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Is Administration Leaner in Charter Schools? Resource Allocation in Charter and Traditional Public Schools

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Abstract

There is widespread concern that administration consumes too much of the educational dollar in traditional public schools, diverting needed resources from classroom instruction and hampering efforts to improve student outcomes. By contrast, charter schools are predicted to have leaner administration and allocate resources more intensively to instruction. This study analyzes resource allocation in charter and district schools in Michigan, where charter and tradition public schools receive approximately the same operational funding. Holding constant other determinants of school resource allocation, we find that compared to traditional public schools, charter schools on average spend nearly $800 more per pupil per year on administration and $1100 less on instruction.

Introduction

Public school leaders frequently confront the criticism that they fail to carry out their administrative duties efficiently. There is chronic and widespread concern that administration consumes too much of the education dollar. By this view, the diversion of resources from classroom instruction to bloated public school administrative structures has hampered efforts to improve student outcomes. One of the appealing prospects of charter schools, by contrast, is that as decentralized organizations compelled to compete for students, they will allocate their resources more intensively on instruction (Hill, et al. 1997, Finn, et al., 2000). The financial and performance pressures on school administrators appear unlikely to fade any time soon. As the charter school movement matures and gains wider support among state and federal policy makers, it is fitting to examine how charter schools compare to traditional public schools (TPSs) in their allocation of resources for administration, instruction, and other functions.

Researchers and policymakers have long wondered whether granting schools greater autonomy from district central administration to make resource allocation decisions would result in any real difference in spending patterns. Many observers anticipate that decentralizing budgeting authority from districts to schools will permit more efficient resource use that conforms better to schools' particular needs. The failure of school-based management initiatives in the 1980s to produce anticipated changes is often attributed to central administrations' reluctance to relinquish control over resources (budgets, staffing). The charter school movement by contrast has established a widely implemented new model of school organization and governance in which the influence of

district administrators on resource allocation in most cases has been entirely banished. So what is different about how charter schools use their resources?

This paper analyzes resource allocation patterns for all charter schools and traditional public schools in Michigan, a state with one of the nation's longest running charter school programs and over 265 charter schools. Unlike many states, charter schools and tradition public schools in Michigan receive approximately the same level of operational funding and the state collects uniform, audited financial data from both. We direct our attention to three main issues. First, we analyze the level and source of funding in charter schools and TPSs. Second, we analyze differences in spending patterns between charter schools and TPSs across disaggregated educational service functions. Third, we use regression analysis to control for several factors that may affect resource allocation on selected instructional and administrative functions to better isolate spending differences between charters and TPSs.

Literature Review

The study of educational resource allocation has traditionally focused on the distribution of state and federal revenues among local school districts with particular attention to equity in school funding. More recently, however, increasing attention has been directed to what happens to resources once they reach local districts and are allocated internally across alternative instructional and non-instructional services. In the mid-1990s, a series of studies sponsored by the CPRE Educational Finance and Productivity Center utilized bivariate statistical analyses to document patterns in school resource allocation across alternative functions (Monk, et al., 1996; Nakib, 1996; Odden, et al., 1995). One of the striking findings of this research was the high degree of

uniformity in the way public schools allocate spending across broad expenditure categories. For example, school districts in states across the U.S. consistently tend to devote roughly 59-65% of their spending to instruction.

Local districts do, of course, vary to some extent in their internal resource allocation (e.g., among regular classroom instruction, special needs instruction, instructional support, administration, or operations and maintenance), and a small literature offers insights regarding systematic factors that account for these variations. Monk and Hussain's (2000) analysis isolates the influence of structural factors such as district size (scale economies), per-pupil funding level, community wealth (resident preferences and ability to pay) and student socioeconomic characteristics. Small districts, for example, lack economies of scale so they tend to devote a larger share of their spending to administration than large districts that can lower the average cost of fixed administrative services by spreading them over more students. In addition, in districts with high per-pupil funding, instruction's share of spending tends to decline as various discretionary support functions command a larger budget share (Monk, et al., 1996).

Much of the available literature on charter school finances addresses the revenue side of the budget. Attention has focused on mechanisms that states use to fund charters and comparisons of per-pupil funding levels in charters and TPSs. States differ widely in their funding arrangements and formulas for charter schools (Nelson, et al., 2004; Belfield, 2008), but available research indicates that in most states charter schools receive considerably less per-pupil revenue than traditional public schools (Belfield, 2008; Nelson, et al, 2003; Fordham Institute, 2005; Miron & Urschel, 2010). For example, Miron and Urschel's recent study of charters in 21 states and the District of Columbia

found that on average charter schools received $2,980 (or 21%) less in per-pupil operating revenues than traditional public schools, although the magnitude of the funding gap varies quite substantially across states. It would not be surprising if such differences in funding translated into systematic differences in spending patterns by charters and TPSs.

Charter schools in most states are further disadvantaged by their inability to pay for capital facilities as do districts with long-term bonds financed by primarily by local property taxes. So while charters may receive financial support for facilities through state or federal start-up grants or through direct state facilities aid, many charters, unlike school districts, are forced to devote a portion of current operating expenditures to paying for buildings and capital equipment (Krop & Zimmer, 2005; Nelson, et al., 2004).

Some observers have noted such discrepancies in revenues in calling for increased funding for charter schools on equity grounds (e.g., Fordham Institute, 2005; Jacobowitz & Gyurko, 2004). Indeed the U.S. Department of Education established review criteria for the 2009-10 federal Race to the Top grant competition that sought to encourage states to establish funding parity between charter and traditional schools.

Simple comparisons of per-pupil revenue, however, may not tell the full story. On the one hand, some, but certainly not all, charter schools receive significant financial support from private sources (foundations, nonprofit charter management organizations, or parents) which is not fully reflected in state school finance data (Scott, 2009; Toch, 2010). Meanwhile, many charters do not provide the full range of services typically provided by TPSs, e.g., student transportation, special education, summer school**,** secondary as well as lower-cost elementary education (Arsen, Plank & Sykes, 1999;

Miron & Urschel, 2010). So charter schools' lower funding levels may correspond very roughly to a more modest set of services they provide. It remains an open question whether charter schools would provide more of these services, if their funding were to increase. A more compelling case for increased charter funding requires better information on charter spending patterns in settings where charter and TPS per-pupil funding is roughly equivalently.

So how do charter schools compare to traditional public schools in their use of the education dollar? Do charters represent an organizational model in which more spending is devoted to teaching and less to administration (and other non-instructional services) as early advocates (e.g., Finn, et al., 2000) predicted? While some observers have argued that charters with their greater spending flexibility do indeed spend more on instruction than traditional U.S. public schools (e.g., Hill and Roza, 2008) most available empirical evidence indicates otherwise. Compared to TPSs, charter schools appear to devote a smaller share of their funds to instruction and a higher share to administration (Miron and Nelson, 2002; Miron & Urschel, 2010; Nelson, et al, 2003; Prince, 1999).

The studies that have generated these surprising results, however, fail to adequately control for a number of factors unrelated to charter schools' governance or organizational structure that previous research has found to influence resource allocation patterns in TPSs. Charter schools generally have smaller enrollments than districts and the associated lack of scale economies would be expected to generate higher administrative costs. Likewise, if funding levels (the size of the pie) affect resource allocation (how the pie is sliced), as previous research on district spending indicates, then charters schools' lower per-pupil funding may help account for differences in their

spending patterns relative to TPSs. Many charters are newly formed schools, and it is possible that the start-up process entails higher administrative costs that diminish relative to other costs as schools mature. Also charter schools, compared to TPSs as a whole, are disproportionately located in urban areas which could lead to lower spending on transportation, for example, but higher spending on building supervision and security. Finally, charter school resource allocation could be distinctively influenced by their use of contracted management services as distinct from their charter status itself. About one-third of U.S. charter schools are managed by for-profit or nonprofit education management organizations (EMOs), although the share of charters that are EMO-managed versus self-managed varies substantially across states (Miron & Urschel, 2009; Molnar, et al., 2009). While some early advocates predicted that EMOs would offer contracting schools the benefit of scale economies in the provision of non-instructional support services (e.g., Chubb, 2001), available evidence points to higher administrative spending in EMO-managed than self-managed charter schools (Miron & Urschel, 2010; Hanaway & Sharkey, 2004). EMO management is much more prevalent among charters than TPSs. So the influence of EMO management should be controlled in research that seeks to compare resource allocation patterns associated with charter and traditional public school organizational structures.

In many states comparable data on charter school and district spending is difficult to obtain. Miron and Urschel (2010), for example, were unable to locate comparable finance data for charters and districts for 60% of the charter schools nationwide. In a number of states it is impossible to disentangle charter finances from the finances of their host districts. (See also Finn, et al., 2005).

In sum, charter school spending appears to differ in unexpected ways from TPS spending, including relatively higher administrative and lower instructional expenditures. But charters differ systematically from traditional public schools on many dimensions that could affect observed spending patterns. Our analysis of charter and TPS finances in Michigan sets out to control these factors to obtain a clearer picture of differences in resource allocation associated with these two organizational forms.

Charter Schools and Educational Finance in Michigan

In 1993, Michigan became the eighth state to adopt a charter school law. A charter school, officially designated a public school academy (PSA), is a state-supported public school that operates independently under a charter granted by an authorizing body. In Michigan, PSAs can be chartered by local school districts, intermediate school districts, the state board of education or the governing boards of public community colleges or universities. Charter schools have no geographic boundaries. Students are free to choose to go to any charter school in the state, on a space available basis.

Originally, no limit was imposed on the number of charters that could be issued by any of the authorizing boards. However, in 1996, following a proliferation of charters issued by the board of Central Michigan University, the state legislature imposed a cap on the total number of schools that may be chartered by Michigan's 15 public universities. This cap of 150 schools limited new school development after 2000. However, there was never a cap on the number of schools chartered by other organizations and in recent years the cap was progressively raised so the number of charter schools in Michigan has grown steadily over the past decade. By 2008, Michigan had 265 charter schools enrolling about 98,000 students (or 6 percent of the state's public

school population). In 2008, Michigan's charter enrollment was the fifth largest in the nation after California Arizona, Florida, and Texas. Michigan's charter schools are concentrated in central city and low-income suburban districts adjacent to central cities. By contrast, charter schools have generated relatively minor competitive pressures on high-income suburban and rural districts.

Michigan's school finance system, commonly known as Proposal A, greatly facilitated the charter school program's development. Michigan's charter schools are funded at a relatively high level compared to other states, and their funding for current operations is roughly equal to that of Michigan's traditional public schools. Approved in 1994, Proposal A shifted the responsibility for funding current operations from local districts to the state. Besides state and federal categorical aid, both school districts and charter schools receive almost all their discretionary operating revenues from the state in the form of a per-pupil foundation grant.[1] Charter schools receive a per-pupil foundation grant equal to that of the district in which the school is located, with the exception of charters in the state's highest revenue districts. These 51 "hold-harmless" districts, comprising 10% of the state's total districts, had per-pupil foundations in 1994-95 exceeding $6,500. Hold-harmless districts (most of which are in high-income suburbs) are eligible to levy additional local property taxes up to a cap established by the state that has increased by less than the rate of inflation since 1994. Under Proposal A, local voters can no longer increase local taxes to support school operations. Thus, the amount of

[1] The revenue generated by a uniform property tax of 18 mills on non-homestead property stays in local districts and is counted as local revenue in the state school finance data. But this revenue does not augment districts' foundation revenue, since the state reduces the foundation revenue it sends to a district by the amount of the district's locally-generated non-homestead property tax revenue.

operating revenue that districts and charter schools receive depends almost exclusively on the number of students they enroll.

Funding for Michigan schools has been extremely tight in recent years due in large measure to a sustained decline in the state's economy. After increasing by roughly 20% between 1994 and 2002, Michigan's combined state and local revenue, adjusted for inflation and student enrollment, fell by 15.3% ($1,507) between 2002 and 2008, a downward trajectory that has yet to be reversed.

A few additional features of Michigan's charter policies and schools are pertinent. Nearly 80% of Michigan's charter schools are operated by for-profit EMOs, a share that is high in comparison to most states. The state's charter schools have no taxing authority to pay for capital facilities. Most charter schools lease their buildings, often from an EMO, and make this payment through general fund expenditures. Under state law, schools chartered by a local school district are subject to the collective bargaining agreements in effect in their host districts, but less than 5% of the state's charters have been authorized by local districts. Charter schools that employ their own staff are required to participate in the state's defined-benefit school employee pension system (the Michigan School Personnel Retirement System), but personnel who are hired through an EMO to work in a charter school are prohibited from participating in MSPERS. Although the state sets MSPERS benefit levels, the system is financed by contributions from local districts (and participating charter schools). This mandatory contribution is calculated as a percentage of current payroll needed to keep the system actuarially sound, and has been in the vicinity of 17-19% and rising in recent years. By contrast, EMO's can

establish defined-contribution retirement plans (e.g., 401Ks) for their employees which are typically far less expensive than the state's pension system.

Data Sources

The data for this study come from the State of Michigan's Center for Education Performance and Information (CEPI). Financial data for all districts and charter schools were obtained from CEPI's Financial Information Database. We also obtained data on student characteristics (e.g., free- and reduced-priced lunch, special education) from CEPI. CEPI's Educational Entity Master database was the source for information on a number of charter school characteristics such as the year opened, charter authorizer, grades served, and management status (self-managed versus EMO-managed). All data used in this study correspond to the 2007-08 academic year.

Under Michigan's charter school law, charter schools have the same legal status as school districts and they report all data used in this study on the same basis as districts. In order to receive their state aid payments, charter schools, like school districts, must annually submit to the state uniform and very detailed reports of their revenues and expenditures that have been audited by a certified public accountant. Consequently the data available for comparing resource allocation in Michigan's charters and TPSs is much better than in many other states.

Fifty-one of Michigan's 552 school districts are single-building districts. Thirty of these are elementary districts, that offer no secondary education, and 22 are single building K-12 districts. These single-school districts are a fading legacy of an earlier era. Since they are similar in size to charter schools, however, they provide one benchmark for comparing charter revenues and expenditures in the analysis that follows.

Charter and School District Revenues

As shown in Table 1, operational funding levels for Michigan's charter schools closely approximates that of the state's traditional public schools. The table displays revenues, by source, for four groups of schools: all school districts, all school districts except the 51 high-revenue hold-harmless districts, single-building districts, and charter schools. All mean values in the table are pupil weighted (a 2,000-pupil district is weighted double a 1,000-student district) so the statewide figures accurately reflect the statewide school group averages and is not influenced by the size distribution of schools within groups.

[Table 1 about here]

The average per-pupil revenue of Michigan's charter schools in 2007-08 was $8,671 or just three percent below the average revenue for all the state's school districts ($8,964). If we exclude the hold-harmless districts, the average revenue in the remaining school districts is nearly equal to the charter school average. Less than 15% of Michigan's charter schools are located in hold-harmless districts and many of the students attending these charters live in nearby non-hold-harmless districts.

Since we are interested in spending patterns and some revenues come with restrictions on their use, it is important to note that charter schools' per-pupil discretionary or unrestricted revenue is also on a par with that of district schools. This discretionary revenue is comprised by the local revenue plus the unrestricted state aid (the sum of which corresponds to the per-pupil foundation grant). The mean discretionary revenue for charter schools ($7,517) is slightly below the level for all districts ($7,713) and slightly above the level for non-hold-harmless districts ($7,396). Charter schools

receive somewhat less state categorical aid than district schools, and this is mainly attributable to lower special education enrollment rates in charters than TPSs. Meanwhile charter schools receive $135 to $150 more federal revenue per pupil than traditional public schools depending on the district comparison group.

In short, although the funding sources differ somewhat for charter and district schools, the total operational revenues for both sets of schools in Michigan is very similar which establishes a highly desirable basis for comparing their resource allocation patterns.

Charter and School District Expenditure Patterns

Despite similar funding levels, there are large differences in how Michigan districts and charter schools spend their revenues. There is also a great deal more variation in spending patterns among charter schools than among school districts. We offer an initial view of these resource allocation patterns in Table 2 which displays the distribution of spending across disaggregated instructional and non-instructional service functions for the same school groups as in Table 1. For each functional category, Table 2 presents mean per-pupil expenditures and the function's share of total expenditures. Each functional category includes expenditures on all objects devoted to the provision of the given service, e.g., employee salaries and benefits, supplies, and purchased services. The figures for administrative services distinguish between district central office functions (general administration and business) and school administration (the principal's office).

[Table 2 about here]

Charter schools spend substantially less on instruction and instructional support than traditional public schools. On average, charters spend nearly $1,700 less per pupil on

instruction and another $400 less on instructional support than districts. As a share of total expenditures, Michigan's districts devote 60.5% to instruction, while charters devote only 47.4%. Charter schools spend less on both basic instruction and added needs instruction (special, compensatory, career-tech and adult education). Seventy percent of charters' lower total instructional spending is attributable to basic instruction ($1,128 less) and 30% to added needs instruction ($508 less).[2] Under added needs instruction, the largest discrepancy between charters and TPSs occurs in special education, where districts spend over $500 more per pupil annually than charters. Nine percent of charter schools have no special education expenditures at all. Turning to instructional support services, by comparison to TPSs, charter schools spend about $300 less per pupil on student services (guidance, speech therapists, health, social work) and roughly $100 less on instructional staff support (library, computer labs, curriculum specialists, instructional staff supervision).

While they spend a great deal less on instructional services than traditional public schools, Michigan's charter schools spend a great deal more on administration. Charters spend about $900 more per pupil annually on total administrative services than districts statewide, and about $1,000 more than the non-hold-harmless districts. While Michigan districts overall devote less than 10% of their expenditures to administration, charter schools devote a striking 22.7% of the educational dollar to administration. This higher spending occurs in every administrative function, but it is concentrated in general administration (e.g., central office administrative functions). The higher administrative spending in Michigan's single-building school districts relative to all districts suggests

[2] Table 2 does not display disaggregated expenditures for a number of small instructional categories such as adult education that are included in the total instruction figures.

that some of the increased administrative spending by charters may be due to their lack of scale economies. Yet single-building districts still spend considerably less on administration than charters. Compared to all districts, the single-building districts spend $520 more on administration, or 14.5% of total expenditures. This higher administrative spending in small school district underscores the importance controlling for this and other extraneous factors when comparing TPS and charter resource allocation, as well we do shortly.

Charter schools annually spend nearly $400 per pupil more than districts on operations and maintenance. This discrepancy is attributable to the fact that most of Michigan's charter schools lease their buildings, since they do not have access to debt millages, and these rental payments are recorded under operations and maintenance.[3] This disadvantage that charters face in facilities finance is completely offset by the fact that charters spend about $400 less per year on student transportation services than traditional public schools. Most charter schools in Michigan do not offer full transportation services, and nearly half of all charters devote no expenditures to transportation at all.

One final point from Table 2 is worth noting. Despite the fact that Michigan's charter and traditional public schools receive very similar levels of per-pupil on average, charter schools' total expenditures are nearly $1,000 less than district schools statewide. Most of this difference is reflected in changes in districts' and charters' fund balances. In 2007-08, a year in which the state of Michigan provided essentially no increase in per-

[3] Most facilities acquisition by school districts is financed through transactions in a separate debt account, not the general fund account that serves as the basis for data in Table 2. Some districts, however, do make small expenditures for facilities acquisition with general fund revenues, and, as Table 2 indicates, charter schools devote somewhat more general fund revenue to facilities acquisition (about $163 per pupil, per year on average).

pupil funding while costs associated for instance with employee health and retirement benefits continued to rise, many districts were forced to balance their budgets by drawing down their accumulated savings in their fund balance. Even in this tight financial environment, however, charter schools were able to add on average about $362 per pupil to their fund balances

Resource Allocation Estimation Strategies

We turn now to specify models designed to provide a clearer picture of the determinants of school resource allocation. Our basic model takes the following form:

$$Y_i = \boldsymbol{CS}_i \mathbf{B_1} + \boldsymbol{SDstructure}_i \mathbf{B_2} + \boldsymbol{SDchar}_i \mathbf{B_3} + u_i \qquad (1)$$

where Y_i is the expenditure variable of interest in district or charter school i. Specifically Y_i is a set of measures of instructional and administrative spending (expressed as both per pupil and share of total spending). We distinguish between administrative spending at the school and central office levels. Charter schools are identified by $\boldsymbol{CS}_i$, which is measured, alternately, in two ways in each of our regression models. First, charter schools are represented simply as a dummy variable in each model. Second, charter schools are represented through a series of interaction terms that capture the effects of specific charter school organizational features. We include the number of years a charter school has been in operation (vintage), since administrative spending in particular may decline in relative terms as charters mature beyond their initial start-up phase. We also include an indicator for charter schools that are managed by an EMO since, as noted earlier, EMO management may have distinctive influences on resource allocation. Finally, we include a measure of the grade levels offered by a charter school to assess the possibility that charters serving exclusively elementary grades have different resource

allocation patterns than charters serving secondary grades or a mixture of elementary and secondary grades. This is motivated by the hypothesis that the instructional costs for elementary grades tend to be lower than those for secondary grades.

SDstructure $_i$ is a vector of structural characteristics of district or charter school *i* that is informed by previous research on factors affecting district resource allocation (e.g., Monk and Hussain, 2000). ***SDstructure*** $_i$ includes district enrollment size and enrollment size squared, total revenue per pupil, and a dummy variable reflecting whether the district or charter school is located in a rural area. District enrollment size controls for scale effects on resource allocation, especially the share of spending devoted to administration which *ceteris paribus* tends to be higher in very small districts. The quadratic term (Enrollment^2) captures the possibility of a U-shaped relationship between average cost and size; that is, after declining over some range of increasing district size, average costs starts to rise in very large enrollment districts. Total revenue per pupil is included to control for the fact that the share of spending devoted to support services tends to increase in districts with higher overall spending levels. The rural dummy captures distinctive geographical influences such as higher per-pupil transportation costs and lower employee wages and salaries in rural as compared to metropolitan areas, as well as possible systematic differences in family preferences for various school services.

SDchar $_i$ is a vector of district student characteristics which control for some of the effects of student needs and family preferences on school resource allocation. ***SDchar*** $_i$ includes the percent of students who receive special education services (which directly affects added needs instructional spending) and the percentage of students eligible for the free/reduced price lunch (FRL) that captures instructional needs

associated with student poverty as well as systematic differences in community preferences for different school services. u_{it} is the unobserved error. We estimate Equation (1) with OLS regressions.

Resource Allocation Model Findings

Tables 3 and 4 present the results of our regression models for administrative expenditures. The dependent variables for Table 3's models are expressed as per-pupil administrative expenditures, whereas the models in Table 4 explain administrative expenditures as a percentage of total expenditures. Both tables show results for three measures of administrative expenditure: central office business and administration, school administration, and total administration (i.e., central office plus school administration). For each dependent variable we estimate equations with and without a series of interaction terms that capture the influence of specific charter school characteristics.

[Table 3 about here]

Before considering the results for the charter school variables, we briefly summarize the findings for the control variables. The enrollment terms in Table 3 clearly indicate the presence of scale economies in education administration. Moreover, these scale economies (lower costs as size increases) are fully realized through central office administration, rather than in school-level administration. In addition, the significant results for the quadratic term (Enrollment$^{2)}$ indicate that there is a tipping point beyond which increasing district size is associated with rising central office expenditures.[4] The

[4] The tipping point, call it E*, is obtained by solving the equation, AdminExp/pupil = aE + bE^2, for the value of E that minimizes AdminExp/pupil. Differentiating with respect to E and setting this equal to zero gives E*= -a/2b, which can be solved by substituting the regression coefficients for Enrollment and Enrollment^2 for a and b.

estimated coefficients in Table 3 indicate that this minimum occurs at a district enrollment between 55,000 and 57,000. Only one district in Michigan, Detroit, is above this enrollment threshold.

Districts in rural areas also spend more per pupil on central administration (ranging from $65 to $79 more in the estimated equations). Although school-level administrative spending tends to be lower in rural areas, this difference was not statistically significant. The highly significant results for total revenue per pupil indicate that for every $1,000 increase in per pupil funding, districts (or charter schools) devote an additional $115 to administrative expenditures, which is split between a $100 increase in central administration and $15 increase in school administration. Increases in the share of students who are low-income are associated with a significant increase in central administration spending, but generates no significant effect on school-level administration. Finally, increases in the percentage of students who receive special education services, lowers total administrative spending through relatively large decreases in spending on central office administration that offset smaller increases in school administration expenditures.

Now consider the results in Table 3 for the administrative spending of charter schools with all the preceding variables held constant. Overall charter schools spend substantially more on administration than district schools and this estimated increased spending is highly significant statistically. In the simplest equations without the interaction term variables, Michigan charter schools spend $774 per-pupil more on administration than traditional public schools. About two-thirds of this higher

administrative spending occurs at the central office level ($506) and one-third at the school level ($268).

The models in Table 3 also account for variations among charter schools in their administrative spending. Charter administrative expenditures tend to decline the longer the schools are in operation. This may reflect unusually high administrative spending during charter schools' early years in operation. It might also reflect the eventual closure of charter schools with extraordinarily high administrative spending. Administrative spending also varies significantly by charter schools' grade configuration. The omitted schools for the grade level interaction terms in Table 3 are elementary schools, so the results for the secondary and mixed-grade charter school variables reflect expenditure differences relative to elementary charters. Central administration expenditures are $312 per pupil less in secondary than elementary charters, but school-level administration costs $194 more. Meanwhile administrative spending in mixed-grade charters does not differ significantly from administrative spending in elementary charters. Finally, charter schools managed by EMOs spend significantly more on administration than self-managed charters (about $312 per pupil). This elevated spending occurs in both central office and school administration, with 60% of the total higher spending devoted to central administration and 40% to school administration.

Table 4 displays regression models that are identical to those in Table 3, except that the administrative expenditure variables that serve as dependent variables are expressed as a percentage of total expenditures. The results for all the explanatory variables in Table 3 are sustained in Appendix 4's models, with the exception not surprisingly of the total revenue per pupil variable. As funding levels increase, districts

and charters devote a higher share of spending to central office administration and a smaller share to school administration. Controlling for other factors, the share of total spending devoted to administration is 10.3 percentage points higher in Michigan's charter schools than in school districts.

[Table 4 about here]

We shift our focus from administrative to instructional spending in Table 5, which presents the results for both the per-pupil and expenditure share models. Unlike the case of administrative spending, the models reveal no scale economies for the provision of instructional services. The per-pupil spending model shows that $483 of an incremental increase of $1,000 in district revenue is devoted to instruction. And instructional spending increases significantly with increases in the share of students who are eligible for special education services.

As in the case of administrative spending, charter schools' instructional spending differs dramatically from that of districts. Holding constant total revenue and other factors known to influence school resource allocation, charter schools spend a remarkable $1,140 less per-pupil on instruction annually than districts.[5] Longer-established charter schools do spend more on instruction than newer charters, although the estimated coefficients imply that it would take more than 30 years of steady progress on this count to close the gap with district instructional spending. The increase in instructional spending as charter schools age exceed the decline in administrative spending as charter schools mature (shown in Table 3), which implies a small shift of spending (roughly $10 per year) from other functions besides administration to instruction. Charter schools'

[5] Recall the actual difference in instructional spending between Michigan's charters and districts, when other factors are not controlled as shown in Table 2, is $1,700.

instructional spending, unlike their administrative spending, does not vary systematically by their grade level configuration.

[Table 5 about here]

Finally, while charter schools as a whole have quite low instructional spending given their level of funding, instructional spending in EMO-managed charters is especially low. Michigan's EMO charters spend $429 less per year on instruction than self-managed charter schools. The results in Table 3 imply that three-fourths of this reduced instructional spending (relative to self-managed charters) is diverted to higher administrative expenditures in EMO-managed charters.

Discussion

Despite the fact that advocates of charter schools and privatization have long criticized public school bureaucracies as bloated and wasteful, it turns out that charter schools spend considerably more on administration than do traditional public schools. Charters' outsized administrative spending, moreover, is simultaneously matched by exceptionally low instructional spending. If one were searching for a contemporary reform to shift resources from classroom instruction to school management, it is hard to imagine one that could accomplish this as decisively as charter schools have done in Michigan.

One need not attach any normative judgment to charter schools' lower instructional and higher administrative spending. It is certainly possible that there could be new ways of providing educational services associated with this sort of resource reallocation that are beneficial for students. The normative standard--that instructional spending is good and administrative spending is wasteful—cannot be ignored, however,

simply because it has been advanced so relentlessly by critics of traditional public schools. Some have coupled their criticism of traditional public school spending with predictions that charter schools, freed from the inept or self-serving governance of elected school boards, will reallocate resources to instruction. These predictions are now proving false.

Our focus in this paper has not been on uncovering why it is that charter schools spend so much on administration and less on instruction, but since roughly 84% of TPS expenditures are related to personnel costs much of the explanation must rest there. On average, charters pay lower salaries for teachers with similar credentials and experience, but they also employ a much less experienced (and less expensive) teaching force than TPSs (Cannata, 2008). The cost differences for employee health and retirement benefits are also large.[6] Less attractive teacher compensation in charter schools appears to contribute to higher turnover rates than in TPSs (Burian-Fitzgerald, et al., 2004; Cannata, 2010; Harris, 2006, 2007). Some charter schools have embraced highly scripted instructional practices as a way to adapt to a low-cost, high-turnover teaching force. Indeed insofar as a school's teachers lack experience and expertise, the demands and cost of administrative coordination and oversight will increase.

Charter schools' higher administrative spending may also be related to the fact that they provide a more modest range of services than TPSs. On average, compared to traditional public schools, a lower share of charter school students have disabilities, and those charter students with disabilities tend to have milder and less costly disabilities

[6] The average per-pupil cost of retirement benefits for all TPS employees in Michigan in 2008 was $1020. If an EMO-managed charter school paid the same average salaries as Michigan's TPSs and contributed 10% of payroll towards its employees' retirement, the charter school would still save $450 per student relative to the cost of the state's school employee retirement system.

(Arsen & Ray, 2004; Howe & Welner, 2002; Miron, et al., 2010). Charters also disproportionately serve less-costly elementary students as opposed to secondary students. Charter schools also tend to spend less on adult education, community education, and a wide range of instructional support activities. Financial data for Michigan's charters and TPSs depict all of these differences in service provision.

Charter schools clearly operate in more competitive environments and within organizational structures that give greater sway to governance arrangements traditionally found in the private sector. In Michigan, charter schools have responded to these changes by devoting significantly more resources to administrative activities and less to instruction than traditional public schools. While there is little question that charter schools are offering a variety of promising practices that TPSs could usefully emulate, we nevertheless find patterns of charter school resource use that are at odds with prevailing conceptions of spending changes that are needed for school improvement. Rather charter schools have advanced a top-heavy reallocation of resources that mirrors the distributional shifts unfolding so dramatically over recent decades in the U.S. private sector.

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Table 1 **Revenue Sources for Michigan School Districts and Charter Schools, 2007-2008**

	All School Districts		All Non-Hold-Harmless School Districts		Single Building School Districts		Charter Schools	
	Mean $ per pupil	% of total	Mean $ per pupil	% of total	Mean $ per pupil	% of total	Mean $ per pupil	% of total
Total Local	1974	22.0	1628	18.7	4900	49.0	236	2.7
Total State	6441	71.9	6484	74.7	4541	45.4	7727	84.0
Unrestricted aid	5739	64.0	5768	66.4	4091	40.9	7281	5.2
Categorical aid	702	7.8	716	8.2	450	4.5	447	89.1
Total Federal	550	6.1	573	6.6	552	5.5	708	8.2
Total Revenue	8964	100.0	8685	100.0	9992	100.0	8671	100.0

Pupil-weighted means.

Table 2 **Resource Allocation in Michigan Schools, 2007-2008**

	All School Districts		All Non-hold-harmless School Districts		Single Building School Districts		Charter Schools	
	Mean $ Per Pupil	% of Total	Mean $ Per Pupil	% of Total	Mean $ Per Pupil	% of Total	Mean $ Per Pupil	% of Total
Instruction	**5629**	**60.5**	**5482**	**60.7**	**6141**	**62.3**	**3942**	**47.4**
Total basic instruction	4321	46.5	4166	46.2	5132	52.1	3193	38.4
Total added needs instruction	1256	13.5	1259	14.0	989	10.0	748	9.0
Special education	846	9.1	843	9.3	544	5.5	305	3.7
Compensatory ed	295	3.2	300	3.3	428	4.3	425	5.1
Career tech education	115	1.2	116	1.3	17	0.2	19	0.2
Instructional Support	**961**	**10.3**	**893**	**9.9**	**404**	**4.1**	**551**	**6.6**
Student services	580	6.2	540	6.0	211	2.1	274	3.3
Instructional staff support	381	4.1	353	3.9	194	2.0	277	3.3
Business & Administration	**906**	**9.7**	**888**	**9.8**	**1426**	**14.5**	**1886**	**22.7**
General administration.	149	1.6	152	1.7	688	7.0	915	11.0
School administration	570	6.1	553	6.1	432	4.4	719	8.7
Business office	187	2.0	182	2.0	306	3.1	252	3.0
Operation & Maintenance	**1042**	**11.2**	**1010**	**11.2**	**1137**	**11.5**	**1429**	**17.2**
Transportation	459	4.9	460	5.1	598	6.1	55	0.7
Other Support	219	2.4	211	2.3	132	1.3	246	3.0
Facilities Acquisition	10	0.1	10	0.1	9	0.1	163	2.0
Total Expenditures	**9297**	**100.0**	**9025**	**100.0**	**9858**	**100.0**	**8309**	**100.0**

Pupil-weighted mean

Table 3 **Administrative Expenditure Models**

(Per-Pupil Administrative Expenditures)

Dependent variable	Total Business & Administration		Central Office Business & Administration		School Administration	
Constant	100.423 (77.045)	104.163 (72.77)	-195.27** (65.034)	-194.70** (62.432)	295.70** (59.605)	298.87** (57.917)
Enrollment/1000	-32.863** (7.211)	-32.793** (6.779)	-38.399** (6.087)	-38.343** (5.815)	5.536 (5.579)	5.55 (5.395)
(Enrollment/1000)^2	.296** (.079)	.299** (.074)	.333** (.066)	.335** (.063)	-.037 (.061)	-.036 (.059)
Total revenue per pupil/$1000	.115** (.006)	.115** (.005)	.100** (.005)	.101** (.005)	.015** (.004)	.014** (.004)
% Free and reduced lunch	3.218** (.709)	2.458** (.676)	2.471** (.598)	2.07** (.58)	.747 (.548)	.387 (.538)
% Special education	-11.591** (2.987)	-10.236** (2.828)	-16.695** (2.521)	-16.985** (2.427)	5.104* (2.311)	6.749** (2.251)
Rural	19.796 (36.644)	39.891 (34.714)	65.657* (30.931)	79.117** (29.782)	-45.861 (28.35)	-39.226 (27.629)
Charter school	773.729** (44.669)	874.352** (121.304)	505.596** (37.705)	511.288** (104.07)	268.132** (34.558)	363.064** (96.544)
Charter school Vintage		-29.802** (8.271)		-9.652 (7.096)		-20.151** (6.583)
Charter school* EMO		311.833** (68.519)		191.549** (58.784)		120.284* (54.533)
Charter school* Mixed grade level		-90.896 (61.235)		-22.601 (52.536)		-68.295 (48.736)
Charter school* High school		-118.487 (80.78)		-312.12** (69.304)		193.633** (64.292)
R-squared	0.66	0.69	0.64	0.67	0.15	0.19

*: $P< 0.05$; **: $P<0.01$.

Table 4 **Administrative Expenditure Models**

(Administration Expenditures as % of Total Expenditures)

Dependent variable	Total Business & Administration		Central Office Business & Administration		School Administration	
Constant	12.902** (.777)	12.789** (.728)	5.389** (.677)	5.393** (.638)	7.513** (.581)	7.396** (.567)
Enrollment/1000	-.351** (.073)	-.357** (.068)	-.367** (.063)	-.371** (.059)	.016 (.054)	.014 (.053)
$(Enrollment/1000)^2$	.003** (.001)	.003** (.001)	.003** (.001)	.003** (.001)	0 (.001)	0 (.001)
Total revenue per pupil/$1000	-.054 (.056)	-.045 (.053)	.146** (.049)	.16** (.046)	-.199** (.042)	-.205** (.041)
% Free and reduced lunch	.026** (.007)	.021** (.007)	.024** (.006)	.021** (.006)	.001 (.005)	0 (.005)
% Special education	-.113** (.03)	-.1** (.028)	-.134** (.026)	-.137** (.025)	.021 (.023)	.038 (.022)
Rural	.773* (.369)	.848* (.347)	1.042** (.322)	1.117** (.304)	-.269 (.277)	-.269 (.27)
Charter school	10.292** (.45)	9.223** (1.213)	7.133** (.393)	5.906** (1.063)	3.159** (.337)	3.317** (.945)
Charter school Vintage		-.115 (.083)		-.03 (.073)		-.085 (.064)
Charter school*EMO		3.366** (.685)		2.551** (.601)		.815 (.534)
Charter school*Mixed grade level		-.577 (.612)		.177 (.537)		-.755 (.477)
Charter school*High school		-1.401 (.808)		-2.854** (.708)		1.453* (.629)
R-squared	0.64	0.67	0.58	0.62	0.21	0.22

*: $P< 0.05$; **: $P<0.01$.

Table 5 **Instructional Expenditure Models**

Dependent variable	% of Expenditures		Per Pupil Expenditures	
Constant	65.3** (1.169)	64.976** (1.111)	1141.055** (137.393)	1122.918** (135.785)
Enrollment/1000	-.129 (.109)	-.134 (.103)	6.808 (12.86)	6.96 (12.648)
(Enrollment/1000) ^{2}	.001 (.001)	.001 (.001)	.01 (.14)	.005 (.138)
Total revenue per pupil/$1000	0.0003** (0.0001)	0.0003** (0.0001)	.483** (.01)	.483** (.01)
% Free and reduced lunch	-.057** (.011)	-.045** (.01)	-5.335** (1.264)	-4.551** (1.262)
% Special education	.09* (.045)	.087* (.043)	14.646** (5.326)	14.241** (5.278)
Rural	3.196** (.556)	2.874** (.53)	137.831* (65.347)	119.838 (64.775)
Charter school	-10.93** (.678)	-12.307** (1.851)	-1140.681** (79.658)	-1234.693** (226.346)
Charter school vintage		.457** (.126)		37.742* (15.434)
Charter school*EMO		-4.707** (1.046)		-428.838** (127.852)
Charter school*Mixed grade level		.544 (.935)		15.988 (114.262)
Charter school*High school		1.544 (1.233)		188.611 (150.731)
R-squared	0.52	0.55	0.80	0.81

*: $P< 0.05$; **: $P<0.01$.