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

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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_83a2f0d7-001e-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. 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. 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.

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.
FIGURE 1
SCHOOL OPENING DATES IN VIRGINIA, 2017-18 SCHOOL YEAR

**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. 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. This followed a 2000 Texas study showing that early school start dates would result in the loss of $332 million in economic activity, a 2002 South Carolina study that estimated a $180 million loss in economic activity and a 2008 Tennessee study whose comparable estimated loss was $189 million. Since then, a 2016 Michigan study has appeared with a rather modest $20 million loss estimate.

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.

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.

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. 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.

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).
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/2014/08/09/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. 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.

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. Given the enrollment provisions, it is possible that some students will turn 18 as early as Sept. 30 of their senior year. 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 rate 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, (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

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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. 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.

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.

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.” 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 receive 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.

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 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.

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. 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. 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.

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 Mykerezi and Genti Kostandini. 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...
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.

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**TABLE 1**

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

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.

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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.

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

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

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

Source: Virginia Tourism Corporation’s “Profiles of Travel in Virginia FY 2017”
### TABLE 3
WHO AND HOW MUCH: TRAVELER CHARACTERISTICS IN VIRGINIA BY REGION

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

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 schools open 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.