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# Robbers or Victims?

## Charter Schools and District Finances

By Mark Weber

Foreword by David Griffith and Michael J. Petrilli



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# Foreword

By David Griffith and Michael J. Petrilli

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## Should President Biden follow through on his campaign promise to grant local school districts veto power over the creation of new charter schools within their borders, on the assumption that their expansion harms traditional public schools?

Anyone consulting the available research on the link between charter competition and student achievement will find little evidence to support such a shift. Indeed, multiple studies, including a [recent analysis](#) from Fordham, have found that charter expansion *improves* student outcomes at nearby district schools—or, at worst, does no harm.<sup>1</sup> Yet the debate over charters' fiscal effects is less studied and more complex. Opponents of charters contend that they drain district coffers because revenues decline as students leave while fixed costs remain largely the same, while proponents argue that it is charters that are denied essential funding.

So where does the truth lie?

To find out, we turned to Mark Weber of New Jersey Policy Perspective—@JerseyJazzman, to his Twitter followers—whose work on this topic is well known, particularly in the Garden State. Veterans of the charter wars will recognize the surprising nature of this partnership, as Mark's skepticism of charters roughly mirrors Fordham's longstanding convictions regarding their efficacy. However, for the purposes of this project, all parties agreed to sheath their swords (and their Twitter handles).

Because much of our knowledge of charters' fiscal effects is based on studies from a handful of Rust Belt states, a primary goal of our project was to broaden the conversation by including as many states as possible. However, because every state takes a distinctive approach to authorizing and funding its charters, we decided against producing national estimates, choosing instead to generate separate estimates for each of the twenty-one states that met our inclusion criteria. Similarly, because both districts and states are likely to adjust their behavior as charters take root and grow, we included all eighteen years for which plausibly comparable data on charter locations and districts finances are available. And to simplify this complicated analysis, we asked Weber to focus on independent charter schools—that is, those not authorized by traditional school districts—as these are the ones most critics find worrisome.

The results are summarized in three findings.

- 1** *In most states, an increase in the percentage of students attending independent charter schools was associated with a significant increase in host districts' total revenue and spending per pupil.*
- 2** *In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' local revenue per pupil, and in some states, it was also associated with an increase in state and/or federal revenue per pupil.*
- 3** *In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' per-pupil spending on support services, and in some states, it was also associated with an increase in instructional spending per pupil.*

Identifying policies that could explain these patterns isn't difficult, particularly on the revenue side. After all, numerous studies have found that charters' *de facto* or *de jure* exclusion from local funding sources is the single biggest driver of district-charter inequities,<sup>2</sup> and in states like Arizona and Idaho, charters still lack any access to local funding.<sup>3</sup> So obviously, charter-driven enrollment losses are likely to increase host districts' local funding per pupil insofar as they mean that districts are serving fewer students with roughly the same amount of locally generated money.

Furthermore, most states have some form of "hold-harmless" policy that directs more money to districts with declining enrollments,<sup>4</sup> plus policies that funnel additional dollars to smaller school districts.<sup>5</sup> And some of the states with the largest increases in state funding per pupil, such as Massachusetts<sup>6</sup> and New York,<sup>7</sup> also have policies that compensate districts specifically for charter-driven enrollment losses.

Finally, increases in host districts' federal funding per pupil could be attributable to the fact that all four Title I programs also have time-limited hold-harmless provisions<sup>8</sup> or issues with the distribution of Title I funds between traditional districts and charters.<sup>9</sup>

But what about spending? One potential interpretation of the increases in support spending, which includes things like building maintenance and administration, is that charter-driven enrollment declines are indeed increasing host districts' fixed costs on a per-pupil basis. However, in our view, though not necessarily in Weber's, the simplest explanation for the observed increases in host districts' spending per pupil is that their revenues per pupil are increasing. After all, traditional school districts, like all government agencies, have a strong incentive to spend whatever monies they receive, rather than signal that policymakers may be giving them more money than they require.

Either way, one piece of undeniably good news is that host districts' instructional spending per pupil remained neutral to positive in all twenty-one states, even in the face of charter expansion. Notably, this key finding is consistent with the growing body of research that suggests charter competition has a neutral-to-positive effect on the achievement of students in traditional public schools.<sup>10</sup>

Now someone needs to tell President Biden.

# Executive Summary

This study uses fiscal data reported by traditional public school districts between 2000 and 2017 to generate descriptive estimates of the relationship between the local market share of independent charter schools and the finances of host school districts in twenty-one states.

The research questions for the study are as follows:

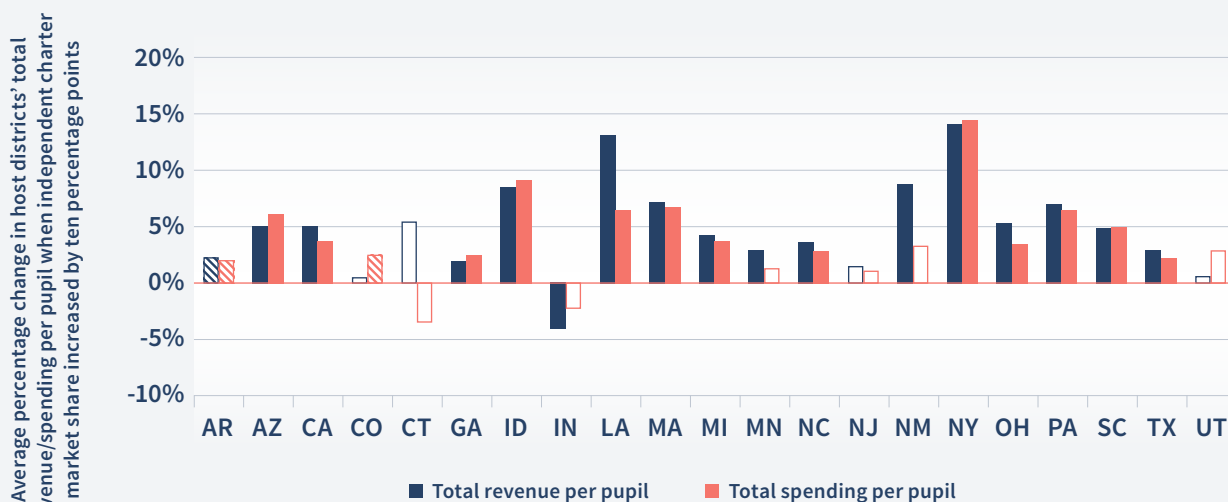
1. On average, was an increase in the percentage of students attending independent charter schools —at the geographic school district level—associated with an increase or decrease in host districts’ **total** revenue and/or spending per pupil?
2. On average, was an increase in the percentage of students attending independent charter schools associated with an increase or decrease in host districts’ **local, state, and/or federal** revenue per pupil?
3. On average, was an increase in the percentage of students attending independent charter schools associated with an increase or decrease in **instructional** and/or **support** spending per pupil?

The results are summarized in three findings.

## Finding 1. In most states, an increase in the percentage of students attending independent charter schools was associated with a significant increase in host districts’ total revenue and spending per pupil.

In fifteen of twenty-one states, higher independent charter market share was associated with a significant increase in host districts’ total revenue per pupil. And in thirteen states, it was associated with a significant increase in their total current expenditures per pupil.

**Figure ES-1. In most states, higher independent charter market share was associated with a significant increase in host districts’ total revenue and spending per pupil.**

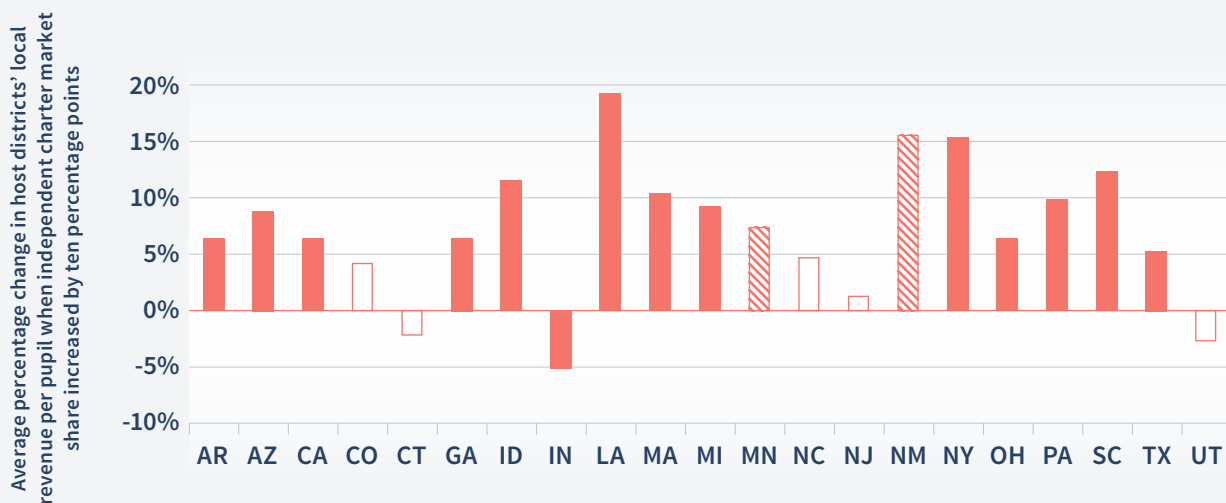


Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

**Finding 2.** In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' local revenue per pupil, and in some states, it was also associated with an increase in state and/or federal revenue per pupil.

In thirteen of twenty-one states, higher independent charter market share was associated with an increase in host districts' local revenue per pupil (Figure ES-2). However, it was only associated with an increase in their state revenue per pupil in seven states. In ten states, host districts saw a significant increase in federal revenue per pupil.

**Figure ES-2.** In thirteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' local revenue per pupil.

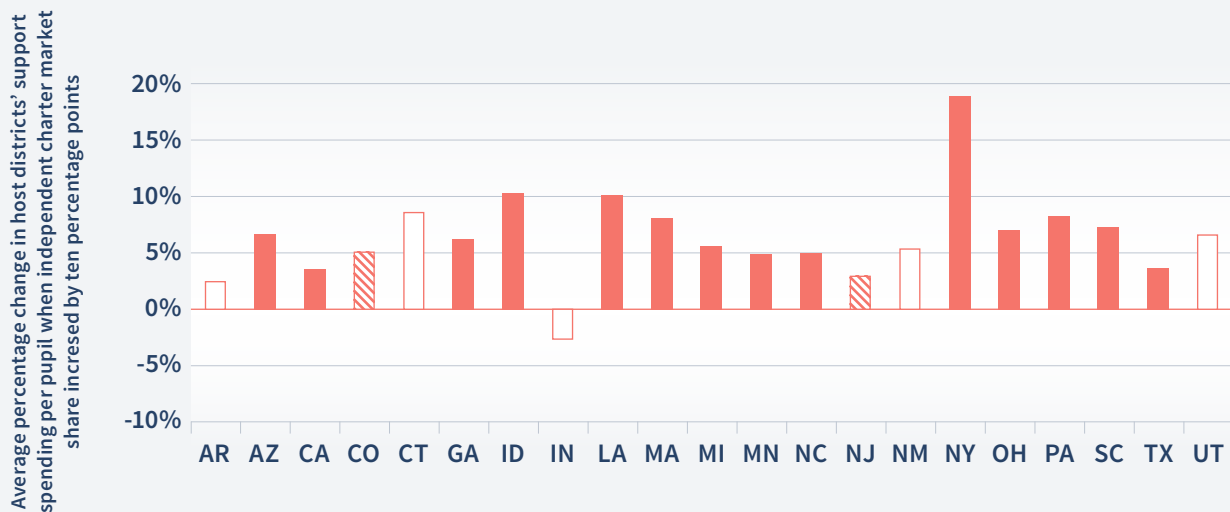


Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

**Finding 3. In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' support spending per pupil, and in some states, it was also associated with an increase in instructional spending per pupil.**

In fourteen of twenty-one states, higher independent charter market share was associated with a significant increase in host districts' support spending per student (Figure ES-3). And in eight states, it was also associated with a significant increase in their instructional spending per student. However, no state saw a significant decline in host districts' instructional spending per pupil.

**Figure ES-3. In fourteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' support spending per pupil.**



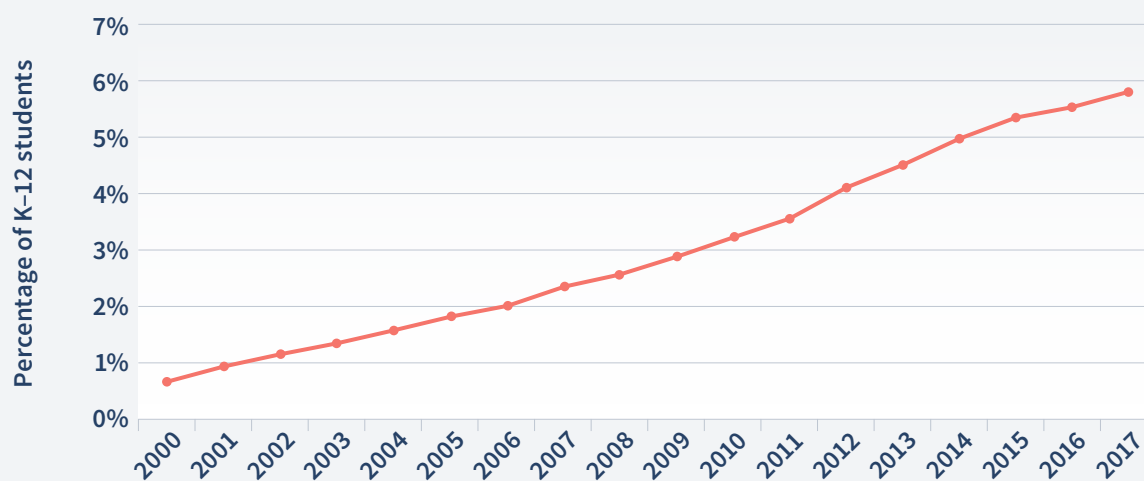
Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.



# Introduction

**There may be no more consequential or controversial trend in education policy than the growth of charter schools—publicly funded schools of choice that are exempt from many of the regulations and collective bargaining agreements to which traditional public schools (TPS) are bound.** In the past two decades, charter school enrollments have risen steadily (Figure 1), prompting a host of studies on their educational effects, both on enrolled students and on those who remain in TPS. Yet less is known about charter schools’ effects on traditional public schools’ finances—especially in states where charters are a relatively new phenomenon—and the debate over these effects remains as confusing as it is contentious.

**Figure 1. Percentage of K–12 students enrolled in charter schools, by year**



*Note: This figure is based on this study’s dataset, which includes “regular” school districts (Type 1 and Type 2), as well as charter school districts, but excludes other types of local education authorities (LEAs).*

Almost from the start, critics of charter schools have argued that they drain money from TPS because “host” districts have fixed costs that can’t be easily reduced when their enrollments decline.<sup>11</sup> Meanwhile, supporters of charters have argued that because they are effectively excluded from some sources of funding that traditional public schools typically access, district revenue per pupil actually increases when students leave for charter schools.<sup>12</sup> Yet too often, the claims made by both sides of this debate have been based on assumptions rather than hard evidence.

If the United States is to make sound charter school policy, better information is required. Charter-driven declines in district enrollments may increase fixed costs per pupil in some states and localities but not in others. Likewise, charter expansion may raise spending per pupil in the short run but not the long run. And of course, the mere fact that a district's enrollment declines as charter schools expand doesn't mean "right-sizing" its operations is impossible (as some opponents seem to believe) or easy (as some reformers seem to assume).

How does charter growth affect the finances of host school districts? In the past decade, a small but growing body of research has sought to answer the question, using a variety of methods. But what has been missing is a comprehensive investigation—that is, a study that uses uniform methods (and a uniform set of federal data) to explore the relationship in varying state contexts—between local charter market share and host districts' finances.

Accordingly, this study analyzes the relationship between "independent charter market share" and host districts' revenue and spending in twenty-one states. (We define "independent" charters as schools that are not part of their "host" school districts.) The analysis seeks to answer three questions:

- 1** *On average, was an increase in the percentage of students attending independent charter schools—at the geographic school district level—associated with an increase or decrease in host districts' total revenue and/or spending per pupil?*
- 2** *On average, was an increase in the percentage of students attending independent charter schools associated with an increase or decrease in host districts' local, state, and/or federal revenue per pupil?*
- 3** *On average, was an increase in the percentage of students attending independent charter schools associated with an increase or decrease in instructional and/or support spending per pupil?*

Because independent charters aren't randomly assigned to districts, the estimates presented herein are necessarily descriptive rather than causal. In other words, although charter growth may correlate with changes in district finances, it's impossible to say with certainty whether it's *causing* those changes. Yet, despite these caveats, the findings are important. In most states with nontrivial charter sectors, there is a statistically significant relationship between independent charter market share and host school districts' revenue and spending per pupil—though it may not be what readers expect.

# Background

**Much of the prior research on charter schools' fiscal spillovers has focused on three interrelated questions:** First, how do charters affect host school districts' revenues per pupil? Second, how do they affect districts' spending—in particular, their fixed costs per student? And finally, to what extent do charter-driven changes in revenues and costs create fiscal stress for host districts that could adversely affect students—for example, by forcing them to reduce instructional spending per pupil or increase class sizes?

The evidence on each of these questions is complex and thus subject to interpretation. For example, one early study found that Michigan charters had a negative effect on districts' state and local revenues per student.<sup>13</sup> And a more recent study of Ohio charters found they reduced residential property values (and, by extension, local revenues).<sup>14</sup> However, an even more recent Pennsylvania study found that initial declines in host district revenue were attenuated by a compensatory state policy enacted during the study period,<sup>15</sup> and another recent study of Massachusetts' charter sector found that host districts' revenues per pupil increased (again because of compensatory state policy).<sup>16</sup> Finally, one national study found negligible effects on state and local revenue per pupil (though any national average should be taken with a grain of salt, given the diversity of state funding systems).<sup>17</sup>

In a similar vein, although several studies have argued that charter schools increase host districts' fixed costs, the evidence that this leads to long-term problems for districts is unclear. For example, both the aforementioned Michigan study and a subsequent case study of districts in upstate New York found that host districts' revenue losses exceeded the reductions in their expenses.<sup>18</sup> Yet in both cases, it's not clear how that financial pressure was ultimately resolved. Similarly, a series of quantitative case studies of charter expansion in large cities projected that charter expansion will lead to the enrollment of more students in inefficiently small schools.<sup>19</sup> However, though research of this type is useful, it doesn't directly measure changes in district fiscal measures and how those changes correlate with charter school expansion.

Notably, some studies have found that charters lead to absolute or proportional declines in host districts' instructional spending per pupil. Yet even this story becomes more complex upon closer examination. For example, the aforementioned Ohio study found that instructional spending declined as charter market share increased, even as districts spent more on new construction, and a recent California study found some evidence of a small decline in host districts' instructional spending per pupil.<sup>20</sup> However, the aforementioned Michigan study found no effects on average teacher salaries or class sizes, while the Massachusetts study found a disproportionate increase in instructional spending per pupil.

**Although several studies have argued that charter schools increase host districts' fixed costs, the evidence that this leads to long-term problems for districts is unclear.**

Needless to say, there are methodological differences between these various studies, perhaps the most important of which is how they approach the issue of scale. On the one hand, the size of a school district has well-established implications for its per-pupil spending, with smaller districts tending to spend more than larger ones, which can usually achieve some economies of scale.<sup>21</sup> On the other hand, enrollment decline may also be the primary mechanism through which charter expansion affects host districts' finances (for example, if a district can't or won't adjust its operations). So if the goal is to understand the absolute changes in host districts' revenue and spending, controlling for changes in host district scale has the potential to obscure the effect that researchers are trying to measure.

In short, the seemingly contradictory findings from earlier research suggest that state and district context play a critical role in determining the relationship between charter growth and school district finances. Yet because different studies have relied on slightly different methods—or asked slightly different questions—even this seemingly inoffensive conclusion must be considered tentative.

# Methodology

## DATA

This study uses eighteen years (2000–17) of geographic school district level data on charter and traditional public school enrollment, school district finances, and student demographics in a total of forty-one states and the District of Columbia (subsequently reduced to an analyzed sample of twenty-one, see *Sample*).

Student counts and charter status come from the NCES Public School Survey, which is also the source of each charter’s LEA code (which may or may not be the same as the LEA code of its host district). Throughout this study, charters that share their host district’s LEA code are referred to as “district” charters, while those with a different code are “independent.” Although there is no NCES documentation to this effect, information gleaned from state department of education websites suggests that in those states where there are both district and independent charters, the former are nearly always authorized and/or administered by the host district, while independent charters are authorized by other entities (e.g., state boards of education or institutes of higher education).<sup>22</sup>

To determine independent charter market share—that is, the percentage of publicly enrolled students in a geographic school district who attended an independent charter school in a given school year—we use publicly available geospatial data to place every charter school within the physical boundaries of a traditional school district and then divide the total enrollment of a given district’s independent charters by its total public enrollment (i.e., by the sum of district and independent charter enrollment).<sup>23</sup> The obvious limitation of this method is that it does not account for students who attend a charter school within the boundaries of one school district but reside within the boundaries of another. However, prior research suggests that estimates of fiscal effects of charter growth that rely on this measure are similar to estimates that account for charter students’ residency.<sup>24</sup> In the absence of student-level data, this is the most reasonable measure of charter market share available.

The fiscal measures used herein are based on the F33 reports produced by the U.S. Census Bureau, which include district totals for total, local, state, and federal revenue, as well as curated versions of total current, instructional, and support spending per pupil. Importantly, the Census considers “nongovernmental” charters (which include any and all charters not authorized by the host district or county) to be out of scope. So, at least conceptually, the Census definition of nongovernmental charters aligns closely to our definition of independent charters. Moreover, according to the documentation for those reports, the student counts that are the basis for these curated spending variables are aligned with the F33’s fiscal measures (though as discussed in *Appendix*, this claim may not be justified for some states).<sup>25</sup>

Analysis of our dataset is further complicated by the fact that state and local dollars flow to independent charters in different ways. In some states, these dollars flow directly to these schools. However, in other states, some or all of these funds “pass through” host districts, meaning they are included in their total revenue and spending. To account for these funds, the F33 data sometimes include an “exhibit” variable (V92), which represents the amount a district paid to charter schools in a given year. Unfortunately, this



variable is reported inconsistently; it is unclear, therefore, whether the amounts should be excluded from revenues when calculating the per-pupil figures used in this report. Our analysis, however, suggests it makes little difference how these issues are addressed (see *Appendix*).

Finally, in addition to information on enrollment and district finances, the NCES and Census data also include information on a collection of host district, geographic school district, and/or attendance zone characteristics that are useful as control variables (for more details, see *Analysis* and *Appendix*.)

## SAMPLE

Of the forty-five states that currently have charter schools, forty-one had charter schools during the study period (2000–17). However, in some of these states, traditional school districts are the only entities that can authorize charter schools (meaning there are no independent charters whatsoever). And in others, only a handful of districts hosted independent charter schools during the study period. To ensure a useful sample size, the study focuses on states where at least ten districts hosted an independent charter school at the end of the study period (an admittedly arbitrary threshold but one that provides a minimal number of districts necessary for this analysis). Because we're primarily concerned with the fiscal effects of charter growth on traditional school districts' finances, we also limit the focus of the study to states where our analysis indicates that the F33 enrollment counts exclude independent charter school students (see *Appendix*).

Taking these steps leaves us with twenty-one states with reliable fiscal data and a critical mass of host districts.

## ANALYSIS

This study uses a fixed-effects model to isolate the relationship between charter market share and host school districts' revenue and/or spending per pupil. This model includes district and year fixed effects that effectively control for any time-invariant characteristics of districts, as well as universal shocks (i.e., changes that affect all districts, such as the fiscal impact of the Great Recession). It also includes control variables that change over time and likely affect district revenues and spending per pupil.

These control variables include the following:

- District size (i.e., total public enrollment in grades K–12)
- The percentage of host district students in grades 9–12 (because costs tend to be higher in high school)
- The percentage of host district students classified as needing special education services
- The percentage of host district students who are English language learners
- The percentage of students in the host district's attendance zone living in economic disadvantage
- Population density in the host district's attendance zone (because costs tend to be higher in more urban areas)<sup>26</sup>
- The labor market in which the district is located (to account for differences in the cost of labor)

As noted in the *Background* section, deciding how to control for district size or “scale” is one of the most consequential decisions that researchers must make when constructing their model. Omitting any measure of district scale will likely bias the estimates, as enrollment size affects spending per pupil.<sup>27</sup> However, if charter school growth affects fiscal measures through enrollment losses, including those losses in the model will hide the charter growth effects. Consequently, our model includes a measure of district scale that is based on total public enrollment—that is, host district enrollment plus independent charter enrollment (see *Appendix* for additional details).

Note also that because we control for the percentages of students receiving free and reduced price lunch, students with special needs, and English language learners at the host district level, we are effectively controlling for any charter-driven changes in these percentages. In other words, our estimates reflect the effects of charter-driven changes in “scale” but not of charter-driven changes in student demographics.

This model is replicated for each state using a variety of fiscal measures as the dependent variable, all of which are expressed as per pupil measures and adjusted for changes in labor costs across time and geography.

These dependent variables include the following:<sup>28</sup>

- **Total revenue per pupil:** Total elementary and secondary revenue from all sources
- **Local revenue per pupil:** Revenue from local sources including taxes, government contributions, revenue from other school systems, and charges
- **State revenue per pupil:** Revenue from state sources including general formula assistance, special education, and other programs
- **Federal revenue per pupil:** Revenue from federal sources including Title I, IDEA, and other programs
- **Total current spending per pupil:** Spending on current operations, including salaries, employee benefits, purchased professional and technical services, purchased property and other services, and supplies; debt service, capital outlay, and reimbursement to other governments are excluded
- **Instructional spending per pupil:** Includes payments for salaries and benefits, supplies, materials, and contractual services
- **Support spending per pupil:** Includes general administration, instructional staff support, operation and maintenance of facilities, pupil support services, pupil transportation services, school administration, and other support services

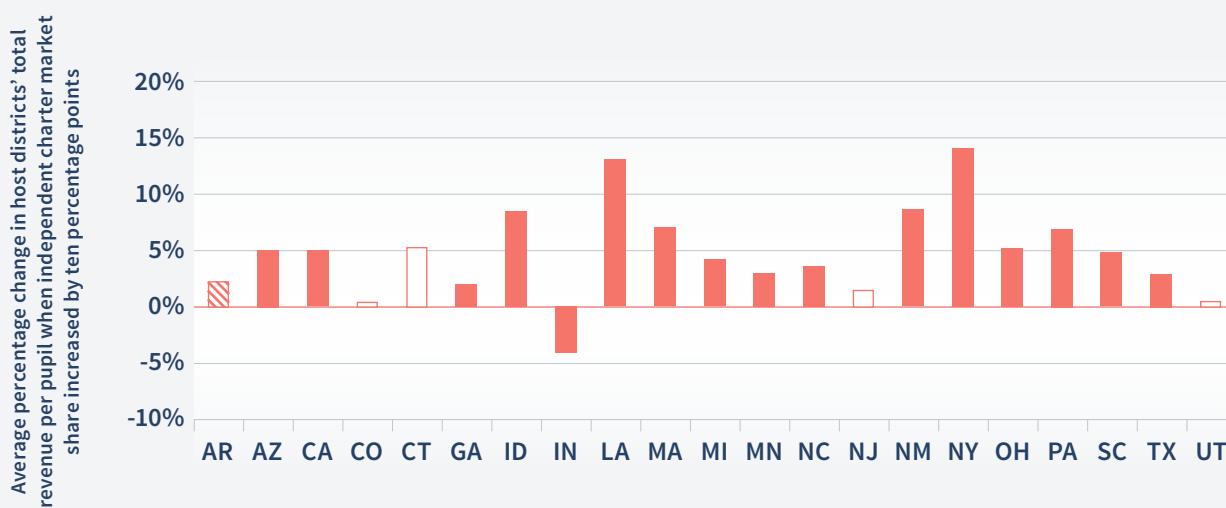
As is typical in the school finances literature, these dependent measures are log transformed, which creates a log-level estimate of the coefficient of charter market share (otherwise known as a semi-elasticity). For the purposes of this report, estimates can be interpreted as the percent increase or decrease in host district revenue or spending per pupil that was associated with a ten-percentage-point increase in independent charter market share. Per the summary statistics in Table A1 in the *Appendix*, this is the sort of increase that a typical host district experienced during the study period.

# Findings

## **FINDING 1: In most states, an increase in the percentage of students attending independent charter schools was associated with a significant increase in host districts' total revenue and spending per pupil.**

In fifteen of the twenty-one states that are the focus of the study, a greater independent charter market share was associated with a statistically significant increase in host districts' total revenue per student (see Figure 2). Moreover, in some states, the estimated increases are quite large. For example, a ten-percentage-point increase in independent charter market share was associated with a 13 percent increase in host districts' revenues per pupil in Louisiana and a 14 percent increase in New York.

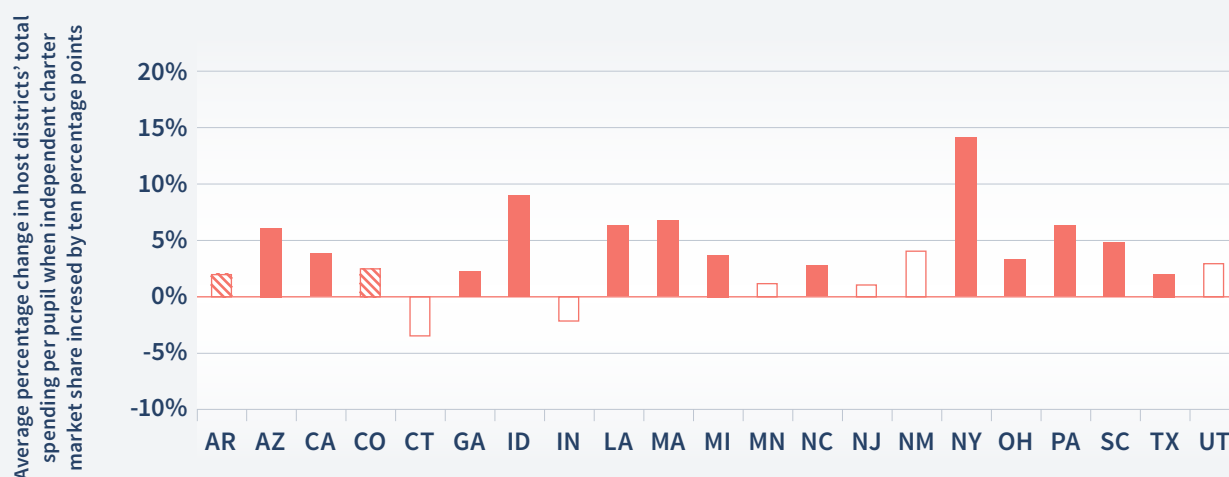
**Figure 2. In fifteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' total revenue per pupil.**



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

Similarly, in thirteen of the twenty-one states in the study, a greater independent charter market share was associated with a statistically significant increase in host districts' current expenditures per student (see Figure 3). Again, the magnitude of this increase is notable in states such as Idaho and New York.

**Figure 3.** In thirteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' total current spending per pupil.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

## What about district-authorized charters?

Because federal data don't allow us to distinguish between the monies that flow to traditional public schools and those that flow to district-authorized charters, we're not in a position to assess the effects of district-authorized charters on the finances of traditional public schools. However, it is possible to estimate the relationship between district charter market share and the finances of all district schools (including district-authorized charters). Importantly, these results are not directly comparable to the estimates of independent charter market share

that are the focus of this report, as the distribution of resources between traditional public schools and district charters has no effect on a host district's spending per student. That said, there are no significant relationships between district charter market share and authorizing districts' total revenue or expenditures per pupil that we can detect (see *Appendix*).

**FINDING 2: In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' local revenue per pupil, and in some states, it was also associated with an increase in state and/or federal revenue per pupil.**

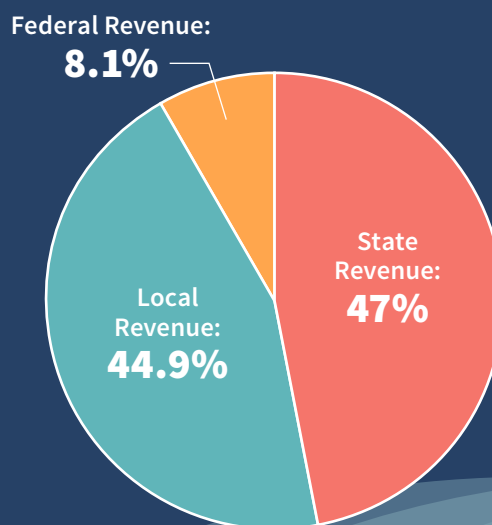
In thirteen of the twenty-one focus states, a greater independent charter market share was associated with a statistically significant increase in host districts' local revenue per pupil (see Figure 4). And in two states, New Mexico and Minnesota, there is evidence suggestive of an increase in local revenue.

In some states, the estimates are quite large. For example, a ten-percentage-point increase in independent charter market share was associated with a 19 percent increase in local revenues per pupil in Louisiana, a 15 percent increase in New York, a 12 percent increase in South Carolina, and an 11 percent increase in Idaho.

In contrast, higher independent charter market share was associated with a statistically significant increase in host districts' state revenue per pupil in just seven states, and in South Carolina it was associated with a statistically significant decline in state revenue (see Figure 5). States where higher independent charter market share was associated with a significant increase in local revenue per pupil but not state revenue per pupil include Arizona, Louisiana, California, Michigan, Texas, Arkansas, South Carolina, and Georgia. Only in New Jersey was higher independent charter market share associated with an increase in state revenue per pupil but not in local revenue per pupil.

**What percentage of district revenues are local, state, and federal?**

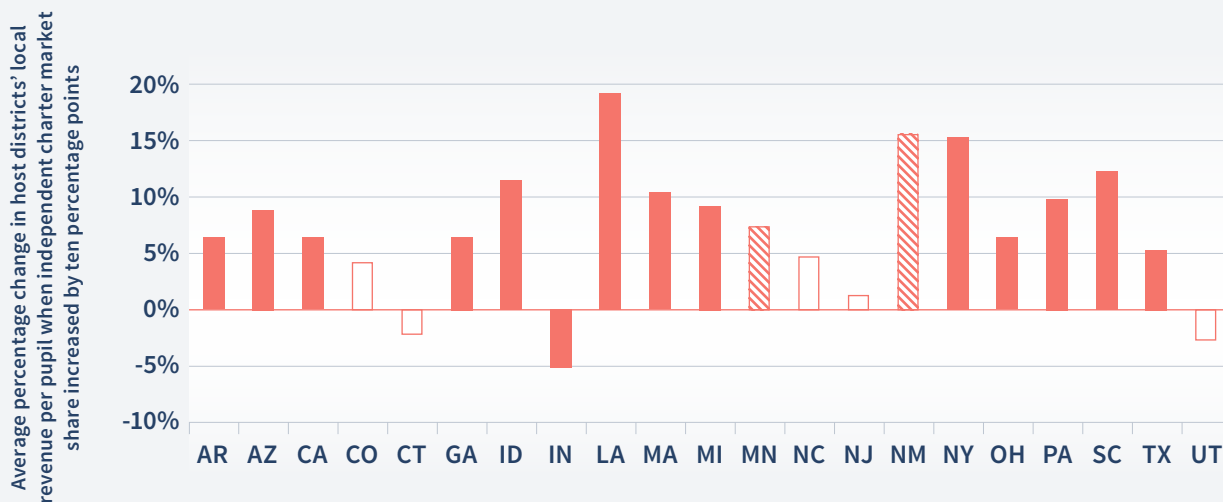
K–12 school revenues come from three sources: localities, states, and the federal government. Per the figure, federal revenue is the smallest part, accounting for less than a tenth of total revenue in the typical school district (although the exact amount depends on the number of low-income and/or special education students in the districts). The balance is a mixture of state and local revenues that varies between and within states.



Source: National Center for Education Statistics, 2016-17

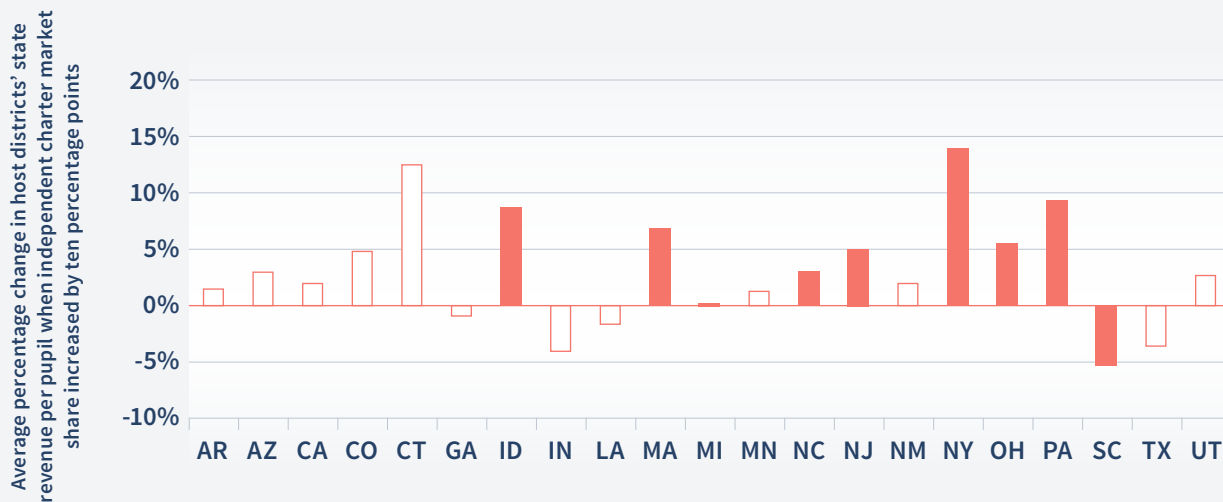


**Figure 4.** In thirteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' local revenue per pupil.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

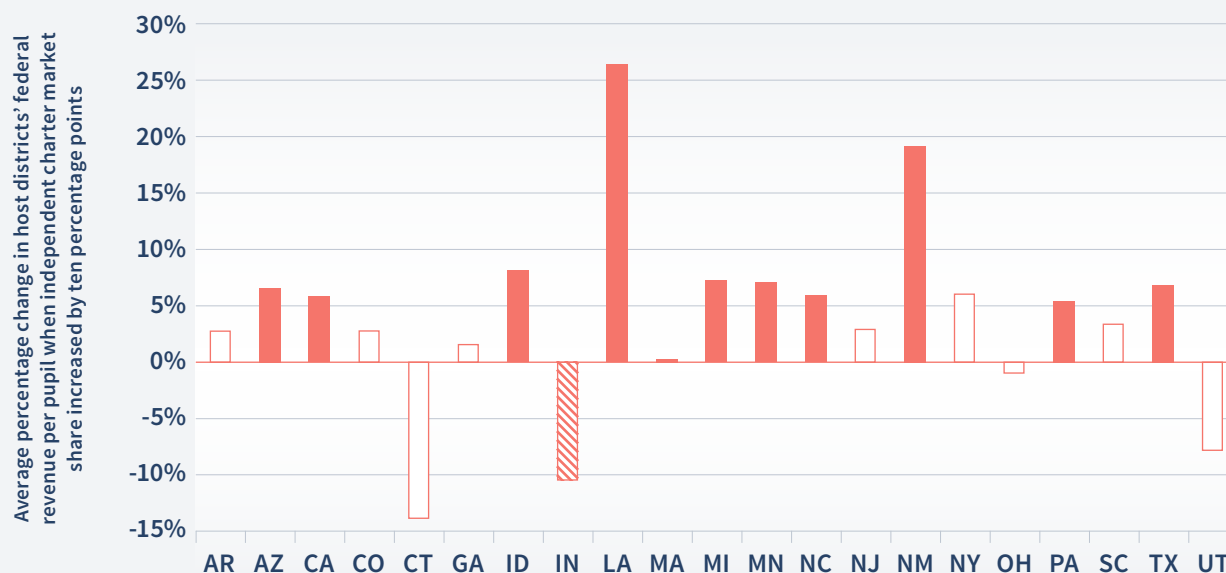
**Figure 5.** In seven of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' state revenue per pupil.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

Finally, in ten of twenty-one states, there was a statistically significant increase in host districts' federal revenue per pupil as independent charter enrollment increased (see Figure 6). For example, in Louisiana, a ten-percentage-point increase in independent charter market share was associated with a 26 percent increase in federal revenue per pupil.

**Figure 6.** In ten of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts' federal revenue per pupil.



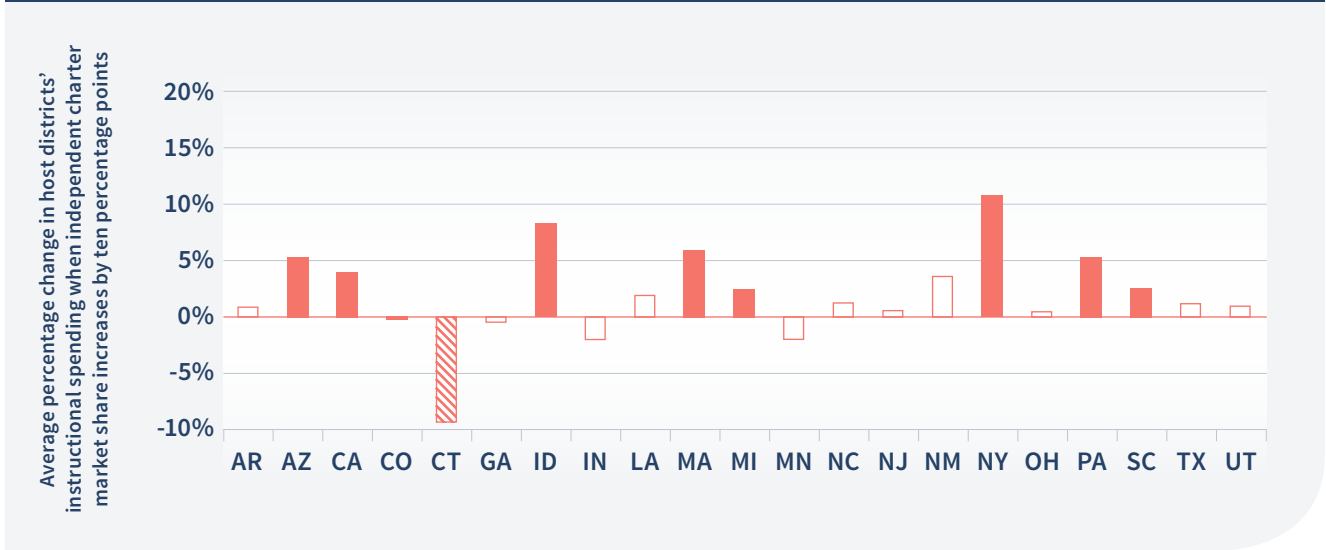
Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

### **FINDING 3: In most states, an increase in the percentage of students attending independent charter schools was associated with an increase in host districts' support spending per pupil, and in some states, it was also associated with an increase in instructional spending per pupil.**

Most K-12 spending can be broken into two categories: spending that is directly on instruction and spending on student and school supports. In general, instructional spending covers expenditures for regular, special, and vocational instruction, including teacher salaries and benefits, while support spending includes administration, instructional support staff (library, curriculum, etc.), pupil support (counselors, social workers, etc.), transportation, and other functions not directly related to classroom instruction.

In eight of the twenty-one focus states, there was a positive and statistically significant relationship between independent charter market share and instructional spending (see Figure 7). For example, in Massachusetts, a ten-percentage-point increase in independent charter market share is associated with a 6 percent increase in instructional spending per pupil.

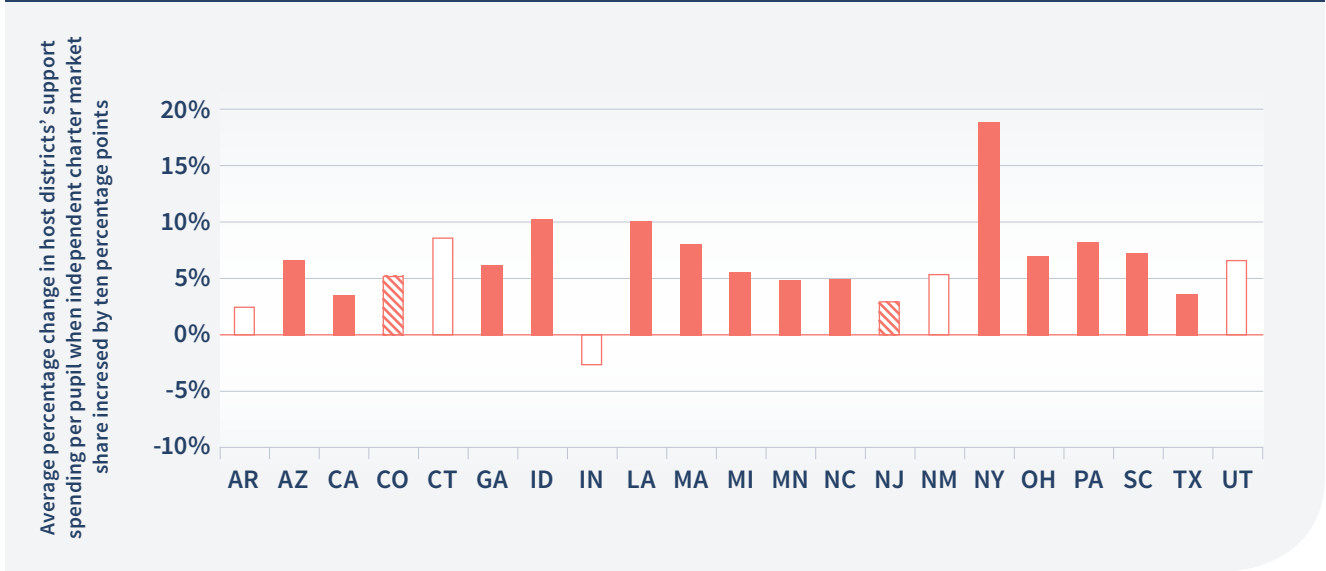
**Figure 7.** In eight of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts’ instructional spending per pupil.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

Meanwhile, higher independent charter market share is associated with a statistically significant increase in support spending in at least fourteen states (and in two others, there is suggestive evidence of a positive relationship). For example, in New York state, a 10 percent rise in independent charter market share is associated with a 19 percent in host districts’ support spending per pupil.

**Figure 8.** In fourteen of twenty-one states, higher independent charter market share was associated with a statistically significant increase in host districts’ support spending per pupil.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

## Limitations

When considering the results presented herein, readers should bear the following in mind.

- The F33 data are not collected directly by federal agencies. They are data from state departments of education, which are curated by federal agencies. As some researchers have noted, the methods for determining the alignment of enrollments and fiscal data may vary by state, which could account for some of the differences between states.<sup>29</sup>
- Because charter market share isn't randomly assigned, the estimates are vulnerable to omitted variable bias—notwithstanding the inclusion of district, year, and labor-market-by-year fixed effects, as well as other economic and demographic controls. For example, the estimates could reflect the fact that charter schools tend to locate in areas of greater student disadvantage and/or where there were concurrent changes in funding systems insofar as the aforementioned controls fail to account for these factors.
- In addition to the number of students who live within its boundaries, the scale of a geographic school district also depends on the number of students who cross those boundaries to attend a charter or traditional public school, as well as the number of students who attend a private school or are homeschooled. Without student-level data, it is difficult to account for these students. However, insofar as independent charters are affecting district scale through either of these channels, it is likely that we are overestimating their effects on district finances (see *Appendix*).
- Although we experimented with alternative approaches, the model that is the basis for the results assumes the relationships between charter market share and host district revenue and/or spending are linear, which could bias our estimates insofar as the actual relationships are curvilinear (e.g., if districts adjust their behavior as charter market share increases).
- Ultimately, the results presented herein are a description of the past and not necessarily a prediction for the future. After all, the laws that determine district and charter school funding can and will change.

# Discussion

**When considering the results, it is important to remember that the United States does not have a single K–12 education system.** In addition to organizing and funding its traditional public schools differently, each state authorizes and funds its charter schools in different ways. Therefore, we should not be surprised that the estimates vary significantly from state to state.

That said, several patterns emerge from the results: First, as independent charter enrollments grow, so too do host district revenues and spending per pupil. Second, local revenue per pupil typically increases by more than state or federal revenue per pupil. Finally, support spending often increases by more than instructional spending.

As noted in the introduction, we can't be completely sure that charter school proliferation is causing these funding and spending increases. Still, two explanations related to charter growth are worth considering.

First, state policies on charter school funding may drive more funding per pupil toward districts that experience charter growth. For example, in states such as Arizona and Idaho, independent charters don't have access to local funding (though they do receive additional funding from the state). Consequently, as students leave for charters, host districts' local revenues per pupil in these states may increase.<sup>30</sup> Similarly, New Jersey law only requires districts to pass through a portion of their per-pupil funding to charters,<sup>31</sup> the amount of which is also weighted by student characteristics (meaning host district funding could increase insofar as local charters enroll a different student population). Finally, charter schools in Colorado were until very recently excluded from revenues raised by additional mill levies.<sup>32</sup> So again, insofar as host districts didn't adjust their local revenue collections as students departed for charters, their local revenues per pupil may have increased. Other policies unrelated to local revenues may also drive funding to districts that host charter schools. For example, Massachusetts,<sup>33</sup> Pennsylvania,<sup>34</sup> and New York<sup>35</sup> have all, at one time or another, enacted policies that provided extra funding to districts that experience charter growth (even if they have been implemented inconsistently).

Second, host school districts may not be able or willing to reduce spending commensurate with their declining enrollment. For example, if a district that sees a decline in enrollment keeps the same number of school buildings open, per-pupil spending on building administration, plant operations, and support staff may increase. The disproportionate increases in host districts' support spending observed in many states support this theory. After all, it's easier to eliminate a teaching position as enrollments decline than to eliminate a school principal position. Note also that as school district enrollments decline (or fail to increase), districts may see their spending per pupil rise, as research shows that smaller school districts tend to have higher costs than larger ones.<sup>36</sup>



Although federal funding accounts for a relatively small part of overall K–12 revenues, it’s worth noting that charter school growth is associated with an increase in host districts’ federal funding per pupil in many states. The complexities of federal formulas make it difficult to know what’s driving these increases. However, they could reflect unobserved changes in the types of special education students that host districts serve and/or issues with the distribution of Title I funding between traditional school districts and independent charters.<sup>37</sup>

In short, our findings suggest a more complex relationship between charter growth and district finances than many charter critics or supporters have previously promulgated. In many states, when students leave for charter schools, some or all of their local funding remains in district coffers, boosting per-pupil revenue and spending. However, this extra revenue tends to flow into support spending—some of which might be considered fixed costs—rather than instructional spending.

# Conclusion

**The primary finding of this report may come as a pleasant surprise to some readers.**

After all, research suggests that increased funding leads to better student outcomes,<sup>38</sup> so if the growth in charter enrollments is linked to increased spending in traditional public schools—no matter the mechanism—students in those schools may benefit. However, we should be wary of jumping to that conclusion because increased spending in host districts could also reflect increases in inefficiency. In other words, the extra spending that accompanies charter growth may not help increase student performance.<sup>39</sup>

Ultimately, the complexity of the interplay between charter growth, district costs, and student outcomes—as well as the diversity of statewide charter school funding policies<sup>40</sup>—keep us from drawing any facile conclusions about the positive or negative effects of increased spending and revenues in school districts that host charter schools. And yet, in many states, those increases do exist. Hopefully, this study spurs further research on why spending and revenues increase when charter enrollments grow and how these increases affect student outcomes.

# About the Author

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# Appendix: Detailed Methods

## THE MODEL

To estimate the relationship between the variable of interest (i.e., independent charter market share) and the dependent variables (i.e., host districts' revenue or spending per pupil), we employ a fixed-effects model. The model accounts for unobserved and “fixed” characteristics of individual school districts, as well global changes across time that affect all districts simultaneously.

The basic form of the model is as follows:

$$Y_{it} = \beta_1 C_{it} + \beta_2 D_{it} + \gamma_t + \delta_i + \varepsilon_{it}$$

Y is a fiscal measure: spending per student, revenue per student, or some subcategory of these. This figure is transformed by Taylor's Education Cost Wage Index (ECWI), which accounts for differences in wage costs over time and geography.<sup>41</sup> The measures are then log transformed, as is typical for such models. The resulting coefficients are log-level, or semi-elasticities, and should be interpreted as described in the text.

C is the variable of interest described above: the share of student enrollments in charter schools for a district's total public enrollments. The share is either for all charter school students, “district” charter students, or “independent” charter students.

D is a vector of time-varying geographic host school district characteristics, including the following:

- The percentage of host district students in grades 9–12, which is determined by “rolling up” from school-level NCES data on enrollment.
- The percentage of students living in the host district's boundaries who are living in poverty, which comes from the Small Area Income and Poverty Estimates (SAIPE) for five- through seventeen-year-olds generated by the U.S. Census Bureau.
- The percentage of host district students who are enrolled in the federal free or reduced-price lunch (FRPL) program.<sup>42</sup>
- Population density in the host district's attendance zone, as estimated by the U.S. Census Bureau.
- The log of total public enrollment, from the NCES LEA data (see below for a more detailed discussion of this measure of “total area scale”).
- The percentage of host district students classified as needing special education services, from the NCES LEA data.
- The percentage of host district students who are English language learners, from the NCES LEA data.
- The labor market in which the school is located (labor markets delineations are from the data compiled in the ECWI data and are only included as an interaction term with year dummies).

In addition to these controls, the fully specified model also interacts poverty and density, per Baker et al.<sup>43</sup>

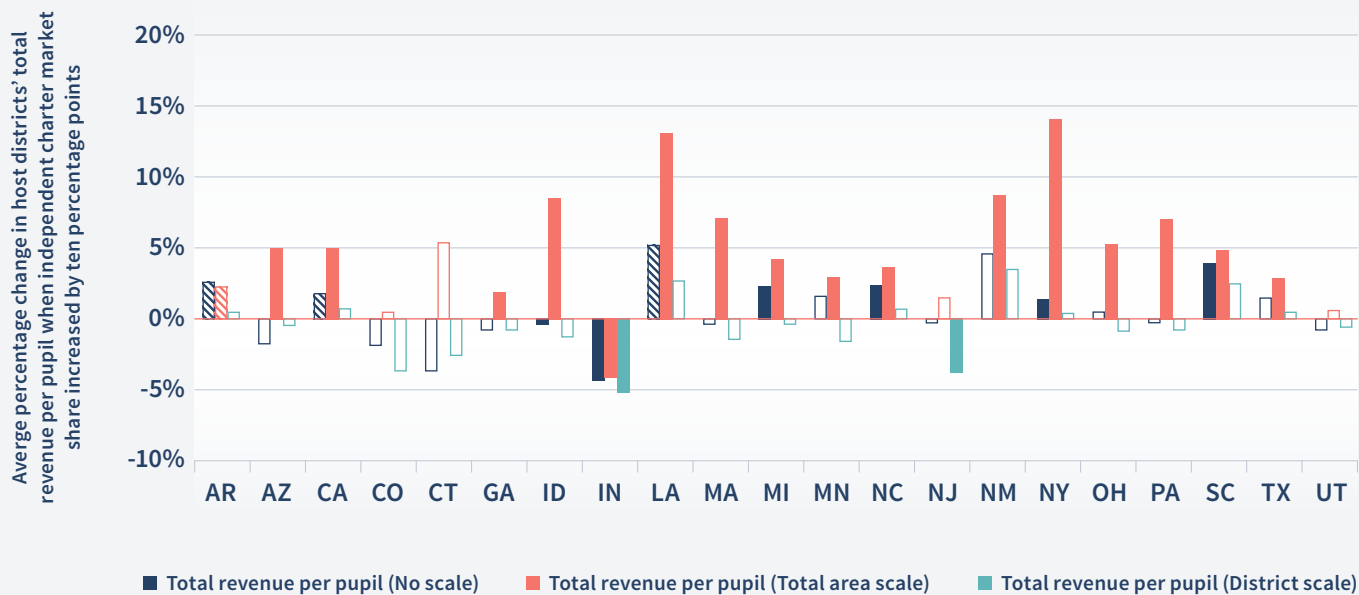
$\gamma$  is a set of year dummy variables to control for secular trends,  $\delta$  is a set of time-invariant district fixed effects, and  $\varepsilon$  is an idiosyncratic error term. We cluster robust standard errors at the district level in these models.

## DISTRICT SCALE

Whether and how to control for changes in district “scale” is one of the most consequential decisions a researcher must make when studying the fiscal effects of charter school growth. The choice depends on the following research question: Is the goal to estimate the effects of charter school growth “net of” charter-driven enrollment declines, or should the effects of those enrollment declines be included in the overall charter effect?

Figure A1 illustrates the importance of this decision by showing the estimated effect of higher independent charter market share on host districts’ total revenues using three variations of this report’s model: one that doesn’t control for changes in scale, one that controls for changes in total area scale (i.e., the combined enrollment of district and charter schools within district boundaries), and one that controls for changes in district scale (i.e., enrollment in traditional public schools and district-authorized charters but not independent charters).

**Figure A1. Association between independent charter market share and host districts’ total revenue per pupil (with alternative measures of scale).**



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the p<0.05 level, and striped bars at the <0.1 level.

Per the figure, when we don't control for changes in scale, there is evidence of a statistically significant relationship between independent charter enrollment and host district revenues in just five of the twenty-one focus states. However, prior research on the relationship between district scale and revenue and/or spending per pupil suggests these estimates may be biased, as district size has a significant effect on per-pupil costs. And it's likely that over the long time period of our study (2000–17), many districts experienced significant changes in size that were unrelated to charter school growth.

In contrast, the estimates of total area scale suggest a significant and almost uniformly positive relationship between charter market share and host district revenues in at least fifteen states. Because this report seeks to understand the fiscal implications of charter-driven changes in host districts' enrollment, the findings focus on these total area scale estimates. However, an implicit assumption of this approach is that students who enrolled in independent charter schools would otherwise have attended schools in the host district. Because this isn't always the case (especially in states with smaller school districts and a significant private school presence), the total area scale estimates can be thought of as an upper bound.

## CHARTER PAYMENTS (V92)

Analysis of the dataset is complicated by the manner in which state and local dollars flow to independent charters. In some states, these dollars flow directly to these schools. However, in other states, some or all of these funds “pass through” host districts, meaning they are included in their total revenue and spending.

To account for these funds, the F-33 data include a variable (V92). However, there are issues with the reporting of this variable: First, although many states reported V92 amounts for prior years, it was only in 2009 the National Center for Education Statistics clarified that these amounts should be excluded from current and instructional spending. Moreover, there is no documentation that suggests these amounts have been excluded from revenue. Second, some states have reported these data inconsistently. For example, Pennsylvania began reporting V92 payments in 2013 (decades after the state's first charter opened its doors), while Arizona reported V92 data for 2015 only (see Table A1).

In states where the V92 data were reported consistently, it seems reasonable to conclude that these amounts were excluded starting in 2009. Similarly, it seems reasonable to infer that charters are funded directly in states with no V92 payments whatsoever. However, this assumption does not seem warranted in states where V92 payments are only reported for some years. In other words, despite the fact that reported V92 payments are excluded from the Census's per-pupil spending measures, it's possible that total current and instructional spending per pupil is inflated in these states.

Finally, although subtracting the V92 payments from total revenue is relatively straightforward, there is no way of knowing exactly what fraction of these payments should be excluded from state and local funding. So in the absence of such data, we deduct these payments in proportion to their share of total revenue for the district and year in question.

As a robustness test, we run the model using total revenue as the dependent variable, both with and without the V92 amounts subtracted, in the nine states where the amounts were reported consistently. Both the estimates and their standard errors changed little, indicating the V92 amounts have little effect on our analysis of the data.

**Table A1. Years when the twenty-one focus states reported any V92 payments to charter schools.**

State	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AR										X	X	X	X	X	X	X	X	
AZ																X		
CA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CO								X										
CT																		
GA							X	X	X	X	X	X	X	X	X	X	X	X
ID																		
IN				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LA																		
MA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MI																		
MN																		
NC									X	X	X	X	X	X	X	X	X	X
NJ	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NM																		
NY	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PA														X	X	X	X	X
SC		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TX	X	X																
UT																X	X	X

## F-33 ENROLLMENT COUNTS

All spending and revenue measures are based on data from the U.S. Census Bureau’s Annual Survey of School System Finances, which is commonly referred to as the F-33 survey.<sup>44</sup> Technical documentation for the survey<sup>45</sup> notes that “enrollments for state educational facilities, federal school systems, and charter schools whose charters are held by a nongovernmental entity have been excluded.” However, the census defines “nongovernmental” to include any charters not authorized by a local authority (e.g., a traditional school district, county, or city). In other words, charters authorized by state boards of education and institutes of higher education are considered nongovernmental, and the Census’s definition of nongovernmental is thus closely aligned to this report’s definition of independent.

Similarly, “enrollments from the CCD agency universe file were subject to adjustment by Census Bureau survey staff if the enrollments were inconsistent with the finances reported.” In other words, the goal of the Census Bureau is to align the fiscal measures in the data with a relevant enrollment count so that per-pupil spending and revenue measures will be comparable across districts. However, because F-33 data are collected by states, there is a possibility that both independent and district charter enrollments could be



included in the enrollment count for a district. After all, the manner in which states organize, regulate, and fund charter schools varies widely, so it's possible that the manner in which they report fiscal data and enrollment counts also varies.

To verify the contents of the F-33 enrollment count, we create three other enrollment counts for each school district in the dataset using the NCES Public School Universe Survey: first, the count of students enrolled in district schools that are not charter schools; second, the count of students enrolled in both charter and noncharter district schools; and third, the count of all publicly enrolled students located within a district's boundaries, including those enrolled in independent charters.

Next, we calculate three correlation coefficients for each enrollment and the F-33 enrollment count by state, including all observations in the dataset across all years. We then compare these coefficients to determine which of the three counts is closest to the F-33 enrollment (see Column 1). In most cases, the F-33 enrollment count correlates most closely to the enrollment count of students in noncharter and charter district schools, which excludes independent charters. However, there are a few states where the F-33 enrollment correlates most closely to total public enrollment—that is, to the enrollment of students in traditional public schools and all charter schools (including independent charters). Because the implication is that enrollment and fiscal data may not be aligned, we exclude these states from the analysis.

**Table A2. Descriptive statistics**

	1	2	3	4	5	6	7	8
State	F33 enrollment description	Statewide charter market share (2017)	Ind. charters' % of total charter enrollment (2017)	Statewide ind. charter market share (2017)	Number of districts (2017)	Number of districts w/ ind. charters in 2017	% of districts w/ ind. charters (2017)	Highest ind. charter market share (2017)
AK*	TPS & district charters	5.0%	0.0%	0.0%	53	0	0.0%	0.0%
AR	TPS & district charters	5.6%	51.4%	2.9%	234	15	6.4%	40.7%
AZ	TPS & district charters	15.2%	100.0%	15.2%	221	79	35.7%	65.6%
CA	TPS & district charters	9.1%	18.4%	1.7%	1026	114	11.1%	59.3%
CO	TPS & district charters	12.6%	21.7%	2.7%	178	20	11.2%	19.3%
CT	TPS	1.9%	100.0%	1.9%	166	11	6.6%	14.6%
DC*	TPS	43.4%	100.0%	43.4%	1	1	100.0%	43.4%
DE*	TPS	10.8%	100.0%	10.8%	19	9	47.4%	23.2%

*continued...*

**Table A2 (continued). Descriptive statistics**

	1	2	3	4	5	6	7	8
State	F33 enrollment description	Statewide charter market share (2017)	Ind. charters' % of total charter enrollment (2017)	Statewide ind. charter market share (2017)	Number of districts (2017)	Number of districts w/ ind. charters in 2017	% of districts w/ ind. charters (2017)	Highest ind. charter market share (2017)
FL*	TPS & district charters	10.1%	1.6%	0.2%	67	4	6.0%	4.9%
GA	TPS & district charters	3.8%	45.9%	1.7%	180	16	8.9%	46.4%
HI*	TPS & district charters	5.8%	0.0%	0.0%	1	0	0.0%	0.0%
IA*	TPS & district charters	0.1%	0.0%	0.0%	333	0	0.0%	0.0%
ID	TPS & district charters	6.9%	87.4%	6.1%	115	21	18.3%	71.4%
IL*	TPS & ALL charters	3.2%	5.4%	0.2%	853	4	0.5%	14.4%
IN	TPS	4.1%	100.0%	4.1%	290	36	12.4%	45.4%
KS*	TPS & district charters	0.6%	0.0%	0.0%	307	0	0.0%	0.0%
LA	TPS & district charters	11.1%	70.9%	7.9%	69	22	31.9%	69.8%
MA	TPS	4.4%	100.0%	4.4%	321	36	11.2%	45.4%
MD*	TPS & district charters	2.5%	0.0%	0.0%	24	0	0.0%	0.0%
ME*	TPS	1.1%	100.0%	1.1%	245	9	3.7%	14.1%
MI	TPS	7.6%	100.0%	7.6%	539	126	23.4%	65.0%
MN	TPS	6.2%	100.0%	6.2%	332	57	17.2%	47.2%
MO*	TPS & district charters	2.5%	99.4%	2.5%	518	2	0.4%	43.0%
MS*	TPS	0.1%	100.0%	0.1%	144	1	0.7%	1.9%
NC	TPS	6.0%	100.0%	6.0%	115	62	53.9%	40.1%
NH*	TPS & ALL charters	1.8%	100.0%	1.8%	176	16	9.1%	46.7%
NJ	TPS	3.3%	100.0%	3.3%	564	35	6.2%	45.7%

*continued...*

**Table A2 (continued). Descriptive statistics**

	1	2	3	4	5	6	7	8
State	F33 enrollment description	Statewide charter market share (2017)	Ind. charters' % of total charter enrollment (2017)	Statewide ind. charter market share (2017)	Number of districts (2017)	Number of districts w/ ind. charters in 2017	% of districts w/ ind. charters (2017)	Highest ind. charter market share (2017)
NM	TPS & district charters	7.5%	65.1%	4.9%	89	14	15.7%	25.5%
NV*	TPS & district charters	8.5%	76.6%	6.5%	17	7	41.2%	13.8%
NY	TPS	4.7%	100.0%	4.7%	681	19	2.8%	32.5%
OH	TPS	6.8%	100.0%	6.8%	612	82	13.4%	66.9%
OK*	TPS	3.5%	100.0%	3.5%	513	9	1.8%	29.0%
OR*	TPS & ALL charters	4.9%	4.4%	0.2%	179	5	2.8%	10.3%
PA	TPS	7.8%	100.0%	7.8%	500	50	10.0%	97.5%
RI*	TPS & district charters	6.1%	86.1%	5.2%	32	7	21.9%	31.7%
SC	TPS & district charters	4.2%	65.9%	2.8%	81	18	22.2%	25.6%
TN*	TPS & district charters	3.5%	28.8%	1.0%	142	2	1.4%	7.9%
TX	TPS & district charters	5.8%	89.8%	5.2%	1023	150	14.7%	33.1%
UT	TPS	10.8%	100.0%	10.8%	41	22	53.7%	33.2%
VA*	TPS & ALL charters	0.1%	13.2%	0.0%	130	1	0.8%	3.4%
WA*	TPS	0.2%	100.0%	0.2%	295	5	1.7%	1.8%
WI*	TPS & district charters	5.1%	18.6%	1.0%	421	5	1.2%	8.7%
WY*	TPS & district charters	0.5%	0.0%	0.0%	48	0	0.0%	0.0%

Note: States that are marked with an asterisk were excluded from the report due to issues with reporting practices or sample size.

## GEOSPATIAL ANALYSIS

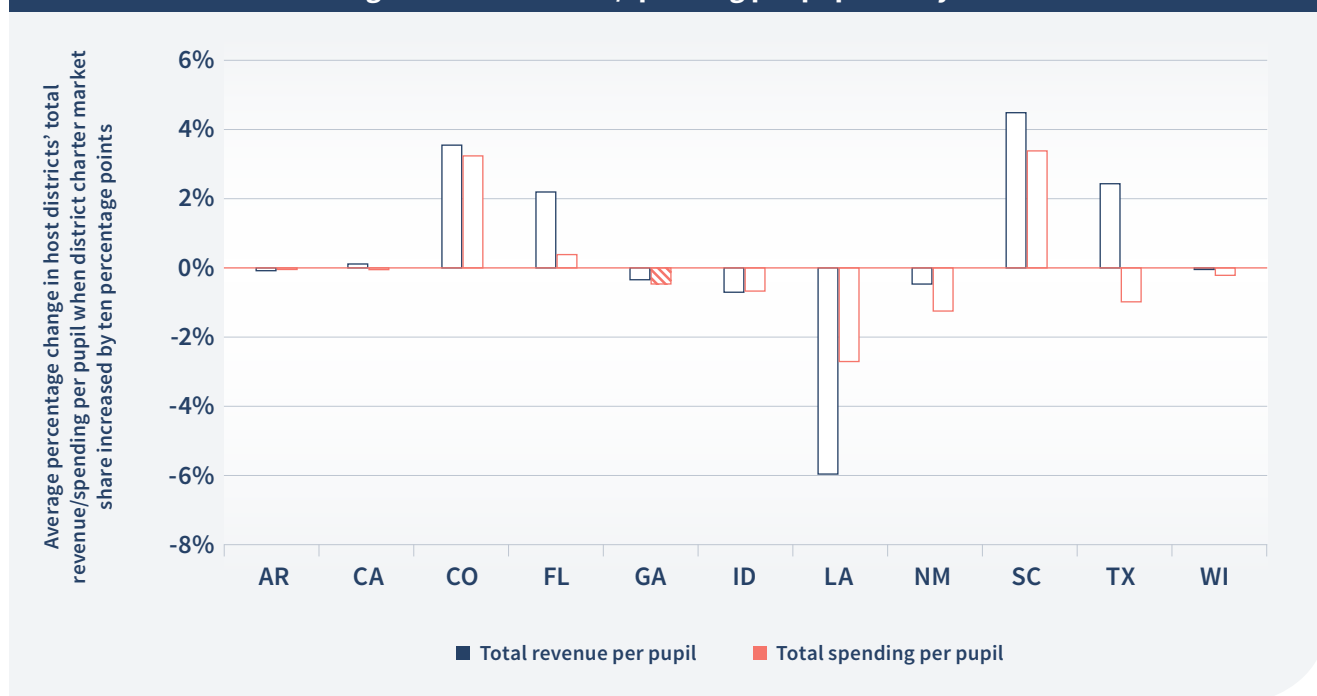
The geospatial data for traditional public school district boundaries comes from the NCES’s Education Demographic and Geographic Estimates (EDGE).<sup>46</sup> Charter school locations come from the NCES Common Core of Data (CCD), specifically the Public Elementary/Secondary School Universe Survey. The boundaries of the districts and locations of the charter schools were merged, and each charter was assigned to one or more “host” districts. When a charter was assigned to multiple overlapping districts (e.g., an elementary and secondary school district), its enrollment counts were divided between the two districts by grade level.

School districts are restricted to those labeled Type 1 or Type 2 in the NCES CCD (i.e., “regular” local school districts, which may or may not be part of a supervisory union). For this reason, descriptive statistics related to charter market share may differ from other sources, as enrollment counts in noncharters do not include enrollments in other types of LEAs such as regional education service agencies, state-operated institutions, and federally operated institutions.

## HOST DISTRICT AUTHORIZED CHARTER SCHOOLS

Per Figure A2, there is no statistically significant relationship between the market share of host district authorized charter schools and host districts’ total revenue or spending per pupil in any of the eleven states that meet our *n*-size criterion (i.e., that had at least ten districts with nonzero district charter market share in 2017). Because district charters are included in the dependent variables (i.e., in host districts’ per-pupil revenue and spending averages), these estimates should not be compared to the estimates of independent charter market share that are the focus of the report.

**Figure A2.** Higher district charter market share was *not* associated with a significant increase or decrease in authorizing districts’ revenue/spending per pupil in any state.



Note: Hollow bars indicate nonsignificance, filled bars statistical significance at the  $p < 0.05$  level, and striped bars at the  $< 0.1$  level.

# Endnotes

1. Jeffrey Max, et al., “How Does School Choice Affect Student Achievement in Traditional Public Schools?” (issue brief, Mathematica, Princeton, NJ, November 2019), <https://www.mathematica.org/our-publications-and-findings/publications/ib-how-does-school-choice-affect-student-achievement-in-traditional-public-schools>.
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21. Matthew Andrews, William Duncombe, and John Yinger, “Revisiting economies of size in American education: Are we any closer to a consensus?” *Economics of Education Review* 21, no. 3 (2002): 245–62, doi:10.1016/S0272-7757(01)00006-1.
22. Almost every state publishes a list of charter schools that includes information on their authorizer and/or type (though most states do not provide this information for every school year in the study period). In some states (e.g., CA and CO), our list of independent charters includes a handful of schools that are authorized by *other* school districts. However, because these schools are still independent from the perspective of the host district, we include them in our measure of independent charter market share. In Pennsylvania, most charter schools are technically authorized by their host school districts. However, because most Philadelphia charters were authorized by the now-defunct School Reform Commission, because the Pennsylvania Charter Appeals Board can reverse districts' decisions regarding charter applications and renewals, and because Pennsylvania charter schools are not included in districts' revenue or spending averages, all Pennsylvania charters are classified as “independent” for the purposes of this report.
23. See *Appendix* for details.
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36. Andrews, Duncombe, and Yinger, “Revisiting economies of size in American education.”
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39. Instead of estimating changes in spending, for example, a recent study of charter schools and district finances in New York state analyzed changes in the cost of educating students in hosting school districts—that is, the amount of spending required for a school to achieve a specified outcome (e.g., a particular test score or graduation rate). In the school finance literature, schools that spend less to achieve a desired outcome for similar students in similar contexts are said to be more efficient. In the short run, the New York study finds that charter school growth increases districts’ costs. However, in the longer term, these cost increases are offset by efficiency gains. Christian Buerger and Robert Bifulco, “The effect of charter schools on districts’ student composition, costs, and efficiency: The case of New York state,” *Economics of Education Review* 69 (April 2019): 61–72, doi:10.1016/j.econedurev.2019.01.003.
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41. The version of ECWI used here comes from the School Finance Indicators Database, which extrapolates values for years in which the ECWI is not available. See the SFID documentation for details.
42. Although FRPL is a useful measure for the purposes of this study, its use as a proxy measure of economic disadvantage has been called into question lately as more school districts employ universal enrollment in free lunch programs. Consequently, we also include SAIPE estimates of household poverty. In general, our estimates are robust to the exclusion of either or both of these measures.
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