



## **Building Equity:** Fairness in Property Tax Effort for Education

February 2017

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This report is a product of the collaborative efforts of the following individuals:

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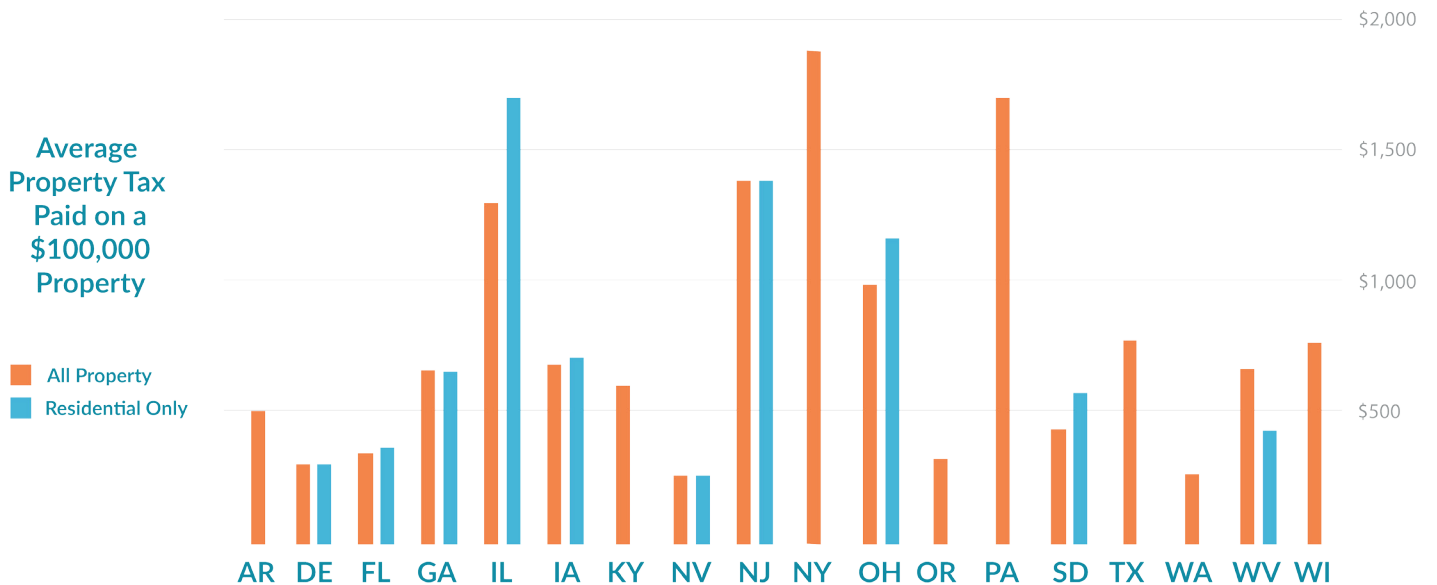
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# EXECUTIVE SUMMARY

If public education is meant to provide every child, no matter his or her background, with the opportunity to learn, grow, and thrive, then funding for public schools must be raised in a way that is aligned with this mission: fairly and equitably, in a manner that supports rather than harms needy communities. Some states achieve this goal better than others. But the fairness of each state's school funding hinges on something that is not, at first glance, a state issue at all: Local property taxation, which is at the heart of school funding equity.

Close to half of public school dollars in the United States are raised locally, mostly from local property taxes. But not all property tax bills are created equal. In some states, tax rates are fairly similar across districts, while in other states, property owners in one district may be putting in twice the tax effort as those in another. And these differences are dwarfed by the disparities in property tax effort for education between states: the average rate in top-paying New York is about six times as high as the rates in low-effort Washington and Nevada.

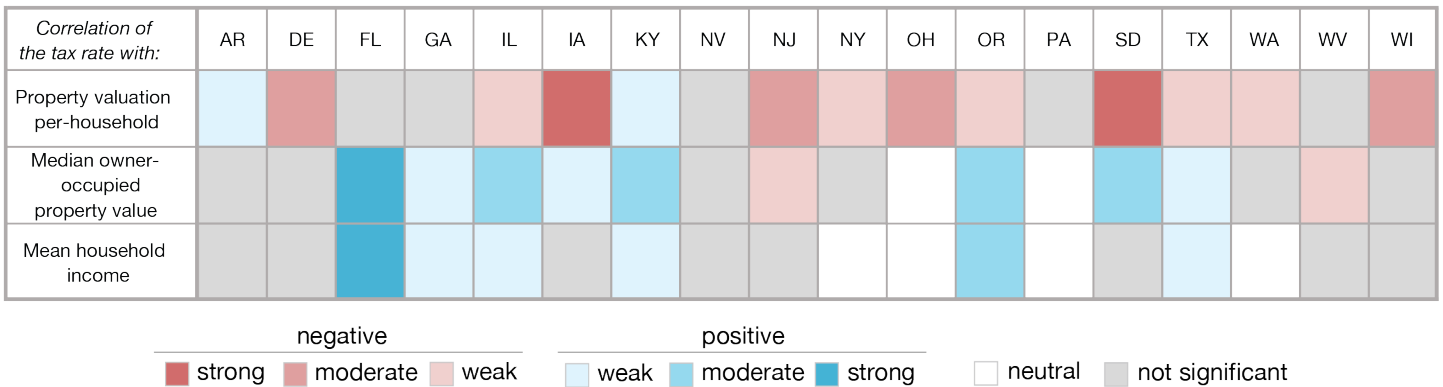


More important, though, is how school tax rates differ. Because property tax receipts are tied to the wealth of communities, there is reason for concern that low-wealth districts—those with low-value property tax bases—may be forced to tax themselves more heavily than high-wealth districts in order to raise enough funding for their schools. In this report, EdBuild asks: Is this really the case? Do school districts with small, low-value tax bases

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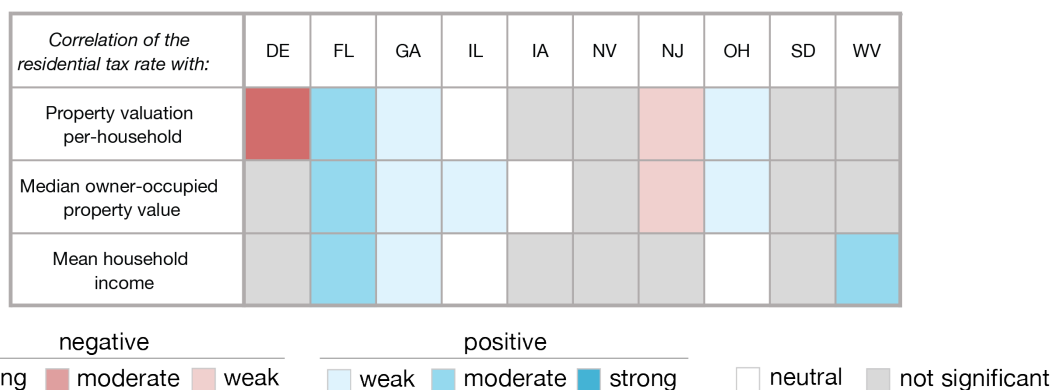
have to impose disproportionately high tax rates to raise enough funding, producing a regressive outcome? And if so, what can be done about it?

This analysis shows that in the strictest sense, property taxation for education is usually regressive. In 11 of 18 states studied, overall education tax rates were found to be lower in school districts where property valuation per household was higher. (The reverse was found in just two states.)



But, it turns out, that's not the whole story. While property taxes for education are regressive at the system level, things look quite different at the household level. In a plurality of states studied, overall school district tax rates were found to be higher in districts with greater median home values. When the investigation was narrowed to property taxes for education paid specifically by homeowners, the results were a mix of progressive, regressive, and neutral findings: residential property tax rates were not found to be consistently related to district affluence. And neither overall tax rates nor tax rates on residential property were found to be consistently related to local income levels.

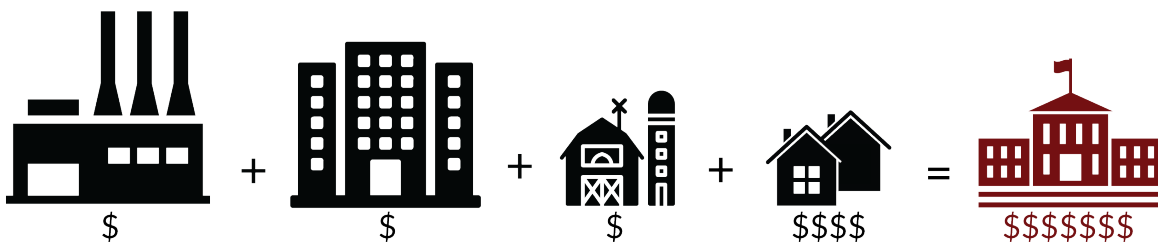
It emerges that property taxes for education may be regressive overall, but not usually because they overburden low-income households or low-wealth homeowners. Instead,



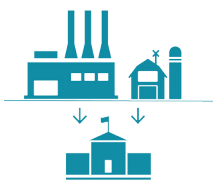
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this problem seems to arise mostly from the taxation of non-residential property, like businesses, factories, and farms. It appears districts often fail to effectively leverage the non-residential property tax base for school funding, and this fact looms larger than any neutral or progressive taxation at the household level.

This is a missed opportunity. If schools are to serve their purpose as vehicles of social mobility, they must be funded adequately, and from taxes that are imposed progressively, with rates aligned to communities' ability to pay. Within a system that relies on property taxes for education, if districts properly leverage high-value properties for school funding purposes, that brings more revenue into the system generally. If those higher local revenues are properly considered in the state's funding policy, that should free up state funds for use in needier districts. When districts do not take appropriate advantage of high-value tax bases, then that money must come from somewhere else—likely, from higher local taxes in districts whose smaller tax bases mean they struggle to raise enough funding for their schools. In this way, regressive local taxation for education undermines the fairness of the entire state's education funding system.



Local tax fairness matters for the education equity in a state. But state policies can also do a great deal to advance tax effort fairness at the local level. This report takes a deeper look at local property tax effort for education in three states (South Dakota, New Jersey, and Pennsylvania), placing their results in their respective policy contexts. These case studies reveal a number of policy areas that impact fairness in tax effort for education.



**The scope of the conversation around school funding policy.** The usual focus on residential property taxes misses a large part of the story. School district property taxes are often regressive in ways that homeowners don't see. The policy discussion must reckon with the role played by non-residential property.



**The state policies that directly address the setting of local tax rates.** State laws vary widely regarding limitations on local school tax rates: In some places, they are strict and unbreakable, while in others, they are easily overridden by voters, and in some states, there are no guidelines at all. State policies

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that reasonably guide and limit districts' local tax rates can do a great deal to promote fairness in tax effort.



**Consideration of taxpayer income.** It is notable how weak the relationship is between local income levels and school tax rates, and if schools are to provide true opportunity to disadvantaged students, that opportunity cannot come through overburdening low-income families.



**Expected local contribution and state share.** The final set of policies that matter for the distribution of the local tax burden are two sides of the same coin: how generously the state estimates each district's needed budget, and how much funding the state provides towards that budget. The interplay between these two state policies determines the gap that must be filled by local funding and likely has a greater impact on local school tax rates than any other area of state policy.

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States can do a great deal to advance or hinder the cause of equity in local property taxation for education. Properly crafted, state policy can provide generous enough aid that low-wealth districts are not forced to overtax themselves, and source revenue fairly enough that high-wealth communities exert correspondingly high tax effort for their schools. It is clear that states can and should do more to promote progressive taxation at the local level. If so much of education funding is to continue to come from local property taxes—an approach that, without proper governance, is inherently biased towards regressiveness—they must make sure that districts tax in a way that supports low-wealth communities rather than harms them, and that at the end of the process, students receive all the resources that they need and deserve.

# INTRODUCTION

## Equity in local school taxation is central to the purpose of public education

American public education was always meant to be an engine of social mobility and opportunity—as public schooling pioneer Horace Mann put it in 1848, to be “the great equalizer of the conditions of men,” promoting prosperity for all and reducing disparities between groups.<sup>1</sup> This vision, though, is far from fully realized. Inequalities persist within the education system, often echoing the gaps that exist in society rather than reducing them.

When it comes to education funding equity, there are two core areas of concern. The first has to do with the distribution of school funding: What level of school resources is provided for children in different communities, and what are the impacts of any resource inequality? These questions have been explored by a long line of research regarding both national trends in disparate funding<sup>2</sup> and within-state resource gaps.<sup>3</sup> While there is a great deal of variation in how states allocate their education funding, it is clear that, nationally, high-poverty districts have less funding per pupil from state and local sources than non-high-poverty districts,<sup>4</sup> even though students in poverty require more resources in order to succeed academically.<sup>5</sup> This is certainly a pressing problem.

The other key issue in education funding inequity is somewhat less well-explored: How fairly is education funding sourced? Is money for “the great equalizer” raised equitably and progressively? This question has particular salience with regard to local education funding, where regressive taxation could mean overburdening the needy communities whose children need the biggest boost from public schools.

Local dollars loom large in school funding: They make up approximately 44.7% of education revenues nationally.<sup>6</sup> In 2014 (the most recent year for which national data is available), local education funding amounted to \$276.2 billion.<sup>7</sup> Chief among local funding sources for schools were local property taxes, and revenue from these taxes alone made up 29% of all education revenue—\$180 billion, or slightly more than \$3,700 per pupil nationally.<sup>8</sup>

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1 Mann, 1848

2 See, for example, Kozol, 1991; Wilson et al., 2006; Beilke and Morrison, 2007; EdBuild, 2016c

3 See, for example, Picus et al, 2005; Versteegen, 2013; EdBuild, 2016d

4 EdBuild, 2016c

5 Card and Payne, 2002; Candelaria and Shores, 2015; and Jackson et al., 2016

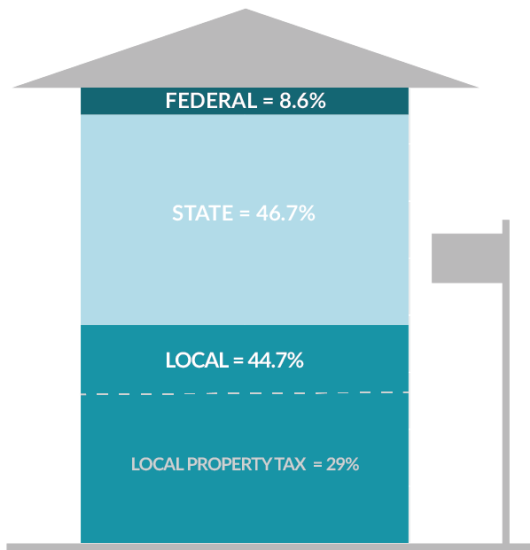
6 US Census Bureau, 2016a

7 *Ibid.*

8 *Ibid.*



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But the use of local property taxes for education raises questions of fairness in tax effort. Property tax revenue is, naturally, a function of both tax rates and property values. In two districts of the same size with unequal property values, the same tax rate will yield more money in the district where property values are higher. As a corollary, property-rich districts can exert a lower level of tax effort—that is, pay a smaller percentage of their property value in taxes—than property-poor districts and still raise the same amount in tax revenue. If local property tax revenues made up all of education funding, low-wealth districts would automatically face a greater tax burden than high-wealth districts—an inequitable result.

There are a great many demands on public funds, and ultimately, there is a limited amount of money that can be raised for public schools. Nationally, education already takes up the largest portion of state budgets,<sup>9</sup> but states fall far short of fully funding schools out of state dollars alone.<sup>10</sup> After district budgets are calculated, most necessary funding that does not come from the state is drawn from local property taxes. Within this framework, therefore, there are three options: that sufficient local dollars be raised progressively, with rates aligned to what communities can support; that sufficient local dollars be raised, but through flat or regressive taxes that many communities will struggle to afford, worsening the inequalities that public schools are meant to help address; or that schools be underfunded. There is a clear policy imperative for local property taxes for education to be structured progressively, with tax rates aligned to communities' ability to pay.

## State policy matters for fairness in local tax effort

State policy in a number of areas can either reduce or compound the inequity that results from the use of local property taxes to fund education.

### *Policies regarding districts' expected local contributions to education*

In nearly every state, after it is calculated how much funding a district needs for the year (its “formula amount”), a determination is made regarding how the state and

9 Center on Budget and Policy Priorities, 2015

10 US Census Bureau, 2016a

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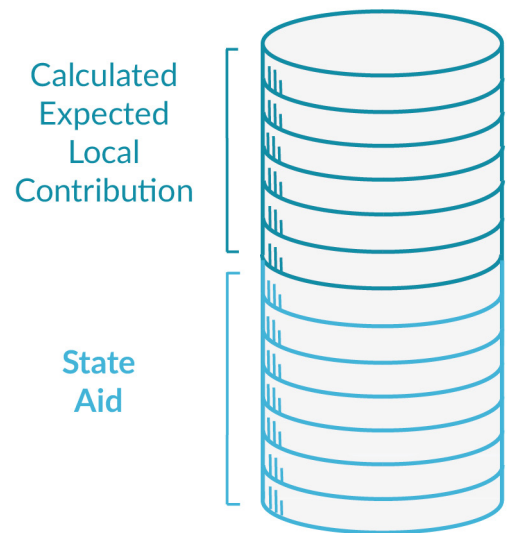
local governments will share the responsibility for raising that amount. An expected local contribution is calculated, and then, the state commits to providing the difference. That expected local contribution is computed differently in different states. For example, North Carolina simply expects local districts to cover all physical plant expenses, while the state covers all instructional costs.<sup>11</sup> This system isn't at all sensitive to local wealth and has the potential to create a highly regressive tax burden. By contrast, states like Massachusetts set districts' expected local contributions through a process that considers both local property values and household income.<sup>12</sup> Such policies are clearly intended to tie each district's tax burden to its residents' ability to pay. In between these two models is the most common approach, used in states from Alaska to West Virginia, in which districts are expected to impose a prescribed tax rate that is uniform across the state.<sup>13</sup>

The amount that would be raised by a tax at this rate in each district is subtracted from the district's formula amount, with the state providing the balance. This system addresses districts' unequal tax bases but does not seek to link districts' level of tax effort to taxpayers' individual ability to pay. The method chosen by a state for calculating the expected local contribution has real ramifications for the amount of state aid given to districts, and for the fairness of the local taxes they will impose to cover the rest of their costs.

## *Policies regarding local discretion over tax rates*

As described above, state funding formulas include an expected local contribution that determines how much of the formula amount will be covered by the state. However, the actual amount raised by a district for schools does not always have to match the state's expectation—in most states, districts are allowed to raise less or more, sometimes within certain limits. Alabama districts can set their local tax rates as high or as low as they want, with no impact on state aid.<sup>14</sup> Georgia requires districts to impose a tax of at least the expected amount, but they can raise more<sup>15</sup>—so districts may raise

State Funding Formula



11 EdBuild, 2016a

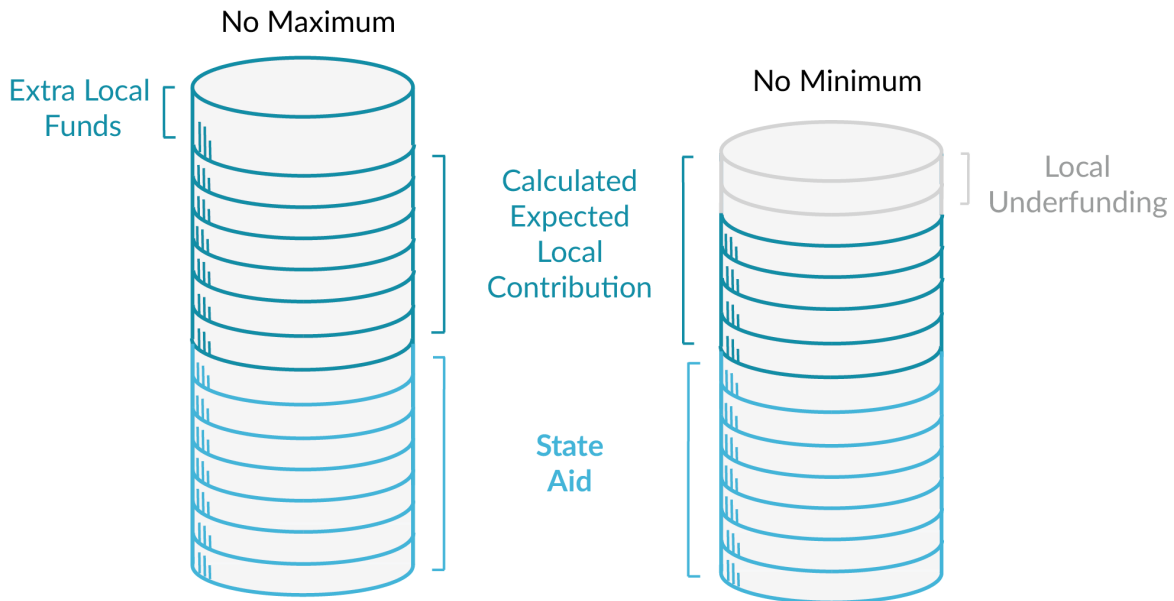
12 *Ibid.*

13 *Ibid.*

14 *Ibid.*

15 *Ibid.*

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Policy implications of allowing districts discretion over local tax rates

extra local funds over and above the formula amount. In Arizona, districts can raise less than the expected amount, but they cannot raise more without voter approval, and even then, they are bound by a maximum—they cannot spend more than 115% of the formula amount.<sup>16</sup> Wyoming requires districts to raise exactly the expected amount, no more and no less.<sup>17</sup> These different policies can have a profound effect on the level of funds available to schools in different districts. If districts are required to raise exactly the amount specified in the formula, with the state providing the rest in aid, then the result will be as progressive as the design of the formula. If districts are not bound to the formula amount, then the advantages of greater property wealth enter the equation, and property-rich districts can either raise sufficient funds with less tax effort, or raise funding over and above the formula amount with relatively minimal additional effort.

An additional state policy that can affect local tax rates is the setting of assessment ratios. As explained in more detail below (*“Data challenges: completeness and comparability”*), property taxes are sometimes applied to only a portion of the current market value of a property. The factor by which full value differs from taxable value is often called an assessment ratio. Some states mandate specific assessment ratios that differ by class of property. For example, in Iowa, 2016 assessment ratios were set such that residential property was assessed at 57% of its full value for tax purposes, while

16 Arizona Association of School Business Officials, 2008

17 EdBuild, 2016a

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agricultural property was assessed at 47% of its full value and commercial property was assessed at 90% of its full value.<sup>18</sup> If a school district sets a single tax rate, these state-prescribed assessment ratios will affect the actual amount that owners must pay—the effective local tax rate—for each type of property.

### *Policies regarding the estimation of education costs and the total amount of state aid for those costs*

The final policies that matter for the distribution of the local tax burden are two sides of the same coin: how generously the state estimates each district's needed budget, and how much funding the state provides towards that budget. State policies for calculating the formula amount vary widely. To cite one useful indicator, Arizona's formula considers the cost of educating a student with no special needs or disadvantages to be less than \$3,500, while Michigan sets this cost at over \$8,000.<sup>19</sup> As a consequence, Michigan is likely to estimate a given district's total costs far more generously than Arizona would. However, a more generous formula calculation does not necessarily mean more state aid for local school districts. As already described, states have systems for splitting the school funding burden between the state and school districts. While different districts in a state will bear a different share of the burden, as explained above, the overall amount of education funding that districts are expected to cover statewide is determined largely by the size of the total state aid allocation—a figure that also varies greatly from state to state. In 2014, the total amount of state education dollars available per student ranged from just over \$3,000 in South Dakota<sup>20</sup> to almost \$17,000 in Vermont.<sup>21</sup> It stands to reason that where there is a smaller state aid allocation, districts will be expected to raise more of their formula amounts locally.

Taking these two issues together—the generosity of the formula's cost estimate and the size of the state aid allocation—the implications for equity become clear. In a state with a generous formula but a small aid allocation, the local funding threshold will be quite high, and low-wealth districts will struggle to meet it. In a state with a meager formula calculation, even if the state covers most or all of the formula amount, districts will have to supplement with local dollars. Since funding outside the formula is not generally matched with any state support, that need for extra funding puts property-poor districts at a disadvantage. However, when a state has a formula that estimates

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18 Iowa Department of Revenue, 2016

19 EdBuild, 2016b

20 South Dakota passed a set of new school funding laws in 2016 that are intended in part to increase this number. See the state's summary of these laws at <http://blueribbon.sd.gov/docs/Memo%20on%20Final%20Formula.pdf>.

21 US Census Bureau, 2016a (numbers not adjusted for regional variation in cost of living)

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educational costs well and the state aid allocation is sufficient to cover a good portion of it, the result will be a fairer local funding landscape.

## Questions addressed by this report

**Research Question #1:** *What is the relationship between a school district's overall property tax rate for education and its affluence?*

The heavy use of local property taxes for education would seem to increase the likelihood of a regressively funded system. This report explores this issue by examining the relationships between school districts' property tax rates—also referred to as their levels of tax effort—and multiple measures of their ability to raise local revenue. It asks:

- (a) In each state studied, how does a school district's level of affluence correlate with its *overall* property tax rate for education (the aggregate property tax rate paid by owners of all kinds of property, whether residential, agricultural, industrial, or any other property, for the school district)?
- (b) How does the level of overall tax effort exerted in each state's most affluent districts compare with the level exerted in its least affluent districts?

For the purposes of these questions, affluence was indicated by three separate measures: a district's property valuation per household; the median value of its owner-occupied homes; and its mean household income. Greater tax effort fairness was defined by a positive relationship between a district's affluence and its level of tax effort.

**Research Question #2:** *What is the relationship between a school district's residential property tax rate for education and its affluence?*

If there is an inherently regressive slant to the use of property taxes to fund education, why is it standard practice? One key argument cited in favor of using property taxes for this purpose is that homeowners have an interest in their local schools, and will therefore be more willing to pay school taxes.<sup>22</sup> This notion is grounded in a long body of research showing that home values are related to measures of school quality<sup>23</sup> and is especially bolstered by new research showing that home prices rise as local school funding levels increase.<sup>24</sup> This line of reasoning would suggest that homeowners view

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22 McNulty, 2014

23 See, for example, Black, 1999; Kane et al., 2006; and Chiodo et al., 2010

24 Chung et al., 2017

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local property taxes for education as a beneficial investment, making these taxes a politically palatable way of raising education funding.

However, property taxes for education are paid not only by homeowners, but by the owners of other types of property as well. The progressive or regressive nature of overall property taxation for education in a state may not translate directly to the homeowner experience. It is therefore helpful to ask:

- (a) In each state for which data was available, how does a school district's residential property tax rate for education relate to its affluence?
- (b) How does the level of *residential* property tax effort exerted in each state's most affluent districts compare with the level exerted in its least affluent districts?

Similar to the approach taken with Research Question #1 above, for the purposes of these questions, affluence was indicated by three separate measures: a district's residential property valuation per household; the median value of its owner-occupied homes; and its mean household income. Greater tax effort fairness was defined by a positive relationship between a district's affluence and its level of tax effort.

**State case studies:** *How do state policy factors affect the level of fairness in local tax effort for education?*

As described above, while the sole use of property taxes to fund education would naturally advantage property-rich districts, well-crafted state policy can do a great deal to mitigate this problem. This report takes a deeper look at the findings from three states. These case studies situate the states' results within their state policy contexts to illuminate how particular policies have either advanced or undermined fairness in local tax effort for education.

## Data challenges: completeness and comparability

Much of the data used in this report had to be gathered from individual states. In order to answer the research questions, EdBuild requested school-district-level data regarding tax rates and property values, as well as information about how property values are assessed for the purposes of taxation. In some states, officials were not responsive to EdBuild's requests. In others, statewide data was not available at the school district level in all requested areas. Ultimately, only 18 states could be included in the report. The process of gathering this data was instructive regarding the lack of comprehensive, public data regarding local school taxation.

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One especially challenging aspect of the state data was that tax rates were not directly comparable from district to district and from state to state. It is unusual for a property tax to be applied to the full, current market value of a property—property assessments for taxation purposes may be out of date, or the tax may be intentionally applied to only a portion of property value. As already noted, full value differs from taxable value to varying degrees in different jurisdictions. As a result, tax rates that look the same may not mean the same thing: A 5% tax rate that is applied to only some of the property value in one district would not indicate the same level of tax effort as a 5% tax rate applied to *all* of the property value in another district. To address these differences, EdBuild converted all reported tax rates into effective tax rates on the full value of property in the district. (For more detail on this conversion, see “*Taking a closer look at tax rates*,” an inset in the Data and Methodology section below.) As a result of this process, readers may see different tax rate numbers listed in this report than they are accustomed to seeing on their tax bills.

A second comparability issue arose with regard to residential valuations and tax rates. When EdBuild sought to perform a narrower analysis focusing only on residential property and the education tax rates applied to it, specific data for this category of property was available for only 10 of the states included in this report. A compounding challenge was the lack of common criteria for the classification of property across states. Property categories are defined differently from state to state, and with varying degrees of detail. In Ohio, for instance, residential property is considered to include both owner-occupied property and rental properties with three or fewer units.<sup>25</sup> In Delaware, the category of residential property includes single-occupancy properties, multiple-occupancy properties, trailers, condominiums, and apartment buildings with less than five units.<sup>26</sup> In West Virginia, residential property is grouped together with owner- and tenant-occupied farmland.<sup>27</sup> While EdBuild has used the most relevant class of property in each of the 10 states for which class-level data was available,<sup>28</sup> this analysis was hampered by the lack of direct comparability across state classification systems.

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25 Ohio Department of Taxation, 2010

26 Delaware Department of Finance, 2016

27 West Virginia Department of Education, 2015

28 See Appendix for a description of the property counted as “residential” for each state.

# DATA & METHODS

## Data

### *Data collection*

For this report, EdBuild used both state-provided data and data from the United States Census, American Community Survey (ACS).

Data from the ACS are based on the 2014 five-year estimates for each school district and included the number of households in the district, its mean household income, and the median value of its owner-occupied homes.<sup>29</sup>

The rest of the data used in this report was obtained from state governments. EdBuild reached out to state officials in all states (excepting Hawaii and the District of Columbia, each of which operates as a single school district) to request the following data:

- Education-specific property tax rates for each school district in the state, excluding taxes for facilities or capital expenditures and bond obligations
- Any property assessment ratios relevant for education taxes
- The total property valuation for each school district in the state

As noted in the Introduction (“*Data challenges: completeness and comparability*”), sufficient data to answer some or all of the research questions were obtained from 18 states. These were Arkansas, Delaware, Florida, Georgia, Illinois, Iowa, Kentucky, Nevada, New Jersey, New York, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Washington, West Virginia, and Wisconsin. Depending on the state, data from 2014, 2015, or 2016 were provided (see Appendix B). Data were initially obtained from Minnesota, Montana, and Oklahoma as well, but as explained below (“*Data processing*”), these states were later struck from the analysis because of data quality concerns.

Using the data obtained from these 18 states and pairing it with the ACS data, EdBuild was able to examine the relationship between districts’ overall property tax rates for education and their affluence, as indicated by their property valuation per household,<sup>30</sup> the median value of their owner-occupied homes, and their mean income levels.

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29 As defined by the U.S. Census, owner-occupied homes are one-family houses in which at least one co-owner lives. Not included are mobile homes, houses with a business or medical office, houses on 10 or more acres of land, and housing units in multi-unit structures. (US Census Bureau, n.d.)

30 Each district’s property valuation per household was calculated using state-provided total property valuation data for the district and ACS data regarding the number of households in the district.



## DATA & METHODS

EdBuild also sought to assess more specifically the relationship between districts' residential property tax rates and their affluence, as indicated by their residential property valuation per household, median owner-occupied home values, and mean income levels. However, data regarding residential property tax rates, residential assessment ratios, and residential property valuations were not available for all states. These data were obtained from, and this analysis was conducted for, 10 states: Delaware, Florida, Georgia, Illinois, Iowa, Nevada, New Jersey, Ohio, South Dakota, and West Virginia. (Of these states, only eight classify property as residential per se. For the other two states, similar classes of property were used: For South Dakota, owner-occupied homes and owner-occupied mobile homes were considered to be the state's residential property, and for West Virginia, all property categorized as Class II was considered to be residential, though the class includes both owner-occupied residential property and "farms...occupied and cultivated by their owners or bona fide tenants."<sup>31</sup>)

### *Data processing*

As a check on the accuracy of the tax rate and valuation data provided, EdBuild used the information obtained for each school district to calculate the amount of local property tax revenue that each district would be expected to receive. This anticipated revenue was plotted against school districts' actual local property tax revenue, as reported in the US Census Bureau's Annual Survey of School System Finances.<sup>32</sup> Perfect alignment was not expected, since the anticipated revenue reflected projected tax bills, while the reported revenue reflected collections. However, the check revealed very strong alignment for nearly all districts in most states. For states in which the expected revenues diverged noticeably from reported revenues for a concerning number of districts, EdBuild reached out to state contacts in order to investigate the inconsistencies. These checks resulted in clarifications and corrections for a handful of states. In the cases of Minnesota, Montana, and Oklahoma, EdBuild was not able to resolve the discrepancies, so these states were eliminated from the analysis.

Across the information collected for the 18 states included in this report, school district property tax rates were not all presented in the same way. Some states expressed their tax rates in percentages, but others did so in mills—that is, thousandths of the value of the property being taxed—and some listed tax rates in cents per hundred dollars. For

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By dividing total property valuation by the number of households in the district, EdBuild attempted to capture a district's property wealth without mistakenly attributing affluence to districts that were merely large, as with county-level or large urban school districts. However, converting total valuations to per-household valuations also has drawbacks (as would conversion to per-capita or per-parcel valuations), because some areas have high-value agricultural, commercial, or other properties whose worth is not shared by most households in the district. The implications of this are referenced in the Results and Discussion section and in the State Case Studies section.

31 West Virginia Department of Education, 2015

32 US Census Bureau, 2016a

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the purposes of this report, all tax rates are shown as percentages, so a reported tax rate of 7.5 mills or 75 cents per hundred dollars would be listed as .75%.

Additionally, in order to allow for apples-to-apples comparison of tax rates across states and school districts, EdBuild used reported valuations, reported tax rates, and assessment ratios to calculate the effective tax rate being applied to each school district's full property valuation. For more information on this process, see "*Taking a closer look at tax rates*," inset.

### Taking a closer look at tax rates

Data from different states (and even, in some cases, data regarding different school districts in the same state) presented a standardization challenge. As explained in the Introduction ("Data challenges: completeness and comparability"), property taxes are rarely applied to the full, current market value of a property. The factor by which full value differs from taxable value is often called the assessment ratio. Taxable value can differ from full value for a number of reasons. In some states, like Delaware, taxable values reflect dated assessments, and assessment ratios are used to estimate the current value of the property.<sup>a</sup> In other states, it is state policy to tax only a set proportion of properties' full value, and an assessment ratio is used to reduce valuations—in Arkansas, for instance, tax rates are applied to just 20% of property value.<sup>b</sup> And some states, like Iowa, apply different assessment ratios for different types (or "classes") of property, so a uniform tax rate in an Iowa school district would be applied to a different portion of the value of a commercial property than of the value of a home.<sup>c</sup> Because of these assessment ratio differences, one district's reported 5% tax rate may not indicate the same level of overall tax effort as another's 5% rate.

In order to make comparisons between districts' tax rates, EdBuild used valuation and assessment ratio information provided by state officials to convert all reported tax rates to effective tax rates on the total value of property in the district. To expand on the example of a state with different assessment ratios for different classes of property, if a state assessed agricultural property at 10% of full value and all other property at 60% of full value, a 10% reported tax rate would be the equivalent of an effective tax rate of 1% on the full value of agricultural property and an effective tax rate of 6% on the full value of other property. If half the property in a district was agricultural and half was not, the total effective tax rate for the district would be 3.5%.

Such calculations were done for most states in order to make apples-to-apples comparisons between districts' levels of tax effort. (See Appendix B for a description of the data used for each state discussed in the report.)

# DATA & METHODS

Once the data was checked for accuracy and standardized, state and federal data for school districts in the remaining 18 states were compiled into a single dataset for analysis. EdBuild excluded from the dataset all school districts with zero schools, zero enrolled students, or a 0% school tax rate. Technical and other special school districts without traditional local funding structures were also excluded. Additionally, a handful of school districts included in state datasets could not be matched to federal data and vice versa; the analysis could not be performed for these districts. Finally, for states where taxpayers may contribute property tax revenue to elementary and secondary school districts that are not fully coterminous, analysis at the level of school districts would sometimes be misleading as relates to the total property tax effort exerted by individual taxpayers, who may occupy more than one district. For Illinois, which has elementary, secondary, and K-12 school districts, only K-12 districts were included in the analysis. Similarly, New Jersey has elementary school districts with boundaries that fall along municipal lines, and it also has joint secondary school districts which span multiple elementary school districts. As a consequence, analyses were run using municipal-level data to ensure that each taxpayer's burden was reflected only once in the dataset. (For a more detailed explanation regarding both these states, see Appendix B.)

For the analysis of residential property tax effort, a dataset was constructed using the same ACS data, along with state-provided residential property tax rates and residential tax effort property valuations, for the 10 states for which these data were available. The same exclusions were applied to this dataset as to the larger dataset.

## Methods

### *Correlational analyses (Research Questions 1a and 2a)*

Taking each of the 18 states as a separate unit of analysis, Spearman's rho was used to assess the strength and direction of the relationship between school districts' total effective tax rates on all property and each of three school-district-level metrics: total property valuation per household, mean value of owner-occupied homes, and mean household income.

Separately, taking each of the 10 states as a separate unit of analysis, Spearman's rho was used to assess the strength and direction of the relationship between school districts' effective tax rates on residential property and each of three school-district-level metrics: residential property valuation per household, median value of owner-occupied homes, and mean household income.

# DATA & METHODS

For both correlational analyses, the threshold of significance was set at  $p=0.05$ , with  $p$ -values between 0.05 and .1 considered nearly significant. Correlation coefficients were interpreted as follows:

Positive	Negative	Interpretation
0.80 or more	-0.80 or less	Very strong
0.60 to 0.79	-0.79 to -0.60	Strong
0.40 to 0.59	-0.59 to -0.40	Moderate
0.20 to 0.39	-0.39 to -0.20	Weak
0.19 to 0	-0.19 to 0	Very weak

Note that charts in the Results and Methodology section below are color-coded to indicate the strength of the correlation in accordance with this chart.

### *Comparative analyses (Research Questions 1b and 2b)*

Within each of the 18 states, school districts were divided into three sets of quartiles defined by the same school-district-level affluence metrics used in the first correlational analysis: total property valuation per household, median value of owner-occupied homes, and mean household income. For the school districts in each quartile, an unweighted, average property tax rate was calculated. Average rates for bottom-quartile districts were subtracted from those in top-quartile districts, and differences were converted to percentages of bottom-quartile tax rates. For each state, this revealed the degree to which the average property tax rate in the most affluent districts differed from that in the least affluent districts.

Separately, within each of the 10 states, school districts were divided into three sets of quartiles defined by the same school-district-level affluence metrics used in the second correlational analysis: residential property valuation per household, median value of owner-occupied homes, and mean household income. For the school districts in each quartile, an unweighted, average residential property tax rate was calculated. Average rates for bottom-quartile districts were subtracted from those in top-quartile districts, and differences were converted to percentages of bottom-quartile tax rates. For each state, this revealed the degree to which the average residential property tax rate in the most affluent districts differed from that in the least affluent districts.

For both comparative analyses, a difference of 10% or more between top-quartile and bottom-quartile tax rates was considered worthy of discussion. However, results of these analyses were treated as suggestive rather than definitive because the methodology did not account for the variance in tax rates within each quartile.

## RESULTS & DISCUSSION

### Research Question #1: What is the relationship between a school district's overall property tax rate for education and its affluence?

(1a) Results of correlational analysis: affluence and overall tax effort across all districts<sup>33</sup>

*In brief:*

- A higher-value tax base per household was significantly correlated with a *lower* effective tax rate for education in most states studied—11 of 18 states (a regressive outcome).
- However, a higher mean household income was significantly or near-significantly correlated with a notably *higher* effective tax rate in 8 of the 18 states studied, with no states showing the reverse result (a mixed to progressive outcome).
- Similarly, a higher median owner-occupied home value was significantly correlated with a notably *higher* tax rate in 8 of the 18 states studied, with only 2 states showing the reverse result (a mixed to progressive outcome).
- School funding systems in most states are not effectively leveraging overall local tax bases (including all types of property) for education. However, these data do not suggest that the local school tax burden is falling disproportionately on disadvantaged households.

This analysis used data from 18 states to determine the strength and direction of the relationship between school districts' total effective tax rates for education (across all types of taxed property) and their affluence. The results of the analysis were as follows:

Correlation of tax rate with:	Property valuation per household	Mean household income	Median value of owner-occupied homes
Arkansas	0.275**	0.016	0.036
Delaware	-0.526**	0.474*	0.318
Florida	0.091	0.621**	0.622**
Georgia	0.128*	0.338**	0.263**

<sup>33</sup> Subject to the exclusions detailed in the Data section (“Data processing,” above) and in Appendix B

## RESULTS & DISCUSSION

Illinois	-0.245**	0.326**	0.539**
Iowa	-0.757**	0.030	0.265**
Kentucky	0.255**	0.270**	0.399**
Nevada†	N/A	N/A	N/A
New Jersey‡	-0.432**	-0.030	-0.345**
New York	-0.261**	0.188**	0.038
Ohio	-0.401**	0.140**	0.172**
Oregon	-0.231**	0.436**	0.419**
Pennsylvania	-0.034	0.176**	0.115**
South Dakota	-0.642**	0.127	0.540**
Texas	-0.322**	0.314**	0.316**
Washington	-0.380**	0.178**	-0.014
West Virginia	0.027	0.264*	-0.285**
Wisconsin	-0.509**	0.062	0.013

Cells are color-coded to indicate the strength of the correlation: very weak, weak, moderate, or strong/very strong.

\*\* $p < 0.05$

\* $0.05 < p < 0.10$

†Nevada's school districts are all required by law<sup>34</sup> to levy the same property tax rate for school operations purposes. Any taxes levied above that rate are designated for bond obligations and are therefore excluded from the analysis.

‡New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

In these results, a positive correlation indicates that within the state in question, greater affluence is correlated with a higher school district tax rate, while a negative correlation indicates that greater affluence is correlated with a lower tax rate.

In 11 of the 18 states studied, a higher-value tax base per household was significantly correlated with a lower effective tax rate: strongly in two states (Iowa and South Dakota), moderately in four states (Ohio, Delaware, New Jersey, and Wisconsin), and weakly in five states (New York, Illinois, Oregon, Texas, and Washington). In just two of the 18 states (Arkansas and Kentucky) was a higher-value tax base per household significantly correlated with a higher effective tax rate, and only weakly. (In the remaining five states studied, no significant correlation was found.) It appears that

34 Nevada Revised Statutes § 387.195

## RESULTS & DISCUSSION

many states' school funding systems are not effectively leveraging their local tax bases for education.

In eight of the 18 states studied, a higher mean household income was significantly or near-significantly correlated with a notably higher effective tax rate: strongly in one state (Florida), moderately in two states (Delaware and Oregon), and weakly in five states (Georgia, Illinois, Kentucky, Texas, and West Virginia). In no states was a higher mean household income significantly or near-significantly correlated with a lower effective tax rate. (All other results were either very weak or not statistically significant.)

In eight of the 18 states studied, a higher median owner-occupied home value was significantly correlated with a notably higher tax rate: strongly in one state (Florida), moderately in three states (Illinois, Oregon, and South Dakota), and weakly in four states (Georgia, Iowa, Kentucky, and Texas). In just two states (New Jersey and West Virginia) was a higher median owner-occupied home value significantly correlated with a lower tax rate, and only weakly. (All other results were either very weak or not statistically significant.)

*(1b) Results of comparative analysis: overall tax effort in the most and least affluent districts*

### ***In brief:***

- Districts in the top quartile of property valuation per household paid taxes for education at average effective rates at least 10% lower than those paid in bottom-quartile districts in most states studied—11 of 18 states (a regressive outcome).
- However, districts in the top quartile of mean household income paid taxes for education at average effective rates at least 10% higher than those paid in bottom-quartile districts in most states studied—12 of 18 states (a progressive outcome).
- Similarly, districts in the top quartile of median owner-occupied home values paid taxes for education at average effective rates at least 10% higher than those paid in bottom-quartile districts in most states studied—10 of 18 states (a progressive outcome).
- These results strengthen the finding that school funding systems are not effectively leveraging overall local tax bases (including all types of property) for education, but they are not necessarily placing a greater local school tax burden on disadvantaged households.

## RESULTS & DISCUSSION

Using data from 18 states, this analysis compared the unweighted, average, overall property tax rate for education across the school districts in each state's most affluent quartile (Q4) to the parallel average tax rate across the school districts in each state's least affluent quartile (Q1). (Average tax rates for each state's middle two quartiles were also noted.) Affluence was defined, separately, by total property valuation per household, mean household income, and median value of owner-occupied homes. Comparisons were performed for each set of affluence quartiles. The results were as follows:

Tax Rates in Quartiles Defined by Total Property Valuation Per Household					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Arkansas	0.51%	0.51%	0.51%	0.53%	4.21%
Delaware	0.34%	0.44%	0.23%	0.19%	-43.52%
Florida	0.35%	0.34%	0.38%	0.32%	-6.84%
Georgia	0.62%	0.69%	0.70%	0.64%	4.24%
Illinois	1.50%	1.30%	1.25%	1.15%	-23.53%
Iowa	0.84%	0.71%	0.64%	0.55%	-34.91%
Kentucky	0.57%	0.58%	0.62%	0.64%	11.40%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.58%	1.60%	1.42%	0.94%	-40.37%
New York	2.08%	1.90%	2.03%	1.51%	-27.01%
Ohio	1.16%	1.05%	0.90%	0.83%	-28.37%
Oregon	0.34%	0.36%	0.33%	0.28%	-18.89%
Pennsylvania	1.85%	1.55%	1.67%	1.72%	-7.20%
South Dakota	0.56%	0.47%	0.40%	0.32%	-43.01%
Texas	0.91%	0.82%	0.73%	0.66%	-27.54%
Washington	0.29%	0.30%	0.27%	0.18%	-38.71%
West Virginia	0.62%	0.74%	0.63%	0.68%	10.84%
Wisconsin	0.90%	0.81%	0.73%	0.62%	-30.99%

Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.

<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.



## RESULTS & DISCUSSION

A review of these results reveals a similar pattern to that found in the correlational analysis. In 11 of the 18 states studied (Delaware, Illinois, Iowa, New Jersey, New York, Ohio, Oregon, South Dakota, Texas, Washington, and Wisconsin) districts in the top quartile of property valuation per household saw average education tax rates at least 10% lower than districts in the bottom quartile. In six of these states (Delaware, Iowa, New York, South Dakota, Washington, and Wisconsin), top-quartile districts saw tax rates more than 30% lower. In only two states (Kentucky and West Virginia) did districts in the top quartile of property valuation per household see average tax rates at least 10% higher than districts in the bottom quartile. (In the remaining six states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

Tax Rates in Quartiles Defined by Mean Household Income					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Arkansas	0.52%	0.51%	0.52%	0.51%	-1.68%
Delaware	0.21%	0.22%	0.35%	0.43%	105.22%
Florida	0.29%	0.32%	0.38%	0.41%	41.85%
Georgia	0.63%	0.65%	0.66%	0.72%	14.30%
Illinois	1.28%	1.13%	1.18%	1.61%	25.95%
Iowa	0.73%	0.63%	0.65%	0.72%	-1.64%
Kentucky	0.57%	0.61%	0.59%	0.64%	13.59%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.36%	1.49%	1.46%	1.24%	-8.68%
New York	1.80%	1.78%	1.95%	2.00%	11.06%
Ohio	1.02%	0.87%	0.92%	1.15%	12.76%
Oregon	0.28%	0.32%	0.35%	0.36%	26.99%
Pennsylvania	1.69%	1.54%	1.74%	1.83%	8.04%
South Dakota	0.40%	0.45%	0.46%	0.45%	11.81%
Texas	0.70%	0.73%	0.77%	0.93%	33.20%
Washington	0.23%	0.27%	0.29%	0.26%	14.81%
West Virginia	0.58%	0.66%	0.69%	0.75%	30.27%
Wisconsin	0.76%	0.74%	0.78%	0.79%	4.09%

Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.

<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

## RESULTS & DISCUSSION

As in the correlational analysis, the results look quite different when districts are classified by mean household income rather than by property valuation per household. In 12 of the 18 states studied (Delaware, Florida, Georgia, Illinois, Kentucky, New York, Ohio, Oregon, South Dakota, Texas, Washington, and West Virginia), districts in the top quartile of mean household income had average education tax rates more than 10% higher than bottom-quartile districts. In four of these (Delaware, Florida, Texas, and West Virginia), top-quartile districts saw average rates more than 30% higher. In no state did top-quartile district pay tax rates that were at least 10% lower than bottom-quartile districts. (In the remaining six states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

Tax Rates in Quartiles Defined by Median Value of Owner-Occupied Homes					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Arkansas	0.52%	0.52%	0.51%	0.51%	-1.00%
Delaware	0.23%	0.26%	0.29%	0.43%	86.45%
Florida	0.27%	0.35%	0.38%	0.39%	46.36%
Georgia	0.62%	0.66%	0.69%	0.69%	11.32%
Illinois	1.09%	1.08%	1.35%	1.68%	54.51%
Iowa	0.64%	0.68%	0.68%	0.73%	15.49%
Kentucky	0.52%	0.60%	0.63%	0.66%	26.87%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.60%	1.49%	1.44%	1.03%	-35.65%
New York	1.91%	1.86%	1.81%	1.96%	2.23%
Ohio	1.01%	0.88%	0.93%	1.15%	14.04%
Oregon	0.29%	0.33%	0.34%	0.36%	26.34%
Pennsylvania	1.76%	1.56%	1.65%	1.83%	4.44%
South Dakota	0.37%	0.38%	0.44%	0.57%	53.28%
Texas	0.67%	0.74%	0.80%	0.92%	37.62%
Washington	0.24%	0.27%	0.30%	0.23%	-5.59%
West Virginia	0.73%	0.70%	0.65%	0.58%	-21.43%
Wisconsin	0.76%	0.79%	0.77%	0.77%	1.58%

Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.

<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

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In 10 of the 18 states analyzed (Delaware, Florida, Georgia, Illinois, Iowa, Kentucky, Ohio, Oregon, South Dakota, and Texas), districts in the top quartile of median owner-occupied home values faced average property tax rates for education more than 10% higher than districts in the bottom quartile. In five of these (Delaware, Florida, Illinois, South Dakota, and Texas), rates paid in top-quartile districts were more than 30% higher. In two states (New Jersey and West Virginia), top-quartile districts paid average property tax rates for education more than 10% below those of bottom-quartile districts, and in New Jersey specifically, top-quartile districts paid over 30% less than bottom-quartile districts. (In the remaining six states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

Overall, the results of the comparative analysis echoed those of the correlational analysis. However, focusing on the highest and lowest quartiles and comparing their tax rates revealed some more pronounced effects than the correlational analysis did. For example, the state of Texas showed only weak correlations between tax rates and measures of affluence: a weakly regressive relationship when district wealth was measured by property valuation per household, and a weakly progressive relationship when district wealth was measured by either mean household income or median owner-occupied home value. The concrete meanings of these relationships were clearer in the comparative analysis. Texas districts with the lowest level of property valuation per household paid property taxes for education of 0.91%, on average, while districts with the highest level of property valuation per district paid property taxes of 0.66%, a rate 27.54% lower. Meanwhile, Texas districts with the lowest mean household incomes paid average property tax rates for education of 0.70%, while districts with the highest mean household income paid property taxes of 0.93%, a rate 33.20% higher. Similarly, districts in the state with the lowest owner-occupied home values paid taxes of 0.67% for education, while districts with the highest such values paid 0.92%, an average rate 37.62% higher. Correlations might be weak when considering all districts, including districts of middling income and property or home value, but differences between the most and least affluent districts are more marked.

*Discussion of Research Question #1: What is the relationship between a school district's overall property tax rate for education and its affluence?*

### *In brief:*

- In most states studied, local property tax rates for education were regressive: districts with higher-value tax bases per household exerted *less overall property tax effort* than districts with lower-value tax bases per household.
- However, household-level measures of affluence show that districts with higher median owner-occupied home values (and, to a lesser extent, higher mean household incomes) tend

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to exert *the same or greater overall property tax effort* than districts with lower median home values (and, to a lesser extent, lower mean household incomes).

- These results show that general district property values are not always tied to home values or household incomes. Instead, districts with a high property per household are likely made up largely of commercial, agricultural, or other non-residential property.
- In most states studied, districts seem not to fully leverage their high-value non-residential property for school funding purposes.

These analyses begin to paint a picture of tax effort for education in the states studied.

It emerges that property valuations per household are not clearly tied to household incomes or to median owner-occupied home-values, and in fact, the metrics often diverge. It is therefore important to be more precise about definitions of affluence and ability to pay. Where levels of property valuation per household are greater, it is no doubt sometimes the case that home values are high. However, it appears that more often, there is commercial, agricultural, or other non-residential property that is high-value relative to the number of households in the district.

Thus, there is evidence that school funding systems are not effectively leveraging local tax bases for education: the often-regressive relationships between total property valuation per household and overall tax rates. However, the analyses of the correlations between tax rates and household-level measures of affluence (district mean incomes and median home values) help to clarify where this regressiveness comes from: It does not seem to arise from a disproportionate local school tax burden on disadvantaged households. (The relationships between tax rates and district mean household incomes are especially weak; in only two states was the correlation between these metrics both significant and moderate or stronger.) Instead, the apparent regressiveness is most likely the result of tax rates paid by and for non-households—that is, lower effective tax rates on high-value non-residential property.

This could come about in a number of ways. It is possible that districts with a high proportion of high-value non-residential properties are not imposing commensurately high uniform tax rates. Similarly, if state assessment ratios are lower for non-residential property than for residential property, that will transform a uniform tax rate into a lower effective tax rate on non-residential property. It is also possible that districts are setting different tax rates for different types of property, intentionally imposing lower rates on non-residential parcels. Whatever the mechanism for these lower rates on high-value non-residential property, though, it is clear that districts are not taking full advantage of this portion of their tax bases to fund education.

## RESULTS & DISCUSSION

This discussion of Research Question #1 analyzes districts' overall effective tax rates, with rates on different classes of property (if different) compiled into a single rate for each district, taking into account the proportion of district property subject to each tax rate. However, given the suggestion in the overall property tax analyses that many states' apparent regressiveness in local school property tax rates may be related more to non-residential than residential property, it is helpful to isolate residential tax rates and valuations for a closer look at the tax burden on homeowners specifically.

### **Research Question #2: What is the relationship between a school district's residential property tax rate for education and its affluence?**

*(2a) Results of correlational analysis: affluence and residential tax effort across all districts<sup>35</sup>*

*In brief:*

- The relationship between the value of a district's residential property tax base and its residential property tax rate for education was found to be inconsistent: It was significantly and notably regressive in two states, significantly and notably progressive in three states, and inconclusive in five states.
- A higher mean household income was significantly or near-significantly correlated with a notably *higher* effective residential tax rate in four of the 10 states studied, with no states showing the reverse result.
- A higher median owner-occupied home value was significantly correlated with a notably *higher* effective residential tax rate in four of the 10 states studied, with only one state showing the reverse result.
- While the overall picture of these results is mildly progressive, the main theme that emerges from this analysis is the lack of strong patterns in residential tax rates, with most results being either weak, very weak, or non-significant.

As discussed in the Data section ("*Data collection*," above) EdBuild obtained data for 10 states that were sufficiently granular to assess the relationship between districts' residential property tax rates and their affluence. The results of the analysis were as follows:

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35 Subject to the exclusions detailed in the Data section ("*Data processing*," above) and in Appen-

## RESULTS & DISCUSSION

Correlation of residential tax rate with:	Residential property valuation per household	Mean household income	Median value of owner-occupied homes
Delaware	-0.606**	0.474*	0.318
Florida	0.587**	0.535**	0.556**
Georgia	0.229**	0.377**	0.320**
Illinois	0.152**	0.155**	0.230**
Iowa	0.073	-0.026	0.143**
Nevada <sup>†</sup>	N/A	N/A	N/A
New Jersey <sup>‡</sup>	-0.350**	-0.030	-0.345**
Ohio	0.242**	0.199**	0.212**
South Dakota	-0.037	0.062	-0.022
West Virginia	-0.200	0.482**	0.041

Cells are color-coded to indicate the strength of the correlation: very weak, weak, moderate, or strong/very strong.

\*\* $p < 0.05$

\* $0.05 < p < 0.10$

<sup>†</sup>Nevada's school districts are all required by law to levy the same property tax rate for school operations purposes. Any taxes levied above that rate are designated for bond obligations and are therefore excluded from the analysis.

<sup>‡</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

In these results, a positive correlation indicates that within the state in question, greater affluence is correlated with a higher school district tax rate on residential property, while a negative correlation indicates that greater affluence is correlated with a lower effective residential tax rate.

In two of the 10 states studied, a higher-value residential tax base per household was significantly correlated with a lower effective residential tax rate: strongly in one state (Delaware) and weakly in one state (New Jersey). In three of the 10 states, a higher-value residential tax base per household was significantly correlated with a higher effective residential tax rate: moderately in one state (Florida) and weakly in two states (Georgia and Ohio). (All other results were either very weak or not statistically significant.)

In four of the 10 states studied, a higher mean household income was significantly or near-significantly correlated with a higher effective residential tax rate: moderately in

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three states (Delaware, Florida, and West Virginia) and weakly in one state (Georgia). Higher mean household incomes were not significantly correlated with lower residential tax rates in any state studied. (All other results were either very weak or not statistically significant.)

In only one of the 10 states studied (New Jersey) was a higher median owner-occupied home value significantly correlated with a lower effective residential tax rate, and only weakly. In four of the 10 states, a higher median owner-occupied home value was significantly correlated with a higher effective residential tax rate: moderately in one state (Florida) and weakly in three states (Georgia, Illinois, and Ohio). (All other results were either very weak or not statistically significant.)

While there are some scattered findings of interest, the main theme that emerges from this analysis is the lack of strong patterns in residential tax rates. Across 30 correlations, there were only six statistically significant results that were moderate or stronger. Florida is the only state with a consistent and moderate-or-stronger trend, with all three correlations showing that measures of household-level affluence are significantly, moderately, and positively correlated with residential tax rates. Georgia is the only other state with directionally consistent, statistically significant findings that meet the threshold for even a weak relationship (a progressive one). While New Jersey is easily the most clearly regressive state in these findings, its correlations between tax rates and home values are weak, and no significant correlation was found between districts' residential tax rates and mean household incomes in the state. The overall picture in these results is very mildly progressive, but the weakness of these relationships is more prominent. This is especially true in the case of mean household income levels, which were found to be significantly correlated with residential tax rates to at least a weak degree in the fewer states than were either of the other affluence indicators tested.

*(2b) Results of comparative analysis: residential tax effort in the most and least affluent districts*

*In brief:*

- The difference in average residential tax rates for education between districts in the top quartile of residential valuation per household and districts in the bottom quartile was found to be inconsistent: Top-quartile districts paid rates at least 10% *lower* in three states and at least 10% *higher* in two states. Rates were separated by less than 10% in five states.
- Districts in the top quartile of mean household income paid residential property taxes for education at average effective rates at least 10% *higher* than those paid in bottom-quartile

## RESULTS & DISCUSSION

districts in half of states studied. Rates were separated by less than 10% in the other half of states studied.

- Similarly, districts in the top quartile of median owner-occupied home values paid residential property taxes for education at average effective rates at least 10% *higher* than those paid in bottom-quartile districts in half of states studied, and at least 10% *lower* in only one state. Rates were separated by less than 10% in the rest of the states studied.
- These results strengthen the finding that residential property taxes for education are, on balance, mildly progressive, but not clearly and consistently related to district affluence.

Using data from 10 states, this analysis compared the unweighted, average, residential property tax rate for education across school districts in each state's most affluent quartile (Q4) to the parallel average tax rate across school districts in each state's least affluent quartile (Q1). (Average tax rates for each state's middle two quartiles were also noted.) Affluence was defined, separately, by residential property valuation per household, mean household income, and median value of owner-occupied homes, and comparisons were performed for each set of affluence quartiles. The results were as follows:

Tax Rates in Quartiles Defined by Residential Property Valuation Per Household					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Delaware	0.39%	0.40%	0.24%	0.18%	-53.85%
Florida	0.33%	0.36%	0.40%	0.38%	15.15%
Georgia	0.61%	0.66%	0.71%	0.66%	8.20%
Illinois	1.65%	1.66%	1.70%	1.79%	8.48%
Iowa	0.70%	0.72%	0.71%	0.71%	1.43%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.55%	1.54%	1.47%	0.98%	-36.93%
Ohio	1.14%	1.06%	1.15%	1.31%	14.91%
South Dakota	0.58%	0.59%	0.57%	0.56%	-3.45%
West Virginia	0.47%	0.42%	0.45%	0.39%	-17.02%

Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.

<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.



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In three of the 10 states studied (Delaware, New Jersey, and West Virginia), tax rates in districts in the top quartile of residential property valuation per household paid residential property taxes at rates that were, on average, at least 10% lower than districts in the bottom quartile. Of these, Delaware and New Jersey saw top-quartile tax rates more than 30% lower. In two states (Florida and Ohio), districts in the top quartile of residential property valuation per household paid residential property taxes at rates at least 10% higher than those in the bottom quartile, and none paid rates more than 30% higher. (In the remaining five states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

Tax Rates in Quartiles Defined by Mean Household Income					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Delaware	0.21%	0.22%	0.35%	0.43%	104.76%
Florida	0.34%	0.36%	0.38%	0.39%	14.71%
Georgia	0.62%	0.64%	0.66%	0.72%	16.13%
Illinois	1.70%	1.64%	1.63%	1.82%	7.06%
Iowa	0.75%	0.67%	0.69%	0.73%	-2.67%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.36%	1.49%	1.46%	1.24%	-8.82%
Ohio	1.17%	1.05%	1.12%	1.32%	12.82%
South Dakota	0.55%	0.60%	0.58%	0.57%	3.64%
West Virginia	0.36%	0.41%	0.46%	0.51%	41.67%

*Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.*

*<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.*

In five of the 10 states studied (Delaware, Florida, Georgia, Ohio, and West Virginia), districts in the top quartile of mean household income paid average residential tax rates at least 10% higher than districts in the bottom quartile. In two of these (Delaware and West Virginia), average top-quartile tax rates were more than 30% higher than bottom-quartile tax rates. In no states studied did districts in the top quartile of mean household income pay average residential tax rates at least 10% lower than districts in the bottom quartile. (In the remaining five states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

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Tax Rates in Quartiles Defined by Median Value of Owner-Occupied Homes					
	Q1	Q2	Q3	Q4	Q4 % > Q1
Delaware	0.23%	0.26%	0.29%	0.43%	86.96%
Florida	0.33%	0.37%	0.38%	0.39%	18.18%
Georgia	0.60%	0.66%	0.69%	0.69%	15.00%
Illinois	1.64%	1.60%	1.70%	1.86%	13.41%
Iowa	0.69%	0.71%	0.71%	0.73%	5.80%
Nevada	0.26%	0.26%	0.26%	0.26%	0.00%
New Jersey <sup>†</sup>	1.60%	1.49%	1.44%	1.03%	-35.63%
Ohio	1.16%	1.07%	1.12%	1.32%	13.79%
South Dakota	0.59%	0.58%	0.58%	0.56%	-5.08%
West Virginia	0.43%	0.45%	0.43%	0.42%	-2.33%

*Cells are color-coded. White cells signal a difference of less than 10%. Lighter-colored cells signal a difference of between 10% and 30%. Darker-colored cells signal a difference of greater than 30%.*

*<sup>†</sup>New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.*

In five of the 10 states studied (Delaware, Florida, Georgia, Illinois, and Ohio), districts in the top quartile of median owner-occupied home value paid average residential property taxes at rates at least 10% higher than those in the bottom quartile. In one of these (Delaware), top-quartile districts paid tax rates more than 30% higher. In only one of the states studied (New Jersey) did districts in the top quartile of median owner-occupied home value pay residential property taxes at rates notably lower than districts in the bottom quartile—more than 30% lower. (In the remaining four states, results showed a difference of less than 10% between top- and bottom-quartile tax rates.)

The comparative analysis produced more findings worthy of discussion than the correlational analysis did, likely because it does not incorporate a significant threshold and is only concerned with the magnitude of difference between the top and bottom quartiles. In 16 of the 30 comparisons performed, top-quartile districts' average residential tax rates differed from bottom-quartile rates by 10% or more. Broadly, the picture is a progressive one; 12 of those 16 notable findings showed top-quartile districts paying higher average residential tax rates than bottom-quartile districts. As in the correlational analysis, New Jersey emerges here as the clearest exception and the most regressive state, with districts in the top quartile by all three definitions paying lower residential tax rates than bottom-quartile districts. West Virginia appears progressive only as relates to payer income and not as relates to residential property

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values; when it comes to the tax base for residential property taxes, the state appears somewhat regressive, highlighting a disconnect between household income and home worth in the state. Overall, though, this analysis suggests that residential school tax rates in most states studied are, to a degree, aligned with payers' home values and ability to pay.

*Discussion of Research Question #2: What is the relationship between a school district's residential property tax rate for education and its affluence?*

In brief:

- Once the inquiry was limited just to residential property and the taxes applied to it, the relationships between district affluence and tax effort for education became considerably more muddled.
- Across all correlations and comparisons performed, results were more often progressive than regressive, but most often they were inconclusive. Most correlations were either weak, very weak, or not statistically significant. Most comparisons showed similar average residential property tax effort across top- and bottom-quartile districts.
- Overall, residential property tax rates were not found to be consistently and meaningfully correlated with district affluence.
- It does not appear that homeowners with the means to do so are paying higher school taxes. This result calls into question the claim that because home values are linked to school quality, homeowners have an interest in paying enough taxes to amply fund schools, making property taxes a logical source of school revenue.

These analyses offer a view of tax effort for education as it is experienced by residential property owners. The key takeaway from both the correlational and comparative analyses is that they produced relatively few findings worthy of discussion.

The correlation between residential property tax effort and district affluence was found to be both statistically significant and meaningful (weak, moderate, or strong) in very few of the tests performed. This is evident when the correlational analysis of overall property tax effort is used as a basis for comparison. Setting aside mean household income, which was only rarely found to be meaningfully correlated with tax effort of any kind, clear relationships between overall property tax rates for education and affluence were found in a notably higher proportion of cases:

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% of correlations that were meaningful and statistically significant:	Correlation of Tax Effort with:		
	Valuation per household (total or residential)	Mean household income	Median owner-occupied home values
Overall Tax Effort	72% (13)	33% (6)	61% (11)
Residential Tax Effort	50% (5)	40% (4)	50% (5)

While the comparative analysis of residential property tax effort in the most and least affluent districts did show some more pronounced results than the correlational analysis, these results were not as clear as those found in the comparative analysis of overall property tax effort. This becomes especially apparent when comparing the number of results that show a difference of 20% or greater between top-quartile and bottom-quartile tax rates in each analysis:

% of comparisons showing a difference of 20% or greater between top- and bottom-quartile tax rates:	Quartiles Defined by:		
	Valuation per household (total or residential)	Mean household income	Median owner-occupied home values
Overall Tax Effort	56% (10)	33% (6)	50% (9)
Residential Tax Effort	20% (2)	20% (2)	20% (2)

In summary, residential property tax rates were not found to be consistently and meaningfully correlated with district affluence, no matter how affluence was measured.

This is a surprising result. As noted in the Introduction (“*Questions addressed by this report*”), there is a significant body of research linking home values to the quality and funding of local schools.<sup>36</sup> Because of this connection, it is sometimes argued that homeowners have a financial interest in their local schools and will therefore be more tolerant of school taxes.<sup>37</sup> It might be expected, then, that districts where payers have the means to invest more in their schools—where there is a stronger residential tax base or where household incomes are higher—higher school tax rates would be imposed on residential property. We do not see evidence of such a trend. This calls into question the foundational claim that property taxes are a logical source of revenue for education because of the alignment between homeowners’ interests and the interests of schools.<sup>38</sup>

36 See, for example, Black, 1999; Kane et al., 2006; Chiodo et al., 2010; and Chung et al., 2017

37 McNulty, 2014

38 *Ibid.*

## RESULTS & DISCUSSION

### Summary discussion: affluence and tax effort for education across different property types

#### *In brief:*

- Overall property taxation for education is regressive, but this result appears to be driven more by the taxation of non-residential property than by taxes on homes.
- Tax effort for education bears little relationship to household income. Tax rates are not set with payer income in mind.
- Differences between states' average property bills for education are quite large. The highest and lowest average rates in the states studied were separated by a factor of six.
- In four of the ten states for which residential property tax data was available, homeowner tax effort property differed noticeably from general property owner tax effort—in three, residential taxes were higher, while in one, residential taxes were lower. There is not consistent evidence that homeowners are more inclined to pay school taxes than property owners generally.
- Homeowner tax effort within each state was broadly similar across each state's highest-home-value and lowest-home-value school districts, with several states appearing slightly progressive but none emerging as dramatically progressive. Only one state appeared strongly regressive.
- In most states studied, districts seem not to take full advantage of their high-value non-residential property for school funding purposes. This is a missed opportunity to bring greater resources into school systems in a way that would make more state funding available for, and/or reduce the tax burden on, property-poor districts.

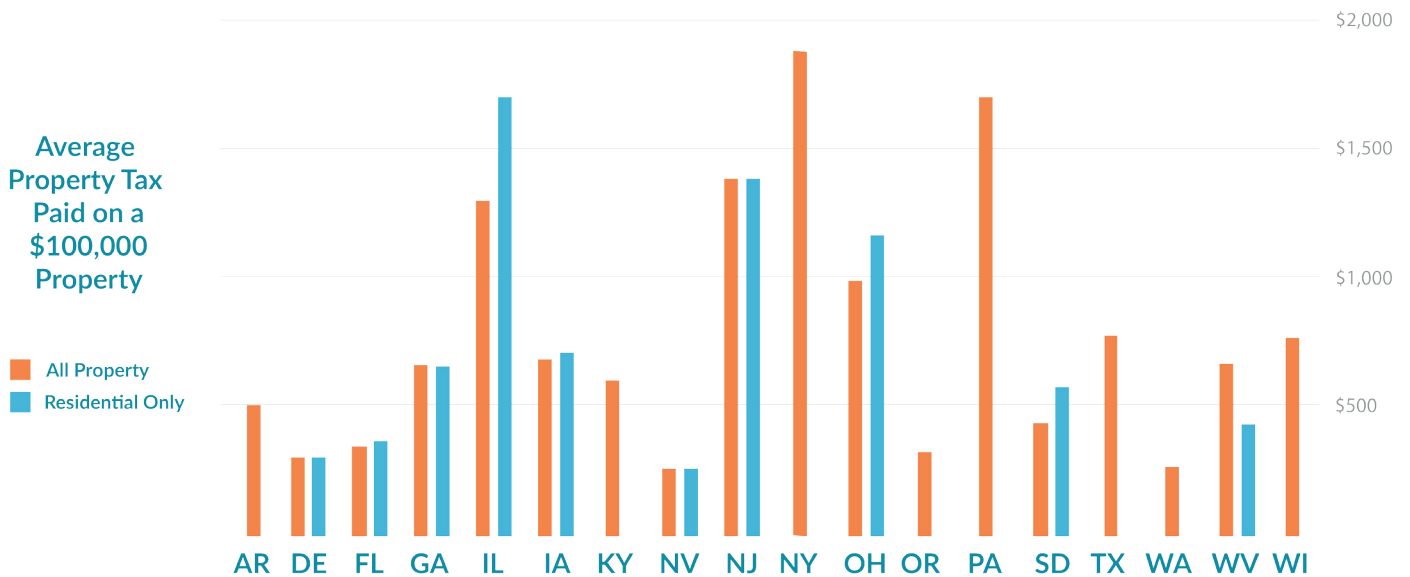
Taken together, the results of Research Questions #1 and #2 suggest strongly that while there is a story to be told about the relationship between tax effort for education and affluence, that story is not primarily about taxes on homes, and in fact is not primarily a household-level story at all. On the whole, property taxation for education is regressive. In most states studied, districts with higher-value properties are taxing those properties at lower rates. But high general property values do not mean high home values, and it is neither clear nor consistently the case that school districts with higher-value residential properties have lower residential property tax rates. There is no parallel trend with regard to the taxation of residential property. The overall regressive

# RESULTS & DISCUSSION

trend, therefore, must arise from the taxation of non-residential property, such as commercial and agricultural property. And because the overall picture of taxation appears regressive despite the mixed results of the residential tax effort analysis, it is clear that in many states, non-residential property looms quite large.

Moreover, relationships between household income and both overall and residential tax effort are weak and rarely significant. In other words, the average taxpayer's income and ability to pay is clearly not a primary concern in the setting of school district tax rates.

Stepping back from national trends and considering how tax effort for education varies from state to state, it is clear that the differences between states' average property tax bills for education are quite large. Drawing on the data used in the analyses above, the following graphic displays the average property tax amount paid for education on a general property parcel worth \$100,000 in each of the 18 states studied, as well as the average property tax paid on a home worth \$100,000 in each of the 10 states for which data on residential property taxes were available.

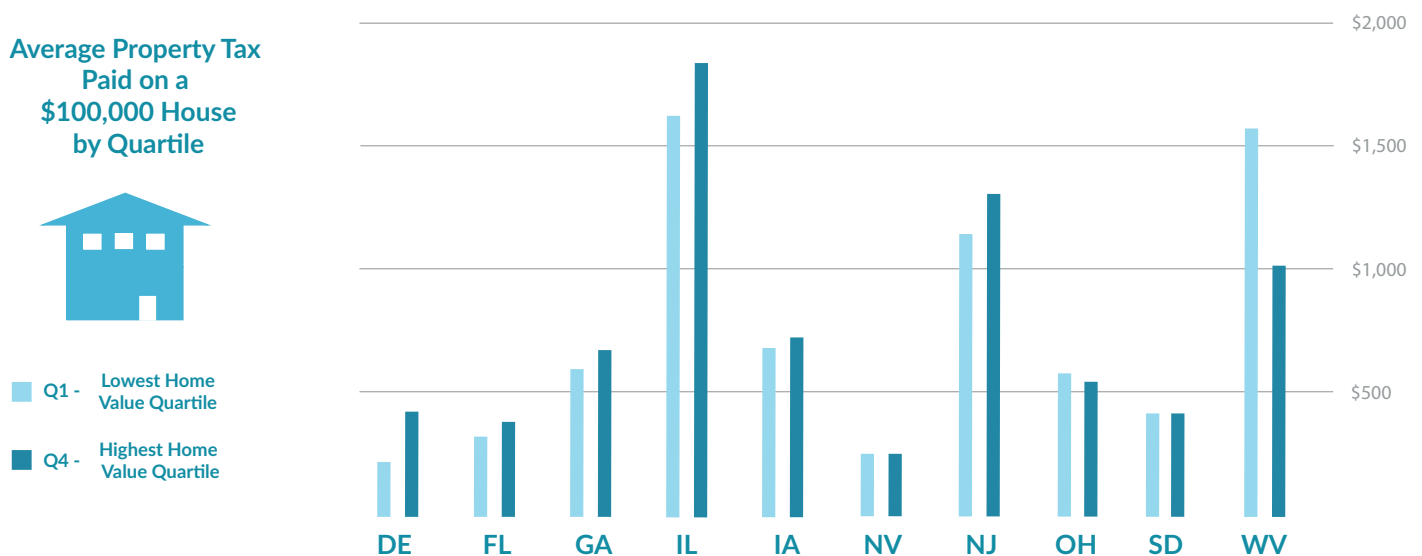


In New York, the state with the highest overall effective tax rate, the taxes on a \$100,000 parcel are roughly six times what they would be on the same property in Washington or Nevada, where the overall effective tax rates are lowest. (See Appendix A for a full list of state average property tax rates.) Property owners face very different tax burdens in different states.

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Additionally, in most states where average tax rates for both residential and general property could be determined, residential property is taxed at similar rates to property generally, but in a few states (Illinois, Ohio, and South Dakota), the tax bill on a residential parcel is substantially higher, while in only one state (West Virginia) is it noticeably lower. As noted above, because of the established link between home values and local school quality,<sup>39</sup> it is sometimes argued that homeowners will view their school taxes as a personally beneficial investment.<sup>40</sup> It might be expected, then, that residential property tax effort would reflect this incentive in a way that general property tax effort does not. It is therefore notable that in only a few states are residential tax rates perceptibly higher than general tax rates.

Drawing on the comparative analysis of residential tax effort, this graphic displays two property tax bills for each state: the average amount that would be paid on a \$100,000 house in a district falling in each of the state's top and bottom quartile of median owner-occupied home values.



In most states, the difference between the tax bill paid by a homeowner living in a district in the top quartile of home values is different, though not enormously so, than the bill that would be paid on the same house in a district in the bottom quartile of home values. It is also not consistent from state to state whether top-quartile districts pay higher or lower rates. Additionally, while there are a few states where the gaps are

39 See, for example, Black, 1999; Kane et al., 2006; Chiodo et al., 2010; and Chung et al., 2017

40 McNulty, 2014

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wider, the differences in residential tax rates for education are certainly much greater between states than within them.

Overall, the lack of a consistent relationship between affluence and residential tax effort, along with the fact that residential tax effort in a state's school districts rarely exceeds overall tax effort to any notable degree, raise doubts about the notion that property taxes are a logical way to raise revenue for education because homeowners' interests are aligned with the interests of schools. These analyses produced no evidence that homeowners are especially willing to pay school taxes.

However, there is a clear indication that when a district's tax base is composed substantially of high-value non-residential property, overall tax rates are lower. Whether this is because of lower uniform rates in high-tax-base districts or because non-residential property is specifically taxed at lower effective rates, the result is that districts are not taking full advantage of this portion of their tax bases to fund education. Most school district funding that does not come from the state is drawn from local property taxes. If schools are to serve their purpose as vehicles of social mobility, they must be funded adequately, and from taxes that are imposed progressively, with rates aligned to communities' ability to pay. Within a system that relies on property taxes for education, if state policy encourages districts to properly leverage high-value properties for school funding purposes, that brings more revenue into the system generally. If properly considered in the state funding formula, those higher local revenues should offset state aid, freeing up state funds for use in needier districts. When districts do not take appropriate advantage of high-value tax bases, then that money must come from somewhere else—likely, from higher local taxes in districts whose smaller tax bases mean they struggle to raise enough funding for their schools.

***To experiment with different property tax rates and see how they affect school funding, go to <http://edbuild.org/content/building-equity/tax-rate-simulator>***



# STATE CASE STUDIES

As discussed in more detail in the Introduction (“*State policy matters for fairness in local tax effort*,” above), there are a number of state policies that can influence the distribution of the local property tax burden for education. These fall into three general areas:

- 1. Policies regarding districts’ expected local contributions to education.** These include whether the state funding formula expects school districts to cover a set of specific costs without any state assistance, or takes into account the value of the local tax base or local income levels when calculating how much revenue a school district can be expected to raise locally for education.
- 2. Policies regarding local discretion over tax rates.** These include how closely school districts’ actual local tax rates and local contributions to education must match the expectations in the state funding formula, and whether the state sets assessment ratios that affect the revenue that will be raised by a given local tax rate.
- 3. Policies regarding the estimation of education costs and the total amount of state aid for those costs.** These include how generously the state funding formula estimates each district’s needed budget and how much funding the state provides towards that budget.

Different combinations of these policies can manifest in any number of outcomes. At one extreme, a state that tightly controls local tax rates—say, one that expects districts to impose a single, uniform tax rate and gives districts minimal freedom to deviate from that expectation—is likely to see little differentiation between overall and residential property tax effort and few gaps in tax effort between districts of disparate wealth levels. But state policy can also lead to wide variations in tax effort. For instance, a state that sets assessment ratios specific to different classes of property may bring about big differences between overall and residential property tax effort. A state that allows a great deal of local discretion in the setting of district tax rates will place education funding at the mercy of different, and sometimes competing, local incentives and economies. And a state whose funding formula greatly underestimates school district resource needs will give districts no choice but to raise a large portion of their budgets from local revenues—and leave districts subject to differences in local tax bases.

In this section, three states’ results from the analyses above are placed in their state policy contexts. These case studies illuminate how different policies can either advance or undermine fairness in local tax effort for education.

# STATE CASE STUDIES

## South Dakota

### *In brief:*

- South Dakota policy sets different expected school tax rates for different types of property; allows districts to set actual rates lower if they choose; and allows districts to set actual rates higher with the approval of a school board supermajority (subject to veto by a voter referendum).
- Nearly half of South Dakota school districts impose higher tax rates than the expected rates, and almost none impose lower rates. State funding formula amounts are clearly seen as insufficient in many districts, and state policies limiting tax rates are weak and surmountable.
- Districts with larger overall tax bases per household (likely those with higher proportions of non-residential property) are taxing at lower rates than districts with smaller tax bases per household. On a simple level, it is clear that they are taking advantage of their greater tax capacity. It is also likely that local economic priorities lead these districts to be deferential to the preferences of the owners of non-residential property.
- Districts with higher home values impose higher taxes on non-residential property than on residential property, which may be a testament to the voting power of homeowners.
- The lowest-income districts see the lowest average tax rates, indicating political attention to taxpayers' ability to pay in these districts.
- Policies passed in 2016 may affect these trends.

### *State Policies Related to Tax Effort*

The South Dakota state education funding formula, like most such formulas, calculates a total amount of funding needed annually for each district and then subtracts an expected local contribution from this sum to determine the amount of state aid that the district will receive.<sup>41</sup> This expected local contribution is computed by applying set tax rates to districts' different tax bases and totaling the revenue that would be generated from these taxes.<sup>42</sup> The tax rates vary by class of property.<sup>43</sup> For taxes payable in 2016, the year of data used for South Dakota in this report, these tax rates were .1568%

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41 South Dakota Department of Education, 2015

42 *Ibid.*

43 *Ibid.*

## STATE CASE STUDIES

on agricultural property, .4075% on owner-occupied homes, and .8728% on all other property (for general education);<sup>44</sup> and, separately, .149% on all kinds of property (for special education).<sup>45</sup> (Note that these are reported tax rates and are affected by assessment ratios, which vary by county. Effective tax rates are slightly different.) The expected local contribution for each district is the amount that would be raised if these tax rates were applied to the taxable valuation in each district.

These rates are the assumed local tax rates for education, but they are also described in state documents as maximum rates.<sup>46</sup> Districts may tax at lower levels if they so choose, but can only raise general education taxes above these levels with approval from two-thirds of the school board,<sup>47</sup> and cannot raise special education taxes above the expected level.<sup>48</sup> Importantly, a board's decision to raise general education taxes above the expected rates can be overruled by the voters in a popular referendum.<sup>49</sup>

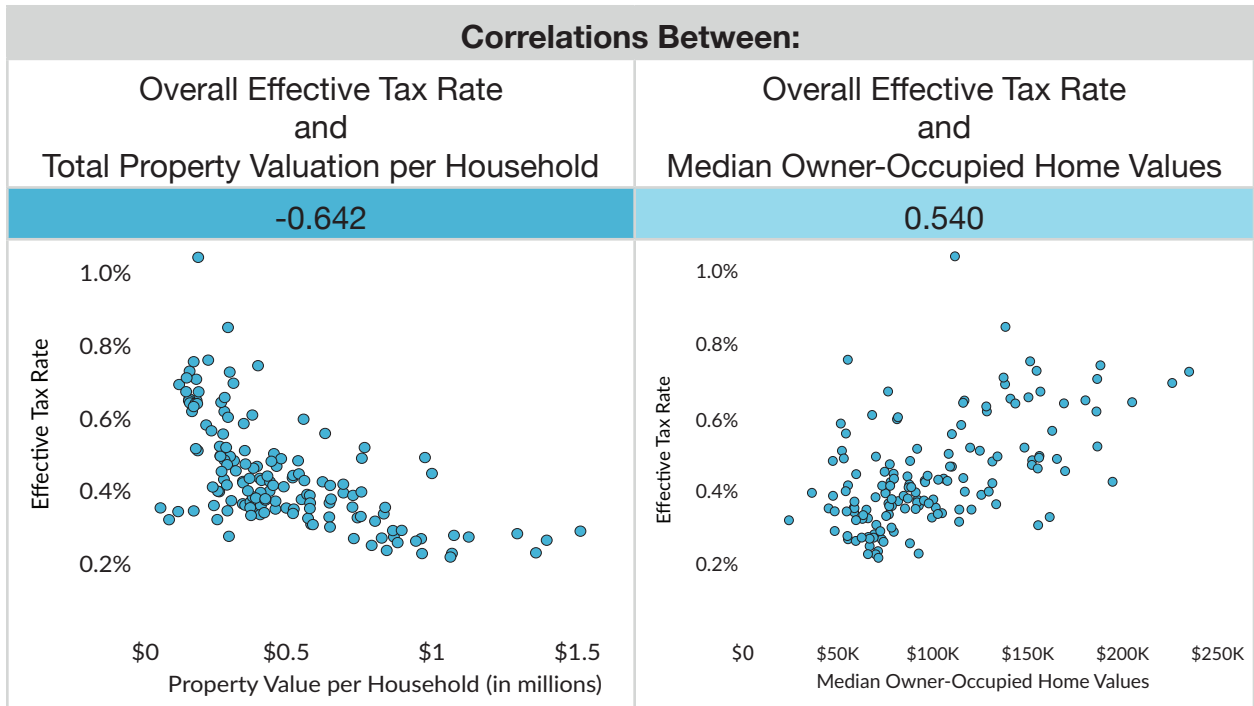
This state funding policy is clearly designed for districts to default to the expected tax rates or below. In practice, however, most districts impose taxes at or above the expected rates for general education.<sup>50</sup> In 2016, out of 150 school districts, 82 imposed exactly the expected general education tax rates for all three classes of property, while 67 imposed higher tax rates.<sup>51</sup> Only one imposed lower tax rates—Elk Mountain,<sup>52</sup> a district estimated by the Census to be home to 31 school-age children.<sup>53</sup> The “maximum” tax rates clearly posed no obstacle for districts who wished to raise extra funding for education over and above the formula amount—and the formula amount was such that 45% of districts did see a need for additional funds.

### *Review of Tax Effort Findings in South Dakota*

The significant results of the correlational analysis of overall property tax effort for South Dakota were as follows:

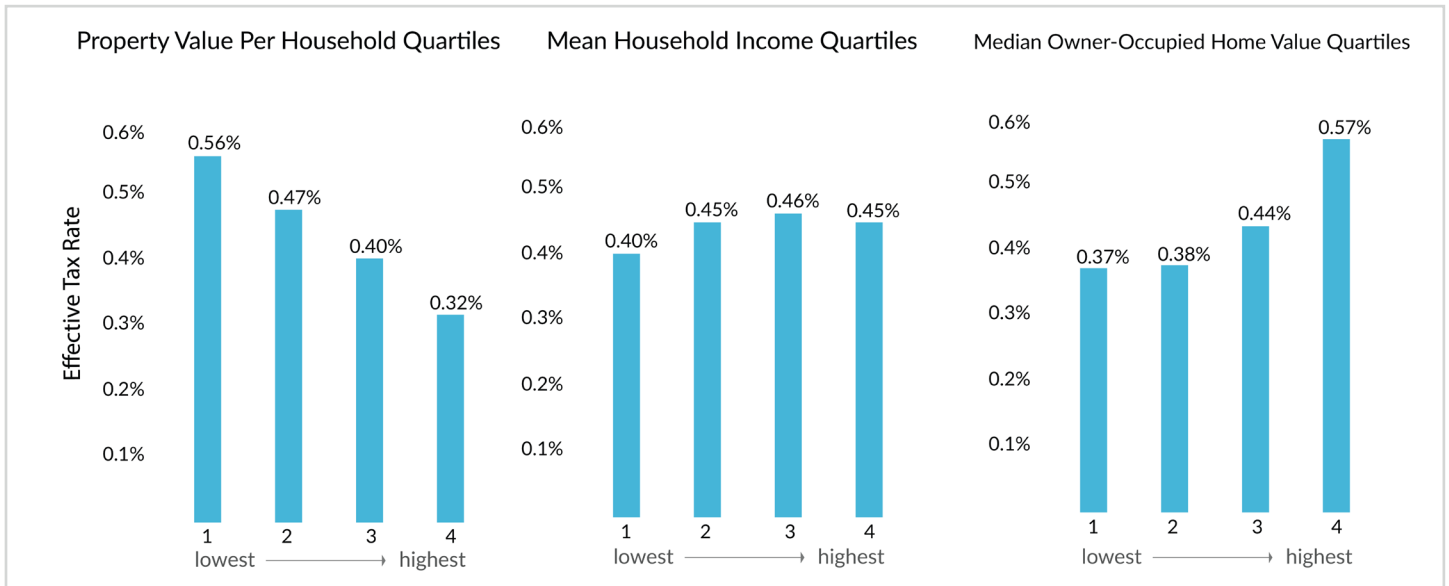
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- 44 *Ibid.*
  - 45 SD Codified Laws § 13-37-16 (2015)
  - 46 South Dakota Department of Education, 2015
  - 47 *Ibid.*
  - 48 SD Codified Laws § 13-37-16 (2015)
  - 49 *Ibid.*
  - 50 Based on data collected for this report. See Appendix B for more information.
  - 51 *Ibid.*
  - 52 *Ibid.*
  - 53 US Census Bureau, 2016b

# STATE CASE STUDIES



(The correlation between districts' total effective tax rates and their mean household incomes was not statistically significant.)

The results of the comparative analysis of overall property tax effort for South Dakota were as follows:



## STATE CASE STUDIES

There is a strong and significant negative correlation between overall effective tax rate and property value per household. This result is supported by the comparative analysis, in which tax rates decrease steadily between quartiles. This trend culminates in tax rates that are 43.01% lower in top-quartile districts than bottom-quartile districts when quartiles are defined by property valuation per household.

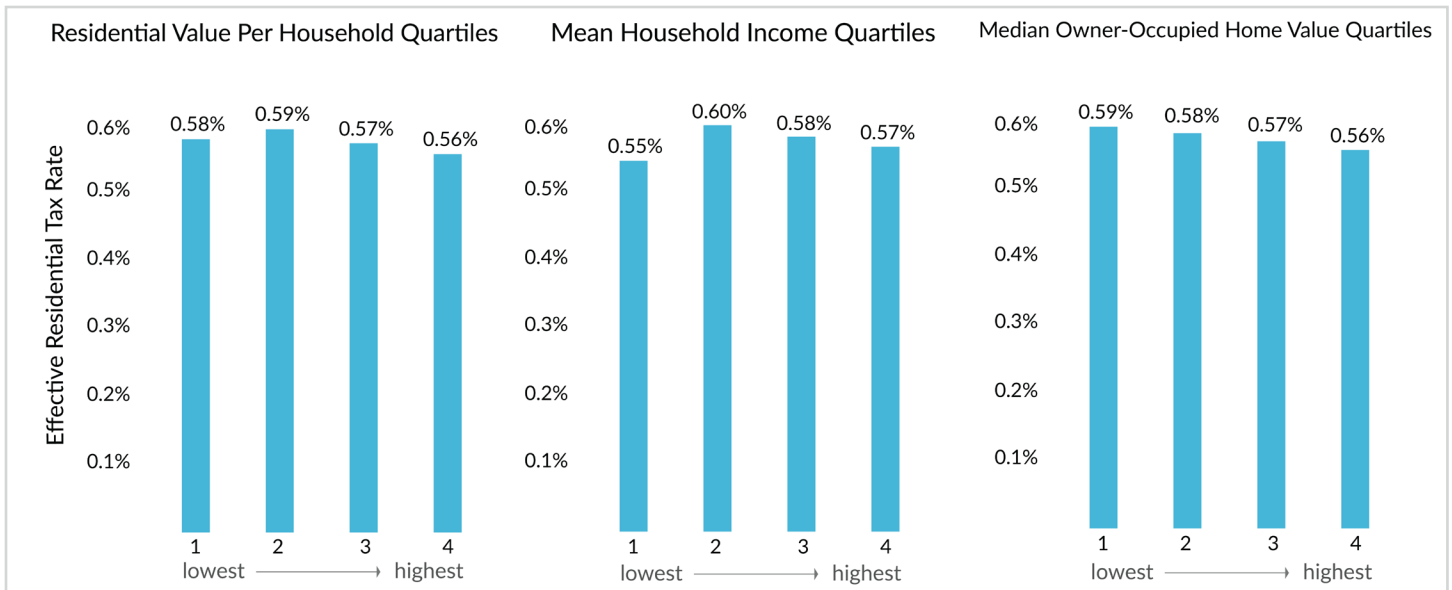
There is a moderate and significant positive correlation between overall effective tax rate and median value of owner-occupied homes. This result, too, is supported by the comparative analysis, in which tax rates increase steadily between quartiles. This trend culminates in tax rates that are 58.28% higher in top-quartile districts than bottom-quartile districts when quartiles are defined by the median value of owner-occupied homes.

However, there is no statistically significant correlation between total tax rate and mean household income in South Dakota. While the comparative analysis does show that top-quartile districts pay 11.81% higher tax rates than bottom-quartile districts, this result is clearly driven by the relatively low average rate paid in the state's lowest-income districts, not by a clear trend in which districts pay more as their income increases.

The results of the analysis of overall property tax effort for education in South Dakota suggest that districts in the state are not aligning overall property taxes for education to the value of their overall property tax base, resulting in a regressive system in which property-rich districts pay lower tax rates than property-poor districts. Still, districts in the state are calibrating total property tax rates to the value of median homes, so districts with higher-value homes are taxing at higher rates than districts with lower-value homes. Additionally, the districts with the state's lowest-income households are taxing at the lowest rates. It appears that the system is regressive where total tax base is concerned, but mixed to progressive at a household level. In these ways, the state is fairly representative of the national trends discussed in this report.

These results suggested different trends in taxation of property overall and of residential property. This proposition was tested further in the narrower analysis of residential property tax effort for education. The correlational analysis of residential property tax effort in South Dakota produced no significant results. The results of residential comparative analysis for South Dakota were as follows:

# STATE CASE STUDIES



The primary takeaway from the residential tax effort analysis for South Dakota is that residential property tax rates for education are quite similar across the state and are not well tied to home values. The correlational analysis revealed no statistically significant trends, and none of the comparisons showed a large difference between average tax rates in the most- and least-affluent districts. It is clear that the clear relationships between overall tax rates and property values are driven mostly by non-residential properties. This is not unexpected, because South Dakota’s property tax base is mostly made up of non-residential property. Residential property constitutes just 20.01% of the total property valuation in South Dakota.<sup>54</sup> In line with this figure, expected revenues from taxes on residential property make up only 22.7% of total expected revenue from local property taxes in the state.<sup>55</sup>



### Possible Policy Impact on Tax Effort

The state’s policy regarding districts’ expected local contributions towards the formula amount is pegged to set tax rates, which means that state aid should be responsive to differences in tax base, though not to differences in individual payers’ income or ability to pay. If districts were generally satisfied with their formula amounts, then there would

54 Based on data collected for this report. See Appendix B for more information.

55 *Ibid.*

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be no clear correlation, positive or negative, between any of the indicators of affluence and effective tax rates; all districts would simply impose the expected tax rates and exert equal tax effort. In practice, though, nearly half of the state's school districts impose school tax rates exceeding the level expected in the state policy, indicating that the formula amount is often seen as inadequate. This, along with the apparent ease with which districts can raise their tax rates above the "maximum," provides a clear opening for local rate-setting and makes the state's education funding vulnerable to inequities based on differences in local wealth.

Possibly as a consequence of this set of policies, districts with larger overall tax bases per household are taxing at lower rates than districts with smaller tax bases per household. Assuming that many school districts seek to increase their funding above the formula amount to a roughly equal degree, it is not surprising that high-value districts would impose lower tax rates; a lower rate in a high-value district would raise the same level of funding as a higher rate in a low-value district. There is no reason for a property-rich district to raise taxes any higher than the level needed to generate just the desired amount of extra funding.

Additionally, these high-value districts likely have a lot of their value in non-residential property. School boards in districts with a high proportion of non-residential property are more liable to be concerned with constituencies other than homeowners, such as business owners or farmers, when setting tax rates; it would be logical that the more non-residential property exists in a district, the more likely school boards are to defer to the owners of non-residential property when setting tax rates, and to therefore set lower rates overall, or lower rates specifically on the non-residential property that makes up so much of the local tax base.

It is also the case that districts with higher median home values have set higher tax rates overall, but not higher residential tax rates. It appears that school boards in districts with higher home values have raised agricultural or other tax rates more readily than they have raised taxes on owner-occupied homes. This may be because voters can veto tax increases through a referendum, and a larger number of voters are likely to be subject to residential property taxes than to other kinds of property taxes.

Finally, the comparative analysis showed that districts in the lowest-income quartile impose a notably lower average effective tax rate than districts in any of the other three income quartiles. This may indicate that the school boards in those low-income districts are more attuned to concerns related to taxpayers' ability to pay—or that tax hikes in those districts are more likely to be overruled by referendum.

During the 2016 legislative session, South Dakota enacted a new funding policy intended in part to generate additional funds for education from state taxes and to

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provide local property tax relief.<sup>56</sup> It remains to be seen whether the new policy will be generous enough to reduce the incentive to raise taxes above the maximum or whether, if the state's goal in having a maximum is to maintain a more equal level of tax effort, stronger barriers against above-maximum rates are needed.

### New Jersey

#### *In brief:*

- New Jersey's formula estimates school district funding needs generously but expects local school districts to bear a high proportion of the total funding burden relative to national averages. This is especially true in the wake of recent cuts to state education aid.
- New Jersey policy ties districts' local contributions to both their property wealth and income levels. However, actual local contributions are raised from property taxes and not from income taxes.
- While the consideration of both income and property wealth should make for a progressive formula, the generous estimate of funding needed, coupled with cuts to state aid, places a large burden on local property tax revenues, and an especially large burden on the low-wealth, low-income districts that were most dependent on state aid.
- The result is a system of regressive property taxation for education.

#### *State Policies Related to Tax Effort*

New Jersey, like most other states, uses a funding formula to calculate the amount of funding needed annually for each district and then subtracts an expected local contribution from this sum to determine the amount of equalized state aid that the district will receive.<sup>57</sup> This expected local contribution is calculated through a formula that takes into account both the district's level of property wealth and its residents' income.<sup>58</sup> The larger a district's property tax base, or the higher its total local income, the more of its formula funding it is expected to raise locally.

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56 State of South Dakota Blue Ribbon Task-Force, 2016

57 N.J. Stat. Ann. § 18A:7F-52

58 In the 2008-2009 school year, each district was expected to contribute an amount equal to .46% of its total property valuation and 2.3% of its total local income. These rates were set in statute in 2007 and were intended to be recalculated each year by the State Commissioner of Education. The law



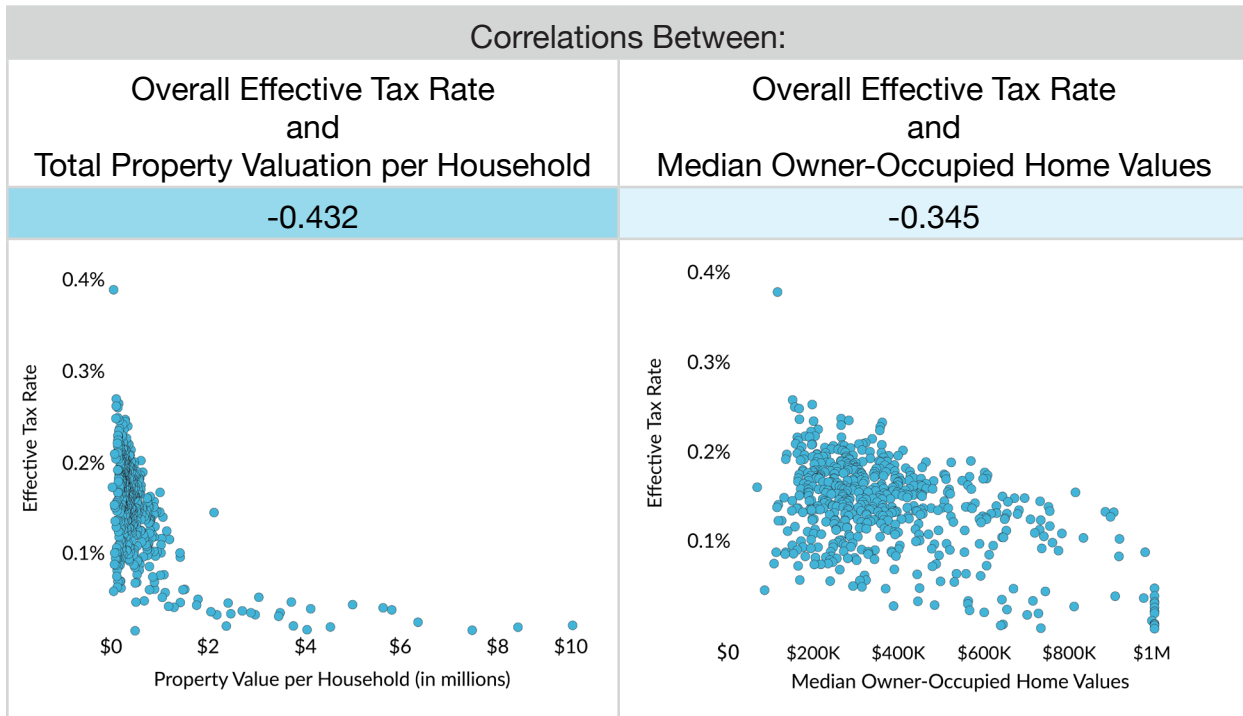
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Note that although this formula takes into account district income when setting the local share of the formula amount, districts do not actually raise this amount from income taxes. In reality, districts raise almost all of their local funding from property taxes.<sup>59</sup> Still, the amount of state aid provided does hinge in part on district income.

Additionally, while the New Jersey funding formula estimates school district funding needs fairly generously—the per-student amount at the basis of its calculations is the highest in the country<sup>60</sup>—New Jersey’s local school districts do bear an above-average portion of the total education funding burden,<sup>61</sup> so the generous estimate is not necessarily a boon. Moreover, the state cut education funding significantly during the Great Recession, decreasing aid to all districts and delegating to districts more responsibility for education funding.<sup>62</sup>

## Review of Tax Effort Findings for New Jersey

The significant results of the correlational analysis of overall property tax effort for New Jersey were as follows:



\* These scatterplots are cropped and enlarged for clarity and therefore exclude three municipalities that are included in the correlational analysis.

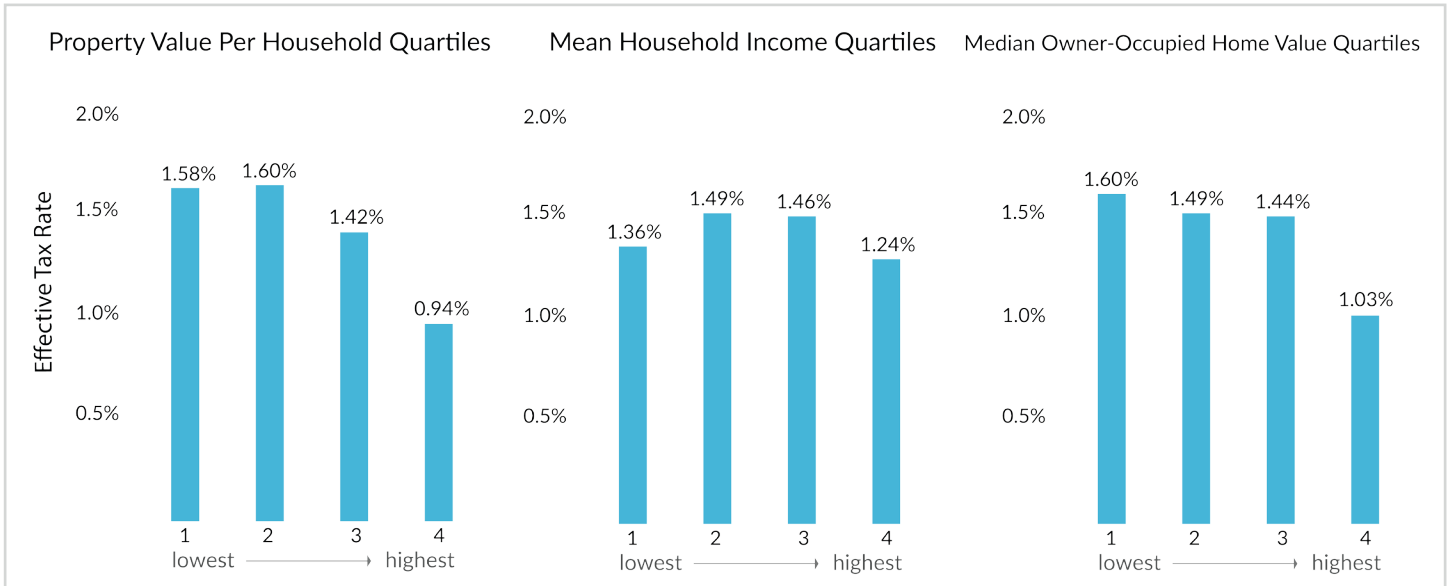
specifies that rates should be set so that the total state share of all districts’ formula amounts is equal to the amount of state aid dollars available. (N.J. Stat. Ann. § 18A:7F-52)

- 59 US Census Bureau, 2016a
- 60 EdBuild, 2016b
- 61 US Census Bureau, 2016a
- 62 Chakrabarti and Sutherland, 2013

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(The correlation between districts' total effective tax rates and their mean household incomes was not statistically significant.)

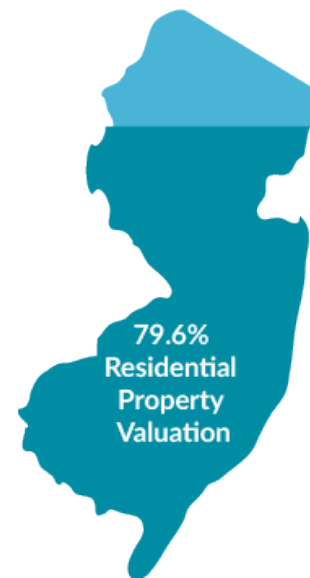
The results of the comparative analysis of overall property tax effort for New Jersey were as follows:



In these results, it is important to note that in none of the three comparisons did the average tax rate rise or fall steadily from quartile to quartile. The two significant trends identified in the correlational analysis, while clearly regressive, were weak, likely because middle-quartile districts appeared in many cases to impose tax rates that diverged from the general trend.

The overall results of the all-property analysis for New Jersey suggest that districts in the state are not calibrating total property taxes to the values of their total property tax bases, resulting in a regressive system. This regressiveness finding is echoed by data suggesting that tax rates are also misaligned with median home values.

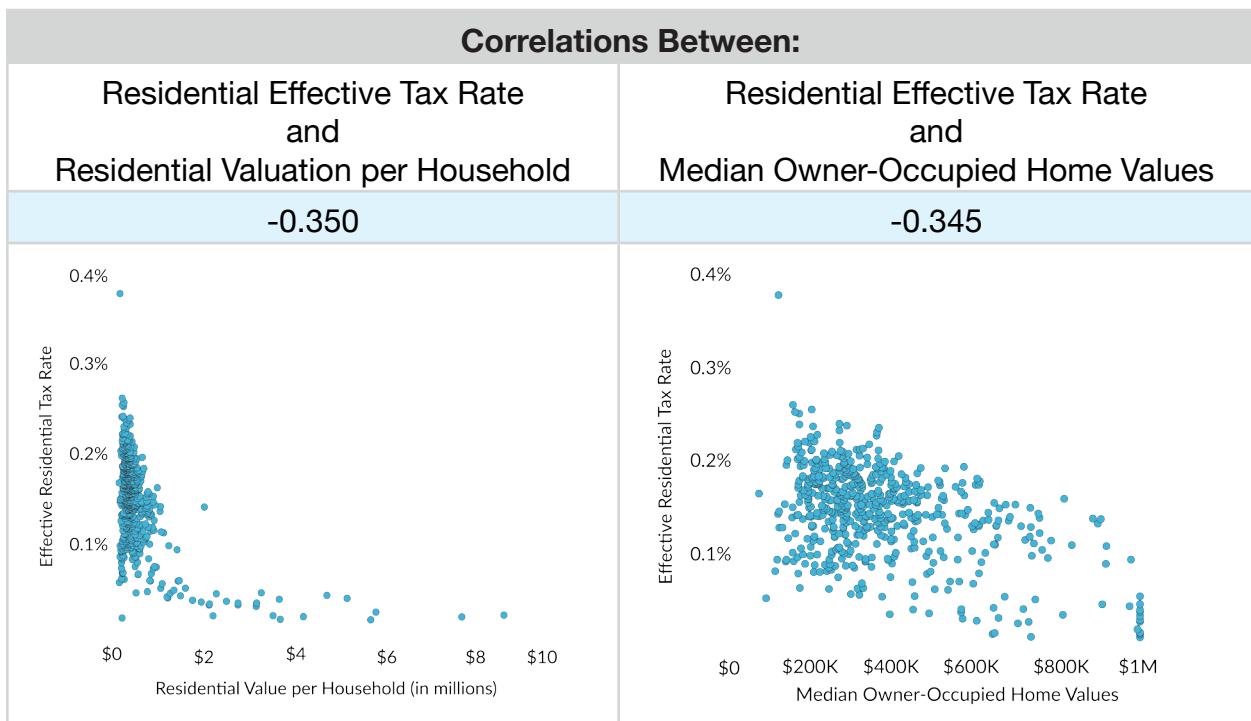
These results do not suggest that there is a clear difference between the taxation of property generally and the taxation of residential property specifically in New Jersey. This is consonant with the fact that the clear majority of property in New Jersey—79.64% of total property valuation—is



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residential.<sup>63</sup> Additionally, New Jersey property values are not assessed for taxable purposes at less than actual value; the only difference between actual and taxable value in New Jersey arises from outdated assessments. The percentage of taxable value coming from residential property is therefore nearly identical at 80.44%. Similarly, because a single tax rate is applied to all kinds of property in each district, there is no real difference between the proportion of property that is residential and the proportion of revenue expected to come from residential property; this value is almost the same, at 79.83%.

The significant results of the correlational analysis of residential property tax effort for New Jersey were as follows:

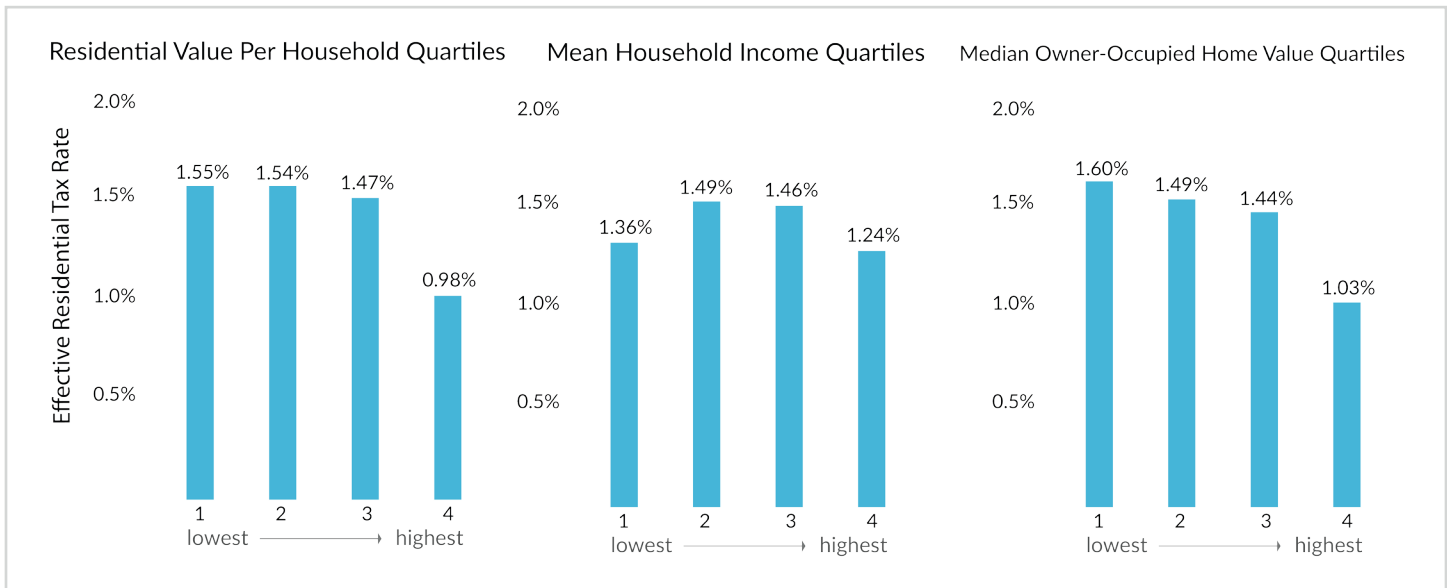


(The correlation between districts’ residential effective tax rates and their mean household incomes was not statistically significant.)

The results of comparative analysis of residential property tax effort for New Jersey were as follows:

63 Based on data collected for this report. See Appendix B for more information.

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As expected, the correlational analysis of residential property tax effort produced regressive results very much like those of the parallel analysis of overall property tax effort. Additionally, with regard to the relationship between income and residential tax rates specifically, while the comparative analysis revealed a somewhat regressive relationship, the correlation is not significant, likely because the two middle-quartile districts are taxing residential property at rates notably above the rates paid in either the bottom or the top quartile.

### *Possible Policy Impact on Tax Effort*

The state funding formula is written progressively, taking into account both districts' property tax bases and their income levels in calculating the amount of state aid they will receive. In practice, though, the local education property tax burden is regressively distributed, with districts in the highest quartile of both total property valuation and residential property valuation paying the lowest property tax rates. It is likely that this disconnect arises primarily from the fact that in New Jersey, a below-average proportion of education funding paid out of state dollars, and that recent cuts intensified the burden on local school districts. With a high total funding expectation (that is, a large formula amount) and an insufficient allocation of state aid, it is reasonable to expect that districts will make up the difference with high local property taxes – and indeed, New Jersey's property taxes for education are among the highest in the country. However, because low-wealth, low-income districts are, by design, more dependent on state aid, cuts harm these districts more, and they must tax smaller property tax bases at higher rates to make up the difference. It is therefore

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not surprising that the resulting local property taxation picture is regressive overall, with the property-richest districts paying average tax rates that are 34.97% lower than the property-poorest districts.

## Pennsylvania

### *In brief:*

- Pennsylvania does not use a funding formula to distribute most of its state education dollars, and the state has no policy regarding the amount of local revenue that districts are expected to contribute toward education budgets.
- This analysis finds a tax effort landscape that mirrors the state's anything-goes policy environment. Overall effective property tax rates for education do not clearly correlate with any indicator of district affluence.
- In the absence of state policy directing local tax effort for education, Pennsylvania school districts' tax rates reflect no particular pattern. Instead, individual district choices produce a scatter of local tax policies. Pennsylvania could achieve a great deal more equity by implementing carefully crafted state policies regarding education funding and taxation.

### *State Policies Related to Tax Effort*

In 2015, the fiscal year for which Pennsylvania school tax rate data was available for this report, the state did not have an education funding formula.<sup>64</sup> During the 2016 legislative session, the Pennsylvania General Assembly passed a bill creating a formula for the distribution of “new” state education funding—that is, for the distribution of a 2016 *increase* in state funding for school districts, but not for any of the funds that would have been distributed without the increase.<sup>65</sup> The formula is intended to be somewhat progressive in the distribution of the dollars governed by it, as it includes adjustments to provide more funding to districts with lesser tax capacity and districts serving more students in poverty.<sup>66</sup> However, because the formula does not apply to most education dollars, the positive impact of this policy is very limited. Additionally, the formula does not set a particular local contribution expectation, so the state does

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64 Wolf, 2015

65 Pennsylvania Association of School Business Officials (PASBO), 2016

66 *Ibid.*

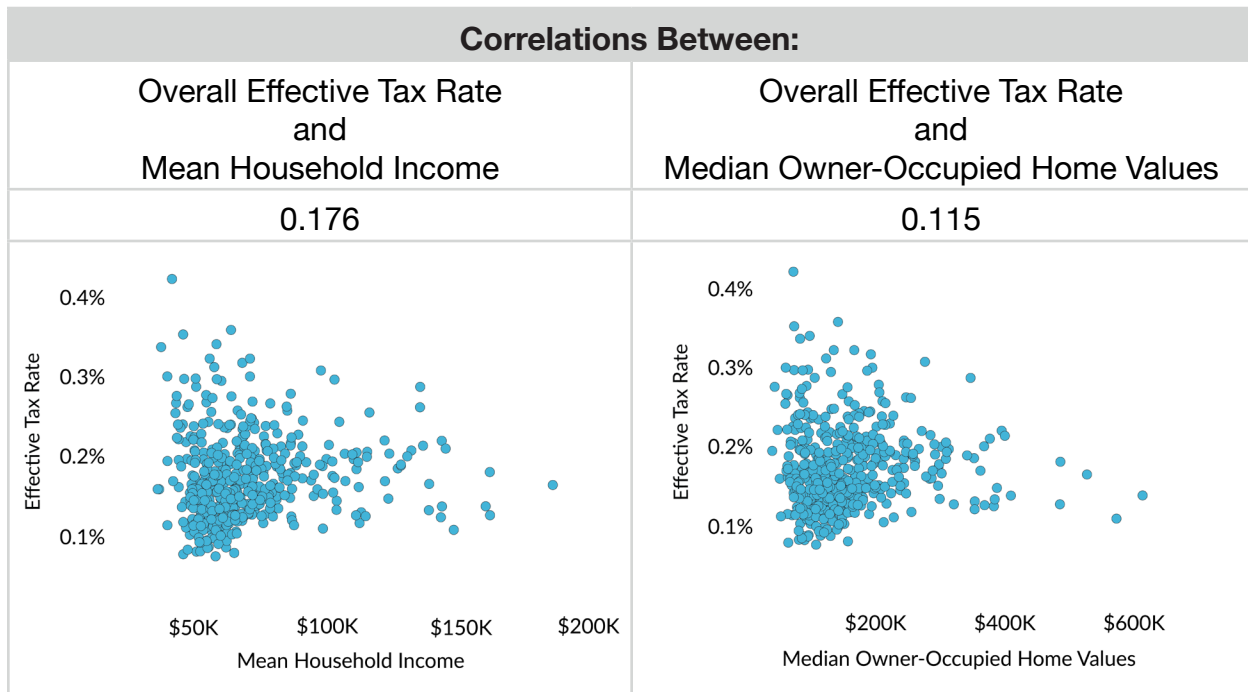
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not provide any guidance to districts about the appropriate level of local tax effort for education.

The one parameter set by the state around local taxation is an index that limits the amount by which any school district can increase school taxes in a given year without voter approval.<sup>67</sup> However, when this policy was enacted in 2006, it allowed districts to keep taxing at their pre-2006 tax rates, so it did nothing to reset the overall system to a fairer baseline regarding the sharing of the tax burden.

## *Review of Tax Effort Findings for Pennsylvania*

The significant results of the correlational analysis of overall property tax effort for Pennsylvania were as follows:

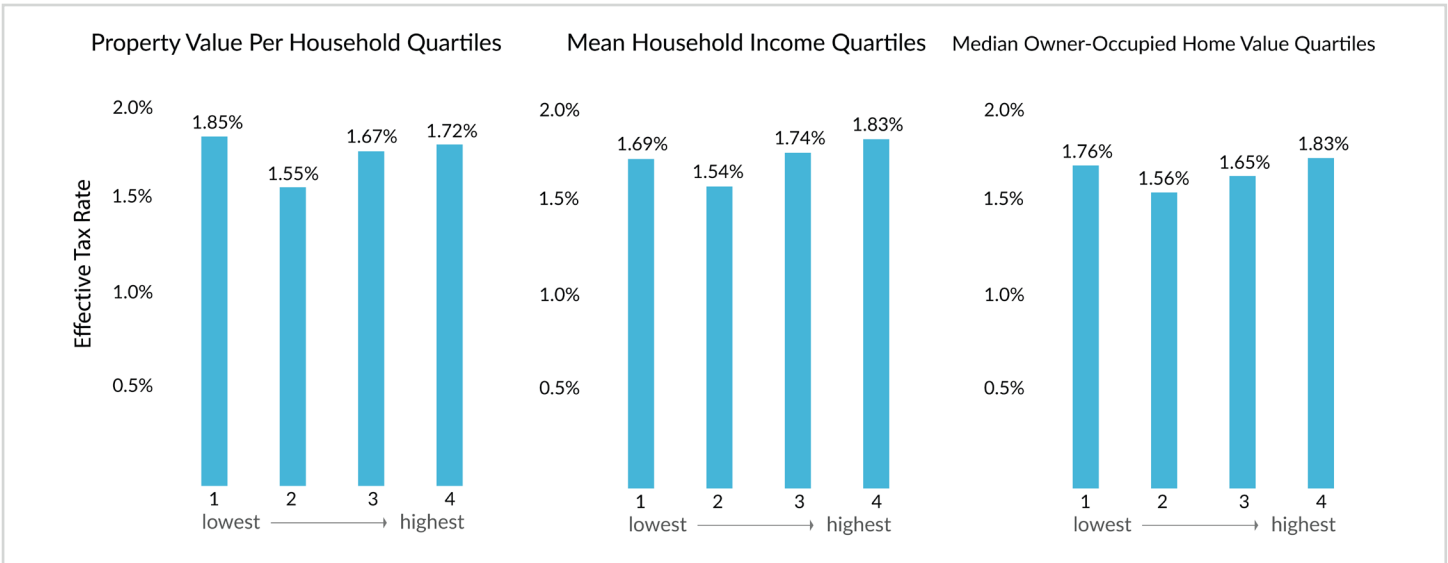


(The correlation between districts' residential effective tax rates and their total property valuations per household was not statistically significant.)

The results of the comparative analysis of overall property tax effort for Pennsylvania were as follows:

67 Pennsylvania Department of Education, 2016

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The prevailing theme of the analysis of overall property tax effort for education in Pennsylvania is the lack of any clear connection between overall effective property tax rates and any of the indicators of affluence. The correlational analysis revealed only non-significant and very weak relationships. In none of the three comparisons did the average tax rate rise or fall steadily from quartile to quartile, and in no instance did top- and bottom-quartile average tax rates differ by more than 10%.

The necessary data was not available for a residential tax effort analysis of Pennsylvania school districts. However, it was possible to determine that 68.42% of the state’s total assessed (or taxable) valuation comes from residential property.<sup>68</sup>



\* Assessed property valuation, not actual property valuation

### Possible Policy Impact on Tax Effort

Pennsylvania is one of the few states in the country without a system for determining districts’ expected local contributions to education.<sup>69</sup> Moreover, the state’s recently enacted policies regarding both the distribution of state aid and permissible local property tax levels affect only new increases to education funding, leaving untouched the tax and aid dollars that make up the vast majority of public school support. In sum, education funding in the state is largely ungoverned by policies that would affect local tax effort.

68 State Tax Equalization Board, 2015b.  
 69 EdBuild, 2016a

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In this, the state is fairly exceptional, but it may be the exception that proves the rule. In the analysis of overall property tax effort, Pennsylvania was notable among the states studied for its lack of significant trends or clear directional pattern, either regressive or progressive, in any of the correlations or comparisons performed. The results are a scatter of individual district choices. The fact that a state with so little oversight regarding local tax effort sees such untidy variation in local tax rates is suggestive of the notion that state policy can be a powerful lever for ensuring equity in local property tax effort for education.



## AREAS FOR FURTHER STUDY

As with any study of a complex area of policy, this project raised as many questions as it answered. There is ample room to build on the results of these analyses with additional research. Areas for further study suggested by this work include:

- **A more detailed look at fairness in the taxation of non-residential property for education.** This should include specific examinations of agricultural, commercial and industrial property, and other classes; policy processes for setting tax rates for different classes of property; and political and policy concerns related to the taxation of non-residential property, including and especially the way in which education funding is weighed against other priorities in the setting of these tax rates.
- **An investigation of the funding levels that result from different states' progressive and regressive local taxation systems.** This should focus particularly on systems that are progressive at the household level because low-home-value and/or low-income districts tax themselves at lower levels, and should determine whether this progressiveness with regard to revenue sourcing results in the underfunding of schools in these districts (a regressive result with regard to funding distribution) or whether state funds adequately make up the difference.
- **A specific study regarding the conflicts inherent in taxing commercial property to fund education,** insofar as higher taxes may hinder states and districts in attracting industry and jobs in the short term but education funding is seen as a long-term investment in the workforce.
- **An analysis of individual states' results that takes into account intra-state differences** in costs and determines whether local housing and labor costs are related to tax effort.
- **Should data become available from more states, an assessment of regional trends in local taxation for education,** considering issues such as the long history of many independent local school districts in the northeast; the prevalence of county-level school districts in the southeast; changes in tax base composition in the midwest; the importance of natural resource taxes and federal lands in the west; and other regional factors.
- **An examination of the role of courts in bringing about the progressive and regressive systems revealed in this report.** A number of studies have used court-ordered education finance reforms as a point of departure for research on the importance of funding levels for student outcomes.<sup>70</sup> Given the important role played by many state courts in affecting state funding policies, there may be a link between specific court rulings or general legal approaches taken and the progressive or regressive results of this analysis.

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70 See, for example, Card and Payne, 2002; Candelaria and Shores, 2015; and Jackson et al., 2016.

## CONCLUSION

Public education is intended to provide opportunity: to allow all children, no matter their socioeconomic background, the chance to learn, achieve, and succeed in life. But in order to accomplish this, public schools must not reproduce (or worse, compound) the economic inequality that exists in American society. Children must receive educational resources commensurate with their needs, and those resources must be raised fairly and equitably, through taxes that are aligned to what communities can support.

The standard practice of raising a substantial portion of school funding from local property taxes poses a challenge to fairness and equity. Because property tax revenues are inherently tied to the wealth of communities, there is reason for concern that low-wealth districts may be forced to tax themselves more heavily than high-wealth districts in order to effectively support their schools. This report examined school district tax rates to determine whether this was, in fact, the case: Is property taxation for education regressive? Does the system place a disproportionate burden on low-wealth or low-income districts? And if so, what can be done about it?

One finding to emerge from this analysis is that school tax rates are rarely aligned with districts' mean household incomes to a strong or even moderate degree. In other words, local rates are not set with taxpayers' ability to pay in mind. This does not result in an automatically regressive system for taxpayers, but it is also not progressive. In many districts, low-income homeowners are, no doubt, asked to pay property taxes well beyond their ability, while many high-income homeowners are certainly paying less than they are able in local property taxes for education.

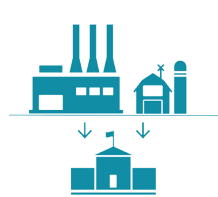
*Homeowners are not the only taxpayers that matter in local education funding, and in many states they are a small part of the picture... It's time for nonresidential property come to the fore of the education funding conversation.*

Additionally, in the majority of states studied, overall local school taxes are regressive, strictly speaking: communities with smaller total tax bases are paying higher effective tax rates. However, it is not the case that poorer individual residents, or taxpayers in school districts with lower median home values, generally pay higher effective tax rates. Nor are the local school taxes that apply just to residential properties broadly regressive; results regarding these taxes are far more mixed. It emerges, therefore, that the overall regressiveness in school funding arises less from taxes on homes than from the taxes imposed on other properties, such as agricultural or commercial properties. In many states, districts appear not to fully leverage their non-residential properties for school funding. This is a missed

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opportunity to bring greater resources into school systems in a way that would make more state funding available for property-poor districts.

What, then, can be done to address this state of affairs? A great deal, as it turns out. State policies can make a real difference in the fairness of local education taxes. The cases of Pennsylvania, New Jersey, and South Dakota make clear that state rules—or the lack thereof—can have important effects at the local level. The findings of this analysis suggest several ideas for state policymakers to consider.



First, broaden the political conversation around school funding, which usually focuses very heavily on homeowners, to explicitly consider the role played by non-residential property. Homeowners are not the only taxpayers that matter in local education funding, and in many states, they are a small part of the picture. It is more often the taxes on non-residential property that drive local education funding in a regressive direction. Thoughts of school resources may take a backseat as taxing jurisdictions think in terms of priorities like attracting business activity or supporting agriculture, but it's time for non-residential property to come to the fore of the education funding conversation. States must consider how they can encourage districts to effectively leverage the non-residential portion of their tax bases for education—or, alternatively, how they can do so from the state level, using state property taxes on these high-value properties to support education statewide.



Second, use state policy to set meaningful guidelines for local education tax rates. A lack of such parameters—minimums, maximums, or other tools for directing district tax rates—leaves school taxes subject only to local economies and political factors. While individual states may have good reason to allow for some local flexibility, it is important that state governments take a role in ensuring that property-poor districts do not overburden their taxpayers, and that everyone pays their fair share towards public schools.



Third, consider taxpayer income. Currently, only eight states include local income levels in their formulas for calculating districts' expected local contributions to their formula amounts<sup>71</sup>—and it shows, as local property tax rates for education bear little relationship to taxpayer income. Just as property-poor districts should not be taxed beyond what their tax bases can support, more should be done to ensure that low-income residents are not paying rates that exceed their ability.

# CONCLUSION



Finally, be mindful of the interplay between total formula amounts and the generosity of state aid. A state education funding formula that is generous in its estimation of how much money districts need and progressive in its calculation of the resources required to educate low-income students can actually work to disadvantage needy districts if state aid is insufficient. When states set the target funding level high but fail to provide adequate aid, they create a funding gap that districts must fill from local property taxes. In the case of property-poor districts serving more low-income students, that funding gap will be both larger and harder to close. On the other hand, when state estimates of district budget requirements are unrealistically low, state policy will not be designed to govern all the funding that schools need. Instead, school districts will have to go outside state structures and raise much of their money locally, with no state systems in place to ensure that this funding is sourced in a fair and equitable way. A credible estimate coupled with a reasonable amount of state funding will take the pressure off local revenues and reduce the concerns raised by any system that relies on community wealth.

It is clear that states can and should do more to promote progressive taxation at the local level. If so much of education funding is to continue to come from local property taxes—an approach that, without proper governance, is inherently biased towards regressiveness—states must make sure that districts tax in a way that supports low-wealth communities rather than harms them, and that at the end of the process, students receive all the resources that they need and deserve.

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# APPENDIX A

## Effective Tax Rates for Education Across All States Studied

	Average Overall Tax	Minimum Overall Tax	Maximum Overall Tax
	Rate	Rate <sup>†</sup>	Rate
Arkansas	0.51%	0.50%	0.74%
Delaware	0.30%	0.13%	0.62%
Florida	0.35%	0.10%	0.46%
Georgia	0.66%	0.23%	1.01%
Illinois	1.30%	0.52%	3.64%
Iowa	0.69%	0.38%	1.25%
Kentucky	0.60%	0.36%	1.28%
Nevada	0.26%	0.26%	0.26%
New Jersey‡	1.39%	0.01%	9.40%
New York	1.88%	0.05%	3.55%
Ohio	0.99%	0.33%	2.19%
Oregon	0.33%	0.04%	0.47%
Pennsylvania	1.70%	0.06%	4.21%
South Dakota	0.44%	0.21%	1.04%
Texas	0.78%	0.11%	1.57%
Washington	0.26%	0.02%	0.93%
West Virginia	0.67%	0.32%	0.99%
Wisconsin	0.77%	0.19%	1.58%

†These figures reflect a dataset from which districts with 0% tax rates have been excluded.

‡New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

# APPENDIX A

	Average Residential Tax Rate	Minimum Residential Tax Rate†	Maximum Residential Tax Rate
Delaware	0.30%	0.13%	0.62%
Florida	0.37%	0.21%	0.48%
Georgia	0.66%	0.23%	1.01%
Illinois	1.70%	0.93%	3.68%
Iowa	0.71%	0.42%	1.11%
Kentucky	0.61%	0.34%	1.30%
Nevada	0.26%	0.26%	0.26%
New Jersey‡	1.39%	0.01%	9.40%
Ohio	1.16%	0.25%	2.23%
South Dakota	0.57%	0.33%	1.06%
West Virginia	0.43%	0.23%	0.61%

†These figures reflect a dataset from which districts with 0% tax rates have been excluded.

‡New Jersey figures are based on municipal-level rather than school-district-level data. See Appendix B for more information.

# APPENDIX B

## Notes on State Data

### *Arkansas*

Data on taxable value and tax rates are from the Arkansas Department of Education's 2014-2015 Annual Statistical Report.<sup>72</sup> Debt service taxes were excluded. Information on assessment is available from Arkansas Assessment Coordination Department.<sup>73</sup>

Tax rates were provided in mills (that is, thousandths of the value of the property being taxed), and converted to percentages for comparability with others listed in the report. Effective tax rates were calculated by computing expected revenue from tax rates and taxable value, and by estimating real market value from taxable value and the 20% assessment ratio.

Initial analysis showed that this data projected substantially higher revenue than actual local property tax revenue reported in the U.S. Census Bureau's Annual Survey of School System Finances. Since fiscal year (FY) 1999, property tax revenue up to Arkansas' 2.5% uniform rate is categorized as state revenue in Census reports.<sup>74</sup> As a consequence, revenue from local property tax includes revenue reported in item C24, "Census state, NCES local revenue" as well as item T06 "Property taxes." When both columns are included, Census-reported data matched expected revenue calculated from taxable value and tax rates.

### *Delaware*

Data on taxable value, tax rates, and assessment for FY 2016 were provided by the Financial Management and Operations office in the Delaware Department of Education.

Debt service and match taxes were excluded. For districts spread across multiple counties, assessed valuation and full market valuations were aggregated and an overall assessment ratio was calculated. Tax rates were provided in mills and converted to percentages for comparability with others listed in the report. Effective tax rates were calculated by computing expected revenue and estimating real market value from taxable value and equalization rate for each district.

For four districts (Brandywine, Christina, Colonial, and Red Clay), our data projected substantially lower expected revenue than was reported to the Census. These districts collect revenue from not only the property taxes levied by each district, but also from

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72 Arkansas Department of Education, 2016.

73 Arkansas Assessment Coordination Division, 2015.

74 United States Census Bureau, 2014

## APPENDIX B

a 0.468% tax shared by those districts.<sup>75</sup> Exclusion of this revenue was responsible for discrepancies between expected revenue and actual revenue reported to the Census. Because this additional tax was collected across more than one district, revenue from the 0.468% tax was excluded from our analysis.

For the residential tax effort analysis, only taxable value categorized as “residential” was used. In Delaware, single-occupancy properties, multiple-occupancy properties, trailers, condominiums, and apartment buildings with less than five units.<sup>76</sup>

### *Florida*

Tax rates were retrieved from the Florida Department of Education’s 2015-2016 Florida Education Finance Program (FEFP) calculations.<sup>77</sup> 2015 data on taxable value and just value, the closest approximation of market value tracked by the Florida Department of Revenue,<sup>78</sup> were retrieved from the Florida Department of Revenue’s Statewide Summary Information by County.<sup>79</sup>

Assessment ratios were calculated from taxable value and just value. Tax rates, which were provided in mills, were converted to percentages for comparability with others listed in the report. Expected revenue was computed using taxable value and tax rates, and effective tax rates were calculated from expected revenue and just value.

Florida provided data broken down into a number of categories. Of these categories, EdBuild included single-family residential, mobile homes, condominiums, multi-family, cooperatives, and retirement homes in the residential tax effort analysis.<sup>80</sup>

### *Georgia*

Data on taxable value and tax rates for FY 2015, and information on assessment were provided by Georgia Department of Revenue.

Overall assessment ratios were determined for each district, using a rate of 100% for timber and 40% for all other types of property.<sup>81</sup> In addition, some districts have an otherwise specified assessment ratio listed in data provide by the Georgia Department

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75 D. Blowman, Associate Secretary of Finance and Operations, personal communication, October 28, 2016.

76 Delaware Department of Finance, 2016.

77 Florida Department of Education, 2014.

78 Lizette Kelly, Property Tax Oversight Program, personal communication, October 10, 2016.

79 Florida Department of Revenue, 2015.

80 *Ibid.*

81 Georgia Department of Revenue, n.d.

# APPENDIX

of Revenue.<sup>82</sup> Taxable value and tax rates specific to Maintenance and Operation were used in the analysis. Tax rates, which were provided in mills, were converted to percentages for comparability with others listed in the report. Effective tax rates were then calculated by computing expected revenue and estimating full market value using taxable value and overall assessment ratio.

Taxable value for residential property, including all land utilized as single family homesite, duplexes, or triplexes, and improvements thereon, was used in the residential tax effort analysis.<sup>83</sup> The same tax rate ratio for all types of property and a 40% assessment ratio were applied.

## *Illinois*

Data on taxable value, assessment ratios, and expected revenue for FY 2014 were provided by the Illinois Department of Revenue.

Illinois has elementary, secondary, and K-12 (Unit) districts,<sup>84</sup> but only non-charter, K-12 districts were included in the analysis, or 383 out of the 863 districts listed in data from the Illinois Department of Revenue. The tax rate levied by an elementary or a secondary school district does not reflect the full tax burden on any individual taxpayer who may live within the bounds of more than one school district. A secondary school district may encompass more than one elementary school district, and with the data available, it was not possible to determine the portion of a secondary school district that corresponded to any given elementary school district. Given these difficulties, all elementary and secondary school districts were excluded.

Illinois assesses all properties at one third of market value, with the exception of Farm B, which is assessed based on land productivity.<sup>85</sup> Farm B market value for each district was estimated using the share of Farm B taxable value in each district compared to the county as a whole, and the total Farm B taxable value in that county.<sup>86</sup> An overall assessment ratio was calculated using the estimate of Farm B taxable value and 1/3 assessment ratio for all other types of property. Nominal tax rates were using expected revenue and taxable value. Finally, effective tax rates were calculated using expected revenue and estimated market value.

For the residential tax effort analysis, an assessment ratio of 27.11% was used for all Cook County school districts. Cook County arrives at an overall assessment ratio

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82 K. Bradberry, Web Manager, personal communication, August 10, 2016.

83 Georgia Department of Revenue, n.d.

84 B. Kriener, Department of Revenue, personal communication, October 10, 2016.

85 Illinois Department of Revenue, n.d.

86 EDGE, 2014.

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of one third by way of a county-specific assessment ratio and a multiplier applied to the total valuation in the county, which has the effect of unevenly distributing the tax burden among different classes of non-farm property. Because of this, the effective assessment ratio is approximately 27.11% for residential property in Cook County.<sup>87</sup> Though this process may also affect the overall assessment ratio of each school district in Cook County based on proportion of various classes of property in each district, these variations were not significant effect enough to take into account.

### *Iowa*

Data on taxable value, tax rates, and assessment ratios for FY 2015 were provided by the Iowa Department of Management.

An overall assessment ratio for each district was calculated using data on taxable value and full market value (100% valuations), where both values include gas and electric utilities. Tax rates, which were provided in mills, were converted to percentages for comparability with others listed in the report. Tax rates, excluding debt service taxes, were applied to the taxable value.

For the residential tax effort analysis, full market value was calculated by applying the 2015 assessment rate for residential property to the taxable value of residential property in each district. Effective tax rates were calculated using expected revenue and full market value.

### *Kentucky*

Data on taxable value for FY 2016 and information on assessment were provided by the Office of Property Valuation in the Department of Revenue and by the Division of District Support in the Kentucky Department of Education. Data on tax rates was found in the 2015 Property Tax Rate Book published by the Kentucky Department of Revenue.<sup>88</sup>

In correspondence with the Division of District Support, overall nominal rates were estimated by applying the motor vehicle tax rate listed in Property Tax Rate Book for motor vehicle taxable value and the real estate tax rate for all other classes of assessed value.<sup>89</sup> Tax rates, which in Kentucky are expressed as cents per \$100,<sup>90</sup> were converted to percentages for comparability with others listed in the report. Effective tax

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87 Kreiner, Bradley, personal communication, December 22, 2016.

88 Kentucky Department of Revenue, 2015

89 Chay Ritter, Division of District Support, personal communication, October 18, 2016.

90 Kentucky Department of Revenue, 2015

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rates in Kentucky were equivalent to nominal tax rates because all property is assessed at 100% of market value.

## *Nevada*

Data on taxable value and assessment ratio were available in the FY 2017 Redbook, published by the Division of Local Government Services in the Nevada Department of Taxation.<sup>91</sup>

Under Nevada code, districts must levy a school tax of exactly 0.75%, excluding bonds.<sup>92</sup> The fact that the total tax rate, including bonds, was almost twice this for some Nevada districts, suggests that that some districts may use bonds for maintenance and operations purposes. However, because it was not possible to determine the share of the total tax rate used for maintenance and operations, a consistent tax rate of 0.75% was used.

Effective tax rates were calculated by computing expected revenue from tax rates and taxable value, and by estimating real market value using taxable value and a consistent 35% assessment ratio.

Data on residential property valuations were provided by Stephanie Klapstein, in the Nevada Department of Taxation. These data included both single-family and multi-family residential properties, which were aggregated and included in the residential tax effort analysis.

## *New Jersey*

Data on taxable value, equalized full market value, and expected revenue were retrieved from the New Jersey Department of Treasury's Table of Equalized Valuations for FY 2016.<sup>93</sup> Residential property valuations for calendar year 2015 are available through the Department of Community Affairs.<sup>94</sup> These resources were located with assistance from the Office of School Finance in the New Jersey Department of Education.

Because New Jersey has elementary, secondary, and K-12 districts, a school district-level analysis would not reflect the full tax burden on any given taxpayer who may live within the bounds of more than one school district. However, because school district boundaries in New Jersey typically follows municipality boundaries, a municipal-level analysis was used to take into account the full tax burden of taxpayers who contribute

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91 Nevada Department of Taxation, 2016.

92 Nevada Revised Statutes § 387.195.

93 New Jersey Department of the Treasury, 2015.

94 New Jersey Department of Community Affairs, 2015.



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property taxes to more than one school district. Unlike other states that provided only municipal-level data, the data on expected revenue available for NJ allowed us to clearly trace both the tax burden of individuals in each municipality and the portion of property tax revenue allocated for each school district.

For each municipality, an overall tax rate was calculated using the expected revenue for district schools and the share of revenue for regional, consolidated, and joint school districts collected from that municipality. For the residential tax effort analysis, the tax rate computed for the municipality was applied to residential taxable valuations for each municipality. Effective tax rates were calculated from expected revenue and equalized full market value.

New Jersey provided data broken down into a number of categories. Of these categories, EdBuild included residential properties, farm homesteads, and apartments in the residential tax effort analysis. As directed by the Office of School Finance, the same assessment ratio and nominal tax rate applied to total taxable value were used for residential properties.<sup>95</sup>

## *New York*

Data on taxable value and tax rates for calendar year 2014 were available through the Office of the State Comptroller.<sup>96</sup> Properties in New York are taxed on 100% of market value, as estimated through the application of equalization rates.<sup>97</sup> Effective tax rates were equivalent to nominal tax rates.

For some Nassau County elementary districts, the total revenue computed was significantly higher than Census-reported revenue. This is because some of the revenue collected from those elementary districts are distributed to joint secondary school districts.<sup>98</sup> Because these levies reflect the actual tax burden of households in those districts, revenue for the secondary school districts was included in the effective tax rate computed for this report for the elementary school districts.

## *Ohio*

Data on taxable valuation and tax rates for FY 2014 and information on assessment and estimated assessment ratios for public utility for FY 2015 were provided by the Tax Analysis Division in the Ohio Department of Taxation.

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95 Yut'se O. Thomas, Director of the Office of School Finance, personal communication, November 16, 2016.

96 Office of the New York State Comptroller, 2015.

97 New York State Department of Taxation and Finance, 2014.

98 Office of the New York State Comptroller, Division of Local Government and School Accountability, personal communication, December 16, 2016.

Full market values for each school district were estimated: Public utility full market value was estimated using taxable value and county-level estimates of public utility assessment ratios. Agricultural full market value was estimated by applying a 35% assessment ratio to arrive at current agricultural use value, and using county-level estimates of the ratio between agricultural full market value and current agricultural use value.<sup>99</sup> Full market value for all other types of properties were calculated by applying a 35% assessment ratio. Because of potential imprecision in the public utility assessment ratios used, districts where public utility taxable value made up more than 10% of total taxable value were excluded, leaving 540 of 614 total districts in data from the Ohio Department of Taxation.

Overall assessment ratios were calculated for each district from total taxable value and total full market value. An overall tax rate was calculated, using class-specific tax rates which took into account tax reduction factors on real property. Effective tax rates were calculated using expected revenue and estimates of full market value for each district.

For the residential tax effort analysis, the taxable value for property classified as residential was used, which includes both non-rental residential property and rental property with three or fewer units.<sup>100</sup> An assessment ratio of 35% and the tax rate for Class I real property, which includes both residential and agricultural property, were applied.

### *Oregon*

Data on taxable value, market value, expected revenue, and tax rates for FY 2016 were available in the Property Tax Statistics Supplement available on through the Oregon Department of Revenue.<sup>101</sup>

Assessment ratios were calculated using real market value and assessed value, and data on expected revenue were used to calculate tax rates, excluding bonds. Finally, effective tax rates were calculated using expected revenue and real market value.

The Property Tax Statistics Supplement contains some duplicates. These were either bond pockets or separate segments of the same school district taxed at a different rate than the school district.<sup>102</sup> Revenue from bond pockets were excluded from analysis, but for the other duplicates, the overall tax rate was computed from the total expected revenue.

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99 Ohio Department of Taxation, 2010.

100 *Ibid.*

101 Oregon Department of Revenue 2016.

102 R. Estabrook, Public Information Officer, personal communication, October 24, 2016.

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## *Pennsylvania*

Taxable value, real market value, and residential value for FY 2015 were available through the Pennsylvania Department of Community and Economic Development.<sup>103</sup> Tax rates, provided in the form of mill rates, were retrieved from the Pennsylvania Department of Education.<sup>104</sup>

Tax rates differ by school district in Pennsylvania, while assessment ratios differ by municipality and class of property. Total taxable value, full market value, and expected revenue calculated using mill rates and taxable value were aggregated for each school district. Four school districts, where tax rates for land and buildings differed, were excluded because of lack of clarity about the value to which each tax rate is applied. For districts with a separate tax rate for oil, gas, and minerals, an overall nominal tax rate was calculated based on the sum of expected revenue from tax on oil, gas, and minerals and expected revenue from all other types of property. Finally, effective tax rates were calculated from total expected revenue and real market value.

Data on residential taxable values were also available through the Department of Community and Economic Development,<sup>105</sup> but because data residential real market value were not available at the school district level, Pennsylvania was not included in the residential tax effort analysis.

## *South Dakota*

Data on taxable value, assessment ratios, and mill rates for FY 2016 were provided by the South Dakota Department of Revenue.

County-level estimates of agricultural and non-agricultural assessment ratios were used to calculate full market value. For school districts in more than one county, a total taxable value, total full market value, and overall assessment ratio were computed based on the assessment practices of the counties in which each district was located. Debt levies and bonds were excluded, and an overall tax rate was calculated, taking into account different tax rates for each class of property. Finally, effective tax rates were calculated from expected revenue and full market value.

South Dakota provided data broken down into a number of categories. Of these categories, EdBuild included both owner-occupied property and owner-occupied mobile homes in the residential tax effort analysis. Owner-occupied full market value

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103 State Tax Equalization Board, 2015a.

104 Pennsylvania Department of Education, 2015

105 State Tax Equalization Board, 2015b.

was aggregated and the levies applicable to owner-occupied properties were used to calculate expected revenue.

### *Texas*

Data on taxable value, market value and expected revenue for FY 2015 were provided by the Texas Comptroller of Public Accounts.

Assessment ratios were calculated from taxable value for Maintenance and Operations and market value. Tax rates were calculated from expected revenue and taxable value. Effective tax rates were calculated from expected revenue and full market value.

### *Washington*

Data on taxable value, assessment ratios and expected revenue for FY 2015 were available through the Washington Department of Revenue.<sup>106</sup>

Because assessment ratios differ by county, an overall assessment ratio was calculated for districts that span more than one county by calculating the total taxable value and total market value. Overall tax rates were calculated by using taxable value and the total expected revenue, excluding capital and debt levies. Finally, effective tax rates were calculated from expected revenue and the total market value.

The expected revenue calculated from this data diverged significantly from F33 data on local revenue from property tax for some districts. However, this appeared to be attributable to districts were reporting revenue from capital projects and bonds as local revenue in Census-reported data. Therefore, no changes were made.

### *West Virginia*

Data on taxable value and assessment ratios for FY 2015 were provided by Office of School Finance in the Department of Education. Only tax rates for Class I property, which includes all tangible personal property employed exclusively in agriculture, were provided, but tax rates for other classes of property could be computed from tax rates for Class I property.

Tax rates for other classes of property were calculated using tax rates for Class I property, and expected revenue was calculated by applying tx rates to taxable value.<sup>107</sup> Debt levies were excluded. Effective tax rates were calculated from expected revenue and from full market value.

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106 Washington State Department of Revenue, 2015

107 West Virginia Department of Education, 2015

All Class II property was included in the residential tax effort analysis. Class II property is defined as, “All property owned, used, and occupied by the owner exclusively for residential purposes; all farms, including land used for horticulture and grazing, occupied and cultivated by their owners or bona fide tenants.”<sup>108</sup>

### *Wisconsin*

Data on taxable value and tax rates for FY 2015 were provided by the Division of Research and Policy in the Department of Revenue.

Most real property is assessed at full market value, with the exceptions of agricultural land, undeveloped land, and agricultural forest land. Undeveloped land and agricultural forest land are assessed at 50%, but because they make up a negligible share of total property value in Wisconsin, this exception was not taken into account. Agricultural land is assessed at its use value, which is a small fraction of full market value. The full market value of agricultural land in each district was estimated as follows: The acreage of agricultural land in each county was provided by the Department of Revenue. Data on the acreage of each county was available from the decennial Census and files from the U.S. Census Bureau’s Education Demographic and Geographic Estimates (EDGE) program were used to estimate acreage of each school district. Together, these data were used to estimate the share of agricultural land in each school district. The market value of agricultural land in each district was estimated using data on the average price of an acre of agricultural land in each county published by the United States Department of Agriculture’s National Agricultural Statistics Service (NASS). Data on 2015 land sales was used for most counties, except for Forest, Milwaukee, Vilas, and Waukesha counties, for which 2015 data was not available. Instead, data on 2014 land sales was used for these counties.

Full market value and assessed (use) value were used to compute an overall assessment ratio for each school district. Finally, effective tax rates were computed based on assessment ratios and reported tax rates.

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108 *Ibid.*

