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The Relationship between District Capital Outlay Revenue Inequities and Adoption of the Four Day Instructional Week, Yearly Instructional Time, and Class Size in Oklahoma

EXECUTIVE SUMMARY



Previous studies have demonstrated that capital outlay funding across districts in the state of Oklahoma has been highly inequitable for many years (Maiden & Stearns, 2007; Hime & Maiden, 2019). These inequities are the natural result of capital outlay being exclusively funded by local districts, absent equalization aid from the state. Given the lack of state aid, wealthier districts are more readily able to raise capital outlay revenues than less wealthy districts because revenues are based on local taxable property wealth. Hime and Maiden (2019) also determined that these capital outlay inequities affected general operations equity, finding that districts that raise higher amounts of capital outlay revenues generally paid higher teacher salaries than other districts, a result of what they labeled as crossover effects. They demonstrated the impact that one restricted revenue source can have on another when a certain amount of crossover funding is possible and impact crossover inequity may have on educational outcomes (Hime & Maiden, 2019).

The purpose of this quantitative, causal comparative study was to determine whether capital outlay inequities are related to inequities in other elements of general operations beyond teacher salaries, and to examine the extent to which capital outlay inequities compel poorer districts to more readily adopt cost savings measures during funding austerity. The study also assessed the extent to which these relationships were more pronounced in rural districts and in districts serving higher proportions of students from economically disadvantaged families.

Background

The state of Oklahoma attempts to enhance horizontal and vertical equity using weighted student formulae to distribute state aid for general operations (outside capital outlay). Horizontal equity is addressed using the equalization formulae, while vertical equity is addressed through student weighting within the formulae (OSDE, 2017). Previous studies have documented the degree of fiscal equity in the general funding system (Deering &

Maiden, 1999; EdBuild, 2018; Hancock, 2008; Maiden, 2019; Maiden, 1998; Maiden & Stearns, 2007).

However, Oklahoma has no method to equalize capital funding (ASCE, 2017; TLC, 2006). The state endeavored to address inequity in capital funding in 1984 through the passage of Oklahoma State Question 578, which established the Public Common School Building Equalization Fund (Haxton, 2009). Under the provisions of the statute, the Oklahoma State Board of Education (OSBE) can allocate monies to LEAs for capital improvements through an equalization formula (2009). The practical reality is that no money has ever been deposited into the fund. (p. 58). The result is substantial inequities in capital outlay funding among districts across the state (Maiden & Stearns, 2007; Hime & Maiden, 2019).

These inequities are exacerbated in rural districts across the state. Rural inequities are a national problem, given the added expense of providing comparable education services in areas with small populations and in isolated rural areas (Maiden, 2003). One-third of students in U.S. rural communities come from families living in poverty (Maiden, 2003). The tax base in these rural areas is often composed of lower-value farmland and other types of property that provides inadequate revenue to meet the capital needs of districts. As Johnson and Maiden (2010) indicated, “[R]ural schools face funding issues metropolitan areas do not. Many of these funding issues deal directly with capital outlay and the inability of rural districts to renovate, remodel, equip, and build facilities” (p.2). The byproduct of rural poverty is an inadequacy of infrastructure to support emerging educational technology, deferred

maintenance, and the lack of capacity to meet the needs of growing enrollment (Maiden, 2003).

The current study endeavored to ascertain the extent to which inequities in capital outlay capacity in Oklahoma public schools were related to certain financial outcomes, particularly cost-saving measure implemented during reductions in state aid from 2014 through 2018. Specifically, the study examined the relationship between district ability to raise capital outlay revenue and three cost cutting outcomes: Adoption of the four-day instructional week, district average class time in minutes, and average district class size.

Context

General operations funding in Oklahoma is based on a two-tiered equalization formula coupled with a transportation supplement, with both tiers being equity based. However, no state capital outlay funding is provided to local districts in Oklahoma. Local districts are eligible for capital outlay needs mostly from two sources. The first is a building fund levy equal to 5 mills is assessed on real and personal property within a district (OSDE, 2013). The building fund may be used by a school district for a variety of capital needs, from building construction, maintenance and repair to certain technology needs. All revenues are local, with no state aid being available. The second source of capital outlay revenue available for Oklahoma districts is through bonding.

The inequity in Oklahoma’s capital funding may best be explained using an example. A district with a net valuation of \$430 million would equate to \$2 million for capital outlay (OCAS, 2017). Conversely, a district with a

net valuation of only \$67 million generate \$335 thousand to support capital outlay (OCAS, 2017). In this example to wealthier district yield six times more than the less wealthy district. Assuming the student count is roughly equivalent, the inherent inequities are huge.

Design and Results

We employed a multilevel analysis that included several models. For a complete description of the design and results of the analysis, please refer to the Full Report.

Discussion

Hime and Maiden (2019) demonstrated a disequalizing effect on state aid in operational funds due to “crossover funding” whereby property-wealthy districts were utilizing copious capital revenue to supplement operational funding. The current study sought to ascertain whether a relationship also exists between capital outlay inequities and other general fund resources, particularly those related to local district cost-saving measures to include alternate school calendars, reductions in instructional time, or increased class sizes. Ideally, with an equitable state aid formula, cuts in state aid should equally affect all districts and no relationship should exist between these cost-saving measures and district wealth.

The connection between time and money is important because during the years included in the current study, districts have slowly reduced instructional days to garner savings, much akin to implementation of the four-day instructional week. Doing so may have avoided the criticism of implementation of the four-day week while concomitantly reaping the benefit of cost savings in support salaries, transportation, and substitute

teachers. However, equivalent instructional time rearranged into a four-day week does not have the same consequences for student achievement (Anderson and Walker, 2015; Colorado Department of Education; 2016, Domier, 2009; Hewitt & Denny, 2011; Lefly & Penn, 2011) as does the decrease in overall instructional time (Berliner, 1990; Fredrick & Walberg, 1980; Levine, 1989; Smith, 2000). The statistically significant inverse relationship between inequitable capital outlay capacity and instructional time found in the current study, combined with the overall trend of reductions in state aid, suggests many districts with modest capacity for capital outlay funding may be addressing budget shortfalls with decreases to instructional time. Inequitable capital outlay capacity created a disadvantage for those districts with lower assessed valuations. It is a troubling outcome, and more research is required to determine whether a trend is emerging.

The results for district adoption of a four-day instructional week were mixed. Between district differences in capital outlay capacity (as indicated by per pupil assessed valuation) did not significantly affect district adoption of the four-day week. Conversely, there was a direct and statistically significant relationship between percent district poverty (as indicated by district percent student eligibility for free and reduced lunch) and adoption of the four-day week. In other words, district wealth did not affect adoption of the four-day week, but the overall percent of poverty within the district was a significant predictor, evidence of a basic inequity. Additionally, districts serving rural communities were more likely to adopt the four-day week than other districts.

Capital outlay inequities between rural and non-rural districts has been documented in the literature (Johnson & Maiden, 2010; Maiden, 1998; Maiden & Stearns, 2007). The current study couples this inequity in capital outlay with the four-day instructional week. Rural districts tend to be smaller, have more students from lower socioeconomic circumstances, and have lower valuations. Intuitively, savings from transportation due to a four-day week could be increased in rural districts compared to non-rural districts. However, Oklahoma provides additional transportation funding for low density districts in the funding formula (EdBuild, 2018; OSDE, 2017); therefore, it cannot be simply a transportation advantage forcing the adoption of the alternative calendar.

“ The inverse relationship between capital outlay capacity and instructional time was evident in the results of the analysis. Clearly, districts with the least ability to generate capital funding (as indicated by per pupil valuation) were more likely to offer fewer hours of instruction to students. This relationship was curvilinear and significant, indicating that this relationship strengthened over time.

Further magnifying the inequity is the finding that district poverty rate was also inversely related to instructional time. Districts with a higher percentage of students qualifying for free and reduced lunch were more likely to offer fewer instructional hours to students than districts with fewer qualifying students. This relationship was also curvilinear and significant.

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The statistically significant inverse relationship between capital outlay capacity and class size during the 5 years of the current study indicate a serious consequence of inequitable

capital funding for Oklahoma students. Generally, students educated in Oklahoma districts with lower assessed valuations were faced with decreased access to their instructors because of larger class sizes. Like many states, Oklahoma has witnessed a trend in increasing class sizes, possibly explained by the teacher shortage in the state combined with significant reductions in state aid. The findings of current study suggest that these increases are related to district ability to raise capital outlay revenues.

The findings of the current study suggest class size may be adversely affected by inequitable capital funding. This is not surprising given the majority of a district’s budget is composed of teacher salaries, and balancing its budget following repeated reductions in state aid often requires reduction of teaching force. Only a small percentage of savings comes from either reducing instructional time or implementing a four-day school week because the savings from those reductions are derived from support wages. These conclusions are consistent with Hime and Maiden’s (2019) findings that school districts with greater access to capital improvement revenue are better able to support higher teacher salaries. The current study also associated wealthier districts with an overarching capacity to hire greater numbers of teachers and thus, offer decreased class sizes.

The statistically significant inverse relationship between rural schools and class size may seem counterintuitive; however, rural schools must offer required courses, irrespective of district enrollment. Every elementary school must have a first grade and high schools must offer Algebra I, English, and U.S. History, regardless of the number of students in a class. Oklahoma is one of 33 states that provides additional resources for sparse districts or small schools, either directly through the state aid formula

or through transportation aid (EdBuild, 2018). School funding formulas must account for the diseconomies of scale in small, rural schools in order to provide equal educational opportunities for students (Bowles & Bosworth, 2002). Therefore, it is likely the additional funding created the inverse effect. Typically, the consolidation argument has traditionally centered around administration costs; however, the findings of the current study suggest that class size may be a significant determinant in the diseconomy of scale additional costs faced by rural and small school districts.

The relationship between poverty percentage and class size was also negative, indicating that an increase in district poverty percentage was associated with lower class sizes. Yet the finding does make sense in that Oklahoma receives over \$150 million in Title I funding for students in poverty (OSDE, 2019), and the Oklahoma state aid formula creates greater equity for districts where poverty is concentrated through its funding formula. The state formula provides additional resources for students from low-income households by weighting them as 1.25 in the state aid formula. These additional state and federal resources may explain the inverse relationship between district percent poverty and class size during the years of the study.

Oklahoma witnessed the greatest cuts to education of any state from 2008-2015 (Leachman, Albares, Masterson & Wallace, 2016). After several years of cuts to state aid, in 2016 and 2017, there were multiple general fund revenue failures, resulting in deep cuts to the funding formula for school districts. By 2018, inequities were overtly exposed, especially for districts lacking the advantage of property wealth that provided access to the flexibility of crossover funding (Hime & Maiden, 2019). The duress of multiple-year budget reductions combined with the lack of capital

outlay crossover funding flexibility in lower-wealth districts created a situation where superintendents from property-poor districts may have been willing to seek drastic cost-saving measures to balance their operational budgets, as documented by the statistical relationships found. A follow up study in subsequent years is warranted to examine whether the trend continues or resolves as school funding recovers.

Unintentionally, the Oklahoma statute that provides flexibility to use capital revenue for certain operational expenses has created a disequalizing effect on elements of general education funding (Hime and Maiden, 2019). Though formula-based equity has been well documented, inequity in capital funding has largely been ignored, and there are definitive consequences of these inequities. Lack of equity in schools has been shown to depress economic growth because underutilization of human potential is costly (McKinsey and Company, 2009; Baker, Sciarra, & Farris, 2012). Furthermore, several studies have shown equity increases with state funding of capital outlay, often referred to as “flat funding” or “lump-sum aid” (Duncombe & Wang, 2009; Maiocco, 2004; Odden & Picus, 2000; Sielke, 2001; Thompson, 1985), and Oklahoma has a constitutional fund for providing state aid for capital revenue, the State Public Common School Building Equalization Fund that has never been funded.

The results of this study suggest several follow up studies about Oklahoma education funding. Clearly, future research might examine other potential effects of capital outlay inequities on other resources in addition to instructional time and class size, in the context of crossover funding. The current study uncovered a trend of Oklahoma school districts reducing instructional time; additional research is necessary to determine if there is a byproduct of the Great Recession or an

emerging trend. Finally, a study into class sizes in small, rural schools is warranted to determine if the diseconomy of scale and the associated costs necessity to offer required classes could surpass the traditional argument of administrative costs being the primary concern for consolidation of small districts.

Recommendations for Policy Makers

Despite multiple studies demonstrating equity increases when funding is collected and dispersed at the state-level (ASCE, 2017; 21st Century School Fund, National Council on School Facilities, The Center for Green Schools, 2016; Thompson, 1985; TLC, 2006), Oklahoma remains one of four states solely funding capital improvements at the local level (2006). In Oklahoma, property wealth is the sole predictor of capital outlay even though the practice has been demonstrated to disadvantage students in low-wealth districts. Oklahoma has perhaps avoided school funding lawsuits due to its equitable state funding formula (Deering & Maiden 1999); however, Hime and Maiden (2019) demonstrated inequitable capital funding has a disequalizing effect on equitably distributed state aid and has impacted a district's ability to pay teacher salaries (2019). This study observed statistically significant relationships between inequitable capital outlay capacity and decreased instructional time as well as increased class sizes. Therefore, the recommendations for policy makers are equivalent to those posed by Hime and Maiden (2019):

class size and teacher salaries as determined by Hime and Maiden [2017]) due to the use of crossover funding. State funding is necessary to reduce these interdistrict imbalances. We realize that the state has faced consecutive years of declining revenues to support education and other critical state services, and that finding funds to appropriate to the Capital Fund may be a daunting task given current economic conditions. However, the Equalization Fund has historically not been supported irrespective of the state of the economy. Funding it is long overdue (Hime and Maiden, 2019).

2. We recommend the development of a capital outlay funding formula to disperse the funding generated through the State Public Common School Building Equalization Fund. A funding formula that recognizes naturally occurring fiscal abilities among local districts is warranted in order to help ensure Oklahoma school children are treated fairly (Hime and Maiden, 2019).
3. Policy makers should commission a study dealing the fiscal adequacy of Oklahoma capital funding in education. Though we believe the current study is sufficient evidence to support the previous two recommendations, we believe a richer understanding of the fiscal needs of school districts would help guide the development of a capital outlay funding formula in the short term, and would guide the Legislature in appropriating funds to provide sustainable support the State Public Common School Building Equalization Fund. The nearly 700,000 children served in Oklahoma's schools deserve no less (Hime and Maiden, 2019).

1. We urge the Oklahoma Legislature to appropriate money to support the State Public Common School Building Equalization Fund (OK Const. art X sec 32). Capital outlay funding in the absence of state aid had been demonstrated to be inequitable (Hime and Maiden, 2019; Maiden and Stearns, 2007), and these inequities affect current operations (instructional time,

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