, 95 percent of the results would lie inside this interval and only 5 percent would lie outside it.

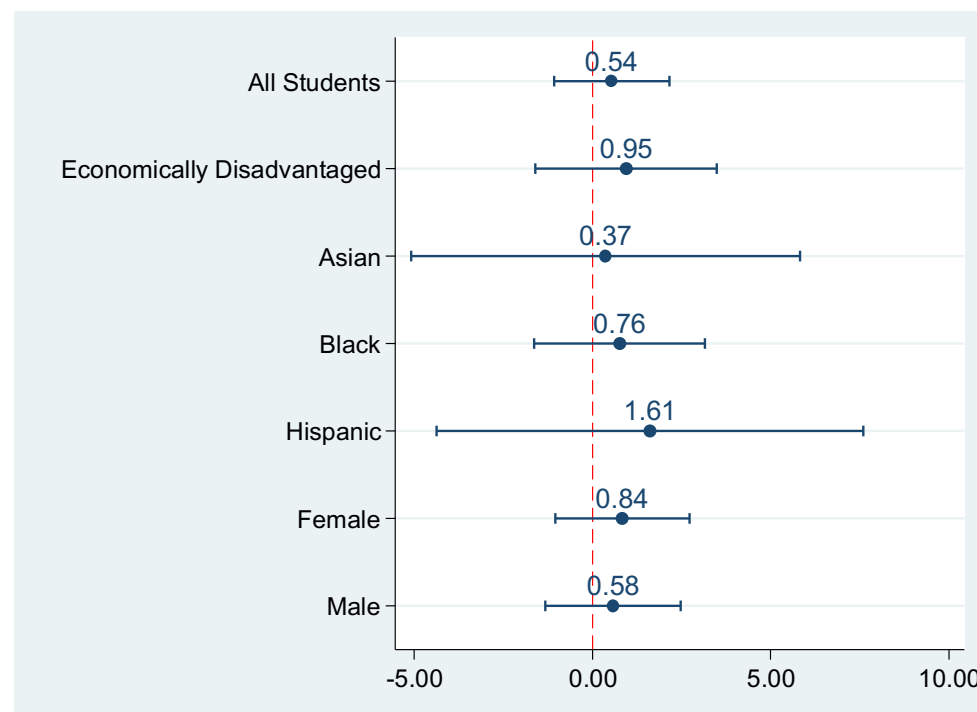
However, note this: A zero value resides within this interval, as do quite a few negative values. This means that if we found the new sample and conducted the same analysis, we might end up with values such as -0.25 or .00. The horizontal bracket, which is termed a confidence interval, tells us that we cannot be supremely confident that our 0.54 estimate would emerge if we found a new sample of school division years.

This seriously reduces our confidence in the 0.54 estimate. **Indeed, if we were testing a formal hypothesis that the actual value of early school start dates upon on-time graduation rates is zero, then we could not reject this hypothesis.**

A perusal of the estimates reported in Graph 2 reveals that every one of them features a horizontal bracket that contains a zero. This means that we cannot be confident at least 95 percent of the time that a new analysis with a new sample of years and school divisions wouldn't generate a zero result.²² This would mean that start dates have no influence on graduation rates.

The practical significance is that we can't show that any of the explanatory factors in Graph 2 has a statistically significant influence upon on-time school division graduation rates. For example, the 1.61 estimate for Hispanics suggests that early school start dates increase Hispanic graduation rates by 1.61 percent. Unfortunately, we aren't sufficiently confident in this result that we can rely on it. If we took a new sample and performed the same analysis, then we might obtain a very different result, perhaps even a negative percentage.

GRAPH 2
EFFECT OF A PRE-LABOR DAY START UPON ON-TIME GRADUATION RATES



Source: Analysis based on data compiled from the Virginia Department of Education, Bureau of Labor Statistics and the Virginia Auditor of Public Accounts Local Government Comparative Reports. Note: Each coefficient estimate is generated using a linear regression model, including per pupil educational spending, local unemployment rate, school fixed effects, a school-level linear time trend and a school-level quadratic time trend to account for time variant trends at the local level. Errors are clustered at the division level. Excludes specific special schools for which information is not available. Sample only includes divisions listing between 272 and 299 calendar days for the school year (1st and 99th percentiles, respectively). Ninety-five percent confidence intervals are shown.

²² Is there anything magical about the 95 percent criterion (which corresponds to a .05 level of statistical significance) rather than, say, a 90 percent criterion? No. However, a .05 level of statistical significance is used widely and is the standard in trials in federal courts.

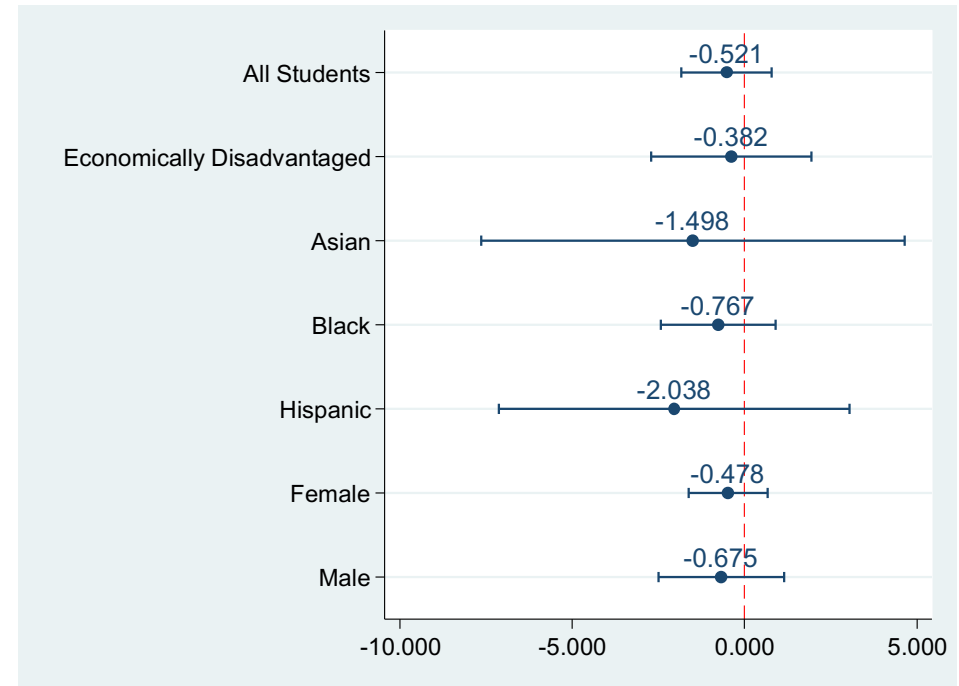
Effects Of Pre-Labor Day Starts On High School Dropout Rates

An argument against a mandatory law that requires K-12 schools to open after Labor Day is that later starts will lead to more high school students dropping out of school before the end of their senior year. Older high school students may turn 18 during their senior year and thus decide to leave high school. While this may have been more common decades ago when a high school diploma was not necessary for some forms of labor, it is common knowledge today that failing to finish high school leads to significantly lower lifetime earnings. While students still drop out of high school, these decisions are multifaceted and may be due more to lack of parental guidance, poor learning environments and a perceived lack of economic opportunities.

These arguments notwithstanding, we examine the empirical evidence of whether school start dates have an effect on high school dropout rates. While the negative coefficients in Graph 3 suggest that pre-Labor Day start dates might diminish dropout rates, a quick scan of the values and the intervals confirms that each contains a zero and therefore there are no statistically significant effects of starting before Labor Day on high school dropout rates. That is, if our standard of evidence is a 5 percent level of statistical significance, then we cannot conclude that early school start dates have an influence on high school dropout rates.

GRAPH 3

EFFECT OF PRE-LABOR DAY SCHOOL DIVISION START DATES UPON HIGH SCHOOL DROPOUT RATES



Source: Analysis based on data compiled from the Virginia Department of Education, Bureau of Labor Statistics and the Virginia Auditor of Public Accounts Local Government Comparative Reports. Note: Each coefficient estimate is generated using a linear regression model, including per pupil educational spending, local unemployment rate, school fixed effects, a school-level linear time trend and a school-level quadratic time trend to account for time variant trends at the local level. Errors are clustered at the division level. Excludes specific special schools for which information is not available. Sample only includes divisions listing between 272 and 299 calendar days for the school year (1st and 99th percentiles, respectively). Ninety-five percent confidence intervals are shown.

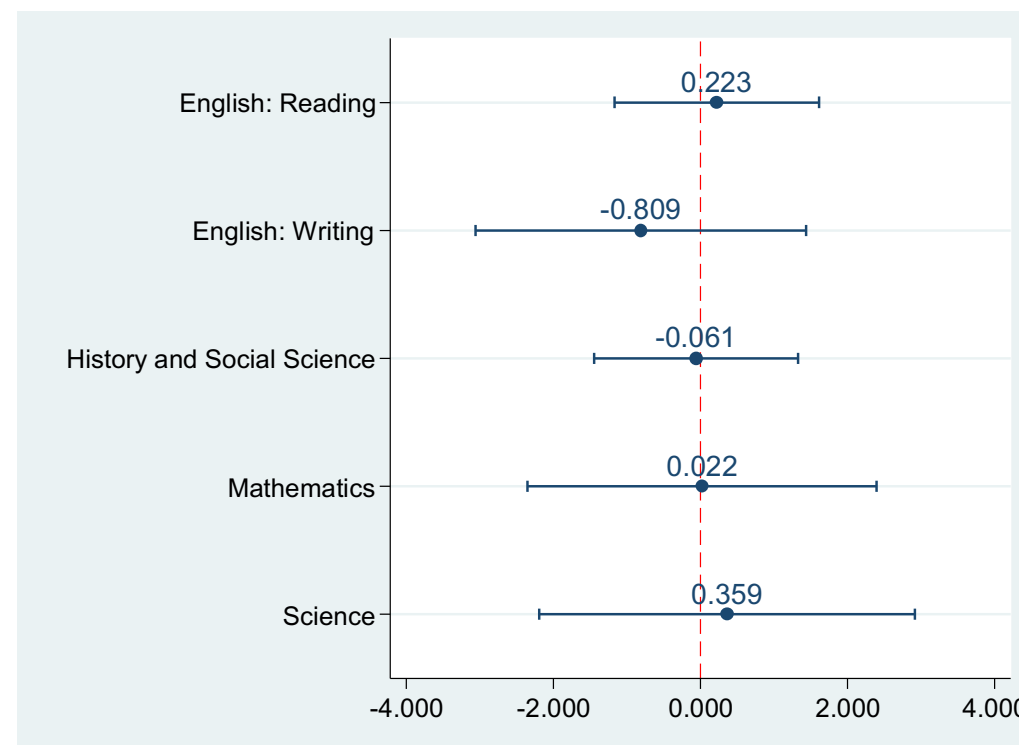
Effects Of Pre-Labor Day Start Dates On Standardized Test Scores

In Virginia, Standards of Learning (SOL) represent the “minimum expectations for what students should know and be able to do at the end of each grade or course in English, mathematics, science, history/ social science and other subjects.”²³ Performance with respect to these standards is measured by SOL exams administered within a specified time window that applies to all public schools in Virginia. For instance, in 2017-18, for the graduating senior end of course (EOC) exams, there was a window of March 5-16 for a student’s first attempt at his or her writing tests. EOC exams are high-stakes exams that can determine the type of diploma high school graduates receive²⁴ and are a factor in school funding and performance evaluations. It is possible that later start dates would penalize student performances on the EOC exams because students so affected would have less time to prepare for them.

The Virginia Department of Education provided us with mathematics SOL score pass rates for grades 3-8 for school years 2007-08 to 2017-18 as well as EOC exam pass rates for English: reading, English: writing, history and social science, mathematics and science for the time period 2007-08 through 2017-18.

Graph 4 contains estimates of the impact that a pre-Labor Day school division start date has on EOC pass rates across all five major exams. The same statistical criteria apply as in Graphs 2 and 3. Because zero values reside inside each of the horizontal confidence interval brackets, we cannot find any statistically significant impact of pre-Labor Day school start dates on EOC pass rates.

GRAPH 4
END OF COURSE PASS RATE EFFECTS BY PRE-LABOR DAY SCHOOL DIVISION START DATES



Source: Analysis based on data compiled from the Virginia Department of Education, Bureau of Labor Statistics and the Virginia Auditor of Public Accounts Local Government Comparative Reports. Note: Each coefficient estimate is generated using a linear regression model, including per pupil educational spending, local unemployment rate, school fixed effects, a school-level linear time trend and a school-level quadratic time trend to account for time variant trends at the local level. Errors are clustered at the division level. Excludes specific special schools for which information is not available. Sample only includes divisions listing between 272 and 299 calendar days for the school year (1st and 99th percentiles, respectively). Ninety-five percent confidence intervals are shown.

²³ Virginia Department of Education Standards of Learning (SOL) and Testing, retrieved June 7, 2018, from www.doe.virginia.gov/testing/index.shtml.

²⁴ Virginia Department of Education, “Frequently asked questions about earning a Virginia high school diploma,” retrieved June 19, 2018, from www.doe.virginia.gov/instruction/graduation/faq.shtml.

Effects Of Pre-Labor Day School Division Start Dates On SOL Scores

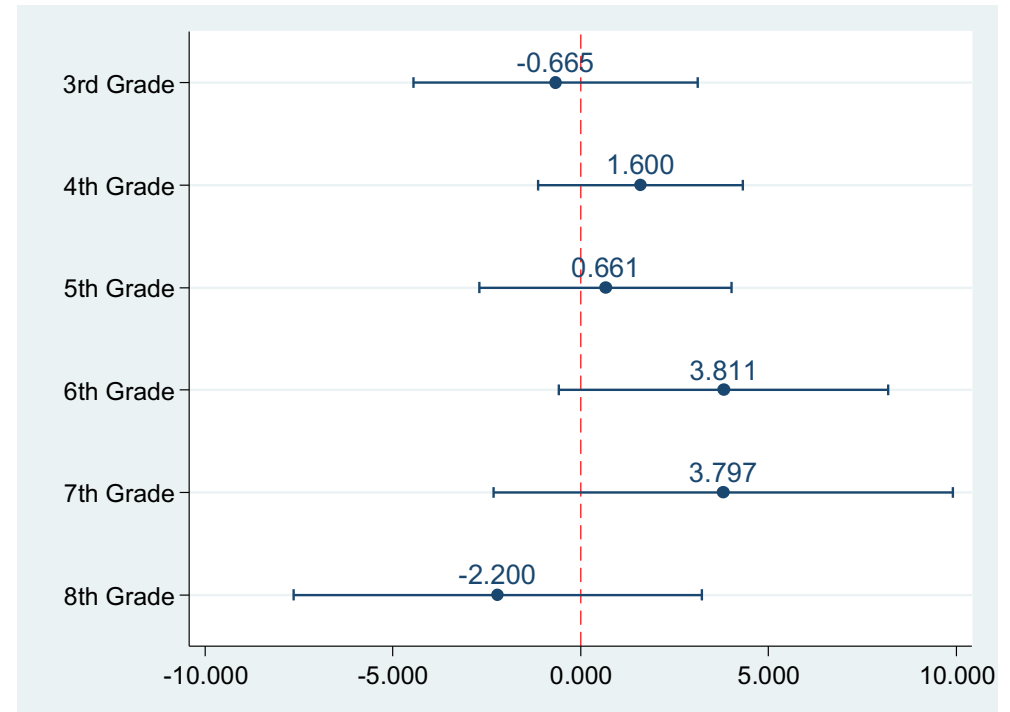
Next, we turn to the influence of early school start dates on SOL scores in grades 3 to 8. We focus initially on mathematics and these results are reported in Graph 5. We emerge with the same conclusion – in this case, early school start dates have no statistically significant influence on SOL mathematics scores.

Next, we look at SOL reading pass rates in grades 3 to 8. While no statistically significant differences are evident in Graph 6 for grades 3 to 6, the results for grades 7 and 8 do meet our .05 standard of statistical significance. An early school start date is associated with a 2.3 percent lower likelihood of passing the reading SOL for seventh-graders and a 3.3 percent decline for eighth-graders. This is interesting, as these are the only instances where we find any statistically significant evidence that early school start dates have an impact on academic performance. It is not clear why these results emerged in these two cases.

Notwithstanding the two anomalous results reported in Graph 6, our overall conclusion is that there is little or no evidence that early school division start dates harm academic performance. If anything, the evidence leans in the opposite direction. It does not appear that academic considerations should play a major role in the discussion about whether the school year should begin before or after Labor Day.

GRAPH 5

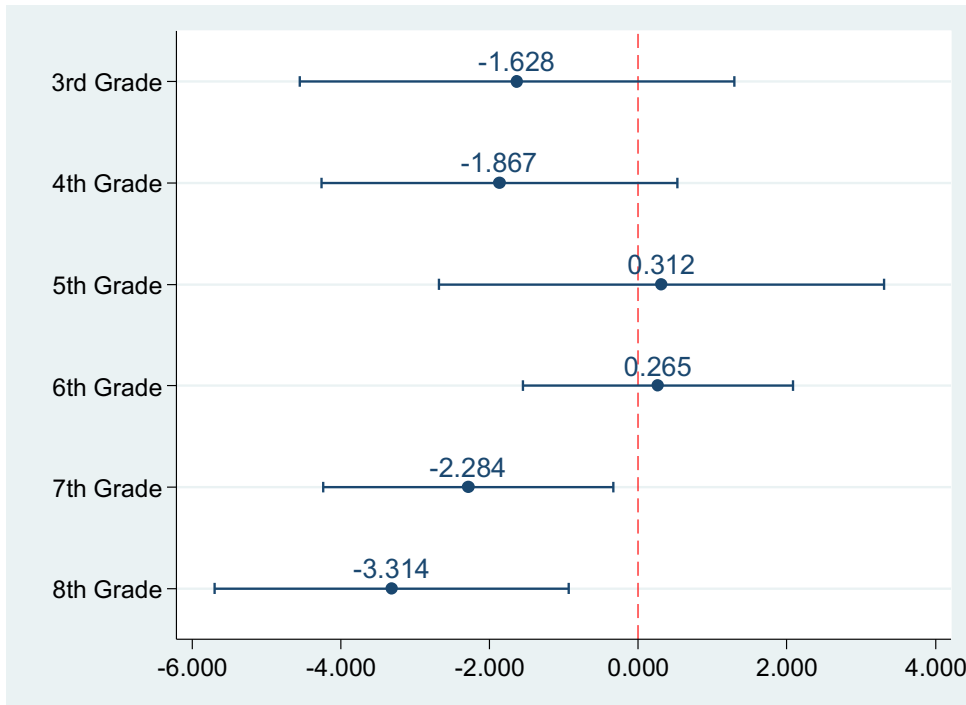
THE IMPACT OF PRE-LABOR DAY START DATES ON MATHEMATICS SOL PASS RATES IN GRADES 3-8



Source: Analysis based on data compiled from the Virginia Department of Education, Bureau of Labor Statistics and the Virginia Auditor of Public Accounts Local Government Comparative Reports. Note: Each coefficient estimate is generated using a linear regression model, including per pupil educational spending, local unemployment rate, school fixed effects, a school-level linear time trend and a school-level quadratic time trend to account for time variant trends at the local level. Errors are clustered at the division level. Excludes specific special schools for which information is not available. Sample only includes divisions listing between 272 and 299 calendar days for the school year (1st and 99th percentiles, respectively). Ninety-five percent confidence intervals are shown.

GRAPH 6

**READING SOL PASS RATES IN GRADES 3-8 BY
PRE-LABOR DAY START**



Source: Analysis based on data compiled from the Virginia Department of Education, Bureau of Labor Statistics and the Virginia Auditor of Public Accounts Local Government Comparative Reports. Note: Each coefficient estimate is generated using a linear regression model, including per pupil educational spending, local unemployment rate, school fixed effects, a school-level linear time trend and a school-level quadratic time trend to account for time variant trends at the local level. Errors are clustered at the division level. Excludes specific special schools for which information is not available. Sample only includes divisions listing between 272 and 299 calendar days for the school year (1st and 99th percentiles, respectively). Ninety-five percent confidence intervals are shown.

A Look At The Economic Evidence Concerning Public School Division Start Dates On Economic Activity

As of mid-2018, Gov. Ralph Northam had yet to take a position on the merits of the Kings Dominion law. In contrast, Northam's predecessor, Gov. Terry McAuliffe, supported the law, specifically citing concern for how changing it might adversely affect the Commonwealth's travel and tourism industry.²⁵ The "tourism issue," as McAuliffe called it, was the original impetus for changing school start dates back in 1986. The thrust of the economic argument comes from the Virginia Restaurant, Lodging and Travel Association (VRLTA), a tourism industry trade group. Among other priorities, the VRLTA has focused its legislative effort on protecting Virginia's post-Labor Day school start date.²⁶ The VRLTA contends that starting classes in August would be detrimental to Virginia's travel and tourism industry and subsequently reduce overall state tax revenues.²⁷

Most of the empirical studies that have focused on the economic effects of pre-Labor Day school start dates have been produced or paid for by parties that have had a proverbial horse in the race. These parties crave a certain result and this is what they usually receive. This is not to say that one should discard these studies (many of which were cited earlier in this chapter), but rather that their conclusions should be interpreted with discerning eyes.

Only one rigorous study of the school start date issue has gone through peer review and criticism. It is the subject of a 2016 article in the journal *Tourism Economics*, authored by Elton Mykerezzi and Genti Kostandini.²⁸ We will have much more to say about it later in the chapter.

One practical reason for the paucity of rigorous studies of the school start date issue is that Labor Day falls in the middle of the third quarter

²⁵ www.roanoke.com/news/politics/article_f071b90a-7a5c-11e3-8030-0019bb30f31a.html.

²⁶ www.vrlta.org/page/LegislativePositions.

²⁷ www.vrlta.org/page/LegislativePositions.

²⁸ Elton Mykerezzi and Genti Kostandini (2016), "The impact of post Labor Day School Start Mandates on Summer Travel: Evidence from a Quasi-experiment," *Tourism Economics*, 22(3), 637-644.

of the year. Therefore, it is not so easy for analysts to determine the precise impact that school start dates have on travel and tourism industry receipts.

Importance Of Tourism Spending To The Virginia Economy

Without a doubt, the travel and tourism industry plays an important role in the Virginia economy. Table 1 provides Virginia Tourism Corporation (VTC) estimates of tourism expenditures in Virginia in 2016. Note, however, that the VTC contracts with the U.S. Travel Association (USTA) to provide these estimates. The USTA utilizes a proprietary model to generate its estimates and hence it is not possible to audit or check the numbers it provides. Most economists familiar with the situation believe that the USTA's estimates are generous, at least partially because of the expansive definitions it utilizes in deciding what is a tourism expenditure.

Nevertheless, tourism expenditures and employment are significant in the Commonwealth. In 2016, \$24 billion (4.8 percent of Virginia's gross domestic product in that year) could be attributed to tourism if one accepts the USTA's estimates. These expenditures were associated with more than 229,000 jobs (or about 5.9 percent of Virginia's total nonfarm employment in 2016). **Hence, it takes about \$103,000 in annual travel spending inside the state to support one tourism-related Virginia job.**²⁹

The economic argument in favor of tourism doesn't stop with the expenditures we have noted in Table 1 and Graph 7. Tourism spending, like all other spending, reverberates through the economy in areas where it takes place. Figure 3 illustrates a simple visual version of the "economic wave" of tourism and visitor spending. First, tourism spending creates jobs in the hospitality sector and related industries from the direct spending noted above. Cities and the Commonwealth capitalize on this spending by collecting revenues from meal and restaurant taxes, transient occupancy

(hotel and motel) taxes and admission taxes. For most tourism-reliant areas, these taxes are important revenue streams. The economic ripples continue with *indirect* and *induced* effects. The indirect effect relates to the spending done by businesses that supply the tourism industry, while the induced effect focuses on the spending undertaken by tourism industry workers with the income they earn. To the extent that pre-Labor Day public school openings reduce tourism expenditures, these indirect and induced effects shrink due to resulting smaller direct effects.

TABLE 1
VIRGINIA DOMESTIC TRAVEL EXPENDITURES AND EMPLOYMENT
BY SECTOR, 2016

Sector	Expenditures (Billions of \$)	Virginia-connected Employment
Lodging	\$4.7 billion	40,800
Food Service	\$7.2 billion	93,000
Entertainment and Recreation	\$1.8 billion	43,900
General Retail Trade	\$2.3 billion	15,500
Public Transportation	\$3.1 billion	24,000
Auto Transportation	\$4.6 billion	8,700
Totals	\$24.0 billion (4.8 percent of Virginia GDP)	229,000 (5.9 percent of Virginia nonfarm employment)

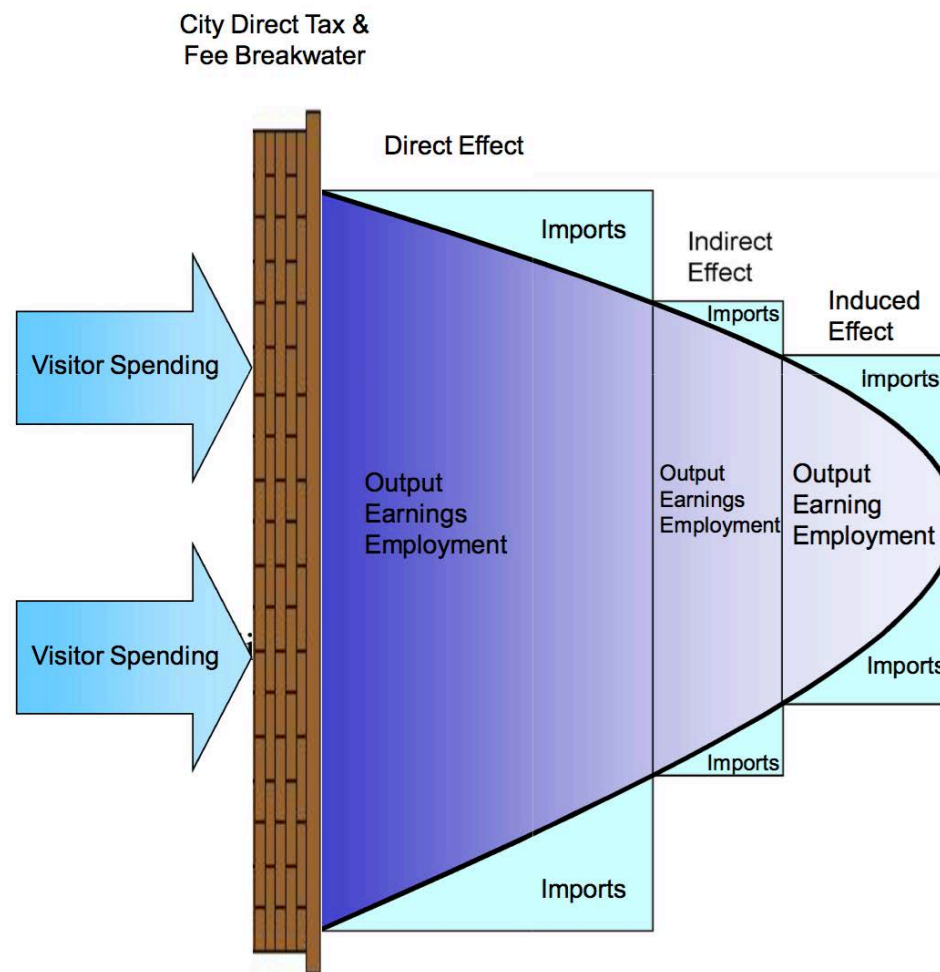
Sources: Virginia Travel Corporation for estimates, FRED (Federal Reserve Bank of St. Louis) for Virginia gross domestic product, <https://fred.stlouisfed.org/series/VANGSP> and Virginia employment, <https://fred.stlouisfed.org/series/VANA>. Travel planning accounts for 3,348 employees and approximately \$183 million in payroll and is included in the totals. Estimates rounded to the nearest 10th for expenditures or 1,000th for employment.

²⁹ www.vatc.org/wp-content/uploads/2017/09/2016_Economic_Impact_of_Domestic_Travel_on_Virginia_and_Localities.pdf.

As noted previously, the scholarly journal *Tourism Economics* has published research that addresses the issue of how much tourism spending might occur (or not occur) during a Labor Day holiday due to earlier public school opening dates. Using appropriate statistical techniques, Mykerezi and Kostandini found that families with children traveled 3.56 fewer days in August and September when they lived in states with pre-Labor Day public school openings. However, the families made up some of this decline by traveling more between May and July. The net reduction in leisure travel, May through September, was 1.59 days per family. Hence, there is a negative tourism effect attached to earlier public school opening dates for these families with children. However, for families without children, the net effect, May through September, was effectively zero. Thus, on average, it is only families with children that are affected by legislation such as Virginia's Kings Dominion law.

Virginia Tourism Commission data also suggest that the Labor Day weekend tourist effect is not quite as large as some might perceive. Graph 8 discloses that single-day tourism travel (with no overnight stay) increases in September and peaks in October. Leisure travel (defined here as consisting of travel more than 50 miles away from home and involving at least one overnight stay) declines a bit in September, but rebounds smartly in October. Perhaps some households make up for any reductions in their Labor Day tourist trips with additional travel later in the fall. Senior citizens may also travel after Labor Day to take advantage of lower hotel rates.

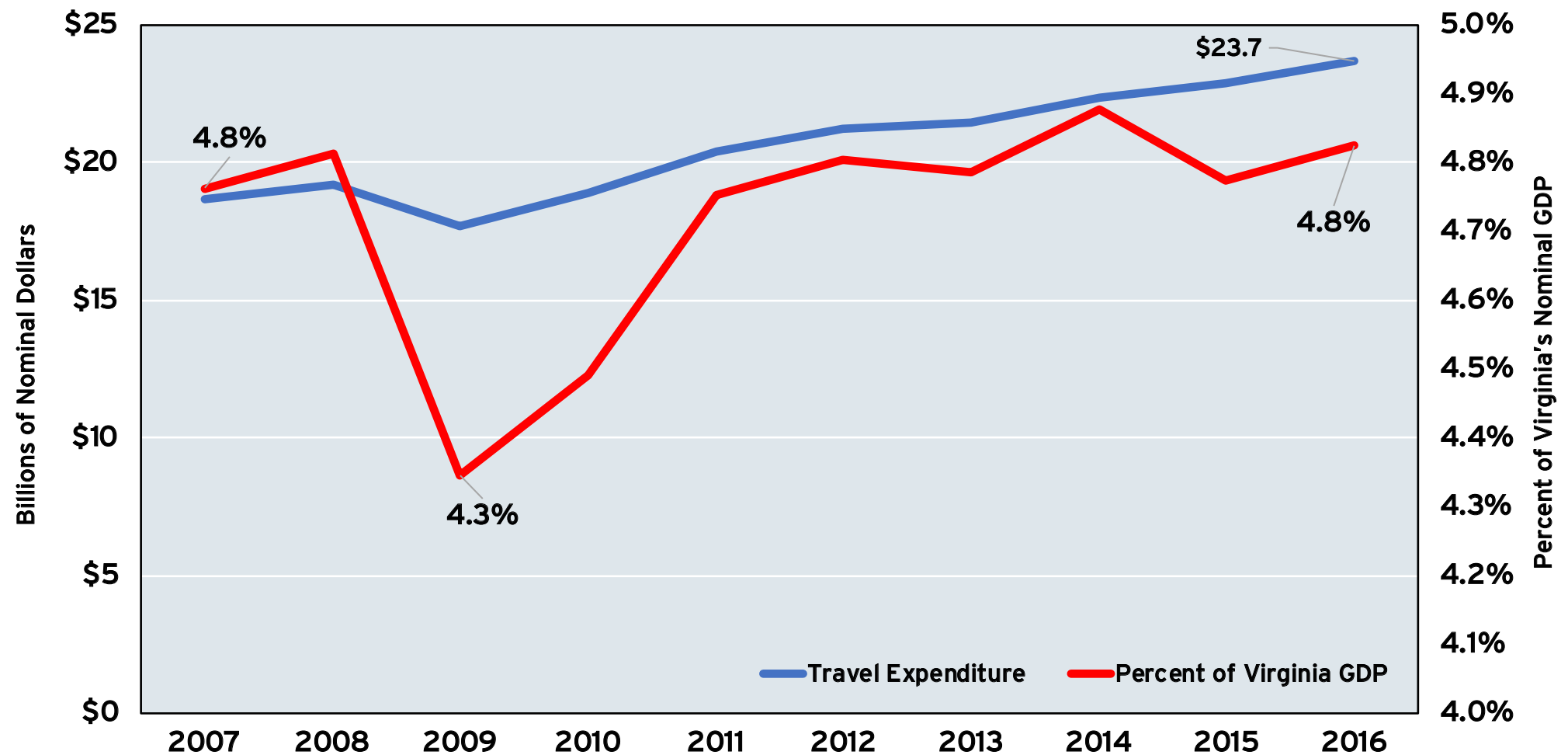
FIGURE 3
THE ECONOMIC RIPPLE EFFECTS OF TOURISM EXPENDITURES



Source: Dragas Center for Economic Analysis and Policy, Old Dominion University

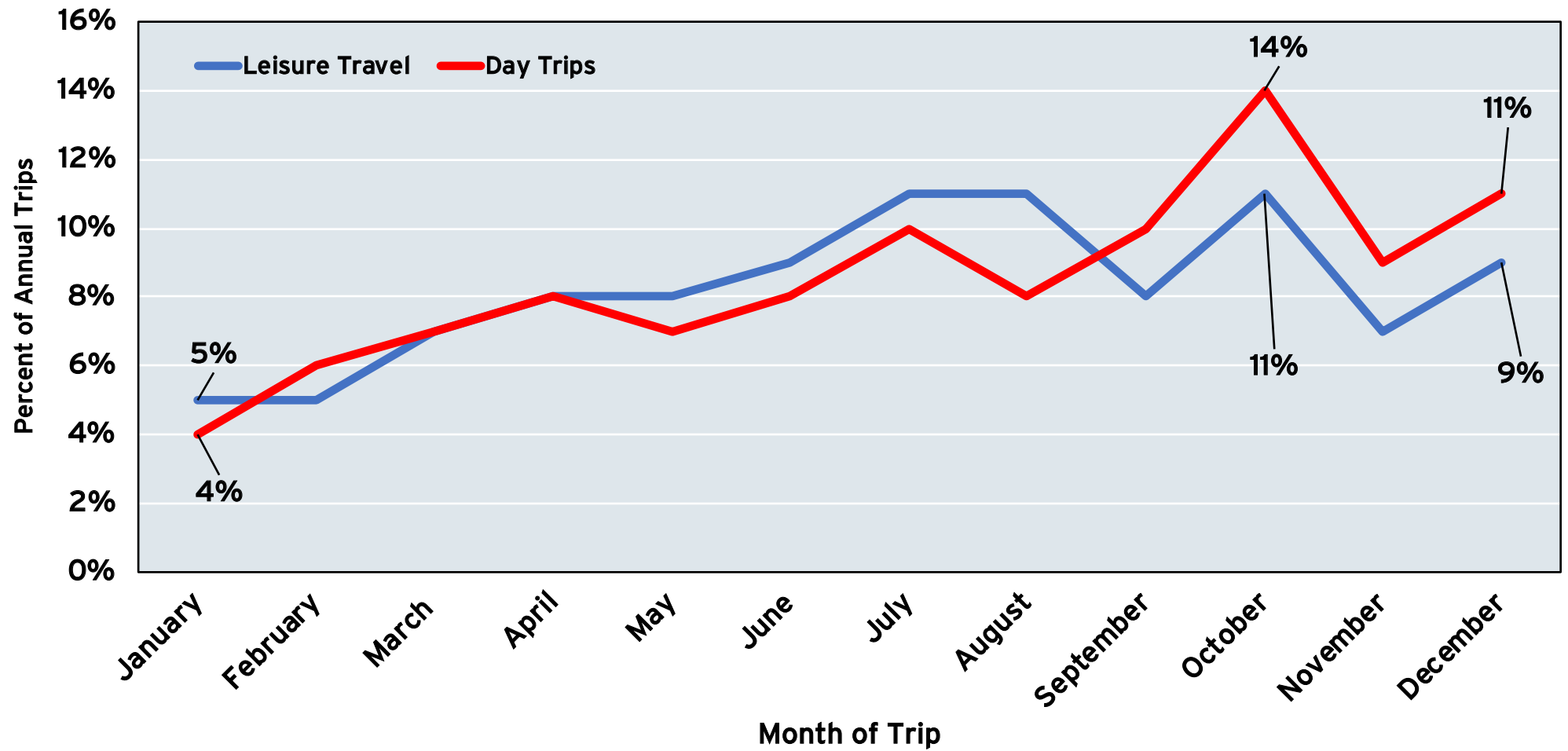
GRAPH 7

VIRGINIA DOMESTIC TRAVEL EXPENDITURES, 2007-2016



Sources: Travel expenditure data from the Virginia Tourism Corporation, state gross domestic product from the Bureau of Economic Analysis and the consumer price index from the Bureau of Labor Statistics

GRAPH 8
LEISURE AND DAY TRIPS BY MONTH IN VIRGINIA,
FISCAL YEAR 2017



Source: Virginia Tourism Corporation, <https://www.vatc.org/research/travel-data-and-profiles>

Who Engages In Tourism In Virginia?

Table 2 reveals the origins as well as the destinations of Virginia tourists, according to VTC data. Tourists entering the Commonwealth come primarily from East Coast states and travel broadly across Virginia. Notably, Table 2 informs us that only 26 percent of leisure travelers in Virginia come from Virginia. This is welcome news because these travelers from other states represent “new” or “outside” money that does not simply redistribute dollars already here. However, this flow of guests from other states also carries with it implications for school start dates. Any tourist industry sting associated with revoking the Kings Dominion law is reduced significantly because almost three-quarters of overnight leisure travel inside the Commonwealth comes from other states.

Those who do engage in leisure travel in Virginia are relatively wealthy and over one-third earn more than \$100,000 a year (see Table 3). **Sixty-six percent of leisure travelers are married, yet only 30 percent of those traveling for leisure bring their children with them.** This is important because the Kings Dominion law only has a direct impact on families that have school-age children.

Finally, the VTC travel profile data provide several useful measures of overnight leisure travel activities. The average leisure travel trip lasts 2.5 nights and involves 2.8 individuals. Spending per travel party trip averages \$550, or approximately \$220 per day. Unfortunately, these data are not categorized by families with and without children.

TABLE 2
THE WHERE FROM AND WHERE TO: PLACE OF ORIGIN AND DESTINATION FOR FY 2017

Origin	Travel Destination										
	Virginia Leisure Travel	Day Trips	Central Virginia	Chesapeake Bay Region	Eastern Shore	Hampton Roads	Northern Virginia	Shenandoah Valley	Southern Virginia	Southwest Virginia	Virginia Mountains
Virginia	26%	64%	45%	45%	28%	38%	31%	37%	41%	36%	33%
North Carolina	8%	13%	6%	9%	9%	11%	6%	6%	18%	12%	11%
Pennsylvania	8%	5%	6%	6%	11%	7%	9%	10%	5%	6%	8%
New York	7%	<1%	6%	7%	8%	6%	6%	6%	5%	4%	<1%
Maryland	7%	6%	7%	4%	7%	7%	7%	6%	3%	4%	6%
Florida	5%	5%	3%	3%	4%	4%	6%	4%	4%	4%	4%
All Other States	39%	7%	27%	26%	33%	27%	35%	31%	24%	34%	38%

Source: Virginia Tourism Corporation's "Profiles of Travel in Virginia FY 2017"

TABLE 3

WHO AND HOW MUCH: TRAVELER CHARACTERISTICS IN VIRGINIA BY REGION

	Virginia Leisure Travel	Day Trips	Central Virginia	Chesapeake Bay Region	Eastern Shore	Hampton Roads	Northern Virginia	Shenandoah Valley	Southern Virginia	Southwest Virginia	Virginia Mountains
Married	66%	63%	63%	64%	65%	65%	60%	65%	60%	64%	66%
Traveling with Children	30%	28%	33%	45%	44%	37%	27%	35%	50%	35%	35%
Average Travel Party Size	2.80	2.60	2.7	3.1	3.1	2.8	2.7	2.9	3.1	2.8	2.8
Annual Household Income >\$99k	37%	23%	33%	33%	32%	37%	40%	33%	24%	29%	31%
Average Travel Party Spending per Trip	\$548	\$166	\$473	\$588	\$729	\$626	\$471	\$515	\$552	\$387	\$475
Average Nights	2.5		3.3	3.6	4.1	3.5	3.5	3.9	3.5	3.3	3.6

Source: Virginia Tourism Corporation's "Profiles of Travel in Virginia FY 2017"

How Many Families In Virginia Are Affected By The Kings Dominion Law?

You will remember that Graph 1 disclosed the rather large percentage (62.6 percent) of schools that obtained a waiver for the 2017-18 school year. In Table 4, we break down the number of Virginia families with pre- versus post-Labor Day school division start dates. The U.S. Census definition of a family is that it consists of a household with two or more individuals who are related by birth, marriage or adoption.

Table 4 shows that approximately 60 percent of households live in areas with pre-Labor Day school starts. This means that more than 826,000 households currently are in school divisions in which the public schools begin prior to Labor Day and only about 425,000 households reside in school divisions that begin after Labor Day. Interestingly, Table 4 also reveals that the presence of children in a household or the household's

income makes little difference in terms of whether that household is in a division that opens its schools either early or late.

The fact that almost 60 percent of school divisions in Virginia have received waivers from the Kings Dominion law means that its effects have been muted over time. Nonetheless, we would like to know what those effects are. We can mine the information presented thus far to develop a simple, transparent measure of the economic impact of pre-Labor Day public school division openings.

Table 4 illustrates that for all the households in Virginia, about 60 percent reside in areas where school starts prior to Labor Day. Not all households, however, have children. Of the approximately 1.2 million households in areas where schools open prior to Labor Day, approximately 587,000 have children. The remaining households did not report having children and would thus be largely unaffected by school start dates. On the other hand, of the approximately 826,000 Virginia households that reside in post-Labor Day school start areas, about 401,000 have children. The remaining 425,000 households without children would, again, be largely unaffected by when schools start their academic year.

TABLE 4				
CURRENT FAMILY DEMOGRAPHICS WITH PRE- AND POST-LABOR DAY START IN VIRGINIA				
	Pre-Labor Day Start	Post-Labor Day Start	% Pre-Labor Day Start	% Post-Labor Day Start
Family Households	1,221,761	826,079	59.7%	40.3%
Family Households Without Children	634,549	425,141	59.9%	40.1%
Family Households With Children	587,212	400,938	59.4%	40.6%
Family Households Over \$30,000 Income Without Children	599,687	424,270	58.6%	41.4%
Family Households Over \$30,000 Income With Children	443,525	292,799	60.2%	39.8%

Source: American Community Survey 5-year estimates

Simply put, this means that of the 2.05 million households in Virginia in 2016, only about 20 percent were impacted by the Kings Dominion law. Table 4 also reveals that neither family income nor the presence of a child made a difference as to whether a household was in a pre-Labor Day or post-Labor Day school division. Most households in Virginia are unaffected by when a school division opens, except, perhaps, for traffic increases due to parents taking children to and from school and the ubiquitous presence of yellow school buses on the road.

If we allow for economic ripple effects, then this number could rise to \$50 million. However, to the extent these families choose to vacation outside of Virginia, the size of this estimate declines. Suppose these families spend one-quarter of their vacation days outside the Commonwealth. Then, our net loss number declines to \$37.5 million.

Recall that the VTC reported that travel-related spending in Virginia was almost \$24 billion in 2016, while our simple calculation relating to the repeal of the Kings Dominion law results in an estimated \$37.5 million annual loss. This estimated loss is less than one-sixth of 1 percent of total tourism expenditures – nothing to be sneezed at, but hardly resembling the financial hammer blow that supporters of the law have contended.

Final Thoughts

For a fairly innocuous law about school start dates, the Kings Dominion law has led to strong opinions regarding its impact on school performance, tourism and economic impact. Both sides of the debate have brought reasonable arguments to a question of policy: Should local control or central control prevail with regard to when public primary and secondary schools start instruction? What should prevail: economic arguments or arguments about how children learn and are tested?

Supporters of the Kings Dominion law argue that pre-Labor Day school year openings would lead to damaging economic losses. We do find damages, but they are remarkably small: less than one-sixth of 1 percent of the VTC's estimated annual tourism expenditures in Virginia and an almost infinitesimal .000076 percent of Virginia's gross domestic product in 2016. Perhaps one way to alleviate these concerns is to allow districts to open the school year based on local preferences but to mandate a four-day Labor Day holiday.

Opponents of the Kings Dominion law argue that delayed school openings harm school performance. Students who attend schools that open later, as this argument goes, have less instruction time to prepare for standardized tests. We find no empirical evidence to support this argument. Our analysis suggests that, after controlling for district characteristics, there are no discernable empirical differences in test scores between early- and late-opening districts.

We acknowledge that our conclusions are unlikely to satisfy those on either side of the argument. The discussion is important but the squabbles over the repeal of the Kings Dominion law ultimately involve arguments over very small stakes. We find almost no evidence that revoking this law would harm the Commonwealth. It seems sensible to allow school divisions to pursue their own pleasure concerning public school start dates.

*Our new Constitution is now established,
and has an appearance that promises
permanency; but in this world nothing can be
said to be certain, except death and taxes.*

– Benjamin Franklin, in a letter to
Jean-Baptiste Leroy, 1789

SIN TAXES AND ALCOHOL CONSUMPTION IN VIRGINIA



State and local governments often seek ways to obtain more revenue, especially to fund ever-increasing expenditure demands. Excise taxes represent one possibility in this regard. An excise tax is one levied by the federal, state or local government on a specific good, such as gasoline, cigarettes or alcoholic beverages. Responsibility for paying this tax falls on merchants, who generally seek to pass on the tax to the price of the good(s) they sell. Unlike income taxes, an excise tax is a tax on consumption – if someone doesn't buy the good, they don't pay the tax.

Increasing existing excise tax rates or levying new excise taxes on certain goods offers a potentially attractive revenue source for state governments, including Virginia. The state can collect the necessary tax revenue, while avoiding increasing – or possibly being able to decrease – their income tax or property taxes. No issues in tax deductibility arise, since excise taxes are generally not deductible from federal or state income taxes.

Excise taxes for alcoholic beverages provide an additional potential benefit to state governments. Along with taxes on cigarettes, they represent an example of a so-called “sin tax.” Excise taxes on beer, wine and distilled spirits have the ancillary effect of reducing alcohol consumption and thus the adverse effects associated with overuse of alcoholic beverages. Efforts can take the form of discouraging negative externalities, such as alcohol abuse or driving while intoxicated.

This chapter examines excise taxes on alcoholic beverages in Virginia. It includes a look at the historical record of excise tax revenue over time for the United States and Virginia; how Virginia's excise tax rates on beer, wine and distilled spirits compare to those of other states across the country; the role of Virginia's Alcoholic Beverage Control Authority; and alcohol consumption over time, including the incidence of negative alcohol-related behavior, in the Commonwealth. We conclude by examining whether increasing excise tax rates on beer, wine or distilled spirits constitutes a potentially effective policy for Virginia.

Revenue From Excise Taxes On Alcoholic Beverages: Historical Trends

Excise taxes on alcoholic beverages have long been a source of income for state and local governments. The Urban Institute, a nonprofit think tank, collects data on state and local governments. For the U.S. overall (Graph 1), revenue from excise taxes declined in real (inflation-adjusted) terms from 1977 to 1999 but has increased since the turn of the century. Total excise tax revenue on alcoholic beverages for all state and local governments fell from \$8.8 billion in 1977 to \$6 billion in 1999, but then recovered to over \$7 billion in 2015.

We observe a similar pattern in the Commonwealth in Graph 2, where excise tax revenues on alcoholic beverages fell from \$250 million in 1977 to around \$161 million in 1997. Since then, excise revenues on alcoholic beverages have recovered smartly, reaching \$257 million in 2015. From 1998 to 2015, excise tax revenues on alcoholic beverages increased almost 60 percent, even after accounting for the effects of inflation, and excise tax rates on beer and wine have not changed in recent memory.

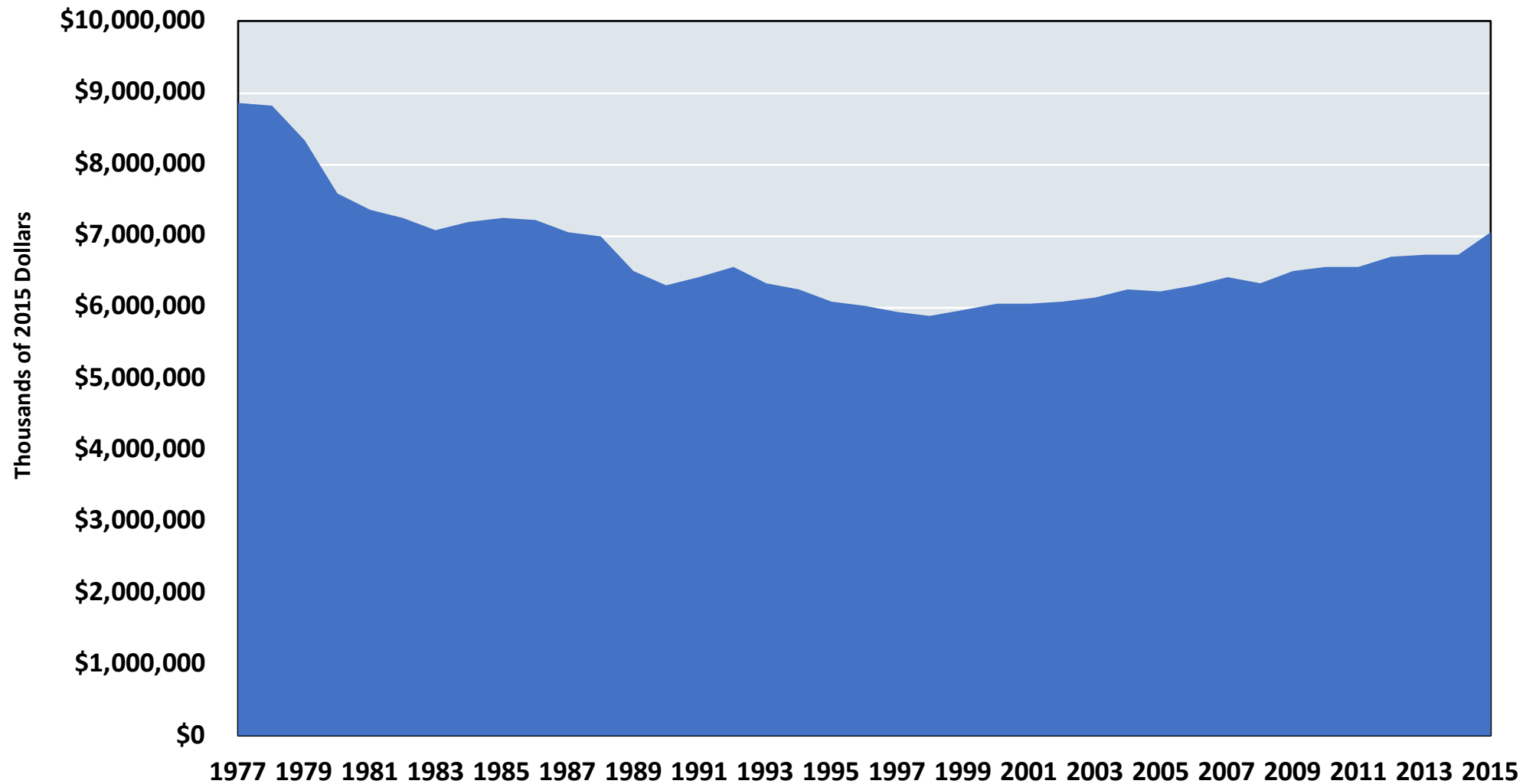
Excise taxes from the sale of alcoholic beverages have been markedly resilient this century, weathering economic downturns in stride. Even during the Great Recession, real (inflation-adjusted) revenue from

excise taxes on alcoholic beverages for state and local governments in the U.S. only fell from \$6.4 billion in 2007 to \$6.3 billion in 2008 before increasing to \$6.5 billion in 2009. Over the same period, Virginia's real excise tax revenues on alcoholic beverages increased from \$192 million in 2007 to \$198 million in 2009. While revenue dipped slightly in 2011, it has steadily increased since then, reaching \$257 million in 2015.

Consistency in revenue from excise taxes on alcoholic beverages contrasts with income tax revenue, which tends to be much more sensitive to fluctuations in economic activity. The Great Recession resulted in significant declines in income tax revenue for state and local governments. These same governments were also constrained by balanced budget requirements and from borrowing to fund day-to-day expenditures. States and local governments faced an unenviable decision of having to increase taxes from other sources, cut expenditures, or both.

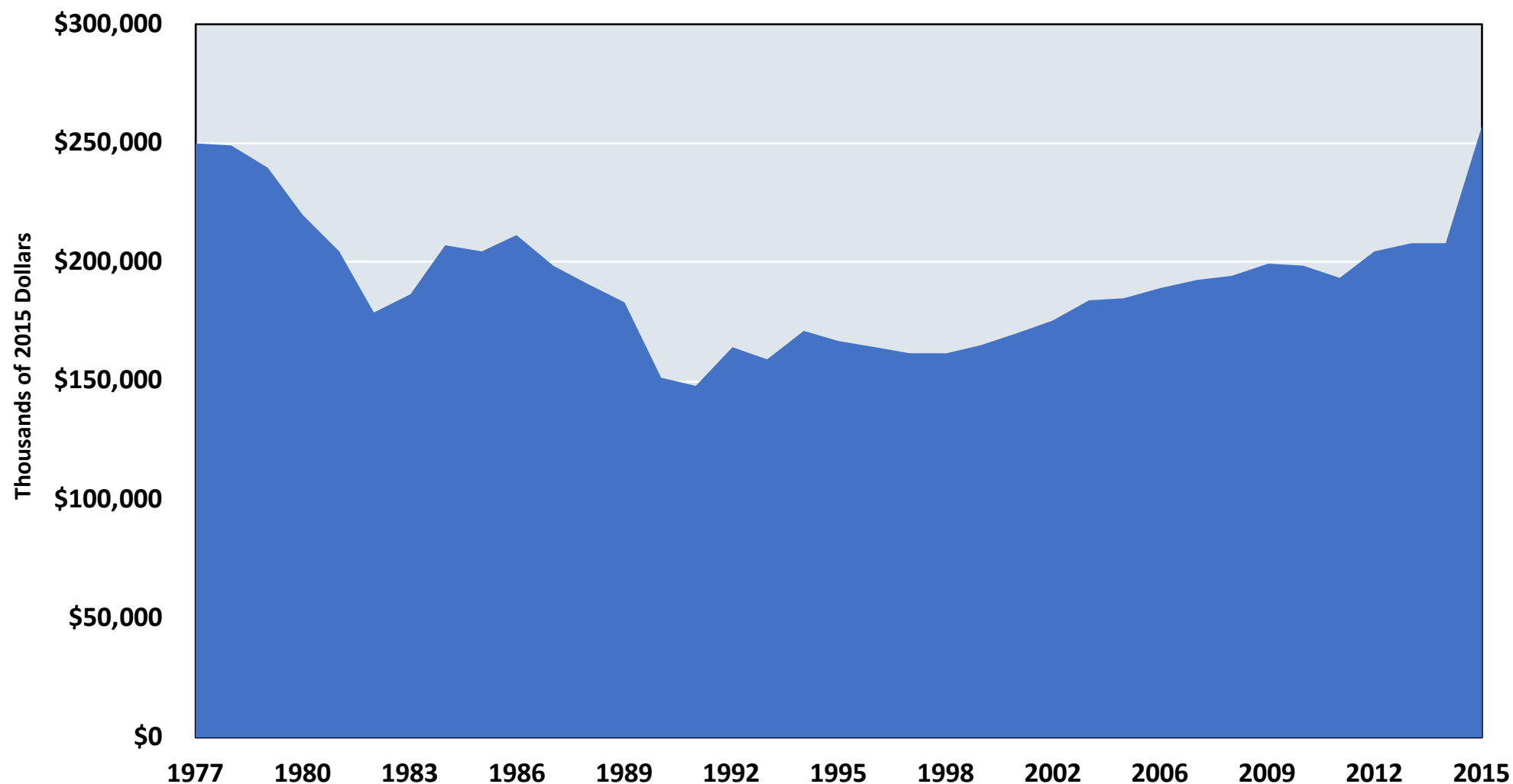
From 2008 to 2010, state and local government income and sales tax revenues in the U.S. fell by 15.3 percent and 6.5 percent, respectively. For Virginia, income and sales tax revenues fell by 15.5 percent and 3.7 percent, respectively, over the same period. For comparison, national excise tax revenues on alcoholic beverages increased by 3.4 percent and Virginia's increased by 2.3 percent from 2008 to 2010. Excise taxes on alcohol, wine and distilled spirits offered more consistency and actually grew during the depths of the recession.

GRAPH 1
ALCOHOL TAX REVENUE FOR STATE AND LOCAL GOVERNMENTS IN THE UNITED STATES, 1977-2015



Sources: State & Local Government Finance Data Query System, the Urban Institute-Brookings Institution Tax Policy Center, data from the U.S. Census Bureau, Annual Survey of State and Local Government Finances, Government Finances, Vol. 4, and the Census of Governments (1977-2015)

GRAPH 2
ALCOHOL TAX REVENUE FOR STATE AND LOCAL GOVERNMENTS IN VIRGINIA,
1997-2015



Sources: State & Local Government Finance Data Query System, the Urban Institute-Brookings Institution Tax Policy Center, data from the U.S. Census Bureau, Annual Survey of State and Local Government Finances, Government Finances, Vol. 4, and the Census of Governments (1977-2015). These revenues may be understated, as Virginia is an alcohol control board state and sells distilled spirits in state-owned stores.

Tax Rates On Alcoholic Beverages

Each state sets its own excise tax rates for beer, wine and distilled spirits (the federal government and possibly local governments set additional excise tax rates on each of these beverages as well). Excise tax rates on the various types of alcoholic beverages differ considerably across states, with Virginia having relatively high rates. As of Jan. 1, 2018, the excise tax rates on beer, wine and distilled spirits for Virginia are each above the corresponding median rates, based upon the 50 states and the District of Columbia.

Virginia's state excise tax rate for beer equals \$0.2565 per gallon (Figure 1), ranking it 21st nationally. The highest excise tax rates on beer are in Tennessee (\$1.28), Alaska (\$1.07) and Hawaii (\$0.93), while the lowest rates are found in Wyoming (\$0.018), Missouri (\$0.06) and Wisconsin (\$0.06). Virginia's excise tax rate for beer is slightly above the median state tax rate on beer of \$0.20 per gallon.

Virginia's state excise tax rate for wine equals \$1.51 per gallon (Figure 2).¹ It ties for sixth highest (with Georgia) among the 50 states and the District of Columbia. The highest excise tax rates on wine come from Alaska (\$2.50), Florida (\$2.25) and Iowa (\$1.75), with the lowest rates found in Missouri (\$0.06), Wisconsin (\$0.064) and California (\$0.20). The excise tax rate for wine in Virginia is more than twice the median rate of \$0.72 per gallon.²

In Virginia, the government directly controls the sale of distilled spirits, one of 17 states to do so. According to the Distilled Spirits Council of the United States, the estimated excise tax rate for spirits in Virginia equals \$19.90 per gallon (Figure 3).³ This rate ranks third highest nationally. The highest excise tax rates for distilled spirits occur in Washington state (\$31.48) and Oregon (\$22.78), with Missouri (\$2.00), Colorado (\$2.28) and

Texas (\$2.48) having among the lowest rates. Virginia's excise tax rate for distilled spirits is well above the median of \$5.56 per gallon.

As the Commonwealth controls the sale of distilled spirits, it can alter the markup on spirits to generate more revenue. Whether this markup is economically efficient is a matter of debate. The Virginia Distillers Association (VDA), for example, argues that distillers contribute more in excise taxes on a per gallon basis than wine or beer producers. In 2016, the VDA estimated that Virginia's excise tax on a per gallon basis for distilled spirits was almost \$31, higher than the \$1.51 for wine and \$0.26 for beer.⁴ Their argument was that one should not only consider the direct excise tax but also the markup, handling fee and other charges that create a higher burden for distillers. Regardless of whether one only examines the excise tax on spirits or a more inclusive measure of the burden on spirits, a reasonable conclusion is that Virginia has a relatively high tax rate on distilled spirits. Given the emergence of craft distilleries (much like craft breweries), these relatively high tax rates may discourage investment in the distillery industry in the Commonwealth.

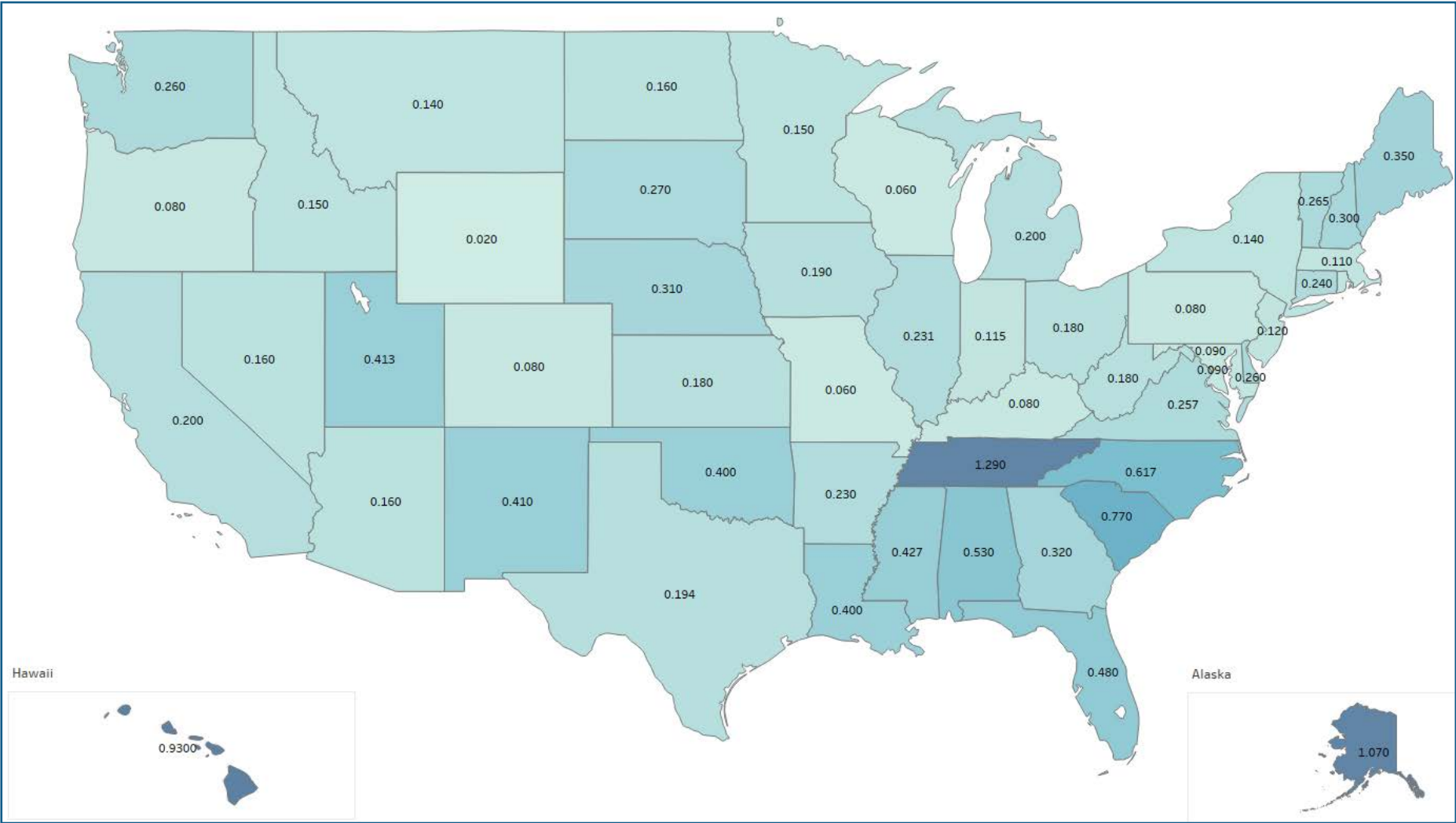
1 Pennsylvania, Utah and Wyoming are omitted from this sample since all wine sales in these states take place through state stores. Revenue in these states comes from various taxes, fees, price markups and net profits.

2 Tax Policy Center (2018b).

3 Alcoholic beverage control states, of which Virginia is one, earn revenue through ad valorem markups as well as excise taxes. Excise tax rates on distilled spirits are estimated for these states.

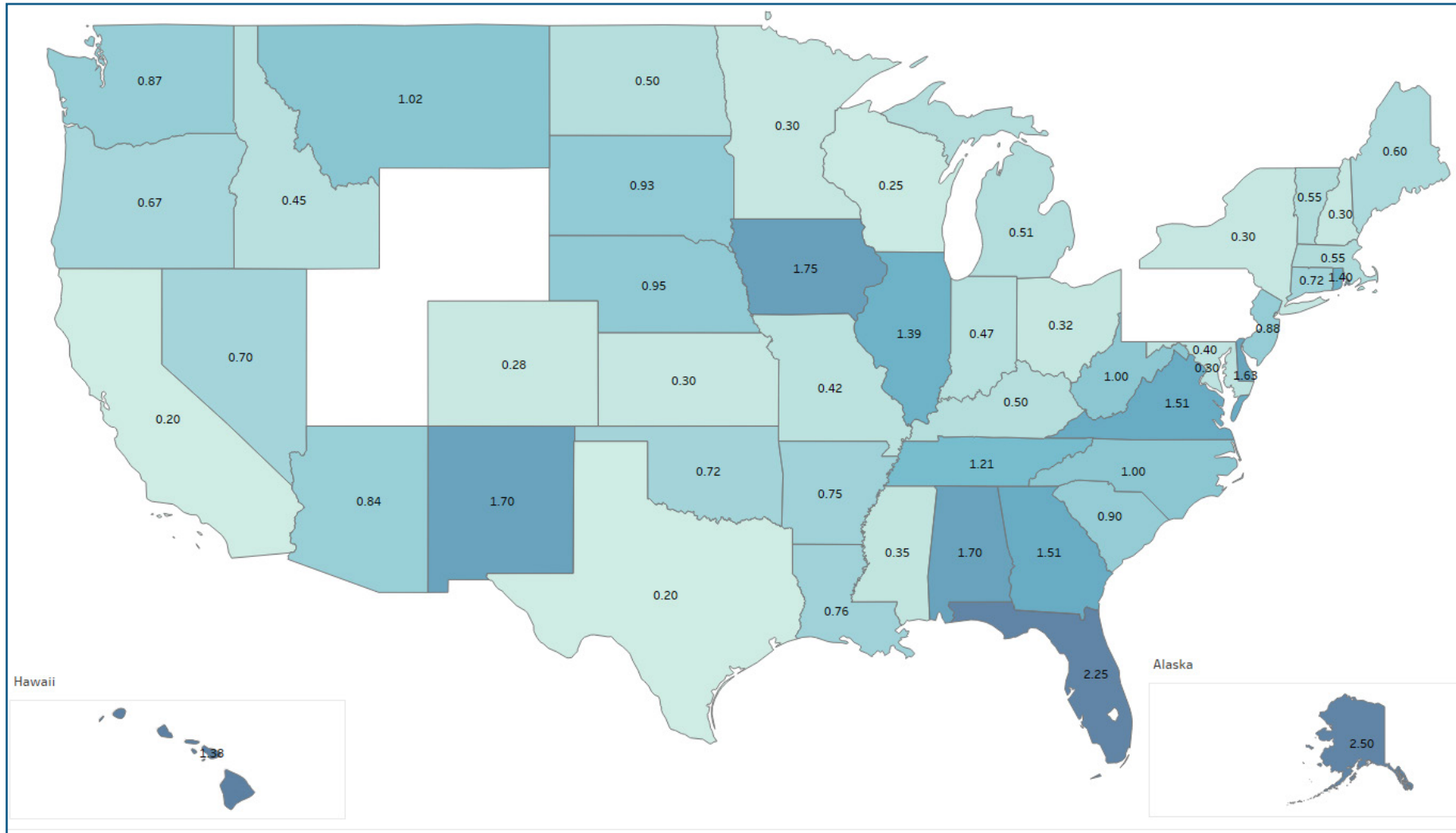
4 <http://www.virginiaspirls.org/wp-content/uploads/2017/09/Understanding-the-Economics-of-Distilling-and-Selling-Spirits-in-the-Commonwealth-1.pdf>.

FIGURE 1
STATE EXCISE TAX RATES ON BEER:
DOLLARS PER GALLON, 2018



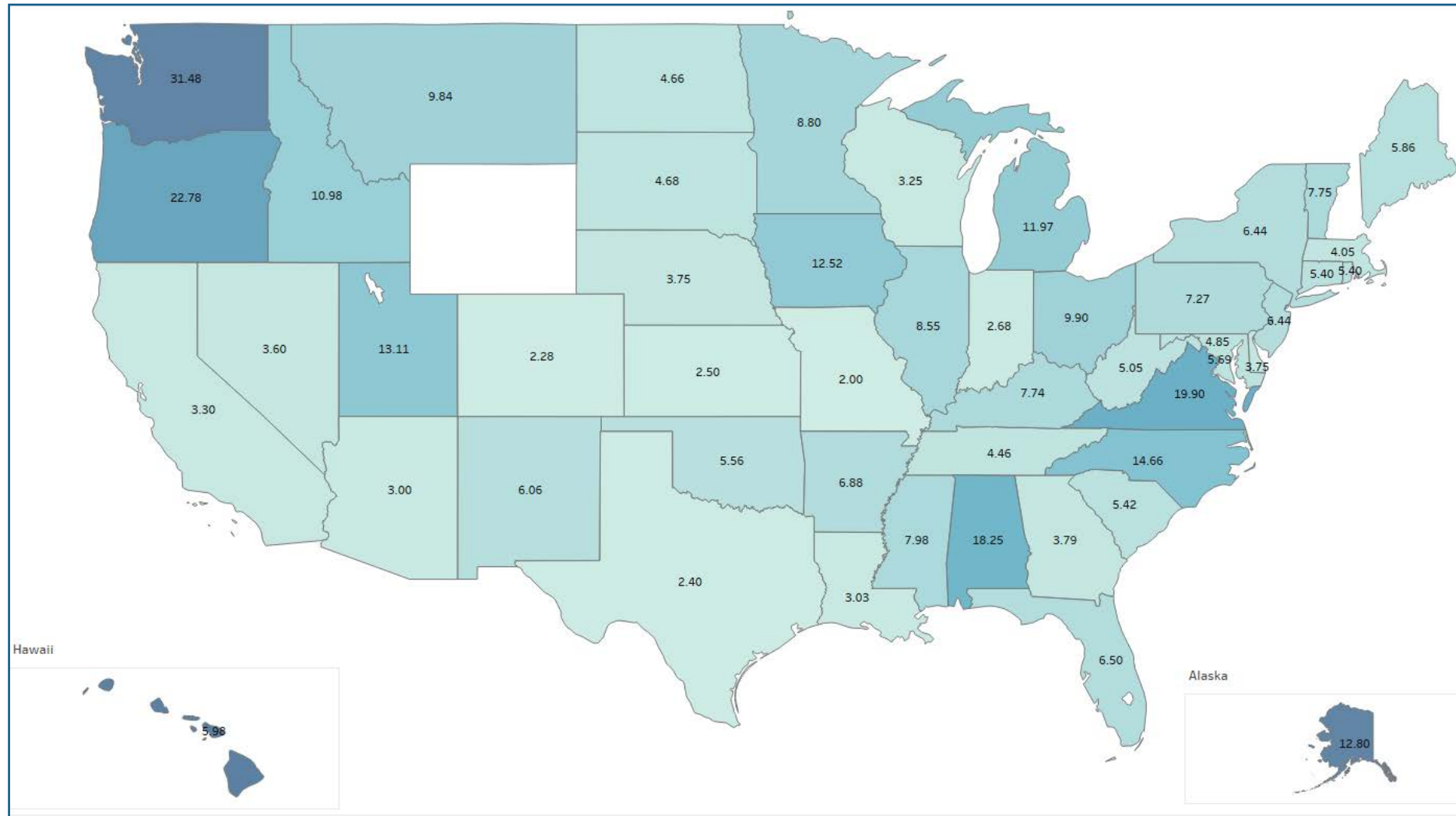
Source: Federation of Tax Administrators (2018)

FIGURE 2
STATE EXCISE TAX RATES ON WINE:
DOLLARS PER GALLON, 2018



Source: Federation of Tax Administrators (2018)

FIGURE 3
DISTILLED SPIRITS EXCISE TAX RATES:
DOLLARS PER GALLON, 2018



Sources: Tax Foundation (2018) and the Distilled Spirits Council of the United States

Excise taxes serve as one means for state and local governments to collect tax revenue. Sales taxes are another source. In contrast to its excise tax rates on beer, wine and distilled spirits, Virginia has one of the lower combined average sales tax rates in the nation (Table 1). With a state sales tax rate of 5.3 percent, Virginia ranks 31st among the states and the District of Columbia. California ranks the highest (7.25 percent), followed by four states – Indiana, Mississippi, Rhode Island and Tennessee – at 7 percent. Delaware, Montana, New Hampshire and Oregon do not levy a sales tax at all.

As localities can piggyback on state sales taxes, combined sales tax rates paint a slightly different picture. **Virginia's combined average sales tax rate of 5.63 percent (5.3 percent state and 0.33 percent local) places it 41st among the states that have a sales tax (Table 1). The sales tax rate in Virginia falls below the median of 6.80 percent. Virginia's relatively high excise tax rates on alcoholic beverages may help keep its sales tax rate low.**

States also collect revenue from several other different types of taxes and fees, such as property taxes and income taxes. Individual states place very different emphases on the various types of taxes as ways to obtain income (Table 2). Relative to its neighboring states, Virginia relies more heavily on income taxes, placing less importance on property taxes. Collections from sales and gross receipts also have relatively lower weight in Virginia. Maryland and West Virginia have less dependence on income taxes, placing a greater emphasis on sales and gross receipts. Maryland also collects a greater percentage of its income from property taxes, relative to the other states in the sample. Sales taxes from alcoholic beverages make up a small but nontrivial percentage of tax collections among the states. For Virginia, taxes from this source comprise 1.3 percent of total revenue.

TABLE 1
SELECTED STATE AND LOCAL SALES TAX RATES
IN THE UNITED STATES, 2018

	Rank	Combined Sales Tax Rate	State Sales Tax Rate	Average Local Sales Tax Rate
Louisiana	1	10.02%	5.00%	5.02%
Tennessee	2	9.46%	7.00%	2.46%
Arkansas	3	9.41%	6.50%	2.91%
Washington	4	9.18%	6.50%	2.68%
Alabama	5	9.10%	4.00%	5.10%
Oklahoma	6	8.91%	4.50%	4.41%
Virginia	41	5.63%	5.30%	0.33%
Maine	42	5.50%	5.50%	0.00%
Wyoming	43	5.46%	4.00%	1.46%
Wisconsin	44	5.42%	5.00%	0.42%
Hawaii	45	4.35%	4.00%	0.35%
Alaska	46	1.76%	0.00%	1.76%

Source: Tax Foundation (2018). Four states do not levy a sales tax at the state or local level.

TABLE 2
STATE TAX COLLECTIONS BY SOURCE:
SELECTED STATES, 2016 (AS PERCENTAGES)

State	Property Taxes	Sales and Gross Receipts	Income Taxes	Alcoholic Beverage Sales Taxes
Virginia	0.1%	32.4%	61.2%	1.3%
Maryland	3.6%	42.8%	46.2%	0.2%
North Carolina	NA	42.5%	50.0%	1.4%
West Virginia	0.1%	50.1%	38.8%	0.3%

Source: U.S. Census Bureau (2016)

Alcoholic Beverage Control (ABC) In Virginia

Virginia is one of 17 states nationwide to have a state-owned and -operated alcohol control board (Figure 4). As in these other “control” states, the ABC in Virginia has a monopoly on the sale of distilled spirits (e.g., bottled hard liquors such as rum or whiskey). The Virginia ABC does allow the sale of “liquor by the drink” in food establishments; however, the sale of distilled spirits by the bottle is only legal in ABC stores. In contrast to distilled spirits, the ABC permits the sale of beer and wine in establishments outside of the state-controlled ABC stores, such as grocery stores and convenience stores.

The ABC in Virginia has a long history dating back to the 1930s, when it was created shortly after the end of Prohibition. Today the ABC employs close to 4,000 people and operates 366 stores statewide. Sales and profits have increased steadily over the past few years. In 2017, ABC stores recorded sales totaling \$940.1 million, an increase of over 17 percent from \$800.5 million in 2014 (Graph 3). Correspondingly, profits in 2017 totaled \$171.7 million, up from \$140 million in 2014, an increase of over 22 percent. Along with helping to increase Virginia’s general tax revenue fund, monies from the ABC help finance several state alcohol-related programs, including youth and adult education prevention programs, training programs for alcohol servers and managers, and alcohol awareness groups.⁵

Virginia’s ABC regulates the sale and movement of alcoholic beverage products into and within Virginia, including the approval of product labels and franchise agreements. The agency also collects excise taxes on these products and submits reports to the appropriate public entities.⁶

In 2017, the Virginia ABC authorized more than 19,000 retail licenses for businesses in various localities to sell alcohol on their premises. Every county in the Commonwealth allows the legal sale of beer and wine, conditional on the local retail establishment obtaining the proper

license. The counties of Bland, Buchanan, Charlotte, Craig, Franklin, Grayson, Highland, Lee and Patrick remain “dry,” meaning that the sale of distilled spirits is currently prohibited. A Virginia Senate panel, however, is considering a reform of Virginia’s liquor laws to make every county “wet” by default. Under this proposal, a county would have to hold a referendum to remain or become “dry.”⁷

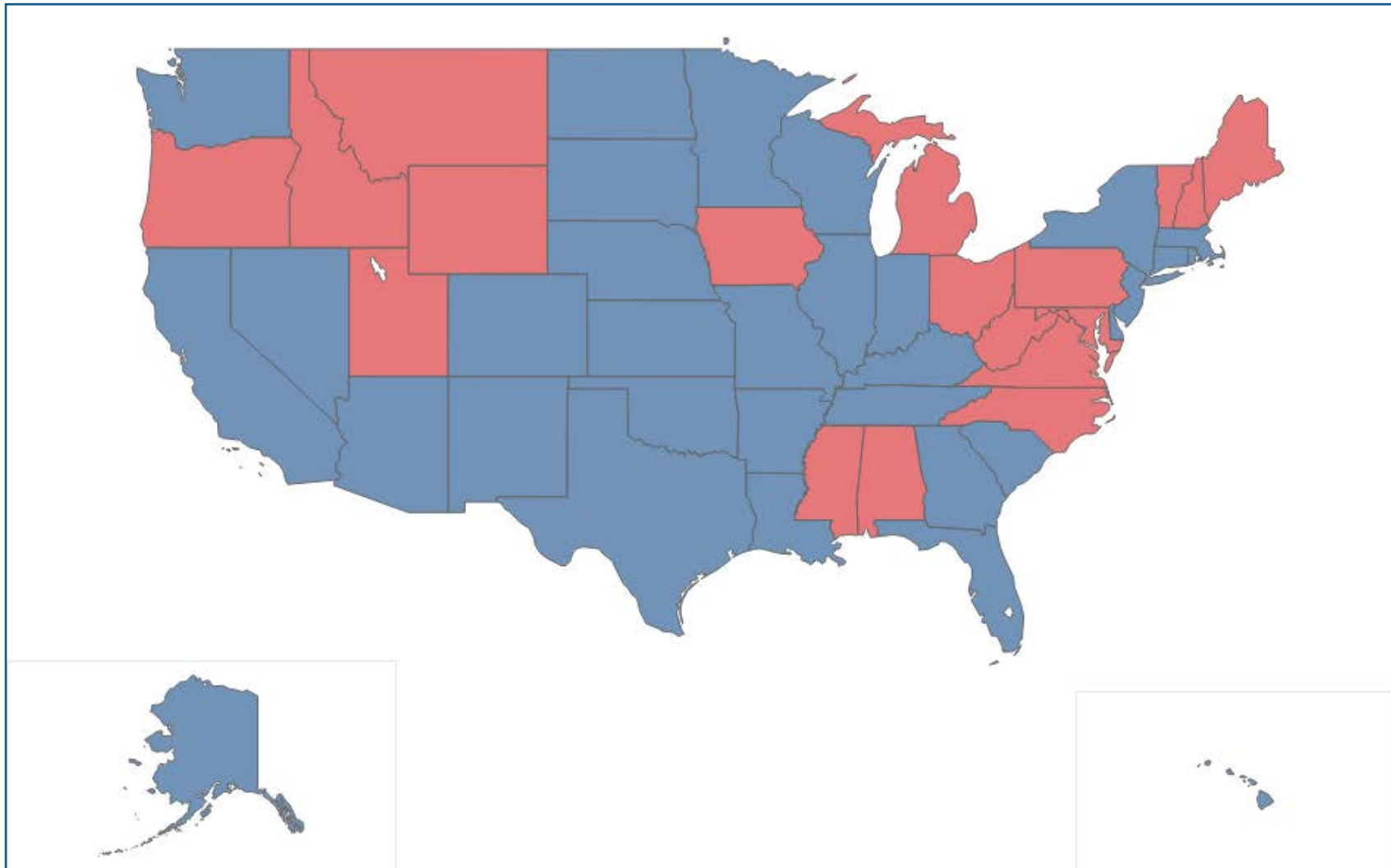


⁵ Virginia Department of Alcoholic Beverage Control, 2017, Annual Report.

⁶ Virginia Department of Alcoholic Beverage Control, 2017, Industry Resources Report.

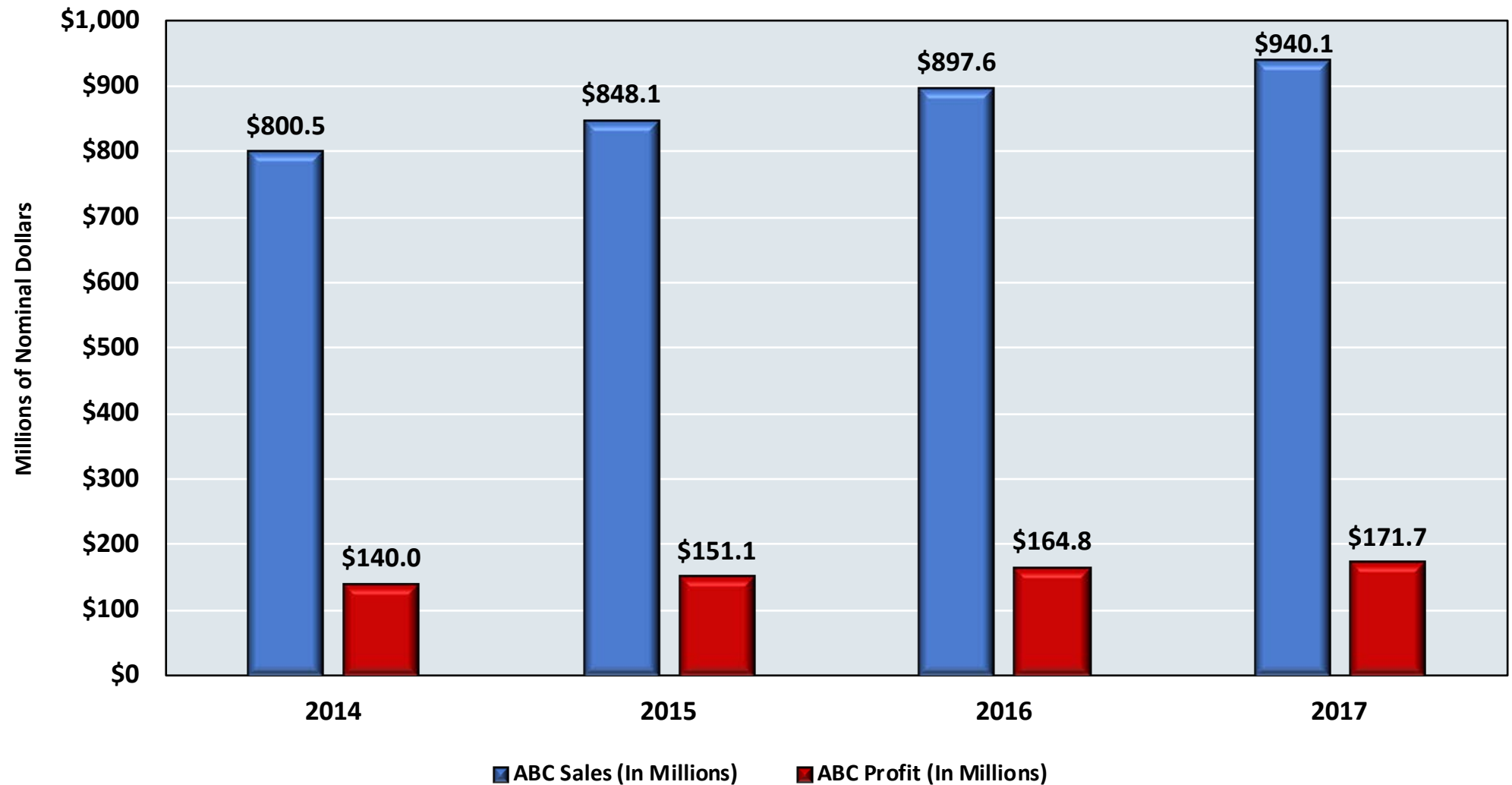
⁷ https://www.richmond.com/news/virginia/senate-liquor-panel-will-study-whether-to-make-virginia-s/article_8b17b4f8-056f-5823-9756-fcd4e75d1311.html.

FIGURE 4
ALCOHOL BOARD CONTROL STATES



Source: National Alcohol Beverage Control Association, 2018. For Maryland, only Montgomery County has a control board. Some jurisdictions in Alaska, Maryland, Minnesota and South Dakota have adopted forms of the “control” model.

GRAPH 3
VIRGINIA ABC SALES AND PROFIT



Source: Virginia Department of Alcoholic Beverage Control (2017a)

Alcohol Consumption And The Costs To Society

Alcohol consumption has been a daily part of social and private life in the United States dating back to our country's founding. While there are laws in place that restrict alcohol consumption (Sunday sale bans, age restrictions, etc.) across several states, the consumption of alcohol has generally been legal throughout U.S. history, with the notable exception of the Prohibition period (1920-1933). **In 2015, the average Virginian drank about 2.1 gallons of alcoholic beverages per year, lower than the national average of 2.32 gallons (Graph 4).**

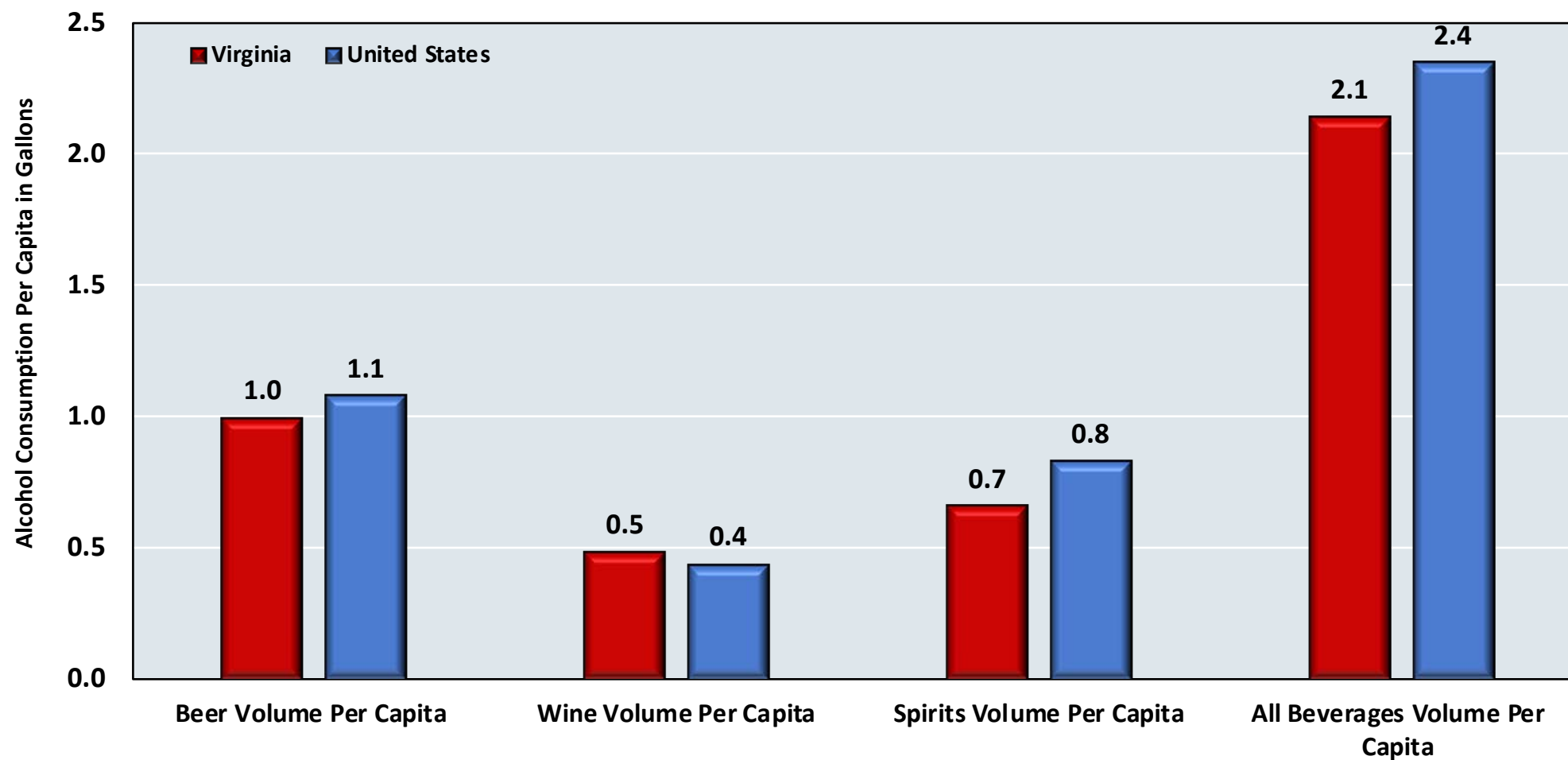
Beer consumption constitutes roughly half of all alcoholic beverage consumption. In 2015, according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), Virginians, on average, drank exactly one gallon of beer per capita per year, 0.48 gallons of wine and 0.64 gallons of distilled spirits. At the national level, Americans on average drank 1.09 gallons of beer per capita per year, 0.42 gallons of wine and 0.81 gallons of distilled spirits.

Overall, alcoholic beverage consumption in Virginia has remained relatively steady over the past decade (Graph 5). That said, current consumption levels (2.12 gallons per year) in Virginia are roughly 22 percent lower than their peak in the early 1980s (2.59 gallons per year). Declines in beer and distilled spirits consumption have been particularly dramatic from their previous peaks. Beer consumption per capita per year among Virginians has declined by 52 percent from its peak of 1.52 gallons per capita per year in 1986.

Per capita consumption of distilled spirits in Virginia peaked in 1980 at 0.90 gallons per year, implying that current spirits consumption has decreased by roughly 41 percent since then. In contrast, wine consumption has increased since the late 1970s (the earliest years available in the NIAAA data). Virginians drank 0.21 gallons per capita per year of wine in 1977, in contrast to today's number of 0.48 gallons, more than double the previous rate.

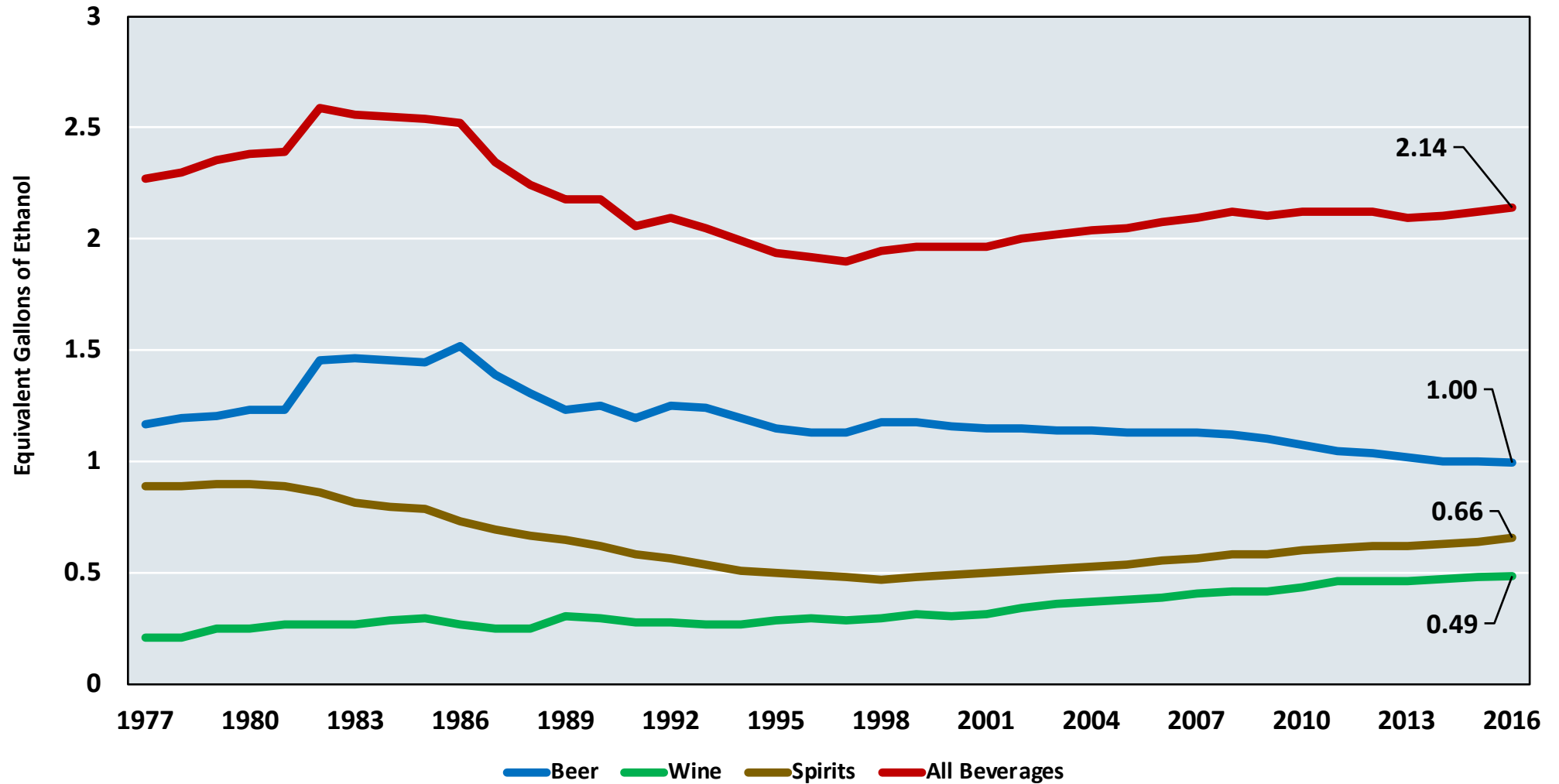


GRAPH 4

**APPARENT ALCOHOL CONSUMPTION PER CAPITA:
VIRGINIA AND THE UNITED STATES, 2016**

Source: National Institute on Alcohol Abuse and Alcoholism (2017), based on population ages 14 and older. Numbers are current as of 2015.

GRAPH 5
VIRGINIA ALCOHOL CONSUMPTION IN GALLONS PER CAPITA:
TYPE OF BEVERAGE, 1977-2016



Source: National Institute on Alcohol Abuse and Alcoholism (2017), based on population ages 14 and older

Virginians' consumption of alcoholic beverages has trended roughly in line with the national average over time. In the United States, alcoholic beverage consumption rates peaked in 1981 with an average consumption rate of 2.76 gallons per capita per year (Graph 6). The latest numbers available at the national level are 2.32 gallons per year, roughly 16 percent lower than their previous high. Similar to Virginia, the national trends show a decrease in beer and distilled spirits consumption and an increase in wine consumption. U.S. per capita alcohol consumption in 2015 was roughly 28 percent less than its previous high of 1.39 gallons per year in 1981. Consumption of distilled spirits is now 23 percent lower in comparison to the high of 1.05 gallons per year in 1978. As for wine, consumption rates at the national level of 0.42 gallons per capita per year are 50 percent higher than their previous low of 0.28 gallons per year in 1994.

Alcohol is a textbook example of a good (product) that can have negative externalities associated with its consumption. In this context, the term "negative externality" simply means that the consuming individual does not bear all of the costs associated with purchasing and consuming the good. Examples of these added costs include those associated with health care, drunk driving and crime related to over-consumption of alcohol.

Drunk drivers impose a cost on society through higher death and injury rates. They not only impact themselves, but could also affect others when crashes occur. The Centers for Disease Control and Prevention noted in 2012 that 1.4 percent of Virginians reported they had driven after drinking too much in the past 30 days (Graph 7). This rate for Virginia does, though, compare favorably with the national median of 1.9 percent. Montana (3.4 percent), Nebraska (3.4 percent) and North Dakota (3.3 percent) have the highest percentages.⁸

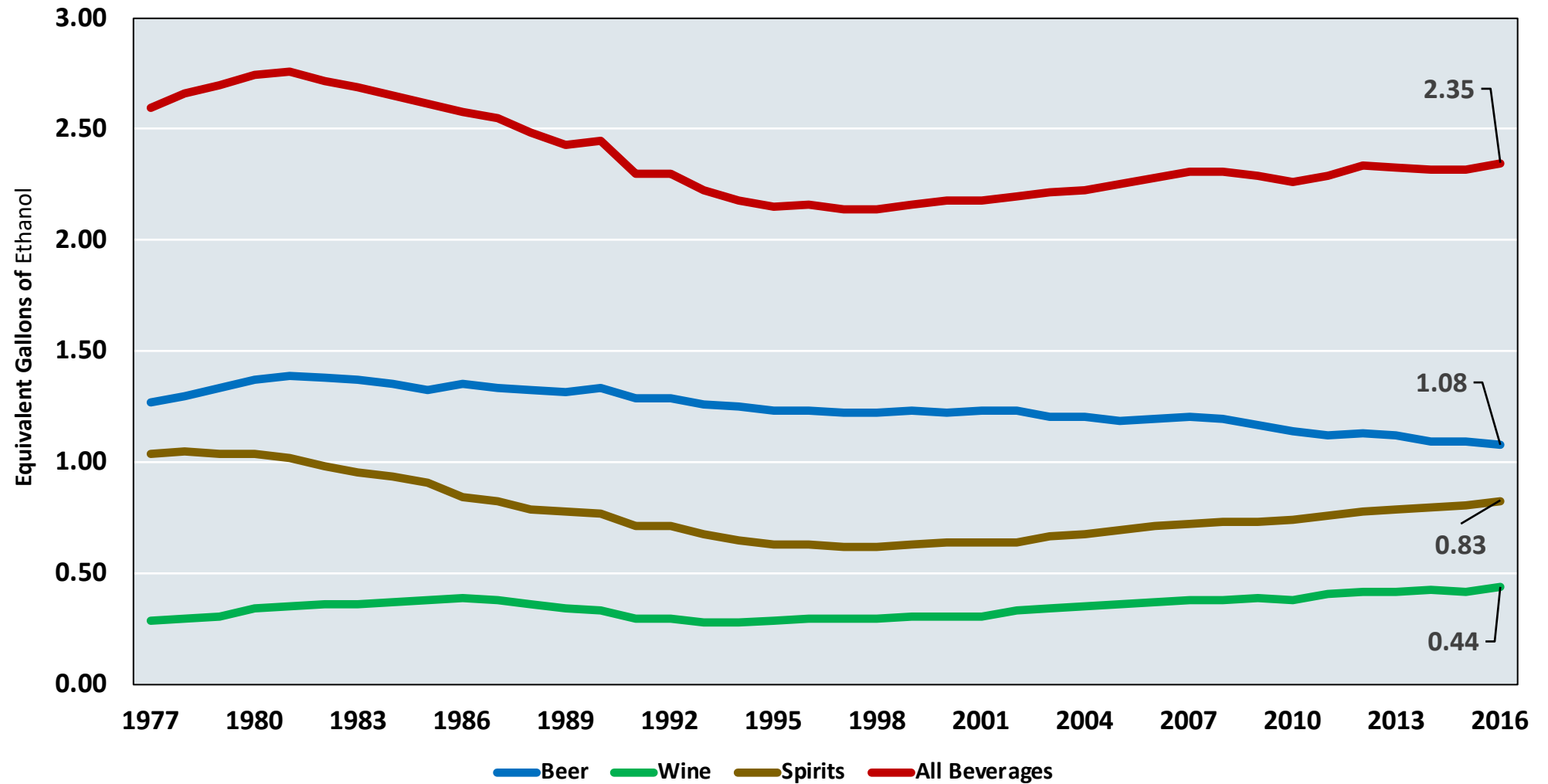
Binge drinking, particularly among youth, also represents a major alcohol-related concern for health officials. Underage binge drinking can lead to negative long-term health consequences as well as destructive behavior on a number of fronts. Of note, the Substance Abuse and Mental Health Services Administration defines binge drinking as having five or more drinks on the same occasion (i.e., at the same time or within a couple of

hours of each other) on at least one day in the past 30 days. Underage binge drinking nationwide and in Virginia occurs with much greater frequency than driving after drinking too much (Graph 8). Virginians in the 12-20 age range report binge drinking in the past month at a rate of 13.9 percent. This percentage is slightly lower than the national median of 15 percent, with the highest rates found in North Dakota (21.4 percent), New Hampshire (21.0 percent) and Vermont (20.9 percent).



⁸ As a cautionary note, data from self-reporting surveys can be subject to measurement error, since people may under-report their incidence of negative behavior.

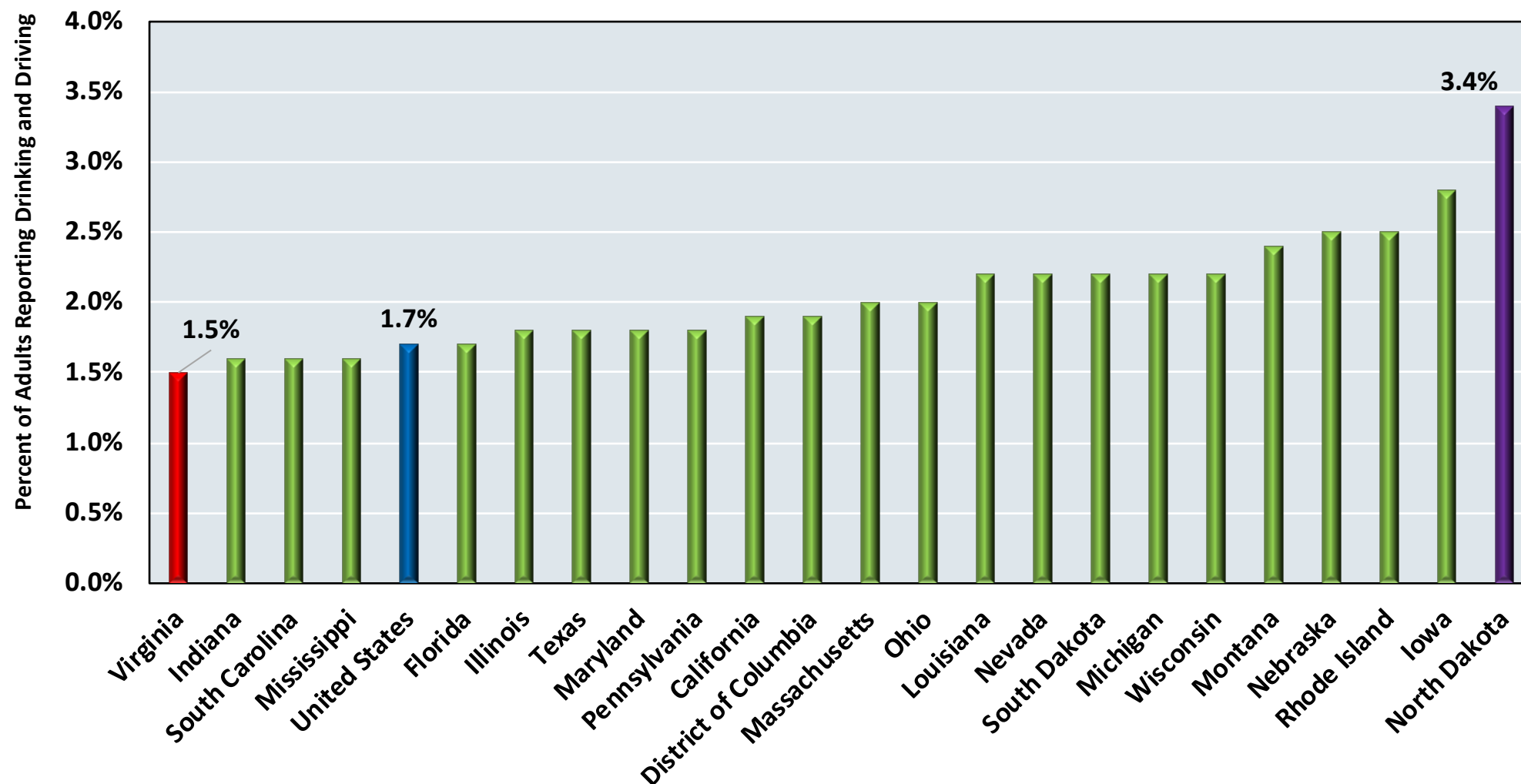
GRAPH 6
UNITED STATES ALCOHOL CONSUMPTION IN GALLONS PER CAPITA:
TYPE OF BEVERAGE, 1977-2016



Source: National Institute on Alcohol Abuse and Alcoholism (2017), based on population ages 14 and older

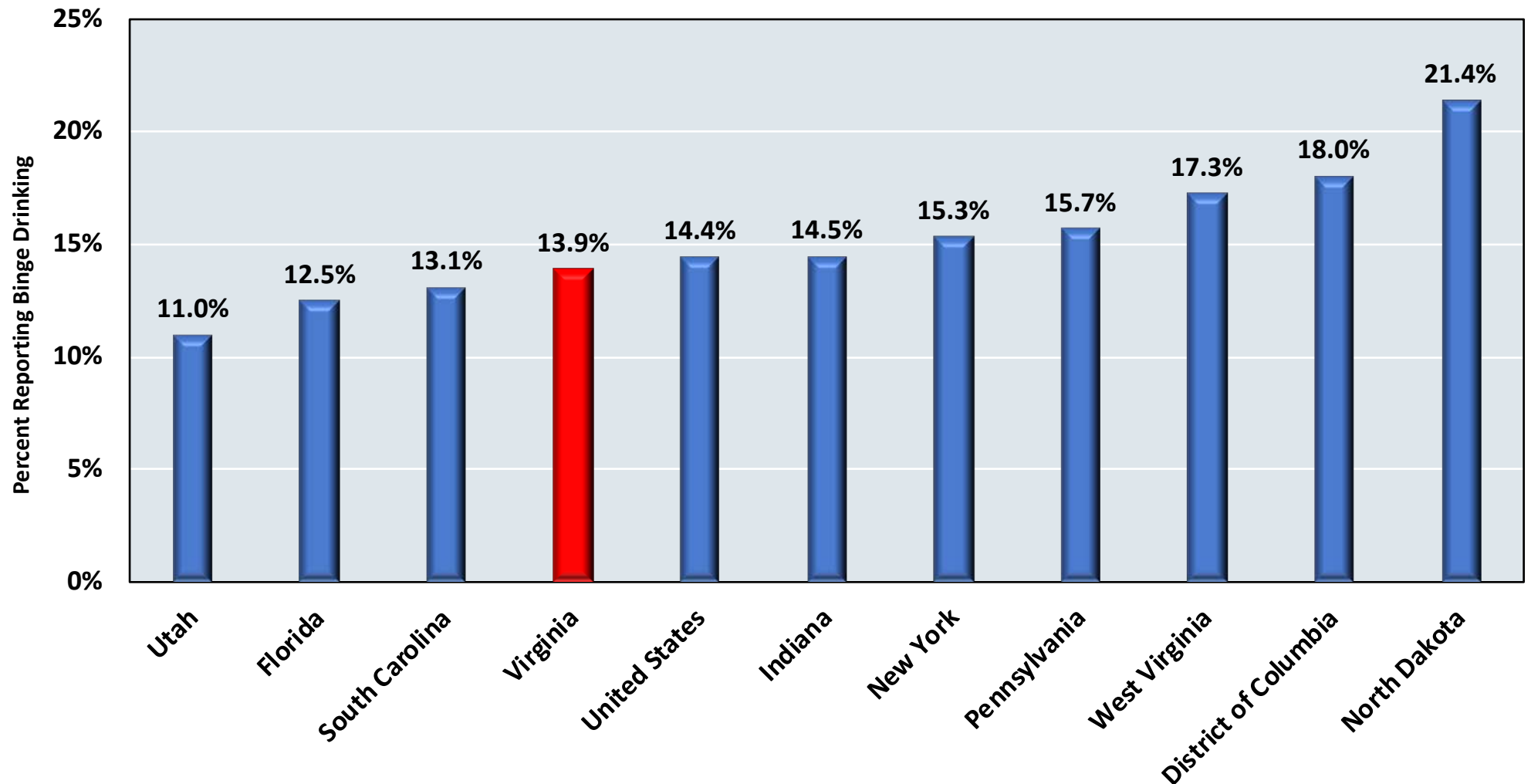
GRAPH 7

**PERCENTAGE OF ADULTS WHO REPORT DRIVING AFTER DRINKING TOO MUCH
(IN THE PAST 30 DAYS)**



Source: Centers for Disease Control and Prevention (2012)

GRAPH 8
UNDERAGE BINGE DRINKING IN THE PAST MONTH AMONG PEOPLE AGES 12-20



Source: Substance Abuse and Mental Health Services Administration (2017). Data show annual averages based on combined 2012 to 2014 data.

An Aside On Sin Taxes

Goods with negative externalities associated with them are common in society. Some goods, such as alcohol and cigarettes, are legal, while others, like heroin and cocaine, remain banned and prosecuted by law enforcement. The standard way to deal with legal goods such as alcohol is through something known as “Pigovian” taxes (named after the economist Arthur Pigou, 1877-1959). A common name for these taxes is “sin taxes.”

The idea behind sin taxes is that the consumer of the good should not only bear the private cost of consumption, but also the social costs associated with the product. Society should not have to pay for the extra health care costs that an individual imposes upon himself by excessive alcohol consumption. This is typically corrected by way of a per-unit, or ad valorem, tax on the good. In this example, society doesn’t ban the commodity outright, but rather makes the consumer pay more at the price register (through a higher tax rate) to account for the costs imposed on the populace at large. In general, the tax rates on such goods should be roughly equal to the costs imposed on society.

While it is difficult to monetize all of the negative externalities associated with alcohol consumption, it has been attempted by a number of researchers.⁹ This line of literature has generally found that alcohol taxation across the United States and within Virginia itself is lower than optimal – that is, the tax revenue collected on alcohol does not appear to fully pay for the negative externalities imposed on society by way of its consumption. Raising the current tax rates on alcohol might help offset the costs imposed on society through higher tax revenues. If the Commonwealth desires to further shift the societal costs associated with alcohol consumption to consumers, raising alcohol excise tax rates might be a prudent (though potentially unpopular) course of action.

Final Observations

Is it time for Virginia either to increase the markups on the alcohol it sells in its state liquor stores, or to levy an increase in the excise tax? Certainly, in examining whether the state should enact such a move, several issues need to be considered, including the potential impact on the emerging craft brewing and distillery industries. There is also the philosophical question of whether it is sound public policy to use the tax system to discourage (or encourage) individual behavior.

First, how does the Commonwealth fare in its alcohol excise tax compared to other states? Virginia has relatively high excise tax rates on wine and distilled spirits. Its excise tax rate for beer is closer to the average but still above the median for U.S. states. However, Virginia also has not changed these tax rates in over 15 years. Other states have periodically levied excise tax increases in recent years, at least in part to generate more revenue.¹⁰ In particular, Alaska has taken such actions despite having among the highest excise tax rates for alcoholic beverages.¹¹

Second, would a hike in excise tax rates on beer, wine or distilled spirits actually result in greater tax revenue for Virginia? Excise taxes are the responsibility of the merchant who sells the beverage. Merchants will pass on the increased cost to the consumer with a higher overall price (retail price plus tax), based upon what markets will bear.

Third, we must recognize that Virginia can also raise the markup on the alcohol it sells. In terms of revenue, there is no real difference between an increase in excise taxes and increases in the markup. However, excise taxes are typically more visible to the consumer than, for example, an increased markup in an ABC store. Care must be taken to recognize the impact of excise taxes and markups on producers and consumers of alcohol.

Furthermore, the experience of excise tax increases on alcoholic beverages (as well as cigarettes and gasoline) in the U.S. points to “over-shifting” behavior. In over-shifting, the change in overall price (retail price plus

⁹ A summary of this research is available at Congressional Research Service (2014).

¹⁰ A summary of these rate changes is available at Tax Policy Center (2018b).

¹¹ See Kenkel, Donald S., “Are Alcohol Tax Hikes Fully Passed Through to Prices? Evidence from Alaska,” *American Economic Review Papers and Proceedings* 95 (2), 273-277.

tax) resulting from an increase in the excise tax is greater than the change in the tax itself. If excise taxes increase by \$1 a unit, for example, sellers will not only fully shift the tax but also increase the underlying price, resulting in a greater than \$1 retail price hike to consumers. The farther the distance from a bordering state, the greater the likelihood that over-shifting will occur, due to the lack of competition.

A hike in the excise tax for beer, wine or distilled spirits in Virginia could very well bring about over-shifting in pricing. While the state would receive an increase in tax revenue, consumers would likely face higher net-of-tax prices. Some research into this question indicates that, even in markets for alcoholic beverages that exhibit over-shifting, hikes in excise tax increases generally tend to be quite favorable for increasing tax revenue.¹² Indeed, the actual experience of excise tax hikes in states across the U.S. reveals that such increases, including for alcoholic beverages, have been consistently successful in generating tax revenue.¹³

Moreover, per capita consumption of beer, wine and distilled spirits in Virginia has been remarkably constant over the past 20 years, with a small increasing trend for wine and spirits. Thus, consumers in Virginia have largely absorbed the continual market-based price increases in alcoholic beverages that have occurred over this period without undergoing major changes in their consumption. In fact, per capita consumption of wine and distilled spirits in Virginia has exhibited small but steady increases over the past decade. And while the record indicates a decreasing trend over time in Virginia's per capita consumption of beer, the emergence of the rapidly growing craft beer industry may lead to a reversal of this pattern.

Might an increase in excise taxes on alcoholic beverages have benefits beyond raising additional tax revenue for Virginia? As a "sin tax," any decrease in alcohol use stemming from increased excise taxes on beer, wine and distilled spirits might lead to declines in some negative behavior associated with over-consumption of alcohol. This may take the form of negative externalities, such as underage binge drinking, driving under the influence or other signs of alcohol abuse. While our preliminary evidence does indicate that Virginia has less incidence of alcohol abuse relative

to most other states, any reduction in this behavior would be welcome. Further, the Virginia government could allocate a portion of the increased tax revenues to statewide programs that address such alcohol-related problems.

It's not clear how much these negative behaviors would decrease in Virginia as a result of such a tax hike, especially since our per capita alcoholic beverage consumption seems to be fairly unresponsive to price increases. Arguably, though, any reduction in this direction stands as favorable. Moreover, considerable research indicates that excise tax rates in the U.S. on "sin tax" goods, such as alcoholic beverages, are well below optimal rates for achieving significant and acceptable reductions in these negative behaviors.¹⁴

As another potential benefit, Virginia could use the increased revenue from hikes in excise taxes on alcoholic beverages (and perhaps other goods) to effect some relief for its taxpayers in their state income tax. With the significant reductions in deductibility for state and local income taxes and property taxes, the federal tax reform legislation of 2017 produced shockwaves for residents of states impacted in this way. Many Virginia residents will be significantly affected by these changes in the federal tax structure in their 2018 tax returns and beyond.

Although Virginia seems to have kept property tax and sales tax rates down relative to other states, it relies much more heavily on income taxes. Excise taxes from alcoholic beverages make up a small percentage of total tax revenue for the Commonwealth. However, with increased revenue from this source, along with possibly raising excise taxes on some other goods, including cigarettes and gasoline, Virginia may be able to lessen the state income tax burden on its residents. This move could benefit Virginians in their federal taxes as well. Increased excise taxes could also counteract any decreased state income tax revenue during future downturns in the economy.

We should not, however, discount that Virginia is now home to a unique craft brewing industry and an emerging craft distillery industry, along

¹² Dutkowsky, Donald H. and Sullivan, Ryan S. (2017).

¹³ See a summary of these changes at Tax Policy Center (2018a, 2018b).

¹⁴ See a summary of this literature at Congressional Research Service (2014).



with established beer, wine and spirits producers. While consumers have shown that they are not highly responsive to changes in price, care must be taken not to throw these nascent and established firms out with the bathwater. There must be a balance between increasing revenue and job creation, especially given that some locations in the Commonwealth (Richmond and Hampton Roads, in particular) are now tourist destinations for beer, wine and, most likely in the future, spirits.

There is also the question of whether governments should try to incentivize specific types of behavior through the tax system. The administrative complex and inefficient federal tax code is a prime example of how good intentions have gone awry. As the complexity of the tax code increases, the transparency of the tax system declines and voters' awareness of what taxes they are paying diminishes. While the consumption of alcoholic beverages does generate social costs that may not be adequately captured by the current tax system, should we use taxes to further decrease consumption? An unintended consequence might be that consumers seek alternative forms of consumption, to include illegal drugs, which have more serious costs and consequences for society. We only have to look at the history of the Prohibition era to observe how good intentions had unintended results.

The best course of action may be to stay the course. While it may be tempting to increase excise tax rates or markups on alcoholic beverages, the emergence of Virginia as a beverage destination has been a boon for local economies. Ensuring that some portion of excise tax revenues on alcohol continues to fund education, outreach and recovery efforts is a wise course of action. While some may view staying the course as inaction, it is preferable to slowing job growth and development in industries associated with alcohol production and consumption.





Old Town at the Waterfront, Alexandria, Virginia



