Districts' Use of Weighted Student Funding Systems to Increase School Autonomy and Equity: Findings From a National Study

Volume 1 — Final Report

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Executive Summary

Over the past 25 years, a small but growing number of school districts have implemented weighted student funding (WSF), a type of school-based budgeting system, as a way to increase school-level autonomy and flexibility and more equitably distribute funding among schools. In these districts, education leaders have implemented policies that allocate dollars to schools rather than staffing positions, using weights to provide higher levels of funding for certain types of students who need additional support, such as students from low-income households, English learners (ELs), and students with disabilities (SWDs). In addition, these systems are intended to provide more autonomy at the school level, shifting more of the decision-making responsibility over resource allocation and school programming to principals and other school stakeholders (such as teachers, parents, and other community members).

This study identified 27 school districts that were implementing WSF systems as of the 2018–19 school year; these systems vary considerably in their longevity and in the specific features of their allocation formulas. This report examines how WSF districts have implemented these systems, the types of weights and other adjustments that they used, how they compare with districts that use more traditional resource allocation practices, and funding equity outcomes. The report is based on surveys of district administrators and principals in a nationally representative sample of WSF and non-WSF districts as well as in-depth case studies of nine WSF districts.

Highlights from this study include the following:

- WSF districts were more likely than non-WSF districts to classify principal autonomy and transparency as high-priority goals for their system of allocating resources to schools.

- The most common student subgroup weighted in WSF formulas were students from low-income families, English learners, and students with disabilities.

- Although all WSF case study districts reported that their schools use average rather than actual teacher salaries in developing their budgets, three districts also used actual salaries, either for some of their schools or by incorporating them into their weighting scheme.

- On average, WSF district administrators reported that over half (53 percent) of their total operational spending was under school discretion, compared with 8 percent in non-WSF districts.

- Despite the flexibility to make decisions about resources, principals in all nine WSF case study sites reported that their effective autonomy was constrained by district requirements to fill certain "non-negotiable" staff positions, collective bargaining agreements, and resource limitations.

- In six of the nine WSF case study districts, higher-poverty schools had higher per-pupil spending levels than lower-poverty schools, but after controlling for other school characteristics, only two had a positive relationship between poverty and spending, while three had a negative relationship.

- Among the five WSF case study districts with sufficient trend data, three showed increases in relative funding levels for high-poverty schools after WSF implementation.

Study Purpose

Few studies to date have investigated how WSF systems operate and their outcomes related to resource allocation. This nationwide study is intended to help fill this gap based on surveys of both WSF and non-WSF districts, site visits and interviews in nine WSF case study districts, and analysis of school-level expenditure data. The study examines three main study questions:

1. How are resources allocated to schools in districts with WSF systems, and how do they compare with districts with more traditional resource allocation practices?

2. In what ways do schools have autonomy and control over resource allocation decisions, and how does this vary between WSF and non-WSF districts?

3. Do WSF districts have higher levels of per-pupil spending in their higher-need schools, and has funding equity increased since the adoption of the WSF system?

This study is intended to provide both practitioners and policymakers with detailed information about the design, implementation, and outcomes of WSF systems in the United States. Readers should note that study results are descriptive and the design of the study does not support causal inferences about the effects of WSF. However, the findings may enable districts who are implementing WSF — or considering whether to adopt a WSF system — to learn from the examples and experiences of other districts who have pursued this approach to improving equity and governance in education.

Methodology and Study Limitations

To address the above study questions, the study team administered surveys to district administrators and principals in a nationally representative sample of 400 districts and 679 schools between December 2017 and June 2018, including all 26 districts identified as implementing WSF at the time of sample selection. Survey responses were received from 253 district administrators (including 13 of the 26 WSF districts) and 318 principals. The surveys included questions about the resource allocation system and perceptions of equity, autonomy, accountability, stakeholder engagement, and transparency.

In addition to the surveys, site visits were conducted to collect more detailed information from a subset of nine WSF districts: Baltimore City, Boston, Cleveland, Nashville, Denver, Indianapolis, Milwaukee, Prince George's County, and San Francisco. In these districts, site interviews were conducted with a district finance administrator, a district academic administrator, three school principals, and two respondents most knowledgeable about the WSF system from the following groups: union representatives, school board members, or other district administrators. The interview data were analyzed to better identify themes surrounding the motivation behind developing a WSF system and challenges implementing such a system, as well as the perceived changes in school-level control over resources and equity across schools.

The case studies also included collection of documents describing the allocation of funding to schools, documents describing the school-level budgeting process or other district budgeting guidelines, and data on school-level expenditures. This information was used to provide descriptions of how the WSF mechanisms distributed funding to schools and to perform an empirical analysis of resource equity across schools. Eight of the nine case study districts also responded to the district survey.

One limitation of the study is the relatively low response rates achieved on the district administrator and principal surveys (63 percent and 47 percent, respectively). In particular, the 13 WSF districts responding to the survey tended to be less urban and to have lower percentages of children in poverty and ELs than the full set of 27 WSF districts. In addition, the nine districts that served as case studies are not nationally representative, and those findings cannot be generalized to all WSF districts in the nation. Finally, although all of the case study districts were asked to provide expenditure data for five years prior to WSF implementation and all years since WSF implementation, some districts' data systems were limited in their ability to provide this information, especially if the WSF system was adopted more than 10 years ago.

Because the study findings are based on a non-random sample of case study sites and on surveys with relatively low response rates, they do not necessarily generalize to the nation as a whole. Additionally, in the analyses of survey results, reported differences between WSF and non-WSF district and schools are intended to be descriptive, not causal, and do not necessarily mean that these differences were caused by the use of WSF.

Summary of Findings

Goals and Structure of WSF Systems

WSF districts were more likely than non-WSF districts to classify principal autonomy and transparency as high-priority goals for their system of allocating resources to schools.

Nearly all district survey respondents in WSF district reported that allowing principal control over budgeting decisions at their schools was a high priority (95 percent, compared with 49 percent in non-WSF districts). Similarly, nearly all WSF districts reported that transparency in how resources are allocated to schools was a high priority (95 percent vs. 64 percent). In case study interviews, district leaders in seven of the nine WSF case study districts indicated that improving equity of resource distribution was a driving motivation behind moving to a WSF system.

The most common student subgroups weighted in WSF formulas were students from low-income families, English learners, and students with disabilities.

District documentation of the WSF systems for 14 districts (including the nine case study districts and an additional five districts that provide links to such documentation via the district survey) revealed that 10 the 14 used weights for students from low-income families, nine used weights for ELs, and seven used weights for SWDs. Six of the districts used weights for low-performing students, while three used weights for gifted and talented students. Two districts used weights for students who are homeless.

The size and structure of the weights to address student needs varied considerably among the nine case study districts.

For example, weights for individual students from low-income families ranged from 0.05 to 0.15, and three of the districts provided additional funding for schools with high concentrations of these pupils (Baltimore, Boston, and Denver), bringing the combined weights for low-income students up to a high of 0.275 in Denver. For EL students, some districts varied the weights by English proficiency level while others used a single weight for all ELs. Similarly, weights for students with disabilities often varied by

type and severity of disability. Weights for ELs and SWDs were often larger than those for low-income students; EL weights ranged as high as 0.94, and SWD weights were over 1.0 in three districts, with a high of 7.25 in one district.

Among the nine case study districts, seven provided larger per-pupil amounts for lower grade levels, but they differed in the specific grades that were favored. Six case study districts supplemented their WSF allocations with additional allocations for specialized programming such as specialty schools and vocational programs.

All WSF case study districts made at least one change to their weighting schemes in recent years.

Among the nine WSF case study districts, two-thirds reported reviewing their weighting schemes on an annual or otherwise regular basis. The most common change, reported by five WSF case study districts, was to add a weight for one or more new student need categories, including students from low-income families (Baltimore, Denver, and Nashville), homeless students (Boston and San Francisco), gifted students (Baltimore), and SWDs (Denver).

Although all nine WSF case study districts reported that their schools use average teacher salaries in developing their budgets, three of the districts also used actual salaries, either for some of their schools or by incorporating them into their weighting scheme.

Boston, Denver, and Prince George's have adopted methods to introduce actual salaries into their WSF schemes to address resource inequities resulting from the distribution of teachers with respect to experience and educational attainment. In both Boston and Denver, about one-third of the schools had opted to use actual salaries for budgeting purposes. Because the schools that choose this option generally have below-average salaries, using actual salaries for budgeting means the schools' budgeted salaries are less than they would be if using district average salaries, which effectively provides the schools with additional funds that can be used to expand or improve other services and resources.

Prince George's took a different approach: instead of addressing teacher salary differences across schools by using actual salaries for budgeting, it incorporated a measure of schools' differences between actual and average salaries into its weighting scheme. Specifically, Prince George's tailored the base allocation for each school by applying a weight to account for differences in teacher salary levels across schools, as well the resources that some schools (particularly specialty programs) receive in addition to their WSF dollars.

School Autonomy

On average, WSF district administrators reported that over half (53 percent) of their total operational spending was under school discretion, compared with 8 percent in non-WSF districts.

District operational funds include both unrestricted funds and restricted funds. Most district funds flow through the "general fund," which provides unrestricted funding for a wide range of school and district functions. In addition, districts have restricted funds that must be used for particular students and/or purposes, including categorical programs such as Title I of the *Elementary and Secondary Education Act of*

1965 (ESEA), the *Individuals with Disabilities Education Act*, and state compensatory education programs. WSF districts, on average, reported providing somewhat higher shares of their unrestricted funds for schools to use at their discretion (59 percent) than they did for restricted funds (48 percent). The share of funds reported as under school discretion varied across WSF districts; among the case study districts, the percentage of unrestricted funds over which principals had discretion ranged from 27 percent to 54 percent.

Principals in WSF districts often reported that decisions about hiring staff, selecting instructional materials, and instructional programming were mostly made at the school level.

For example, 85 percent of principals in WSF districts reported that decisions about hiring regular classroom teachers were mostly made by school staff and stakeholders, compared with 56 percent of principals in non-WSF districts. Responses of district administrators showed similar patterns.

Principals in WSF districts were more likely than their counterparts in non-WSF districts to indicate that decisions about hiring school-level staff were mostly made by school staff and stakeholders. However, most of these differences were not statistically significant in conditional analyses that controlled for certain differences between WSF and non-WSF districts (such as enrollment size), with the exception of instructional coaches.

WSF principals were more likely than their non-WSF counterparts to report that decisions about selecting instructional materials were mostly made by school staff and stakeholders, although this was less common than for decisions about selecting staff. For example, 48 percent of WSF principals reported that school staff and stakeholders made most decisions about selection of instructional software, compared with 10 percent of non-WSF principals.

WSF principals were also more likely than those in non-WSF districts to report that school staff and stakeholders made most decisions about before- and after-school programming (59 percent vs. 30 percent), elective and non-core classes (56 percent vs. 26 percent), and summer programming (33 percent vs. 9 percent). WSF principals were also more likely to report such autonomy for professional development (30 percent vs. 9 percent).

Despite the flexibility to make decisions about resources, principals in all nine WSF case study districts reported that their effective autonomy was constrained by district requirements and other factors.

In the case study interviews, principals in WSF districts reported that district policies required them to fill certain "non-negotiable" staff positions, which limited the amount of funds in the school's annual budget that they could actually control. School staff in case study districts also reported constraints related to collective bargaining agreements and resource limitations.

Principals in WSF districts reported that the most significant challenge to budgeting is difficulty in predicting school resources from year to year.

Just over half (56 percent) of WSF principals reported that predicting school resources from year to year is a major or moderate challenge for them, compared with 35 percent of non-WSF principals.

In six of the nine WSF case study districts, district administrators reported challenges related to building and sustaining principal capacity around the planning and budgeting process, citing concerns specifically about principals' understanding of the financial aspects of making resource allocation decisions.

Interviewees often noted that managing the business aspects of running a school is not part of a principal's traditional skill set. Several district respondents spoke about the unevenness in principals' knowledge of budgeting and skill in making effective spending decisions, particularly among novice principals and districts experiencing high principal turnover.

Principals in WSF districts reported having access to a variety of district supports for budget development and management, including having a specific district staff person assigned to their school to assist with budget development and management (75 percent); availability of district staff to provide technical assistance as needed, either by phone (73 percent) or in-person (62 percent); and online resources such as documents, videos, and/or training modules (66 percent).

Stakeholder Inclusion in the Budgeting and Planning Process

Principals in WSF districts often reported that teachers and other school stakeholders had moderate or significant influence over school budget decisions.

Not surprisingly, principals most often reported themselves as having moderate or significant influence over school budget decisions (96 percent). In addition, 81 percent reported that teachers had moderate or significant influence, followed by other school administrative staff (79 percent), district staff (77 percent), school support staff (59 percent), and parents (47 percent).

All of the WSF case study districts had policies requiring principals to engage school stakeholders during the budgeting process, and principals and district administrators often emphasized the value of seeking their input. For example, one administrator described how this process can build community support for the school, saying "you have to go in with some ideas as a recommendation; then you come out with what the feeling of the school community is."

Accountability

Principals in WSF districts reported that the most likely consequence of a school spending more than its allotted amount was that the amount overspent could be deducted from the school's budget the following year.

Fifty-seven percent of principals and 60 percent of district administrators in WSF districts reported that if a school's spending exceeded its budget, the overage could be deducted from the school's budget the following year. In the case study interviews, district administrators described providing supports to principals to help them meet budgetary requirements, and principals said it is rare for a school to overspend, given the frequent district oversight and guidance.

More than half of principals and district administrators in WSF districts indicated that not meeting performance targets could result in closer district monitoring of a school's budget.

For example, 74 percent of principals reported that a school not meeting performance targets could result in the district more closely *evaluating the school's proposed budget* for the next year, and 52 percent said the district could more closely *monitor implementation of the school's budget*. However, the case study data suggest that accountability systems for school performance may not be directly connected to WSF financial systems; interviewees were unable to point to any specific mechanisms or procedures that apply budgetary consequences for poor academic performance.

Funding Equity

To examine this issue, we used school-level expenditure data provided by the nine WSF case study districts to examine equity patterns within each district using two approaches. First, we compared average per-pupil spending in higher-need versus lower-need schools in terms of poverty rates and percentages of ELs and SWDs. Second, we used regression analysis to estimate implicit weights that measure the extent to which schools with higher levels of student needs tend to have higher per-pupil spending after controlling for other school characteristics.

Examining equity trends in WSF districts is challenging due to the difficulty in obtaining detailed school-level expenditure data both before and after the implementation of WSF. Because of the limited amount of pre- and post-WSF implementation data, the trend analyses in this report are presented as descriptive, not causal, analyses, and should be interpreted with caution.

In six of the nine WSF case study districts, higher-poverty schools had higher per-pupil spending levels than lower-poverty schools, but after controlling for other school characteristics, only two had a positive relationship between poverty and spending, while three had a negative relationship.

Although high-poverty schools had higher funding levels than low-poverty schools in six of the districts, they also typically had higher needs in terms of special education and ELs. Although this analysis is based on unrestricted funds, and did not include categorical funds that are restricted to serving SWDs and ELs, it is possible that the higher spending in high-poverty schools could in part reflect other funds provided to help meet the needs of those students. The implicit weight approach, which uses regression analysis to control for other student needs (EL and SWD), school size, and grade level, indicated that in three of the case study districts, high-poverty schools spent less per student than otherwise similar schools with low poverty rates.

It may seem surprising that not all WSF districts have higher per-pupil spending in their high-poverty schools, given that WSF formulas allocate funds to schools at least in part based on indicators of student needs. However, equity outcomes may be influenced by a variety of factors, such as whether the WSF formula contains weights for students from low-income families and the relative size of those weights. A second factor that could reduce equity results is if funds outside the WSF formula are provided to support programs serving more advantaged students.

In addition, the use of average salaries for budgeting the funds that are allocated through the WSF formula, rather than the amounts actually paid to those teachers, could result in schools with lower-paid

teachers having lower actual per-pupil expenditures than they appear to have "on paper." Because higher-poverty schools often have teachers with less experience and lower salaries, these schools may then have lower per-pupil expenditures than lower-poverty schools, even if the WSF formula uses weights to provide them with larger allocations.

Looking at total school-level expenditures, rather than just spending from unrestricted funds, provides a more positive view of school spending patterns in relation to poverty.

Restricted funds are those that are targeted to specific student groups or programs, such as the federal Title I program, state compensatory education programs, and programs serving English learners and students with disabilities. Typically these restricted funds are not allocated to schools through WSF formulas, which is why this report focus on unrestricted funding. However, because these funds are part of the total resources that are available in schools, we also examined equity patterns for these funds, in the eight case study districts that provided data on restricted funds.

Across the eight districts, the number of districts in which high-poverty schools received more than low-poverty schools rose from five districts (for unrestricted funds) to seven districts (for both unrestricted and restricted funds). After controlling for other factors, one district showed a positive relationship[1] between poverty and total spending and the other seven districts showed no significant differences.

Among the five WSF case study districts with sufficient data to examine trends before and after WSF implementation, three showed a more positive relationship between spending and poverty after the adoption of WSF, after controlling for other variables.

High-poverty schools experienced gains in per-pupil spending from unrestricted funds, relative to low-poverty schools, in four of the five districts. After controlling for other school characteristics, three of these districts showed increases in their implicit weights for students from low-income families.

In four of the nine WSF case study districts, schools with higher concentrations of English learners had higher per-pupil spending, on average, than low-EL schools, but only two districts had a positive relationship between percentage of EL students and spending levels, after controlling for other variables.

The other seven districts showed no relationship between EL concentration and per-pupil spending.

Among the five districts with sufficient data to examine trends, two showed relative average gains for high-EL schools after WSF implementation, compared with low-EL schools. After controlling for other school characteristics, three districts showed increases in their implicit weights for EL students.

Most of the WSF case study districts showed substantially higher spending levels in schools with higher proportions of students with disabilities, both before and after WSF implementation.

In eight of the nine case study districts, schools with higher concentrations of students with disabilities had higher spending levels than other schools, and this relationship was statistically significant after

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[1] One of the two districts that showed a significant positive relationship between poverty and spending from unrestricted funds was not included in the analysis of total spending.

controlling for other school characteristics. This is not surprising given that children eligible under IDEA are entitled to a free appropriate public education.

Four of the five case study districts with sufficient trend data largely maintained their distribution of per-pupil spending resources with respect to students with disabilities in the post-WSF time period.

Conclusions

WSF is a policy that aims to increase school-level autonomy and funding equity. The survey results from this study indicate that WSF districts allocate over half of their total operational spending to schools to be used under principals' discretion — more than six times the amount reported by non-WSF districts. In addition, principals in WSF districts reported a higher degree of school autonomy in a number of areas than did their counterparts in non-WSF districts, including hiring instructional coaches, selecting curricular materials and instructional software, and making decisions about extended time programs and professional development. However, in the case study interviews, WSF principals often reported that their autonomy was constrained to some degree by requirements to fill non-negotiable staff positions and other factors.

In terms of equity, the findings from this study are mixed. Although districts often targeted similar student need categories in their WSF systems — in particular, students from low-income families, English learners, and students with disabilities — they varied considerably in the magnitudes of the weights they used, as well as in other formula details. Analyses of expenditure data in the nine WSF case study districts found that while some WSF districts had progressive equity outcomes and appeared to make equity gains after WSF implementation, others did not. Although WSF is a tool that may be used to direct higher levels of funding to schools with greater needs, its effectiveness in improving the equitable distribution of funds will be affected by the types and sizes of weights used, the share of total funding distributed through the formula, and whether schools use actual or average salaries for budgeting the funds that are allocated to them.

In short, the WSF districts in this study have grappled with a variety of challenges in their efforts to use this approach to increase equity and school autonomy. Some districts have just begun to implement their WSF approach or are in the process of deciding whether to embark on this path, while others have seen their systems evolve over many years and changes in leadership — yet all may benefit from learning from the examples and experiences of other districts who have pursued this approach to improving equity and governance in education.

1. Introduction

Over the past 25 years, a small but growing number of school districts have experimented with the use of weighted student funding (WSF), a type of school-based budgeting system, as a way to increase school-level autonomy and flexibility and more equitably distribute funding among schools. While school districts in the United States typically distribute most school-level resources in the form of staff, instructional materials, and other tangible resources to schools, districts with WSF systems allocate dollars to each school and assign the schools greater responsibility and control over how those funds are spent. Under WSF systems, individual school allocations are based on a formula that includes weights for certain types of students, such as students from low-income families,[2] English learners (ELs), and students with disabilities (SWDs),[3] in order to provide additional resources to meet the needs of those students.

This study identified 27 school districts that were implementing WSF systems as of the 2018–19 school year; these systems vary considerably in their longevity as well as the specific features of their allocation formulas. This report examines how WSF districts have implemented these systems, the types of weights and other adjustments that they used, how they compare with districts with more traditional resource allocation practices, and funding equity outcomes. The report is based on surveys of district administrators and principals in a nationally representative sample of WSF and non-WSF districts as well as in-depth case studies of nine WSF districts.

Policy Context

Most school districts in the United States distribute school-level resources in the form of staff, instructional materials, and other tangible resources, rather than allocating specific dollar amounts to individual schools. These traditional resource allocation systems typically determine the number of teachers, school administrators, and other types of staff for each school based on its total student enrollment; supplemental support for particular groups of students (e.g., students from low-income families, ELs, and SWDs) is provided through federal- and state-funded categorical funding programs. In addition, decisions about the allocation and use of those categorical funds often may be made at the district level.

Under these systems, school leaders and other stakeholders such as teachers and other school staff, parents, and community members may have little discretion or influence over how dollars are spent at their schools, or even understand how much money is being spent on their school. In addition, a large

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[2] This report frequently refers to "students from low-income families," who are defined as those who are eligible for free and reduced-price lunch (FRPL) under the National School Lunch Program. FRPL eligibility is determined based on documentation obtained from a student's parents or other household members, or through direct certification based upon administrative records (e.g., records from the Temporary Assistance for Needy Families program or Supplemental Nutrition Assistance Program). These students are also sometimes referred to as "economically disadvantaged" students.

[3] In this report, the term "students with disabilities" is not specifically limited to students who have Individualized Education Programs (IEPs) and who receive special education services under the *Individuals with Disabilities Education Act (IDEA)*. The documentation provided by WSF districts most often referred to "students with disabilities" and not students with IEPs, and it is possible that some WSF systems may consider the term to include a broader category of students, such as those covered under Section 504 of the *Rehabilitation Act*, as well as students with IEPs served under the *IDEA*.

percentage of those resources may be fixed because of staffing decisions made at the district level, as well as staffing obligations required by district policies and/or collective bargaining agreements.

In addition, some researchers and advocates have raised concerns that traditional resource allocation systems can result in inequities in the distribution of resources. One concern is that schools with higher concentrations of at-risk students may not receive sufficient additional resources to meet the complex needs of those students (Rubenstein, Schwartz, and Stiefel 2006). Another concern is that teacher assignment practices and patterns can result in higher-poverty schools having lower per-pupil expenditures compared with other schools in the district, because higher-poverty schools often have teachers with less experience and lower salaries and districts typically allocate staff to specific schools without regard to their actual salaries (Roza and Hill 2004).

In contrast, districts with WSF systems have implemented policies that allocate dollars to schools rather than staffing positions, using weights or other funding adjustments to provide higher levels of funding for certain types of students who need additional support,[4] while also shifting more of the decision-making responsibility over resource allocation and school programming to principals and school stakeholders.

Under the WSF approach, providing schools with more autonomy may enable school leaders to use resources more effectively to meet the specific needs of their school's students. Some prior research suggests that increased principal autonomy may be associated with improved school quality and student outcomes (Mizrav 2014; Steinberg 2014). By devolving more control over programming and resource decisions to schools and providing more transparency about the level and types of resources in each school, WSF systems may also increase the level of accountability placed on school leadership and staff to deliver results and encourage greater stakeholder involvement in decision-making. Finally, using weights to allocate higher per-pupil amounts to schools with higher concentrations of students from low-income families, ELs, SWDs, and other kinds of at-risk students may provide the additional resources those schools need to help those students attain better educational outcomes.[5]

Federal Student-Centered Funding Pilot Program

A new federal pilot program to encourage the adoption of WSF systems was included in the *Every Student Succeeds Act of 2015* (*ESSA*), the most recent reauthorization of the *Elementary and Secondary Education Act of 1965* (*ESEA*). Under this law, the Department of Education is authorized to enter into local flexibility demonstration agreements with school districts that allow a district to consolidate certain federal education funds with its state and local funds and to allocate these funds to schools through a weighted student formula.[6] Initial applications for the Student-Centered Funding (SCF) pilot

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[4] The literature on education finance widely recognizes that additional costs are associated with achieving similar outcomes for students with specific needs and circumstances such as students from low-income families, ELs, and SWDs (Duncombe and Yinger 2008).

[5] Baker (2016) provides an overview of the case that additional spending on students with specific needs can effectively improve outcomes.

[6] *ESEA* programs for which funds could be consolidated under the pilot are: Title I, Part A; Title I, Part C; Title I, Part D; Title II; Title III; Title IV, Part A; and Title V, Part B. Participating districts must still meet the purposes of the federal programs but would not have to provide a separate accounting for the funds.

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were due in March 2018, and six districts have submitted applications; none are currently approved to participate in the pilot (as of September 2019).[7]

Under the SCF pilot, participating districts must follow a number of statutory requirements, including:

1. **Provide "substantial" weights for students from low-income families and for English learners.** The formula must allocate substantially more funding for these students than for other students. A district may also choose to apply weights for other student characteristics associated with educational disadvantage; if it does so, then the formula must also allocate substantially more funding for those students than for other students.

2. **Allocate a "significant percentage" of the district's funds through the formula.** The share of state, local, and federal funds allocated through the student-centered funding system must be a significant percentage[8] that is sufficient to carry out the purposes of the demonstration agreement and meet the requirements of *ESEA* section 1501(d).

3. **Use actual expenditures, not districtwide averages or other proxies.** When charging schools' expenditures against the funding allocated to each school, the district must use actual expenditures, "including staff salary differentials for years of employment." Similarly, districts must also use actual expenditures for non-personnel resources.

4. **Report annual data on funding equity outcomes.** Participating districts are required to publicly report school-by-school data on per-pupil expenditures and ensure funding gains for high-poverty schools. More specifically, a participating district must ensure that each high-poverty school receives more per-pupil funding for students from low-income families, and at least as much per-pupil funding for ELs, in the first year of the demonstration agreement as it received in the previous year.[9]

Although this study is not directly examining the SCF pilot program, its findings may help illuminate some of the issues and decisions facing districts and policymakers as they consider how to implement the program. The law does not define the terms "substantial" or "significant percentage"; this study may help practitioners and policymakers think about appropriate levels and expectations by providing information on the types and sizes of weights used by other districts that have implemented weighted student funding formulas. With regards to the use of actual expenditures, a Frequently Asked Questions (FAQs) document issued by the Department in February 2018 acknowledged that "this is not currently a common practice [and] many LEAs currently charge an average salary for each position after allocating funding to schools" (U.S. Department of Education 2018, p. 15).[10] This study examines the extent to which, and how, the case study districts used actual versus average personnel expenditures in their WSF systems — which may help prospective pilot applicants consider ways that they might propose to meet

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[7] Several applicants were seeking flexibility that was already available to them under federal law. One district was initially approved but that approval was later withdrawn because the district did not meet statutory requirements.

[8] When calculating the significant portion of funds to be allocated to the school level, a district must also include all school-level actual expenditures for instructional staff and non-personnel resources.

[9] This report makes use of data on various measures of incidence of students from low-income families, including children with approved applications for free and reduced price lunch, those who are *directly certified* for free lunch through verified enrollment in programs such as Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families or Medicaid, or child poverty measures developed by the U.S. Census such as the Small Area Income Population Estimates. Note that Census poverty data are available for school districts but not at the school level. In this report we use the terms low income and poverty interchangeably.

[10] The FAQs for the Student-Centered Funding pilot are available at https://www2.ed.gov/policy/elsec/leg/essa/scfp/faqs.pdf.

this requirement. The study's analyses of longitudinal fiscal data for the case study districts provide examples of outcomes that have been achieved by some WSF districts and demonstrate methods that can be used to examine equity outcomes and how they change after WSF implementation. Finally, study information on the challenges experienced by WSF districts and schools — and the strategies they used to address those challenges — may be useful to both practitioners and policymakers considering ways to improve the implementation and efficacy of WSF systems.

Study Purpose

Few studies to date have investigated how WSF systems operate and their outcomes related to resource allocation, such as whether school leaders and stakeholders have experienced greater autonomy and how they use that autonomy, whether there have been increases in the equity with which resources are distributed among schools, and how resource allocation and use differ between WSF and non-WSF districts.

To help fill this gap, this study examined resource allocation practices in both WSF and non-WSF districts to explore these issues, as well as examining changes in the distribution of funding across schools after the implementation of a WSF system. The study focused on three main study questions:

1. How are resources allocated to schools in districts with WSF systems, and how do they compare with districts with more traditional resource allocation practices?
2. In what ways do schools have autonomy and control over resource allocation decisions, and how does this vary between WSF and non-WSF districts?
3. Do WSF districts have higher levels of per-pupil spending in their higher-need schools, and has funding equity increased since the adoption of the WSF system?

This study is intended to provide both practitioners and policymakers with detailed information about the design, implementation, and outcomes of WSF systems in the United States.[11] Readers should note that study results are descriptive and the design of the study does not support causal inferences about the effects of WSF. However, the findings may enable districts who are implementing WSF — or considering whether to adopt a WSF system — to learn from the examples and experiences of other districts who have pursued this approach to improving equity and governance in education.

Study Design

To address the above study questions, the study conducted surveys of district administrators and principals in both WSF and non-WSF districts, as well as conducting case studies to obtain more in-depth data in nine WSF districts, including interviews, document reviews, and analysis of school-level

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[11] In addition to the study results presented in this volume (Volume 1), a set of technical appendices is provided in Volume 2 containing supplemental information for the interested reader. Appendix A provides short profiles of the WSF systems used in each case study district. Appendix B provides the statutory authorizing language for the Student-Centered Funding pilot. Appendix C provides a more detailed description of the study methodology, including sample selection and data collection and analysis methods for the surveys, interviews, extant documentation, and fiscal data. Appendix D provides supplemental data tables and charts. Appendix E provides the data collection instruments.

expenditure data. This section describes these data sources, selection of the study samples, procedures for data collection and analysis, and study limitations.

Data Sources

To address the above study questions, the study used three primary data sources:

1. **District and principal surveys** were administered to a nationally representative sample of 400 district administrators and 675 school principals in both WSF and non-WSF districts. The surveys were completed by 253 district administrators and 318 principals from this sample, for response rates of 63 percent and 47 percent, respectively. The goal of the surveys was to better understand the experiences and perceptions of practitioners in WSF and other districts across the country regarding resource allocation practices. Specifically, the surveys included questions about the resource allocation system and perceptions regarding equity, autonomy, accountability, stakeholder engagement, and transparency.

2. **Interviews and document reviews** were conducted in a purposive sample of nine case study districts that were implementing WSF systems in 2017–18. The case studies included in-person interviews with district and school staff, including district program officers, chief financial officers, school principals, union representatives, and school board members, as well as examination of district documents describing their WSF weights and other formula features.

3. **School-level expenditure data** were collected from the nine case study districts to examine patterns in the distribution of school-level resources before and after the implementation of WSF. Districts were asked to provide these data for five years prior to WSF implementation and all years since WSF implementation, if possible. The longitudinal expenditure data were used to examine the relationship between school-level per-pupil spending and various indicators of student need and whether this relationship changed after WSF implementation.

Sample Selection

For the nationally representative surveys, 400 districts were randomly selected from public school districts in the United States that have at least six schools (3,389 districts); this threshold was selected because the smallest district identified as implementing WSF at the time of sample selection had six schools.[12] The sample was designed to include 26 districts identified as implementing a WSF system during the 2017–18 school year, as well as five districts identified as having previously implemented WSF. This list of 31 current or previous WSF districts was developed by consulting with school finance experts, drawing on reports such as the *Reason Foundation Weighted Student Formula Yearbook* (Snell and Furtick 2013) and a presentation by Koteskey and Snell at the Future of Education Finance Summit (Koteskey and Snell 2016), and examining district websites; these districts were selected with certainty to guarantee their inclusion in the study sample.[13]

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[12] The smallest district that we identified as a WSF district at the time of sample selection was later determined to be not in fact implementing WSF; the smallest WSF district in our final set of known WSF districts had 22 schools in 2018–19 (see Exhibit 2).

[13] Among the 26 districts identified as WSF implementers at the time of sample selection, the study team later learned (during the data collection phase of the study) that two were not in fact implementing WSF systems.

For the principal survey, 675 schools were randomly selected from the sample districts. In each of the 31 WSF districts, up to 10 schools were selected, for a total of 306 schools in WSF districts. In the remaining 369 districts, one school per district was selected, for a total of 369 schools in non-WSF districts.

For the case study component, we selected a purposive sample of nine districts identified as currently implementing a WSF system. The specific sites were selected to yield a diverse set of districts with respect to geographic location, age of WSF system, and formula design (Exhibit 1).

Exhibit 1.   Characteristics of the nine WSF case study districts

District name	State	Year established	Enrollment	Number of schools	Urbanicity
Milwaukee Public Schools	WI	2000–01	77,316	167	City
San Francisco Unified	CA	2002–03	58,414	127	City
Denver School District	CO	2007–08	88,839	191	City
Baltimore City Public Schools	MD	2008–09	84,976	189	City
Boston Public Schools	MA	2011–12	54,312	120	City
Prince George's County Public Schools	MD	2012–13	127,576	211	Suburb
Cleveland Municipal School District	OH	2013–14	39,365	102	City
Metro Nashville Public Schools	TN	2015–16	84,069	164	City
Indianapolis Public Schools	IN	2016–17	31,794	67	City

Exhibit reads: One of the nine case study districts was Milwaukee Public Schools, which established its WSF system in the 2000–01 school year. The district had 77,316 students and 167 schools in the 2015–16 school year and was located in a city.

Sources: Information on the year the WSF system was established is based on review of school district documents and websites and personal communication with district administrators. Other data are from National Center for Education Statistics, Common Core of Data Local Education Agency (School District) Universe Survey Data (2015–16).

Data Collection and Analysis

The nationally representative surveys were administered electronically between December 2017 and June 2018. In each of the case study districts, the study team conducted interviews with a district program officer, a district finance officer, three school principals,[14] and two respondents from the following three groups — a union representative, a school board member, or an additional district administrator. The two individuals selected depended on such factors as the existence of a union in the district and which respondents were most knowledgeable about the WSF system. Case study site visits were conducted in spring and summer of 2018, including interviews and collection of extant documents; follow-up phone calls were also conducted during the 2018-19 school year to collect additional information where needed. WSF system characteristics are based on information for 2018–19. Eight of the nine case study districts also responded to the district survey.

In addition, the study team collected a variety of documents and data from the case study districts, including documents describing how funding and other (personnel and non-personnel) resources were allocated to schools; documents describing the school-level budgeting process or other district budgeting guidelines; and audited end-of-year, school-level fiscal files. We asked the districts to provide

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[14] For each case study district, the three principal interviewees were purposively selected from the 10 randomly selected schools included in the survey sample, with the aim of including variation in school grade levels.

expenditures for at least five years prior to WSF implementation and at least five years after implementation (but ideally for all post-WSF years), as possible.

Data from surveys were weighted to produce national estimates of the frequency of practices and attitudes collected through the survey items. Fiscal data were analyzed to examine trends in pre- and post-WSF relationships between spending and student need for each case study district. Interview and document data were organized and analyzed using the tagging function in Microsoft OneNote. At least two respondents in a given case study district must have mentioned a fact or concern for it to have been included as a theme for that district.

Study Limitations

The study surveys collected information from district administrator and principal respondents in both WSF and non-WSF districts and schools in an effort to compare responses on many items that asked for individuals' perceptions about the resource allocation system being used, which by definition could be subjective. In addition, the survey response rates for the district survey (63 percent) and principal survey (47 percent) were lower than the Office of Management and Budget target for federal program evaluations (85 percent).[15] Consequently, the survey results are not necessarily generalizable to the populations of WSF and non-WSF districts and schools across the country. While the survey weights account for nonresponse bias based upon the sample site characteristics, a comparison of the WSF districts that responded to our survey shows some differences from the population of known WSF districts. Specifically, the 13 WSF districts responding to our survey tended to be less urban and have lower levels of both poverty and ELs than the full set of 27 known implementers.[16]

In addition, WSF and non-WSF districts differ along several dimensions other than their decision to implement a WSF system. Specifically, WSF districts tend to be larger and more urban and to have higher poverty rates and other need indicators. In our comparative analyses of WSF and non-WSF survey responses we have attempted to control for these types of differences through statistical conditional analysis. However, these adjustments cannot control for unobserved differences in the characteristics of the two groups. Consequently, the comparisons between WSF and non-WSF survey responses are presented as descriptive analyses and do not necessarily mean that these differences were caused by the use of WSF.

There are also some limitations to the interpretation and generalizability of the study findings stemming from the case study districts. Although the nine case study sites represent a relatively large proportion of the 27 districts identified as implementing WSF, they are not nationally representative, so the case studies findings cannot be generalized to the nation as a whole. It also should be noted that although the district-level interviews included a variety of officials, the school-level interviews were limited to principals, whose views about the involvement of teachers and other school stakeholders may not match the perceptions of those groups. Finally, although all of the case study districts were asked to provide expenditure data for years prior to WSF implementation, sometimes the data systems were limited in their ability to provide this information, especially if the data systems and/or WSF systems were old.

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[15] This study is not evaluating a federal program, so selected districts and principals were not required to participate in the surveys. In addition, some survey items asked for factual budgetary and fiscal information, which may have discouraged some respondents from continuing because these items are more challenging than simple opinion or perception questions.

[16] A comparison of the characteristics between the WSF survey respondent districts and the group of districts representing our best approximation of the population of WSF implementers is included in Exhibit C-5 in Appendix C.

Prevalence of WSF Systems

The study identified 27 school districts that were implementing WSF systems as of the 2018–19 school year; these districts enrolled 9 percent of the nation's students.

Minneapolis Public Schools was the first district in the country to implement a WSF system, starting in the 1993–94 school year. Seven of these districts adopted their WSF system 15 or more years ago, while 16 adopted WSF in the past 10 years. The most recent adopters were Indianapolis, Atlanta, and Shelby County, with full WSF implementation taking place in 2016–17 in Indianapolis and in 2018–19 in Atlanta and Shelby County (Exhibit 2).

Exhibit 2. **Districts identified as implementing a WSF system in 2018–19, by year of adoption**

District name	State	Year adopted	Enrollment	Number of schools	Poverty rate	Urbanicity
Minneapolis Public Schools	MN	1993–94	36,793	86	24%	City
Prince William County Public Schools	VA	1994–95	87,793	92	9%	Suburb
Cincinnati Public Schools	OH	1999–2000	34,227	54	33%	City
Houston Independent School District	TX	2000–01	215,627	283	31%	City
Milwaukee School District*	WI	2000–01	75,749	158	34%	City
San Francisco Unified School District*	CA	2002–03	58,865	116	12%	City
St. Paul Public School District	MN	2002–03	37,698	103	27%	City
Hawaii Department of Education	HI	2006–07	181,995	289	10%	Suburb
Denver Public Schools*	CO	2007–08	90,235	189	20%	City
New York City Public Schools	NY	2007–08	981,667	1,579	26%	City
Poudre School District	CO	2007–08	29,527	53	9%	City
Baltimore City Public Schools*	MD	2008–09	83,666	182	31%	City
Douglas County School District	CO	2008–09	66,896	89	2%	Suburb
Falcon School District 49	CO	2010–11	20,561	22	8%	City
Boston Public Schools*	MA	2011–12	53,885	120	28%	City
Charlotte-Mecklenburg Schools	NC	2011–12	146,211	164	17%	City
Newark Public School District	NJ	2011–12	40,889	65	33%	City
Prince George's County Public Schools*	MD	2012–13	128,936	207	12%	Suburb
Adams 12 Five Star Schools	CO	2013–14	39,287	53	10%	Suburb
City of Chicago School District 299	IL	2013–14	387,311	591	27%	City
Cleveland Municipal School District*	OH	2013–14	39,410	101	43%	City
Metro Nashville Public Schools*	TN	2015–16	85,598	154	23%	City
Jeffco Public Schools	CO	2015–16	86,731	165	7%	Suburb
Santa Fe Public Schools	NM	2015–16	13,265	33	20%	City
Indianapolis Public Schools*	IN	2016–17	31,371	67	41%	City
Atlanta Public Schools	GA	2018–19	51,500	89	33%	City
Shelby County Schools	TN	2018–19	114,487	208	34%	City

Exhibit reads: Minneapolis Public Schools adopted a WSF system in the 1993–94 school year, enrolls 36,793 students, has 86 schools, a poverty rate of 24 percent, and is located in a city.

Note: Data on enrollment and number of schools are for the 2015–16 school year. School districts included in the case study sample are indicated with an asterisk (*) and boldface text.

Sources: Information on the year the WSF system was established is based on review of school district documents and websites and personal communication with district administrators. Enrollment, number of schools, and urbanicity are based on data provided from the National Center for Education Statistics, Common Core of Data Local Education Agency (School District) Universe Survey Data (2015–16). Poverty rates are based on the 2016 Census Small Area Income Poverty Estimate (SAIPE) data for school districts.

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As can be seen from Exhibit 2, school districts that have implemented WSF systems are predominantly large, urban districts. Although the 27 known WSF districts comprised less than 1 percent of all school districts in the United States, they accounted for 11 of the 40 largest districts (28 percent) and nine of the 20 largest urban districts (45 percent). Collectively they enrolled 3.2 million students in the 2015–16 school year, or 9 percent of the nation's students in public elementary and secondary schools.

Nearly a quarter (23 percent) of the districts identified as implementing a WSF system were in Colorado. Collectively, the six WSF districts in Colorado represented 30 percent of public schools and 37 percent of students in the state.

There may well be additional WSF districts that we were not able to identify through review of prior research, consultation with school finance experts, and the study's district survey.[17] Based on the district survey results, we estimate that approximately 33 districts nationwide are using a WSF system.

The study team also identified five districts that previously had implemented WSF but discontinued those systems prior to 2018–19 (Exhibit 3). Seattle, for instance, eliminated WSF in 2008–09 over concerns from multiple stakeholders — including principals, community members, the district's budget advisory team, and other district staff — around the perceived complexity and inefficiencies of the approach. In its place, Seattle adopted a Weighted Staffing Standards system, which the district said "retains the principle of funding a school according to the needs of its student population, but . . . is much simpler to use" (Seattle Public Schools 2008). Under Seattle's revised approach, all schools receive funding for instructional staff (e.g., teachers, librarians, instructional support) and for non-instructional staff (e.g., administrators, office staff, counselors, and nurses). In addition, all schools receive discretionary funding based on total student enrollment, the number of students eligible for free and reduced-price lunch, and the presence of specific special needs programs (Seattle Public Schools 2019). In at least four of the five districts, the decision to end WSF followed a change in district leadership.

Exhibit 3.   Districts identified as having adopted and discontinued a WSF system prior to 2018–19

District name	State	Year adopted	Last year implemented	Enrollment	Number of schools	Poverty rate	Urbanicity
Seattle Public Schools	WA	1996–97	2007–08	53,317	105	10%	City
Oakland Unified School District	CA	2004–05	2013–14	49,098	121	22%	City
Hartford Public Schools	CT	2008–09	2014–15	20,874	66	35%	City
Twin Rivers Unified School District	CA	2010–11	2012–13	31,137	54	33%	Suburb
Rochester City School District	NY	2010–11	2011–12	28,886	54	42%	City

Exhibit reads: Seattle adopted a WSF system in the 1996–97 school year and discontinued it in 2007–08.

Note: Data on enrollment and number of schools are for 2015–16.

Sources: Review of school district documents and website for districts that various experts initially identified as previously implementing a weighted student funding system. National Center for Education Statistics, Common Core of Data Local Education Agency Universe Survey Data (2015–16). Poverty is based on the 2016 Census Small Area Income Poverty Estimate (SAIPE) data for school districts.

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[17] Indeed, one of the 27 WSF districts listed in Exhibit 2 was part of the random sample of "non-WSF" districts selected for the surveys. This district provided survey responses suggesting that it was implementing WSF, and the study team followed up with phone calls, as well as reviewing district documentation available online, to confirm that the district did indeed have a WSF system. Four other survey districts also provided survey responses suggesting that they were implementing WSF, but the study team determined, based on follow-up communications with the districts and reviews of district documentation, that they were not in fact using WSF formulas to allocate funds to schools.

The total number of districts identified as implementing WSF systems, though small, has grown steadily over the past 25 years, from one district in 1993–94 to six districts by 2001–02, 15 by 2009–10, and 27 as of 2018–19 (Exhibit 4).

Exhibit 4.   Growth in number of WSF districts, 1993–94 through 2018–19
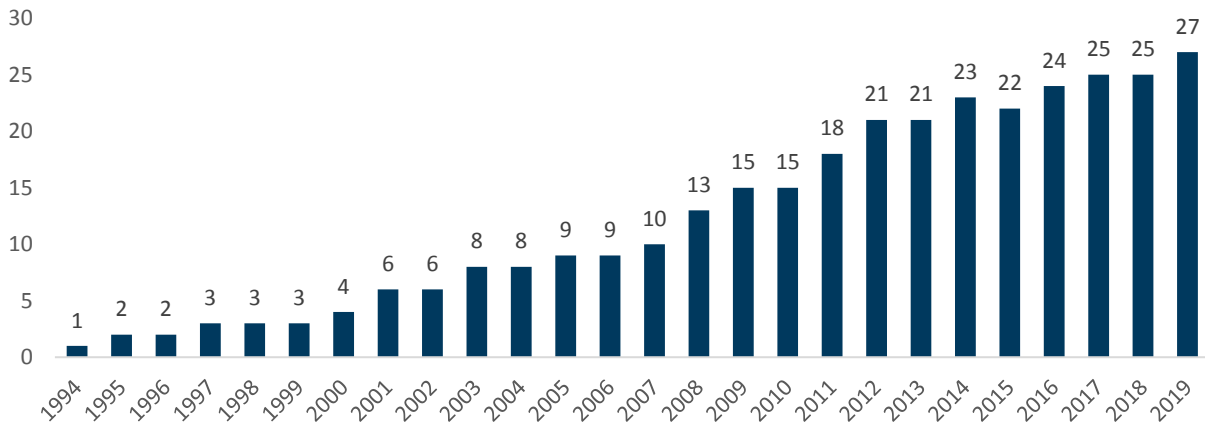
Exhibit reads: The number of school districts implementing WSF grew from one in 1993–94 to 27 in 2018–19.

Sources: Review of school district documents and websites for districts identified in prior research and by various experts as previously implementing a weighted student funding system.

WSF districts were more likely to be large, urban districts than non-WSF districts and to enroll a greater percentage of students from low-income families than non-WSF districts.

Over three-quarters (78 percent) of WSF districts were located in urban areas, compared with 6 percent of all non-WSF districts and 17 percent of non-WSF districts with more than six schools.[18] In contrast, none of the identified WSF districts were located in town or rural areas. Nearly two-thirds (63 percent) of WSF districts had student enrollments of at least 50,000 students, compared with 1 percent of non-WSF districts. Almost half (48 percent) of WSF districts had a student poverty rate greater than 25 percent, compared with 21 percent of non-WSF districts. Districts with 20 percent or more of their students identified as ELs accounted for 26 percent of WSF districts, compared with 6 percent of all non-WSF districts and 11 percent of non-WSF districts with more than six schools (Exhibit 5).

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[18] To provide a more comparable set of non-WSF districts, the survey sample of non-WSF districts was drawn from districts that had six or more schools, which represented the smallest number of schools in a district that we had identified as implementing WSF at the time of sample selection. Exhibit 5 compares the population characteristics of the 27 known WSF districts to that of all non-WSF districts and of non-WSF districts with six or more schools.

Exhibit 5. **Distribution of WSF and non-WSF districts, by various demographic characteristics, 2015–16**

Characteristic	WSF districts (*n* = 27)	Non-WSF districts with six or more schools (*n* = 3,389)	All non-WSF districts (*n* = 16,388)
By urbanicity			
City	78%	17%	6%
Suburb	22%	42%	23%
Town	0%	22%	18%
Rural	0%	19%	53%
By district enrollment size			
Very large (50,000 or more students)	63%	2%	1%
Large (25,000–49,999)	30%	5%	1%
Medium (10,000–24,999)	7%	16%	5%
Small (less than 10,000)	0%	76%	93%
By poverty rate			
Highest poverty quartile (25% or more)	48%	22%	21%
Second highest poverty quartile (17–24%)	15%	25%	24%
Second lowest poverty quartile (10–16%)	11%	25%	29%
Lowest poverty quartile (less than 10%)	26%	28%	26%
By percentage of English learners (ELs)			
High-EL (20% or more)	26%	11%	6%
Medium-EL (5–19%)	59%	30%	18%
Low-EL (less than 5%)	15%	59%	76%

Exhibit reads: School districts located in cities accounted for 78 percent of WSF districts, 17 percent of non-WSF districts with six or more schools, and 6 percent of all non-WSF districts.

Note: The 27 districts classified as WSF are listed in Exhibit 3. It is possible that the comparison group of "non-WSF" districts may include some additional WSF districts that we were not able to identify as such; however, these are likely to be few in number and to have a negligible impact on the demographic statistics presented for non-WSF districts. The reported percentages defining poverty quartiles are rounded approximations of the actual cutoffs between quartiles.
Sources: Urbanicity, enrollment, percentage of ELs, and number of schools are based on data provided from the National Center for Education Statistics, Common Core of Data Local Education Agency (School District) Universe Survey Data (2015–16). Poverty is based on the 2016 Census Small Area Income Poverty Estimate (SAIPE) data for school districts.

Chapter Summary

The WSF approach to combining formula-based resource allocations to schools with increased school-level autonomy is used in only a small set of predominantly large, urban districts. Even so, WSF has spread markedly in recent years — nearly two-thirds of current WSF districts adopted their WSF systems in the past decade, and over one-third did so within the past five years.

This report provides a broad examination of the WSF landscape across school districts in the United States, with the aim of understanding how WSF is being implemented, including the types of weights and other adjustments that are used, how WSF districts compare with districts that use more traditional resource allocation practices, and funding equity outcomes. The next chapter describes the goals and structure of WSF systems, as well as stakeholder perceptions regarding the transparency and stability of these systems. Chapter 3 looks at school autonomy and stakeholder engagement in decision-making about resource allocation, and Chapter 4 explores funding equity in the nine WSF case study districts.

2. Goals and Structure of WSF Systems

Districts that choose to adopt WSF may have a variety of goals for these systems, such as a desire to increase school autonomy and flexibility, funding equity, stakeholder engagement in decision-making, and budget transparency. In addition, WSF districts vary in the types of students that are weighted, the magnitude of these adjustments, and other features of these systems. This chapter examines districts' goals for their WSF systems, the types of student weights used and other WSF policy decisions, and stakeholder perceptions regarding the efficacy, transparency, and stability of WSF systems.

District Goals for School Funding Systems

WSF districts were more likely than non-WSF districts to classify principal autonomy and transparency as high-priority goals for their system of allocating resources to schools.

The largest difference between WSF and non-WSF districts was for the goal of allowing principal control over budgeting decisions at their schools (95 percent vs. 49 percent) (Exhibit 6). Similarly, nearly all WSF districts (95 percent) reported that transparency in how resources are allocated to schools was a high priority for the district's resource allocation system, compared with 64 percent of respondents in non-WSF districts. For three other potential goals — equitable resource allocation, stakeholder participation in school decision-making, and principal accountability — there was no significant difference between WSF and non-WSF districts. However, in case study interviews, district leaders in seven of the nine districts cited improving equity in resource allocation as a driving motivation behind their WSF systems.

Exhibit 6. **Percentage of district administrators reporting that various goals are a high priority for their district's system of allocating resources to schools, in WSF and non-WSF districts**

WSF districts	Goal	Non-WSF districts
94%	Principal control over budgeting decisions at their schools**	56%
94%	Transparency in how resources are allocated to schools**	75%
83%	Principal accountability for student outcomes	82%
77%	Equitable resource allocation between high- and low-need schools	83%
66%	Participation in school decision-making by different stakeholders	69%
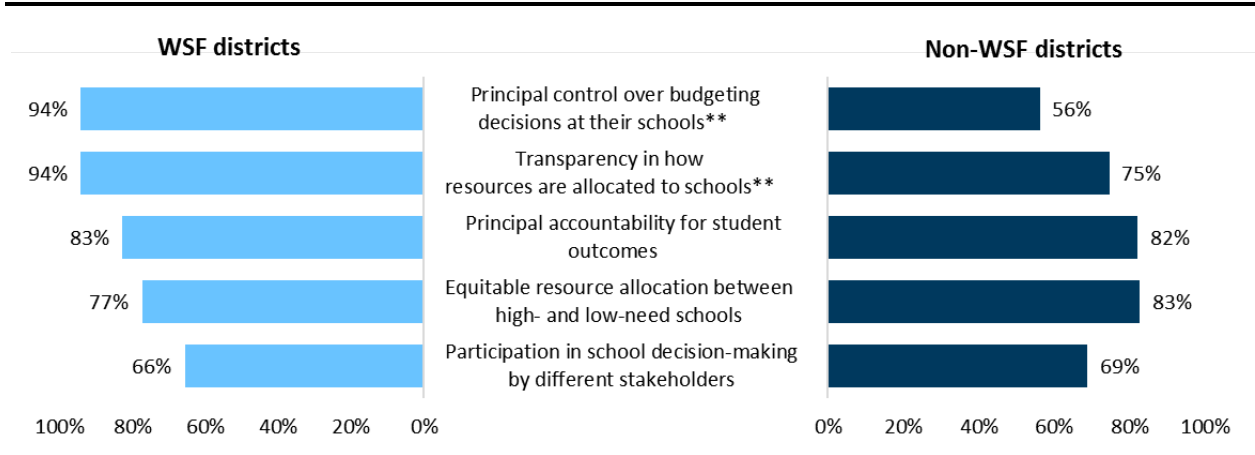
Exhibit reads: Principal control over budgeting decisions was reported to be a high priority for the district's resource allocation system by 95 percent of WSF districts and 49 percent of non-WSF districts.

Note: Asterisks denote a statistically significant difference between WSF and non-WSF districts (**p < .05). In addition to the simple frequency data presented here, regression analyses were run to control for differences in certain district characteristics between WSF and non-WSF districts; the two significant differences in this chart persisted after controlling for district size, urbanicity, and percentage of FRPL students (see Exhibit D-1 in Appendix D).
Source: District survey, Q20 (n = 13 WSF, 237 non-WSF).

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Autonomy

While increased principal autonomy in decision-making was mentioned as a priority for WSF across all case study districts, respondents in three case study districts specifically highlighted autonomy as a key reason for adopting a WSF system. These districts, however, differed in their rationale for increasing principal autonomy. In one district, for instance, district administrators strengthened principal decision-making authority to address principal concerns with the district's top-down approach to budgetary policies and decision-making. A district program officer explained the frustration that principals felt before the shift to the WSF system:

> *If you are a principal trying to make changes and [are] told this is the process and it's a one-size-fits-all for everybody, this was frustrating for a lot of our principals who expressed, "I know best how to educate our students, and you need to allow me to do this."*

In another district, the initial decision to decentralize decision-making authority was based on the superintendent's belief that school principals were better equipped to make funding decisions because their close contact with students gave them a better understanding of their students' needs. In later years, however, this district began to reduce the amount of school-level autonomy, following a change in superintendents to one who saw a need for greater centralization to ensure additional basic services to all schools. As a district administrator explained, "There are some things that . . . just really, truly just need to be centralized and just automatic, [such as] art, music, physical education . . . in elementary school."

Some respondents stated that increased principal autonomy may improve efficiency in budgetary decision-making. For example, one district adopted WSF because of budgetary constraints at the district level and a view that affording principals with greater budgetary autonomy under WSF — thereby delegating decision-making responsibility to those more attuned to students' needs — would result in improved student outcomes per dollar spent.

Transparency

The case study data suggest several connected motivations for prioritizing transparency as a goal of the WSF system. First, districts may seek to improve financial transparency so that external stakeholders such as families and community members may better understand how education dollars are distributed. Increasing transparency may also be done to reinforce other goals of the WSF system — most notably, equity, accountability, and autonomy. In two districts, for instance, district respondents reported on the need for transparency to assess how equitably the system allocates resources. As one school board member stated,

> *. . . there had been a number of concerns around how dollars are being used, where they were going, and why they were going where they were. . . . People wanted to know where the money was going and if it was being distributed in an equitable way. In order to know that, you had to be able to see [school-level allocations].*

In another district, administrators viewed transparency as a means to facilitate principal autonomy. According to the district financial officer, the district sees more transparent information as a means to developing a school-level culture of decision-making "that takes into account resource efficiency and effectiveness."

Accountability

Case study respondents in three districts explicitly reported that promoting accountability among school leadership for budget decisions and student outcomes is a major priority of the WSF system. Respondents in each of these three districts stressed the importance of pairing principal autonomy with principal accountability. As one district administrator explained,

> *Handing over control to the principals in how they dictate their dollars meant they did get that autonomy they needed, but it also held them accountable . . . we need[ed] to stop blaming [the] Central Office and put power in the hands of the principals who are there and then support them to be able to make the best decisions as possible.*

A principal in another district described how the WSF system helped ensure that "we're accountable for the spending" and that "students are getting equitable services."

Equity

Among the nine case study districts, respondents in seven districts cited improving equity in resource allocation as the issue driving their respective WSF systems. By using student weights and other factors to determine school funding allocations, these districts sought to provide more resources for high-need schools and underserved student populations. One district administrator expressed the idea simply: WSF helps ensure that "monies follow the needs of students." One school board member, for instance, described the reactions of stakeholders when they learned how much money each school was receiving under the previous resource allocation model:

> *. . . the [school board] and the public were shocked at the inequities in the previous [staffing] formula. . . . Plain and simple, we saw schools that had received favoritism over the years. Not usually from a malicious viewpoint, but it had just built up over time. . . . Once it became clear to us, we had to support a weighted student funding formula because that was what we perceived as the most equitable way to distribute funds.*

Key Features of WSF Formulas Used to Allocate Funds to Schools

Under WSF systems, schools receive a base allocation for each student served, along with a series of funding adjustments based on student characteristics and other factors the district believes affect the cost of providing educational services.[19] In general, the formula factors used in WSF systems can be divided into five categories:

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[19] Note that WSF formulas do not include all of a district's or school's total funding. Typically they exclude funding for capital expenditures and debt service, federal and state funding for categorical programs, and funds for districtwide programs and services (e.g., central office staff). The study did not collect data on WSF allocations to individual schools and we do not have information on the share of funding allocated through the WSF formula for the case study districts. However, Chapter 3 provides estimates of the share of funding distributed to schools to use at their discretion, as reported on the district survey, which can be thought of as a proxy for the share of funding that flows through the WSF formula (see Exhibit 16).

1. **Base allocation.** Amount that a school receives for each pupil served, regardless of any specific needs the pupil may have.

2. **Grade-level adjustments.** These adjustments provide differential amounts for students in elementary, middle, or high school or in specific grades (e.g., kindergarten).

3. **Student need adjustments.** These adjustments provide additional funding based on student need characteristics (e.g., socioeconomic status, EL status, special education status).

4. **Performance adjustments.** These adjustments provide additional funding based on student academic or behavioral outcomes (sometimes as rewards for positive outcomes, sometimes using negative outcomes as indicators of need).

5. **Allocations for specialized programming.** Additional funding provided to specific academic programs or schools that are considered to be more resource-intensive (e.g., vocational programs; programs with a particular theme, such as science, technology, engineering, and mathematics [STEM]; arts programs).

Under WSF systems, schools receive a base allocation for each student served, along with a series of funding adjustments, which can be defined in either of two ways: as weights relative to the base allocation or as additional per-pupil dollar amounts (Education Resource Strategies 2018). As an example of how weights are used to calculate funding adjustments, consider a weight of 0.20 for students from low-income families. This would provide schools with an additional 20 percent of the base allocation for each student served from a low-income family. Alternatively, the funding adjustment may be defined in absolute terms — for instance, each school would receive an additional $1,000 per low-income student. For comparability purposes, the study team mathematically converted absolute weights used by case study districts to equivalent relative weights and vice versa. Exhibit 7 summarizes the different types of funding adjustments used by the case study districts. For full descriptions of the WSF systems used in each case study district, see the case study profiles in Appendix A; in addition, Exhibit D-2 in Appendix D provides a detailed comparison of WSF features across the nine sites.

Exhibit 7.   Types of funding adjustments used in WSF allocation formulas, by case study district

	Grade level	Students from low-income families	English learners	Students with disabilities	Homeless students	Other needs group	School/ student performance	Specialized programming
Baltimore	●	●		●			●	
Boston	●	●	●	●	●	●	●	●
Cleveland	●		●	●		●	●	●
Denver		●	●	●			●	●
Indianapolis	●	●		●				
Milwaukee	●		●					●
Nashville	●	●	●	●				
Prince George's	●		●				●	
San Francisco	●	●	●	●	●			
Total	**8**	**6**	**7**	**7**	**2**	**2**	**5**	**4**

Exhibit reads: Baltimore's school funding formula included adjustments for grade level, students from low-income families, students with disabilities, and gifted and talented students.

Note: WSF system features are based on information for 2018–19.
Source: Extant documentation from case study districts.

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How Districts Developed Their Specific Formula Adjustments

District staff who were interviewed in the case study districts often described a considerable investment of time and effort in developing specific funding adjustments used in their formulas, including both the types of student and school characteristics considered and the specific weights or per-pupil amounts for each. Many of these districts sought outside assistance with developing their WSF formulas.[20] In addition, respondents in several districts described appointing a design team consisting of various district- and school-level stakeholders to provide input on key design decisions, such as determining which student characteristics to include in the system. One district administrator summarized the early-stage design process:

> *The work that went into it involved the design team, school-based leaders, and central office leaders. Initially you take inventory of all the resources that they have in schools. Everything from security officers, football coaches to teachers to secretaries to books and curricular materials . . . In determining the weights, the first calculation is of implicit weighting. What are we spending now in these different areas? And then calculate implicitly the amount [that] the base is for a standard kid, for special education, gifted and talented, English language learners, struggling students, etc. Engaging people in the question — how many more dollars do English language learner students need than a general education student? . . . How much more time and resources do they need?*

The ways in which base per-pupil amounts, funding adjustment sizes, and other WSF policy factors may affect each other make it difficult to estimate the *right* size of funding adjustments, particularly at the onset of introducing a WSF system (Education Resource Strategies 2018). Indeed, respondents in several case study districts described a level of ambiguity in initially defining the size of the funding adjustments. As one district administrator explained,

> *There's an art and a science to it. There is no "correct" weight. It's just a combination of past practice, desired practice, and you negotiate the intersection.*

Similarly, in another district, an administrator suggested that, while "there was research to support the idea that there were some categories of students that needed more support," there was little evidence to specify the *precise* value of its funding adjustments. To help refine the model in the early stages, four case study districts reported conducting a one- to two-year pilot with a subset of schools, using this experience to adapt the model prior to full implementation across the district. In addition, all of the case study districts have revised their weighting formulas at least once since developing the initial scheme.

Base Funding

WSF formulas for allocating funds to schools generally provide a base amount of per-pupil funding for all students to support school operations, prior to adding funds for specific kinds of students and programs. In the case study districts, the base allocation per student ranged from $3,060 in Prince George's to $5,521 in Baltimore (Exhibit 8). Between 2016–17 and 2018–19, Cleveland experienced the largest growth in base funding, a 21 percent increase from $4,051 per student to $4,887 per student. In

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[20] Seven of the WSF case study districts consulted with Education Resource Strategies (ERS), a non-profit organization, to support initial planning around the funding adjustments. ERS worked with each of these seven districts (Baltimore, Boston, Cleveland, Denver, Indianapolis, Nashville, and Prince George's) to conduct a detailed analysis of its existing resource allocation strategy and student needs to inform the design of the funding system.

contrast, Milwaukee saw a 13 percent decline in base funding, due to a combination of diminishing revenues and recentralizing management of school costs to the district.

Exhibit 8.   WSF base allocations per pupil in each case study district, 2016–17 to 2018–19

District	2016–17	2017–18	2018–19	Percentage change
Baltimore	$5,693	$5,416	$5,521	−3%
Boston	$4,100	$4,100	$4,291	5%
Cleveland	$4,051	$4,860	$4,887	21%
Denver	—	$4,051	$4,283	—
Indianapolis	—	$3,758	$4,985	—
Milwaukee	$3,620	$3,329	$3,163	−13%
Nashville	$4,350	$4,425	$4,600	6%
Prince George's	$3,000	$3,300	$3,060	2%
San Francisco	$3,475	$4,529	$3,904	12%

Exhibit reads: In Baltimore, the base per-pupil amount declined from $5,693 in 2016–17 to $5,521 in 2018–19, a decrease of 3 percent over the three-year period.

Notes: Baltimore and Milwaukee provided base allocations that differ by grade level; this exhibit presents the lowest of their grade-level base allocations. A dash indicates data were not available. Denver did not provide data on base allocations for 2016–17. Indianapolis began implementation of its WSF system in 2017–18, so base allocation data did not exist for 2016–17.
Source: Extant documentation from case study districts.

Grade-Level Funding

Seven of the nine WSF case study districts provided larger per-pupil amounts for lower grade levels, but they differed in the specific grades that were favored.[21]

Although Milwaukee and Nashville prioritized all elementary schools, four districts focused just on early grades (prekindergarten in Indianapolis, grades K–1 in Prince George's, and grades K–3 in Cleveland and San Francisco). Boston used a more complex set of six grade-level categories. For most of these districts, the elementary or early-grade supplement was about 10 percent of the base allocation; however, Indianapolis provided a 23 percent supplement for prekindergarten and San Francisco, a 26 percent supplement for grades K–2, while Boston's weights for elementary grade categories ranged from a 30 percent supplement for grades 3–5 to an 80 percent supplement for prekindergarten (Exhibit 9).

In contrast, Denver did not differentiate base funding amounts by grade level, and Baltimore provided a larger per-pupil amount to high schools, amounting to an additional 10 percent over the base allocation. Also, three of the districts that provided larger amounts in the early grades also provided larger amounts to high schools than to middle schools, with this supplement amounting to 1 percent of the base allocation in Cleveland, 4 percent in Milwaukee, and 18 percent in San Francisco. Nashville, however, provided 5 percent more to middle schools than to high schools, and Indianapolis provided supplemental funding for each student in grades 7 and 9 "to ensure students experience success as they enter middle and high school" (Indianapolis Public Schools 2018).

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[21] Two districts provided base allocations that differ by grade level (Baltimore and Milwaukee), while six districts provided the same base allocation regardless of grade level but then make grade-level funding adjustments (Boston, Cleveland, Indianapolis, Nashville, Prince George's, and San Francisco).

Exhibit 9.   WSF base allocations per pupil after grade-level adjustments, by case study district

District	Grade-level category	Per-pupil allocation	Grade-level weight
Baltimore	Elementary	$5,521	*1.00*
	Middle	$5,521	*1.00*
	High	$6,096	*1.10*
Boston	Prekindergarten	*$7,724*	1.80
	Kindergarten	*$6,866*	1.60
	1–2	*$6,007*	1.40
	3–5	*$5,578*	1.30
	6–8	*$6,007*	1.40
	9–12	*$5,149*	1.20
Cleveland	K–3	$5,349	*1.10*
	4–8	$4,860	*1.00*
	9–12	$4,925	*1.01*
Denver	All grades	$4,283	*1.00*
Indianapolis	Prekindergarten	$4,895	*1.23*
	K–6, 8, 10–12	$3,985	*1.00*
	Grades 7 and 9	$4,385	*1.10*
Milwaukee	Elementary	$3,465	*1.10*
	K–8	$3,469	*1.10*
	Middle	$3,163	*1.00*
	High	$3,294	*1.04*
Nashville	Elementary	*$5,060*	1.10
	Middle	*$4,830*	1.05
	High	*$4,600*	1.00
Prince George's	K–1	*$3,305–$3,397*	1.08–1.11[1]
	2–12	*$3,060*	1.00
San Francisco	K–3	$4,934	1.26
	4–5	$3,904	1.00
	6–8	$4,529	1.16
	9–12	$4,606	1.18

Exhibit reads: In Baltimore, the base per-pupil amount allocated to elementary schools was $5,521.

Notes: For districts that reported funding adjustments as additional per-pupil amounts, we mathematically converted them to equivalent relative weights, and vice versa; calculated figures are presented in italics (San Francisco reported funding adjustments both as additional per-pupil amounts and their equivalent relative weights). Baltimore and Milwaukee provided base allocations that differ by grade level, while Boston, Cleveland, Indianapolis, Nashville, Prince George's, and San Francisco provided the same base allocation regardless of grade level but then made grade-level adjustments. The exhibit presents adjusted base allocations for all districts for comparability purposes only. WSF system characteristics are based on information for 2018–19.

[1] Prince George's WSF formula did not use fixed school-level grade-level base per-pupil allocations; rather, these vary slightly across schools in order to limit funding losses and gains to schools from year to year.

Source: Extant documentation from case study districts.

Student Need Adjustments

The most common student subgroups weighted in WSF formulas were students from low-income families, English learners, and students with disabilities.

District documentation of the WSF systems for 14 districts (including the nine case study districts and an additional five districts that provided links to such documentation in response to the district survey) revealed that 10 of the 14 used weights for students from low-income families, nine used weights for ELs, and seven used weights for SWDs. Six of the 14 districts implemented adjustments for students performing below grade level, while three had weights for gifted and talented or high-performing students. Two districts allocated additional funds through their formula based on numbers of students who are homeless (Exhibit 10). Note that a WSF formula typically applies only to a district's unrestricted funds and does not necessarily represent all funds allocated based on these types of students; schools likely receive additional funds outside of the WSF formula for students who have particular needs requiring additional support, including through federal and state categorical programs, grants, and other restricted funding sources.

Exhibit 10.   Number of WSF districts reporting the use formula adjustments to provide additional funding to schools based on various student needs categories

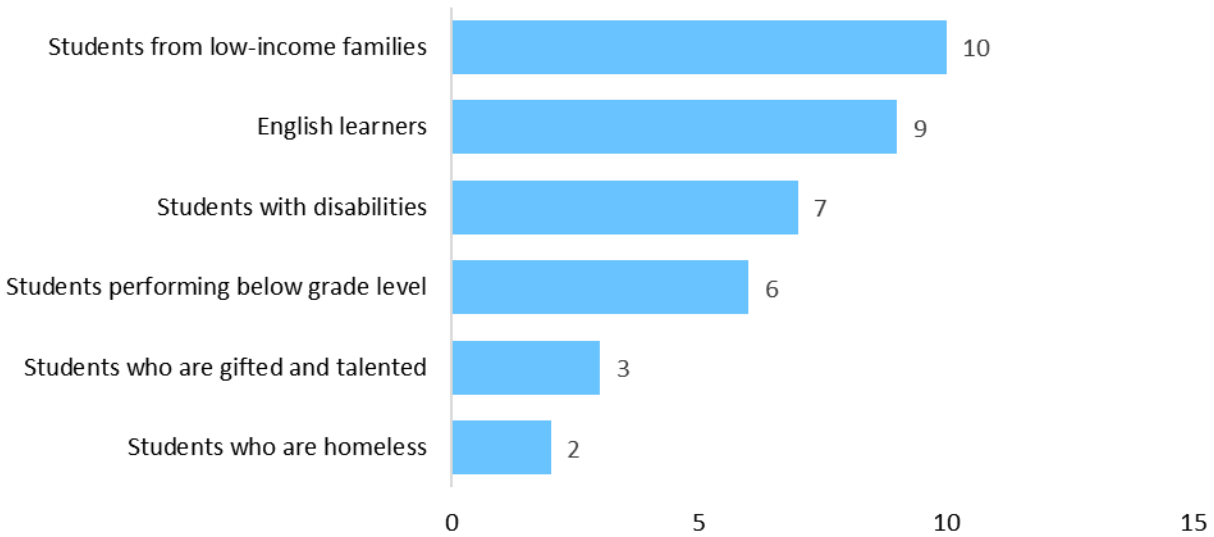**Exhibit reads:** Ten out of 14 WSF districts reported using weights or other formula adjustments to provide additional funding to schools based on their numbers of students from low-income families.

Source: Extant documentation from the nine case study districts and from five additional WSF districts that provided links to such documentation in response to the district administrator survey (*n* = 14).

Among the six case study districts providing funding adjustments for students from low-income families, the weights for individual students ranged from 0.05 to 0.15. Three districts — Baltimore, Boston, and Denver — provided additional allocations for schools with high concentrations of these pupils.

Two of the six districts used free and reduced-price lunch (FRPL) eligibility as the basis for this adjustment (Denver and San Francisco), while five districts used direct certification (DC) data, under federal provisions that allow districts to certify students as eligible for free lunch based on shared data on other forms of assistance such as the Supplemental Nutrition Assistance Program[22] (Baltimore, Boston, Denver, Indianapolis, and Nashville). Direct certification data may reflect a lower income ceiling for defining low-income families than the traditional FRPL application process, depending on the specific programs used to determine DC eligibility,[23] and may also provide a more accurate measure of student socioeconomic status by capturing students who are eligible for FRPL but do not apply to receive them (Chingos 2016; Hoffman 2012). In Denver, schools received additional funding from adjustments for both FRPL-eligible students and DC students, with DC students getting the cumulative amount for both adjustment categories (Exhibit 11).

Weights for individual FRPL-eligible students ranged from 0.09 in San Francisco to 0.13 for high school students in Denver. For DC students, Nashville had both the lowest and highest weights for individual DC students (0.05 for middle and high school students and 0.15 for elementary students). Denver had a combined weight of 0.15 for high school students who were both FRPL-eligible and DC.

Among the three districts with additional funding adjustments for high concentrations of students from low-income families, Denver had the largest maximum funding adjustment. Indeed, DC students in Denver schools with a high percentage of such students would have qualified for all four low-income funding adjustments (i.e., FRPL-eligible, DC student, and additional adjustments for high concentrations for FRPL students and for high concentrations of DC students), thus receiving a weight of up to 0.265 in elementary schools and 0.275 in high schools. In Baltimore, the additional allocation for schools with a high concentration of DC students (0.04) applied only to elementary and K–8 schools and increased the weight for those students to equal the basic weight provided to DC students in high schools (0.11). Baltimore and Denver applied the additional funding adjustment to *all* students from low-income families, whereas Boston used the added weight for high concentration only to the number of DC students above the concentration threshold.[24] Baltimore, Boston, and Denver also differed in the thresholds used for these additional allocations, ranging from a 50 percent DC concentration in Boston to an 80 percent DC concentration in Baltimore (Exhibit 11).

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[22] Since the passage of the *Healthy, Hunger-Free Kids Act of 2010*, the National School Lunch Program (NSLP) has allowed districts to directly certify students as eligible for free meals based on shared data on family eligibility for other forms of assistance such as the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, and Medicaid, as well as children who are homeless, migrant, or in foster care or Head Start. Under this approach, children who are directly certified to receive free meals at school do not have to submit annual eligibility forms to receive benefits (Food Research and Action Center 2018).

[23] Students are eligible for free lunches if their family's income is no more than 130 percent of the official poverty line and reduced-price lunch eligibility extends up to 185 percent of the poverty line, while eligibility for other programs can have a lower income ceiling and sometimes varies by state.

[24] As an example, consider a high school in Boston with 1,500 students, of which 850 are DC students. The school would only receive the additional high-concentration funding for the 100 students in excess of the 50 percent concentration threshold of 750 students.

In dollar terms, the combined funding adjustments for low-income students ranged from $230 for a middle or high school student in Nashville to a high of $1,132 in Denver for a high school student who is both FRPL-eligible and directly certified and is in a school with a very high concentration of such students.

Exhibit 11.   WSF funding adjustments for students from low-income families, by case study district

District	Adjustment category	Per-pupil allocation	Weight
Baltimore	Student who is directly certified (DC) as eligible for free school lunch	E, EM: $400 H: $700	*E, EM: 0.07* *H: 0.11*
	Additional allocation for each DC student in a school with a high concentration of DC students (at least 80%)	E, EM: $200	*E, EM: 0.04*
Boston	DC student	*$429*	0.10
	Additional allocation for each DC student above the 50% DC concentration threshold	*$429*	0.10
Denver	Student eligible for free or reduced-price lunch (FRPL)	E: $498 H: $537	*E: 0.12* *H: 0.13*
	Additional allocation for each FRPL-eligible student in a school with a high concentration of FRPL students (at least 60%)[1]	$183–$415	*0.04–0.10*
	DC student	$80	*0.02*
	Additional allocation for each DC student in a school with a high concentration of DC students (at or above the 50th percentile)[1]	$40–$100	*0.01–0.025*
Indianapolis	DC student	$500	*0.13*
Nashville	DC student[2]	*E: $690* *M, H: $230*	E: 0.15 M, H: 0.05
San Francisco	FRPL-eligible student	*$351*	0.09

Exhibit reads: Baltimore allocated an additional $400 for each student who is directly certified as eligible for free lunch in elementary and elementary/middle schools, which is equivalent to a weight of 0.07 per DC student.

Notes: Cleveland, Milwaukee, and Prince George's are excluded from the table because they did not include adjustments for students from low-income families. For districts that reported funding adjustments as additional per-pupil amounts, we mathematically converted them to equivalent relative weights, and vice versa; calculated figures are presented in italics (San Francisco reported funding adjustments both as additional per-pupil amounts and their equivalent relative weights). WSF system descriptions are based on information for 2018–19.
E = elementary school, M = middle school, EM = elementary/middle school, H = high school.
[1] Denver used a progressive formula to provide additional funds for schools with high concentrations of FRPL students, ranging from $183 per FRPL student in schools with a FRPL rate between 60 to 63.9 percent up to $415 for schools with a FRPL rate of 90 percent or more. For DC students, the additional amount provided for schools with high concentrations of DC students ranged from $40 per DC student up to $100 in schools where the percentage of DC students was at or above the 50th percentile among district schools.
[2] For middle schools and high schools, Nashville applied a weight based on prior academic performance. Because there is no prior performance for incoming students at the elementary level, Nashville applied an extra 0.10 poverty weight to elementary schools as a proxy for prior academic performance, in addition to the 0.05 poverty weight applied to all schools in the district.
Source: Extant documentation from case study districts.

Among the seven case study districts providing funding adjustments for English learners, weights varied considerably, ranging from 0.01 for an elementary bilingual program participant in Milwaukee to 0.94 for a high school student with limited or interrupted formal education in Boston.

Three of the seven districts varied the EL weights by level of English proficiency level (Boston, Cleveland, Prince George's, and San Francisco), while two used a single weight for all ELs (Denver and Nashville) and one varied the weights only by grade level (Milwaukee). In addition, Boston included a weight for students with limited or interrupted formal education (SLIFE) — EL immigrant students whose gaps in formal education left them far behind academically (Exhibit 12).

Exhibit 12.   WSF funding adjustments for English learners, by case study district

District	Adjustment category	Per-pupil allocation	Weight
Flat allocation			
Boston	Student with limited or interrupted formal education (SLIFE)	Grades 4–5: $2,146	4–5: 0.50
		6–8: $3,604	6–8: 0.84
		9–12: $4,034	9–12: 0.94
Denver	English language learner (ELL) student	$431	0.10
Milwaukee	Bilingual program participant	$50	E, K–8: 0.01
			M, H: 0.02
Nashville	ELL student	$1,104	0.24
Allocation by proficiency level			
Boston	Foundational English learner (EL) student	K–5: $1,030	K–5: 0.24
		6–8: $2,188	6–8: 0.51
		9–12: $2,618	9–12: 0.61
	Transitional EL student	$86	0.02
Cleveland	Prefunctional limited English proficiency (LEP) student	$2,399	0.49
	Beginning-level LEP student	K–8: $2,000	K–8: 0.41
		H: $2,240	H: 0.46
	Intermediate- or advanced-level LEP student	K–8: $1,600	K–8: 0.33
		H: $2,000	H: 0.41
Prince George's	ELL student[1]	$826–$2,020	0.27–0.66
San Francisco	Beginner/intermediate EL student	E: $200	0.0512
		M: $240	0.0615
		H: $530	0.1358
	Long-term EL student	$240	0.0615
	Advanced EL student	$155	0.0397

Exhibit reads: Boston allocated an additional $2,146 for each EL student with limited or interrupted formal education (SLIFE), which is equivalent to a weight of 0.50 per student.

Notes: Baltimore and Indianapolis are excluded from the table because they did not include adjustments for EL students. For districts that reported funding adjustments as additional per-pupil amounts, we mathematically converted them to equivalent relative weights, and vice versa; calculated figures are presented in italics (San Francisco reported funding adjustments both as additional per-pupil amounts and their equivalent relative weights). WSF system descriptions are based on information for 2018–19.
E = elementary school, M = middle school, H = high school.
[1] Prince George's WSF model did not use fixed school-level weights, rather weights varied slightly by school to reflect differences across schools in the composition of EL students served with respect to English proficiency (Newcomer, Beginner, Intermediate, and Advanced) and to limit funding losses and gains to schools from year to year.
Source: Extant documentation from case study districts.

Four of the seven districts provided adjustments that amounted to more than $1,000 per student, while the other three provided adjustments of less than $600 per student (Exhibit 12). In Boston, the funding adjustment for SLIFE students amounted to between $2,146 and $4,034, depending on grade level, while the allocation for ELs determined to be at a foundational level (at or below proficiency) was between $1,030 and $2,618. In Cleveland, funding adjustments for ELs ranged from $1,600 to $2,399, depending on proficiency level and grade level. Nashville's adjustment amounted to $1,104 per EL student. Smaller adjustments were provided in Milwaukee, San Francisco, and Denver (Exhibit 12).

Among the seven case study districts providing funding adjustments for students with disabilities, weights often varied by type of disability, ranging from 0.0128 for a student with a low-severity disability in San Francisco to 7.25 for student with a high-severity disability in Nashville.

Two districts' WSF formulas provided a flat supplemental allocation for SWDs taught in a self-contained classroom (Baltimore and Indianapolis) and Denver provided a flat supplemental allocation for each student above the average school caseload of students with mild/moderate disabilities. In contrast, four districts varied the size of the funding adjustment based on disability type (Boston, Cleveland, Nashville, and San Francisco).

As with the EL adjustments, the size of the adjustments for SWDs varied considerably. The three districts providing flat supplemental allocations ranged from $641 to $910 per student. In the four districts with adjustments that varied by disability type, the range in weights was often quite wide ($4,291 to $28,750 in Boston, $729 to $7,918 in Cleveland, and $2,300 to $33,350 in Nashville). At the low end of the spectrum, San Francisco's adjustments were between $50 and $100 (Exhibit 13). It is important to note that the case study districts may differ in the extent to which they provide state and local funding for students with disabilities through or outside of the WSF formula.

Three case study districts used additional categories of student need in determining school allocations.

Cleveland provided a student mobility weight of 0.15 to all K–8 schools for students who moved two or more times in the previous year. In San Francisco, schools with at least 25 homeless students received $4,000 plus $96 for each homeless student. In Boston, homeless students received a 0.10 weight plus a 0.10 weight for the projected number of homeless students above a 5 percent concentration threshold.

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Exhibit 13.   WSF funding adjustments for students with disabilities, by case study district

District	Adjustment category	Per-pupil allocation	Weight
Flat allocation			
Baltimore	Student with disability (SWD) taught in a self-contained classroom	$641	*E, M: 0.12* *H: 0.11*
Denver	SWD above the average caseload of students with mild/moderate disabilities	$800	*0.19*
Indianapolis	SWD in a self-contained classroom	$910	*0.23*
Allocation by disability type			
Boston	SWD with low-severity disability	*$4,291*	1.0
	SWD with moderate-severity disability	*$6,007*	1.4
	SWD with high-severity disability	*$8,153–$28,750*	1.9–6.7
Cleveland	SWD with emotional disturbances or requiring intensive behavior interventions	$729	*0.15*
	SWD taught in a resource room or inclusion setting	K–8: $7,918 H: $,5938	*K–8: 1.63* *H: 1.22*
	SWD taught in a self-contained classroom	K–8: $4,524 H: $2,545	*K–8: 0.93* *H: 0.52*
Nashville	SWD (varies by disability type)	*$2,300–$33,350*	0.50–7.25
San Francisco	SWD with low-severity disability (in grades K–12)	*$50*	0.0128
	SWD with moderate- or high-severity disability or in prekindergarten	*$100*	0.0256

Exhibit reads: Baltimore allocated an additional $641 for each student with disabilities taught in self-contained classroom, which is equivalent to a weight of 0.12 for elementary and middle schools.

Notes: Milwaukee and Prince George's are excluded from the table because they did not include adjustments for SWDs. For districts that reported funding adjustments as additional per-pupil amounts, we mathematically converted them to equivalent relative weights, and vice versa; calculated figures are presented in italics (San Francisco reported funding adjustments both as additional per-pupil amounts and their equivalent relative weights). WSF system descriptions are based on information for 2018–19.
E = elementary school, M = middle school, H = high school.
Source: Extant documentation from case study districts.

Performance Adjustments

Five of the nine case study districts included performance-based funding adjustments in their WSF systems, sometimes for low-performing students and sometimes for high-performers.

Prince George's had the largest weights in this category, ranging from 0.35 to 0.71; performance weights in the other four districts ranged from 0.02 to 0.30 (Exhibit 14). Prince George's employed a broad set of factors associated with student academic need, including multiple student assessment scores for all grade levels and low-performance risk measures for middle schools and high schools based on student outcomes such as grade point average, attendance, and student assessment scores. Similarly, Boston included additional allocations for high school students at high risk of dropping out based on chronic absenteeism, poor academic performance, and insufficient credit accumulation. In Nashville, middle schools and high schools were provided a weight for students with poor prior academic performance,

and in Cleveland, schools received a weight for students below proficient in reading and a weight for high school students with chronic absenteeism.

Three districts included performance adjustments for high-performing students. Cleveland provided a weight for students above proficient in reading, Baltimore employed a weight for students identified as high performing or high potential, and Denver provided a weight for gifted and talented students.

Exhibit 14.   WSF funding adjustments for student or school performance, by case study district

District	Adjustment category	Per-pupil allocation	Weight
Baltimore	Student identified as high performing or having high potential	$400	*0.07*
Boston	High-risk student[1]	*$858 (grade 9)* *$215 (grade 10)*	0.20 (grade 9) 0.05 (grade 10)
Cleveland	Chronically absent student (10+ days) in grades 9–12	$750	*0.15*
	Student below proficient in reading (based on proficiency in grades 3 and 8)	$1,500	*0.30*
	Student above proficient in reading (based on proficiency in grades 3 and 8)	$750 $1,500	*0.15 (K–8)* *0.30 (9–12)*
Denver	Gifted and talented student	$130	*0.03*
	School identified as low performing under School Performance Framework (SPF)	3–5 years of phased funding	*N/A*
	Student in school showing schoolwide improvement under SPF	$65–$115	*0.02–0.03*
Nashville	Low-performing student	*$460* *$230*	0.10 (M) 0.05 (H)
Prince George's	Multiple factors including state assessments, at-risk probability ratios, grade point average, attendance, suspension/expulsion requests, and student retention[2]	*$1,071–$2,173*	0.35–0.71

Exhibit reads: Baltimore allocated an additional $400 for each student identified as high performing or having high potential, which is equivalent to a weight of 0.07.

Notes: Indianapolis, Milwaukee, and San Francisco are excluded from the table because they did not include adjustments for student or school performance. For districts that reported funding adjustments as flat per-pupil allocations, we derived the equivalent weights, and vice versa; calculated figures are presented in italics. WSF system descriptions for all districts are based on information for 2018–19.
E = elementary school, M = middle school, H = high school.
[1] Boston defined *high-risk students* as high school students at high risk of dropping out, as evidenced by chronic absenteeism, poor academic performance, and insufficient credit accumulation.
[2] Prince George's WSF model did not use fixed school-level weights; rather, weights varied slightly by school to reflect differences across schools in the composition of students with respect to student performance and to limit funding losses and gains to schools from year to year.
Source: Extant documentation from case study districts.

While performance adjustments were typically applied for *student* performance, Denver's WSF system also focused on *school-level* performance. Under Colorado's district and school accountability system, the School Performance Framework (SPF), schools were evaluated on key performance indicators, including academic achievement, academic growth, and for high schools, postsecondary and workforce readiness. Under the SPF, a school is assigned a rating: blue (distinguished), green (meets expectations), yellow (accredited on watch), orange (accredited on priority watch), and red (accredited on probation). Denver offered additional funding, referred to as *tiered supports*, to low-rated schools (red or orange), as well as extra per-pupil funding (0.02 to 0.03) for schoolwide improvement on the SPF.

Allocations for Specialized Programming

Four of the case study districts supplemented their standard WSF funding adjustments with additional allocations for specialized programming, such as specialty schools and vocational programs.

In general, these additional funds were earmarked for unique academic programs or schools that were deemed to be more resource intensive. Milwaukee, for instance, featured several such allocations, including providing specialty schools (e.g., art schools, International Baccalaureate schools, gifted and talented, career and technical education) with an additional 1.0 FTE teacher and $150 per student; providing Montessori, language immersion, and dual language schools with an additional 2.25 FTE paraprofessionals; and providing schools with culinary arts or Turnaround Arts programs (integrated arts models in high-need schools) with an additional 1.0 FTE teacher (Exhibit 15). In Cleveland, the WSF formula model included extra allocations for specialty schools (e.g., career and technical education, STEM, and performing arts) and new school transition funding typically offered for three to four years to support start-up costs of new schools. Denver offered $7,480 for each Center Program (programs offering individualized support and instruction to students with special needs), and Boston provided a weight of 1.0 ($4,291 per student) for students in vocational programs and a weight of 0.35 ($1,502 per student) for students receiving inclusive supports.

Exhibit 15.   Funding adjustments for specialized programming, by case study district

District	Adjustment category	Adjustment
Boston	Vocational program	1.00 ($4,291 per student)
	Student in inclusive setting	0.35 ($1,502 per student)
Cleveland	Specialty schools	Additional funding per school
	Newly created schools	Additional funding (up to 4 years) per school
Denver	Center Program at a school[1]	$7,480 per program
Milwaukee	Specialty schools	1.0 FTE teacher and $150 per student
	Montessori, language immersion, and dual language	2.25 FTE paraprofessionals
	Culinary arts, Turnaround Arts	1.0 FTE teacher

Exhibit reads: Boston provided a weight of 1.0 per student for vocational programs.

Notes: Baltimore, Nashville, Prince George's, and San Francisco are excluded from the table because they did not include adjustments for specialized programming. WSF system descriptions for all districts are based on information for 2018–19.
[1] Denver defines "Center Programs" as programs that provide individualized support and instruction to SWDs.
Source: Extant documentation from case study districts.

Changes to Funding Adjustments Over Time

Seven of the case study districts reported regularly reviewing their weighting schemes, on either an annual basis or some other regular basis. For example, Nashville convened a focus group of principals and district leaders each year to discuss changes to the WSF model. In Cleveland, the district retained the services of an external non-profit organization to regularly provide consultation on remodeling the formula as well as ensuring the weights are appropriate. In contrast, Baltimore reviewed and adjusted its WSF system for the 2018–19 school year, which marked the first time in 10 years that district leaders and stakeholders had revisited the model. As one district administrator explained, "We [as a district] collectively reached a tipping point. . . . Costs have gone up and down, so the weights have had to be

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adjusted to reflect this. We've identified other factors that affect the ways kids learn, which [needed to be] factored in [to the system]."

All WSF case study districts had made at least one change to their weighting schemes in recent years.

Over the past five years (or since transitioning to WSF in districts that started implementing the system more recently), the most common change, reported by five of the nine case study districts, was to add a funding allocation for one or more new student need categories, including students from low-income families (Baltimore, Denver, and Nashville), homeless students (Boston and San Francisco), gifted students (Baltimore), and SWDs (Denver).

In addition, Boston was experimenting with integrating contextual need factors into its WSF formula. Boston introduced an Opportunity Index for the 2018–19 school year, which "incorporates a range of data representing factors that are outside of the schools' control but are also predictive of students' academic outcomes." These factors consisted of indicators related to students' neighborhoods, including safety, socioeconomic status, educational attainment, and physical environment, as well as factors specific to individual students and their families, such as participation in state-administered programs for low-income populations, student academic achievement, student behavior, and chronic absenteeism. The Opportunity Index was not a part of Boston's WSF system, although "district officials [were] exploring the possibility of incorporating the index into the budget process more deeply in subsequent years" (Boston Public Schools 2018).

Conversely, two districts removed weights from their respective WSF systems. Baltimore eliminated performance weights for students at the basic or advanced level and for high school students at risk of dropping out, while Indianapolis eliminated its base weight for K–2 students.

Case study districts also frequently reported adjusting the size of weights or per-pupil allocations. Boston, in particular, made several changes to weight magnitudes in recent years, including a mix of increases and decreases to the weights for several high-severity disability categories and EL categories, as well as a reduction in the size of its base weight for grades 9–12 (from 1.30 to 1.20). Denver also revised several weights, specifically increasing allocations for FRPL-eligible students, ELs, and gifted and talented students.

Perhaps the most substantial change to a WSF system came from Prince George's, which shifted away from a fixed-weight approach in spring 2017.

> *PGCPS [Prince George's County Public Schools] relies on a formula built from a series of [dynamic] weights. First, PGCPS identifies student characteristics that it believes to affect the cost of providing educational services to different types of students in different contexts (these are weight categories, e.g., performance, or ESOL [English for speakers of other languages]). PGCPS then assigns specific weight values within each category to [each] school based on [its position relative to other schools in the district]. The weight amounts are meant to reflect the relative need students have. These weights are then added together to get a student's (or school's) total funding allocation. (Miller 2018)*

Stakeholder Perceptions on the Efficacy of Funding Adjustments

Case study respondents with positive views about WSF described the funding approach as a valuable instrument for providing resources to schools serving students with the greatest needs and as generally targeting the appropriate student categories.

As a Boston principal summarized, "I think [the WSF system] takes into account a lot of factors . . . the type of students you're getting [and] the type of resources that are going to be needed to have these students educated successfully." Respondents also tended to view the weighting schemes as a work of continual improvement. In Boston, a district administrator described the process as a "constant evolution that WSF needs to go through." In Denver, one district finance officer shared the following observations:

> *I think it's getting there [in terms of meeting the needs of students]. I think it's better than doing it without weights. . . . I think we probably need [to get to] where, for every non-need kid . . . for every one dollar they get, you probably need to be at $1.35 to $1.40, when you start to look at the risk factors. We are probably at $1.20 to $1.30. A couple of years ago, we were probably at $1.05 to $1.20, so we are making progress. I don't think it is where it needs to be, but it is much closer today than it was even a couple of years ago.*

Among case study participants, the most common critiques of WSF weighting schemes were limited capacity to provide significant funding adjustments for all categories of student need and inability to keep pace with evolving student populations.

First, respondents in several case study districts described finite resources as a limiting factor in developing funding adjustments of sufficient magnitude for all student need categories. For example, one district administrator argued that their weighting scheme is unable to capture the needs of some high-need students because their formula was too general and the weights were not suitably nuanced. In another district, a district administrator explained that the core issue is the inability "to grow the pie" because of the state formula, suggesting that "adding a weight in a different place at this point just takes it from someplace else." A district official in a third district voiced a similar concern about their funding system:

> *We do the best we can, but we operate on less than $10,000 per student per year. There is a limited amount of differentiating that we can do within that dollar amount. We would like to add more weights for . . . some of these other subgroups, but with such limited funding, it's tough. . . .*

Similarly, a fourth district chose to limit its number of weighting categories due to resource constraints. As one district administrator explained, the district wanted to ensure that each individual weight carried a sufficient amount of funds, but given the level of state and local funding, they could not adequately support a larger number of weights.

In another district, a principal described the additional amount of funding received through the weights as too little to be meaningful:

> *The crazy thing is all this talk . . . about adjusting weights, holding forums, and getting principal and teacher feedback . . . but really, when the weights are such a small percentage for a poverty school, and literally, you're getting an extra $100 per kid. They*

created this big fanfare and [declared] it would totally upset the system, but if you looked at everyone's funding — from what they were getting this year compared to last year — it's fairly neutral. We wasted so much time for massive changes, and what it amounted to is $40,000 to $50,000, which is nothing to sneeze at. But $40,000 to $50,000 on a $3.4 million-dollar budget is like we created fanfare over a rounding error.

A second theme common across several case study districts was a perception that certain student populations — in particular, immigrant students — were not being adequately counted in WSF formulas. One principal shared the following:

My principal friend in [another part of the city] is at a high-poverty school, but his direct certified is low because of a lot of undocumented kids. The undocumented kids are not certified. So, it looks like his free and reduced rate is 40 percent. . . . The district knows this but won't do anything about it. They won't do any adjustments to these schools at all, which they know have high undocumented populations. This school is showing as one of the more affluent schools in the district because they have a ton of kids showing as not certified.

In another district, which had experienced a growing number of immigrant students and families in recent years, a principal acknowledged that the allocation for ELs was higher than that for non-ELs, but questioned whether the weight assigned to ELs was "a fair amount at this particular point in time" or "high enough based on some of the needs of families."

Other WSF Policy Decisions

In addition to the specific funding adjustments included in a WSF system, there are aspects important to the WSF funding structure, including the use of average versus actual teacher salaries, hold-harmless strategies, and small-school provisions.

Hold-Harmless and Small-School Provisions

Seven WSF case study districts reported having hold-harmless provisions to limit the amount of funding losses that a school could experience from year to year. Eight districts reported having small-school provisions.

Among those districts with hold-harmless provisions, Cleveland, Indianapolis, and Nashville had used these strategies to help ease the transition to WSF, limiting the amount of per-pupil funding that a school could lose compared with the resources they received prior to WSF. To offset these costs and stay within budget, the districts also had to cap the amount of funding that a school could gain. At the time this report was published, Cleveland and Nashville were phasing out these protections, gradually increasing both the gains cap and loss limit each year,[25] while Indianapolis, still in the early phases of WSF implementation, is no longer using a hold-harmless policy for middle and high schools and is planning to eliminate it for elementary schools. As one school board member explained, "At the end of the day, those things will not continue to exist because they perpetuate inequities."

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[25] In Nashville, hold-harmless protections will continue for schools designated as Priority Schools.

In Baltimore, the district allocated $5.2 million in additional funding as a temporary measure to hold all schools harmless for the 2018–19 school year after the significant cuts experienced in the prior year. The three other districts — Boston, Prince George's, and San Francisco — adopted ongoing, hold-harmless provisions. For example, San Francisco provided, on average, $60,000 per school annually for schools experiencing budget declines due to actual enrollments in the fall being lower than projected enrollments in the spring. The additional amount often did not cover the full amount caused by enrollment adjustments, but it did, as one district administrator explained, "grant [a] school some latitude in making budget decisions about consolidating staff." As part of its WSF formula, Prince George's capped its schools' per-pupil dollar losses to no more than 1.5 percent, and Boston introduced a series of new supports in 2018–19 for schools with declining enrollments, particularly those that are lower performing.

Eight of the case study districts provided additional funds to very small schools to help cover the basic operational costs of running a school. For example, Nashville provided roughly $16 million in its WSF system to support small schools, mostly in a part of the district that has experienced significant enrollment declines to "[make] sure [they] can afford the non-negotiables, on top of their teaching staff and principal." In San Francisco, the allocation formula included a "floor plan" mechanism, which takes into account minimum staffing ratios to ensure that "base staffing is achieved." Similarly, Baltimore, in cooperation with an external partner, developed a series of algorithms to determine supplemental requirements to support baseline needs.

Use of Actual Versus Average Teacher Salaries

As noted in Chapter 1, one concern about traditional resource allocation systems is that allocating set amounts of staff to each school through staffing formulas can result in an inequitable distribution of resources across schools because higher-poverty schools often have teachers with less experience and lower salaries. As a result, the amount of money spent in high-poverty schools may be less than in lower-poverty schools, all else being equal, thus creating an implicit subsidy from higher-poverty schools to lower-poverty schools (Baker and Thomas 2006; Levin et al. 2013; Malen et al. 2015; Roza and Hill 2004; Shambaugh, Chambers, and DeLancey 2008). WSF systems have the potential to change this dynamic, but only if school budgets are based on the actual salaries of the staff employed in each school. By doing so, a high-poverty school with teachers who are less experienced and lower salaried, on average, would have lower salary expenditures than a school with higher-paid teachers (for the same number of teachers) and could use its "left-over" funds to purchase additional resources such as an instructional coach, professional development for teachers, instructional materials, computers, or lowering class sizes. In this way, WSF could enable districts to compensate for within-district inequities related to such factors as higher teacher attrition in high-poverty schools or a tendency of experienced teachers to choose to teach in more affluent schools. However, if schools are "charged" for each teacher based on a districtwide average salary rate rather than the teacher's actual salary, that potential benefit is lost and schools with lower-paid teachers will appear to have the same level of expenditures as schools with higher-paid teachers.

> **Although all nine WSF case study districts reported that their schools use average teacher salaries in developing their budgets, three of the districts also used actual salaries, either for some of their schools or by incorporating them into their weighting scheme.**

In general, in all of the case study districts, schools used a constant, districtwide average teacher salary when developing their budgets, regardless of the specific pay levels of the teachers in each school. Many

district- and school-level respondents perceived this practice as beneficial, stating that use of average salaries simplifies staffing costs, encouraging principals to hire "based on quality [and] not about how much it costs" and to "not penalize [principals] for using veteran staff." One principal shared the following observations:

> *The pluses [are] that if I used the actual salary, I would not have enough monies to pay for the individuals. Here, my staff doesn't leave. They're going to stay. The majority of teachers here have taught 10 [years] or above. So, if you paid them their salary out of my budget, I would not have enough funds for that to happen.*

Three of the case study districts, however, adopted methods to introduce actual salaries into their WSF schemes to address the issue of "implicit subsidies" from higher-poverty schools to lower-poverty schools. In both Boston and Denver, local initiatives and state policy established a set of autonomous schools that have been granted greater control over matters such as staffing, educational programming, calendars and scheduling, and budgeting. Schools with autonomous status were offered the option of choosing to use actual or average salaries for WSF system budgeting — an option that was primarily used by higher-poverty schools with relatively low-salaried teachers.

Roughly one-third of WSF-funded schools in Boston (34 schools) and Denver (65 schools) were autonomous schools in 2018–19, of which most had decided to use actual salaries. Because these schools typically had below-average salaries, the shift to actual salaries increased the effective buying power of their funding allocation, creating, in essence, a sizable windfall for these schools — at least initially — to use as they see fit. Once an autonomous school had chosen to use actual salaries, however, the school could not simply revert to average salaries if that became more beneficial in a subsequent year. In Boston, autonomous schools using actual salaries were permitted to elect to return to using average salaries only after actual school salaries had exceeded the district average for three consecutive years. Similarly, autonomous schools in Denver that opted to use actual salaries were required to continue until, as one school principal explained, "you've reached that threshold where you don't have enough money to fund your staff."

Boston had experienced schools electing to change back to average salaries. In the last three school years, five schools switched back and district administrators expected the number to rise in the coming years. As district administrators explained, schools that are successful in improving the school culture and student performance tend to build a positive reputation, which, in turn, may improve their ability to recruit and retain more experienced (and more expensive) teachers. As a result, the size of the school's "windfall" gradually evaporated. In contrast, Denver officials suggested that they did not view such a situation as likely because the distribution of teacher experience within schools — and, therefore, school-level averages of actual salaries — tended to be more or less constant over time.

Critics of using actual salaries may argue that this approach could encourage principals to hire less qualified (and thereby less expensive) teachers. To help guard against such claims, Denver required a school vote to withdraw from negotiated agreements with the district, such as shifting from average to actual salaries: At least 60 percent of teachers were required to support such measures for a school to make any changes.

The use of actual salaries for lower-salary schools in a district effectively provides those schools with additional funds that they can choose to spend on other things, and those funds have to come from somewhere. In both Boston and Denver, district officials said that introducing the use of actual salaries

across all schools in the district in the same year would have caused significant budgetary strains on the district; however, because schools gradually opted in to using the actual salary approach, the district was able to phase in the additional costs over time. As a district administrator in one of the districts explained, the additional cost each year was about $200,000, which he characterized as "a drop in the bucket" in comparison to the overall operating budget of $400 million.

Prince George's County took a different approach to adjusting for the uneven distribution of more experienced teachers: Rather than directly using actual salaries, it incorporated a measure of schools' differences between actual and average salaries into its weighting scheme. Specifically, Prince George's tailored the base allocation for each school by applying a weight to account for differences in teacher salary levels across schools in the district, as well as the resources that some schools (particularly specialty programs) receive in addition to their WSF dollars. This weight was based on three specific components: (1) the three-year average variance between the average and actual salaries from unlocked instructional positions (positions purchased through WSF funds), (2) the number of locked instructional positions (positions funded and staffed by the central district office) in a school, and (3) the total of the average salaries of these locked positions in the school.

Transparency of WSF Systems

In four case study districts, the majority of respondents characterized budgeting and resource allocation under WSF as largely transparent. Among the remaining case study districts, perceptions were mixed.

Respondents with positive perceptions of the transparency of their WSF system characterized the level of communication from the district and information made available to school-level stakeholders as beneficial. In these districts, principals often received, alongside their total school allocation, specific information on their projected enrollment numbers, the base amount of funding per student, and funding adjustments for specific student characteristics. This allowed principals to visualize how student population counts translate into dollars and to better understand their budgets. Several respondents also emphasized the level of district support as key to promoting transparency and understanding. For example, two districts provided each school with a "budget partner," a district staff person who served as the primary point of contact for guiding principals through the budgeting process. Principals expressed appreciation for those budget partners, with one stating how "they go line by line with you [through the budget], explaining any questions you may have." Similarly, in another district, principals received a budget guide, which one principal described as "invaluable . . . because it gives us . . . the rules of the game: 'Okay, this is what you can do; this is what you can't do.'"

In those districts in which stakeholder perceptions on WSF transparency were mixed, district-level respondents typically held more favorable views than their school-level counterparts. Although both groups generally agreed that districts were sharing more information on budgets and resource allocation than they did before adopting WSF, principals often viewed the materials as highly complex with not enough guidance to help explain the system's technical details. As a result, principals in these districts typically expressed a strong understanding of the broad aspects of their WSF system, but not its particulars. For instance, a principal in one district explained, "For the weights, they give us a comparison every year . . . [but it's] not exactly easy to understand. You have to analyze it and be good at math." Similarly, in another district, a principal indicated that the funding adjustments were unclear: "I mean, I understand how it [operates], but I don't know the exact dollar amounts that those weights carry or receive." In a third case study district, all three principal respondents suggested the system was

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not adequately transparent. As one principal stated, "It's not very transparent, not due to their unwillingness to explain it but because . . . the average person has a hard time explaining what the metrics were for the formula here."

Across all case study districts, including those in which respondents held largely positive perceptions of their WSF system's level of transparency, there were two commonly cited areas of confusion related to aspects of resource allocation, though independent of WSF. First, some respondents — primarily principals — reported a lack of clarity around locked positions (positions funded and staffed by the central district office). A district administrator in one district explained why the rationale for positions funded centrally was unclear to school principals:

> For example, in special education, deciding that an ABA [applied behavior analysis] specialist is needed for an autism program for a basic number of students. It's transparent in the sense that it's clear this is what you should be allocating for, but I think schools would feel what's not transparent is, 'Why do I need to do this? Why do I need to have that ABA specialist? Why can't I decide that . . . I'm not going to go with an ABA specialist? I'm going to contract out with [another] group of people because they think they're much more meaningful to my students and they can still meet the IEP [individualized education program] needs. Why do I need to do that?'

A principal in another district expressed similar frustration with perceived inconsistencies in district mandates for certain positions, explaining that some schools purportedly were granted exemption from having to employ a guidance counselor and adding, "I wished I had known ahead of time that other principals were allowed to say no, because I would have said no too, which would have allowed us to have the behavior coach." In a third district, a district administrator indicated that, because of increased transparency around funds included in the WSF system, principals may turn to locked funds (funds controlled by the central district office), which lack the same transparency, to secure additional resources. Savvier principals who can navigate the budgetary channels and advocate for their schools, may convince the district to provide extra resources through these centrally controlled funds, which could lead to inequities within the district.

Second, and on a note related to the first critique, principals in several districts suggested a lack of transparency around the basis for funding provided to schools through sources outside of WSF, such as special education or Title I of the *ESEA*. Similarly, in one case district, the central office sets aside a limited amount of funds for supplemental budget requests, which one principal respondent reported was "not as transparent as it needs to be." Specifically, the principal contended that the district did not provide any form of explanation for rejecting certain supplemental budget requests.

Predictability and Stability of Resource Allocations

In five WSF case study districts, respondents reported that school budgets were not sufficiently predictable or stable. In three districts, respondents had mixed perceptions of how stable the budgets were.

The majority of respondents in five case study districts shared concerns about the predictability or stability of their school budgets from year to year. In the principal survey, just over half (56 percent) of WSF principals reported that the predictability of school resources from year to year is a major or moderate challenge for them, compared with 35 percent of non-WSF principals. Depending on

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enrollment numbers — both in the aggregate and by student need category — schools may see large swings in their allocated budget from one year to the next. Respondents in three districts expressed mixed perceptions. While some stakeholders experienced stable resources and were satisfied with their ability to predict and plan ahead, other stakeholders experienced swings in resources from year to year and challenges in retaining teachers.

In all nine districts, the stability of the budget was directly tied to the stability of student enrollment at both the district and the school levels. In multiple districts, demographic shifts and population changes in the geographic area led to declines in enrollment as well as shifts in the types of students whom the districts were serving. One principal explained how rapidly shifting demographic changes in their city may affect a school's ability to plan from year to year:

> *[City demographic changes] can have a huge impact on your budget . . . [a change that might impact us] the next year — revitalizing some of those inner-city housing projects. When they do that and they make a mixed income, that can have a huge impact. [Some students] bused out here are EL, they're poverty, they're — some of them are special ed. They generate quite a lot of funds. . . . If you lose 12 of those students, you've lost a teaching position, if you think of it in just simple dollars and cents.*

Moreover, the timing for publishing final enrollment numbers was another consideration cited as an influence on the stability of school budgets. In many instances, enrollment figures were not complete until October. In cases in which actual enrollment exceeded projected enrollment, schools were obligated to contend with additional students for whom they had no extra funding. Conversely, schools in which actual enrollment was lower than the projected numbers often were required to return funds to the district, with the loss of anticipated funds requiring adjustments to staffing or programs. As one principal explained:

> *For this school year . . . we were given numbers of projections that were higher than what we ended up getting in October . . . then we had to pay back the district the amount that we were short with [WSF] funds, even though we continued to get kids in November and December and January. We're at where the district projected us to be, but we weren't there in October, which [resulted] in us losing out on those funds.*

Respondents across districts reported a few strategies to overcome these challenges and to promote stability and predictability in annual budgets through the WSF system — most notably, the use of hold-harmless provisions, as discussed in the previous section.

School choice policies and charter schools in districts were also perceived as influences on the stability of school budgets in WSF systems. In districts with school choice policies, popular schools may have seen increases in funding yearly, while less popular schools with declining enrollment may have faced decreases in funding. While some principals expressed dissatisfaction with the way school choice policies may decrease their funding, other principals and stakeholders saw the competition between schools and potential for increased funding for popular schools as a positive aspect of school choice.

Chapter Summary

Although the survey and case study findings show commonalities in the student need categories that districts targeted in their WSF systems — in particular, students from low-income families, ELs, and SWDs — there is clear variation in how districts define these student categories and in the magnitudes of the corresponding weights. In addition to these major categories of student need, districts have developed other funding adjustments to reflect their priorities, such as performance-based funding adjustments to provide additional resources for low-performing or at-risk students, and additional resource allocations for specialized programing, such as career and technical education, International Baccalaureate, and performing arts schools.

Although all WSF case study districts reported that their schools use average teacher salaries in developing their budgets, three districts also used actual salaries, either for some of their schools or by incorporating them into their weighting scheme. Two of these districts allowed schools to opt in to using actual teacher salaries — and the schools that did so were generally higher-poverty schools, which were able to increase their effective level of resources by making this choice. Because schools gradually opted in to using the actual salary approach, the two districts were able to phase in the additional costs over time, which may provide a model for other districts for how to shift to using actual salaries without inordinate disruption or budgetary strain.

Case study findings also show WSF design to be an ongoing, iterative process. Over time, the case study districts have made changes to their weighting schemes, such as adding weights for new student need categories or modifying the size of certain weights. These revisions were made to keep pace with shifting student demographics and district priorities, but they also serve to illustrate that setting weights is not an exact science. While districts have included detailed analyses of existing resource allocations in their decision-making processes and have considered research on identifying categories of students most in need, there does not appear to be a strong evidence base from which districts have been able to draw to determine what an *appropriate* value for various weights should be. However, the examples from the case studies at least provide information on the range of weights used in various categories, which may enable districts to make more informed decisions about the size and structure of their own weights.

3. School Autonomy

One of the defining goals of WSF systems is to give principals and their schools more control over educational resources and instructional decisions. In theory, this may enable schools to better serve their students, by putting the money in the hands of those closest to the students, since school personnel who work with their students every day may have a deeper understanding of their needs than staff in the district office. School leaders given expanded autonomy under WSF systems could use this autonomy to make more efficient spending decisions and to implement educational practices and programs intentionally designed to meet their specific students' needs (Roza, Davis, and Guin 2007). Some research suggests that these shifts may be associated with improved school quality (Mizrav 2014) and student achievement (Steinberg 2014), especially when autonomy initiatives are focused on teaching and learning, and principals are given more than token discretion (Honig and Rainey 2013). Although school districts can choose to increase school autonomy through other types of policies, the hallmark of a WSF system is that schools receive a specific allocation of funds over which they have some measure of discretion and control, which may make this autonomy more tangible.

WSF systems also aim to create systems to engage and empower school faculty and staff, parents, students, and other community stakeholders by involving them in school-level resource allocation decisions. Such stakeholder involvement may promote budgets that better support student needs and reflect community priorities. Finally, WSF systems typically also include structures to hold principals accountable for the decisions they now have the discretion to make. This chapter examines how school autonomy, stakeholder engagement, and accountability systems vary among districts with and without WSF systems.

School and Principal Autonomy

On average, WSF district administrators reported that over half (53 percent) of their total operational spending[26] was under school discretion, compared with 8 percent in non-WSF districts.

Most district funds flow through the general fund, which provides unrestricted funding for a wide range of school and district functions, while supplemental funding is provided through various categorical programs such as Title I of the *ESEA*, the *Individuals with Disabilities Education Act*, and state compensatory education programs that provide restricted funding for specific purposes. Though there are rules regarding what restricted funds may be used for, districts may still allow schools the discretion to make decisions about the specific uses of these funds, within those broad rules. For both WSF and non-WSF districts, the average share of funds provided to schools for discretionary use was similar for unrestricted and restricted funds (Exhibit 16). The share of funds reported as under school discretion varied across WSF districts; among the case study districts, the proportion of unrestricted funds over which principals had discretion ranged from 27 percent to 54 percent.

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[26] Total operational spending refers to expenditures on day-to-day programs and services; it excludes capital expenditures and debt service.

Exhibit 16.   Average percentage of unrestricted and restricted funding provided to schools to use at their discretion, in WSF and non-WSF districts
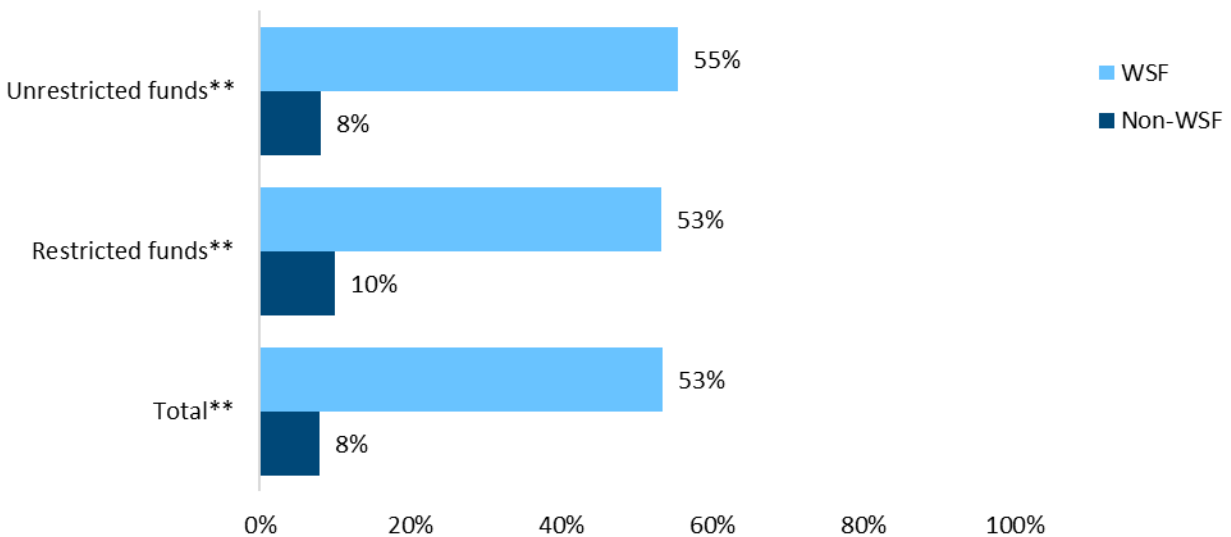

Exhibit reads: On average, WSF districts provided 55 percent of their unrestricted funds to schools to use at their discretion, compared with 8 percent in non-WSF districts; this difference was statistically significant.

Note: Asterisks denote a statistically significant difference between WSF and non-WSF districts (**$p < .05$). In addition to the percentages presented here, regression analyses were run to control for differences in certain district characteristics between WSF and non-WSF districts; the significant differences in this chart persisted after controlling for district size, urbanicity, and percentage of FRPL students (Exhibit D-3 in Appendix D).
Source: District survey, Q12 (n = 9 WSF, 173 non-WSF).

This chapter examines three ways in which principals can allocate resources at their discretion: (1) hiring and selecting staff, (2) selecting non-personnel materials and services, and (3) making instructional programming decisions. For the following analyses, we examine the percentages of WSF principals and district administrators that reported that decisions about allocating various types of resources were mostly made by school staff and stakeholders, in comparison to reports from principals and administrators in non-WSF districts. However, it is important to note that WSF and non-WSF districts differ in size, urbanicity, and student demographics, and potentially on other unobservable characteristics, which could mean that any differences found between them are due to their different characteristics and are not necessarily related to the system used to distribute resources to schools. To explore this issue, we also conducted conditional probability analyses that used multiple regression to control for differences in observable district characteristics between WSF and non-WSF districts, including enrollment size, urbanicity, and percentage FRPL. Some differences that were statistically significant based on the unadjusted percentages were no longer statistically significant after controlling for district size, urbanicity, and percentage of FRPL students. In such cases, the exhibit includes a note indicating which variables do not show statistically significant differences in the conditional analyses. Regardless, all of the comparisons between WSF and non-WSF are only meant to be descriptive and should be interpreted with due caution.

Hiring and Selecting Staff

Principals in WSF districts often reported that decisions about hiring teachers, aides, and instructional coaches were mostly made by school staff and stakeholders.

Over two-thirds of WSF principals reported that school staff and stakeholders mostly made the decisions about hiring regular classroom teachers (85 percent), resource and special area teachers (71 percent), special education teachers (69 percent), instructional aides (80 percent), and instructional coaches (70 percent). Responses of district administrators showed similar patterns, though few district administrators in WSF districts reported that schools had discretion over hiring special education teachers (Exhibit 17).

Exhibit 17. **Percentage of principals and district administrators reporting that decisions about hiring staff were mostly made by school staff and stakeholders, in WSF and non-WSF districts**

	Principals			District administrators		
	WSF	Non-WSF		WSF	Non-WSF	
Regular classroom teachers	85%	56%	**	95%	36%	**†
Resource teachers and other special area teachers (e.g., music, technology)	71%	39%	**	78%	29%	**
Special education teachers	69%	37%	**	11%	15%	†
Instructional aides	80%	54%	**	68%	47%	*
Instructional coaches	70%	21%	**†	67%	17%	**†
Pupil support staff	33%	18%	**	43%	11%	**
Assistant principals	52%	18%	**	41%	8%	**
Principals	21%	4%	**	12%	2%	**

Exhibit reads: Eighty-five percent of principals in WSF districts reported that decisions about hiring regular classroom teachers were mostly made by school staff and stakeholders, compared with 56 percent of principals in non-WSF districts; this difference was statistically significant.

Notes: Asterisks denote a statistically significant difference between WSF and non-WSF districts (**$p < .05$, *$p < .10$). However, some of these differences were not statistically significant in conditional analyses that controlled for certain differences between WSF and non-WSF districts (enrollment size, urbanicity, and percentage of FRPL students); differences that remained significant in the conditional analyses (or became significant) are indicated with a cross (†)). Exhibit D-4 in Appendix D provides the results of the conditional analyses. Exhibit D-5 provides complete responses to the survey items, including the percentages of respondents reporting that decisions were shared between the district and school or were mostly made by the district.
Sources: Principal survey, Q10 (n = 104 WSF, 213 non-WSF); District survey, Q13 (n = 13 WSF, 238 non-WSF).

Principals in WSF districts were more likely than their counterparts in non-WSF districts to indicate that decisions about hiring school-level staff were mostly made by school staff and stakeholders. For example, 85 percent of principals in WSF districts reported that decisions about hiring regular classroom teachers were mostly made by school staff and stakeholders, compared with 56 percent of principals in non-WSF districts, a statistically significant difference. However, most of these differences were not statistically significant in conditional analyses that controlled for certain differences between WSF and non-WSF districts (enrollment size, urbanicity, and percentage of FRPL students), with the exception of instructional coaches.

Case study principals provided several examples of how they were using their autonomy to select staff to meet the needs of their students. Principals in multiple schools mentioned using autonomy to provide

additional academic supports, such as additional in-school tutoring, resource teachers, reading specialists, and paraprofessionals, and principals in three schools reported adding academic supports for special populations, such as ELs and SWDs. In one school, for example, the principal explained how the district had assigned 1.5 EL teachers based on the school's projected EL enrollment, but because she felt this was insufficient to support her EL students — many of whom were newcomers to the country with little or no English proficiency — she used her discretionary funds to add an additional 1.5 FTEs. As a result, the school had a total of three EL teachers "who are implementing a co-teaching model and can pull out small groups for more intensive instruction that the kids might need."

Some of the school principals interviewed focused funds at their discretion on staff providing nonacademic supports. One school hired a dean of students to address the increasing population of students entering the school with "social-emotional deficits," and another school allocated funds for a school social worker and a school psychologist to support its homeless student population and other students with mental health needs.

Selecting Instructional Materials and Other Non-Personnel Resources and Services

WSF principals were more likely than their non-WSF counterparts to report that schools have autonomy in purchasing instructional software, curricular materials, textbooks, and contracted services.

For example, 48 percent of principals in WSF districts reported that decisions about selecting instructional software were mostly made by school staff and stakeholders, compared with 10 percent of principals in non-WSF districts (Exhibit 18). Similarly, WSF principals were more likely to report that school staff and stakeholders mostly made the decisions about selecting curricular materials (31 percent vs. 8 percent), textbooks (25 percent vs. 8 percent), and contracted services (37 percent vs. 7 percent).

Exhibit 18. **Percentage of principals and district administrators reporting that decisions about selecting instructional materials and other non-personnel resources and services were mostly made by school staff and stakeholders, in WSF and non-WSF districts**

	Principals			District administrators		
	WSF	Non-WSF		WSF	Non-WSF	
Instructional software	48%	10%	**†	51%	8%	**†
Curricular materials	31%	8%	**†	30%	7%	**
Textbooks	25%	8%	**†	25%	7%	**
Office supplies	96%	77%	**	100%	73%	**
Contracted services	37%	7%	**†	61%	9%	**†
Food services	3%	1%	†	0%	2%	*

Exhibit reads: Forty-eight percent of principals in WSF districts reported that decisions about selecting instructional software were mostly made by school staff and stakeholders, compared with 10 percent of principals in non-WSF districts; this difference was statistically significant.

Note: Asterisks denote a statistically significant difference between WSF and non-WSF districts (**$p < .05$, *$p < .10$). However, some of these differences were not statistically significant in conditional analyses that controlled for certain differences between WSF and non-WSF districts (enrollment size, urbanicity, and percentage of FRPL students); differences that remained significant in the conditional analyses (or became significant) are indicated with a cross (†)). Exhibit D-6 in Appendix D provides the results of the conditional analyses. Exhibit D-7 provides complete responses to the survey items, including the percentages of respondents reporting that decisions were shared between the district and school or were mostly made by the district.
Source: Principal survey, Q11 (*n* = 104 WSF, 213 non-WSF); District survey, Q14 (*n* = 13 WSF, 238 non-WSF).

Case study data provide examples of how WSF principals used their autonomy to purchase non-personnel materials. Among the WSF case study districts, principals and district staff reported putting funds toward curricular materials. Examples include intervention materials for reading and mathematics, writing programs, books, and other academic resources. One principal explained that her school had used its autonomy to move away from textbooks promoted by the district and toward technology-based resources "because that's not the way our kids are learning these days." In another school, the principal described how they had recently introduced a new science, technology, engineering, arts, and math (STEAM) initiative, which required the purchase of many new instructional and curricular materials.

Some principals in case study districts reported that technology, including information technology equipment and instructional software, was a major non-personnel expenditure over which they had discretion. In six case study districts, principals used WSF allocations to purchase computers and other equipment, and instructional software. One school, for example, used WSF funds to adopt a new literacy program and digital platform, designed to help students grow critical thinking skills through personalized learning (i.e., instruction tailored to the learning preferences, skills, and specific interests of different learners).

School leaders also described the regular need to compromise between spending on personnel and spending on non-personnel resources. Office supplies were often a point of focus in the budgetary trade-offs. As one principal stated,

> *We're pushing our school body to make some hard decisions in terms of sacrifice, like, "Ok, if you want a reading specialist and that costs $100,000, are you willing to sacrifice one box of copy paper per quarter [per teacher]?" Really having them do the math and do the comparison. I think the challenge for some people is that they may not understand economic sustainability. Just making sure we're not wasting our resources and we're being very intentional with resources. . . . Are we being as productive as possible to get the biggest bang for our buck?*

Instructional Programming and Professional Development Decisions

WSF principals were more likely than those in non-WSF districts to report that decisions about instructional programming and professional development were mostly made by school staff and stakeholders.

Overall, 59 percent of WSF principals reported that decisions about before- or after-school programming were mostly made by school staff and stakeholders, compared with 30 percent of non-WSF principals (Exhibit 19). WSF principals were also more likely to report having more discretion over elective or non-core classes (56 percent vs. 26 percent), summer programming (33 percent vs. 9 percent), and professional development (30 percent vs. 9 percent).

Exhibit 19. **Percentage of principals and district administrators reporting that instructional programming and professional development decisions were mostly made by school staff and stakeholders, in WSF and non-WSF districts**

	Principals			District administrators		
	WSF	Non-WSF		WSF	Non-WSF	
Before- or after-school programming	59%	30%	**†	54%	25%	**
Elective or non-core classes	56%	26%	**†	84%	28%	**†
Summer programming	33%	9%	**†	11%	10%	
Professional development for staff	30%	9%	**†	24%	3%	**
Daily schedule	66%	64%		52%	38%	

Exhibit reads: Fifty-nine percent of principals in WSF districts reported that decisions about before- or after-school programming were mostly made by school staff and stakeholders, compared with 30 percent of principals in non-WSF districts; this difference was statistically significant.

Note: Asterisks denote a statistically significant difference between WSF and non-WSF districts (**$p < .05$). However, some of these differences were not statistically significant in conditional analyses that controlled for certain differences between WSF and non-WSF districts (enrollment size, urbanicity, and percentage of FRPL students); differences that remained significant in the conditional analyses (or became significant) are indicated with a cross (†). Exhibit D-8 in Appendix D provides the results of the conditional analyses. Exhibit D-9 provides complete responses to the survey items, including the percentages of respondents reporting that decisions were shared between the district and school or were mostly made by the district.
Source: Principal survey, Q12 (n = 104 WSF, 213 non-WSF); District survey, Q15 (n = 13 WSF, 238 non-WSF).

In case studies, one principal expressed appreciation for the flexibility to implement new programs, stating, "I feel like if I wanted to present something, I could bring it forth during my meeting [with the district] and say, 'This is the initiative I want to try.'" Several principals also suggested that independence from district curriculum decisions was a welcome result of WSF.

Case study principals who reported using WSF funds to purchase professional development services explained this choice by highlighting the importance of building teachers' capacity and matching training to the needs of the school. They also felt "freed" from district-sponsored professional development, which they suggested often does not meet the unique needs of their schools. For example, in explaining the choice to employ professional development contracts outside the district, a principal of a Montessori school stated, "[I]t takes special training to be a Montessori teacher."

A district finance officer stated that, with WSF in place and the autonomy that accompanies it, school principals can ". . . have an extra fourth-grade teacher and have smaller class sizes or have this after-school program or have field trips." A principal also offered a good example of this autonomy, describing how he was able to select electives to address student interests:

> *When I got here, there were about three or four electives that the kids had. It wasn't enough. It was all core. I mean, how do we stimulate these kids? How do we intrigue them to be in our building? We began to create different electives such as drama, guitar, piano, that were not available in hopes that we would get more kids interested in our building.*

Other interviewees offered additional instructional programming choices they made using discretion that WSF systems offer. For example, programming changes designed to meet the specific needs of prekindergarten students, ELs, and homeless youth were mentioned in multiple districts.

Stakeholder Inclusion in the Budgeting and Planning Process

Principals in WSF districts often reported that teachers and other school stakeholders have moderate or significant influence over school budget decisions.

Not surprisingly, principals most often reported themselves as having moderate or significant influence over school budget decisions (96 percent). In addition, 81 percent reported that teachers had moderate or significant influence, followed by other school administrative staff (79 percent), district staff (76 percent), school support staff (59 percent), and parents (47 percent). Fewer principals reported that other community stakeholders (24 percent) or students (19 percent) had such influence (Exhibit 20).

Exhibit 20. **Percentage of principals reporting that certain stakeholders have moderate or significant influence over schools' budget decisions, in WSF districts**
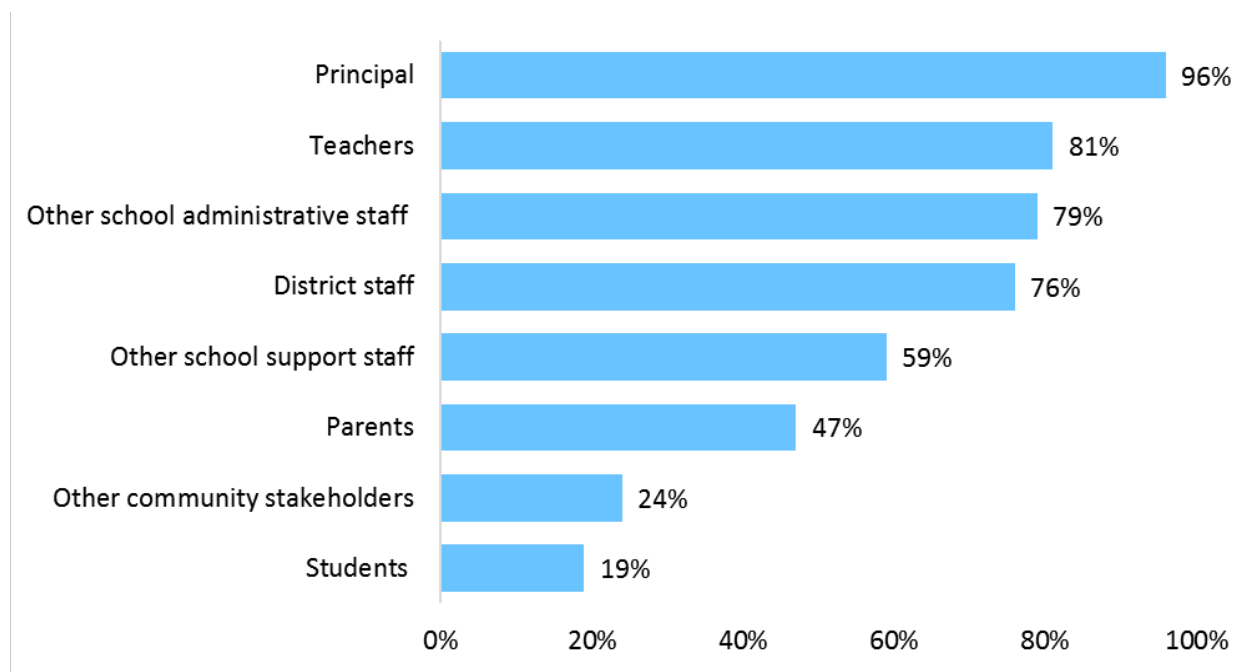
Exhibit reads: Ninety-six percent of principals in WSF districts reported that principals have moderate or significant influence over school budget decisions.

Source: Principal survey, Q17 (*n* = 104).

Respondents in eight of the nine case study districts reported that teachers, parents, and other school stakeholders were involved in the budgeting process, and administrators often emphasized the value of seeking their input.

All of the case study districts had policies requiring principals to engage school stakeholders during the budgeting process, and administrators often reported that stakeholder participation is important to ensure that the budget is aligned with community needs. For example, one district administrator explained that budgets should not be done "in a vacuum" and that stakeholder participation is meant to ground the budgets in school and community needs. In that district, principals make recommendations to a school committee that includes parents, teachers and other staff, and at least one community member, and the committee provides feedback to the principal. The administrator described how this

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process builds community support for the school, saying "you have to go in with some ideas as a recommendation; then you come out with what the feeling of the school community is."

Challenges to School and Principal Autonomy

Despite the flexibility to make decisions about resources, principals in all nine WSF case study districts reported that their effective autonomy was constrained by district requirements to fill certain non-negotiable staff positions, collective bargaining agreements, and resource limitations.

Principals in WSF systems interviewed as part of the case study reported that they must fill at least some staff positions to meet district requirements. These positions, mandated by the district, must be budgeted as part of the school's annual budget. One principal described how this requirement was presented during principal training:

> *We came to a principals' meeting and were given a guide to WSF, and one of the pages had the new non-negotiables. If you have a school between 500 and 750 kids, you must purchase one of these. We were told, based on the number of kids we have, that we had to have a certain number of school counselors. We also have to purchase a reading specialist. Before WSF, the district would say, "Because we require this, we are paying for every school to have a reading specialist." Now, it's like, "We [the district] are not keeping the money, but you still have to buy it."*

In one district, the district finance officer said that the district has to impose limits on choices that principals can make as a result of the collective bargaining agreement in place between the district and the teachers' union, specifically around class size:

> *We definitely have limits that are imposed based on our contractual obligations with the teacher's union. A school comes in and says, "We want our fifth-grade class size to be 30, because we're projected to have 30 kids. We want to have one class, [and] we have one great teacher who can do it." We have to say "no" because we have an agreement with the teachers' union that says that the class size maximum is 25; you need to have two classes for 30 kids, not one.*

Similar concerns regarding collective bargaining agreements were expressed by principals during the case study interviews. Principals in three districts expressed a concern about the quality of staff available in "the pool," a group of teachers not currently assigned to a particular school from which principals are expected to staff their schools first. Another issue raised in case study interviews was that of minimum staffing requirements that can limit creative staffing solutions, whereby a principal may be required to have an additional position filled that might not align optimally with the needs of the students. For example, one principal stated that she and her assistant principal had decided to use funds to contract with a community organization that would provide staff to support students' social-emotional needs in the classroom, freeing the principal to focus more on instructional leadership. Using the community organization instead of district staff also enabled the school to afford a part-time music teacher. However, the district did not approve the school's budget because of a new requirement for all schools to hire a guidance counselor, leaving no remaining funds to cover the social-emotional support and music teacher.

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Case study interviewees also discussed other challenges such as loss of economies of scale and uneasiness about changing roles under WSF.

Both principals and district administrators pointed to the loss of economies of scale when individual schools need to purchase things that previously were bought in larger quantities by the central office. As one district administrator explained:

> There are economies of scale that principals cannot realize that we can [realize] at the district [level]. For example, if I want to set up a cleaning contract at my school, I would have to go hire someone, set up a contract, and clean for 200 hours a year. If I want some company to clean my 175 schools, I can probably negotiate a better deal. For computer purchases or anything we spend money on, doing this at the school level is sometimes more expensive than doing them on a macro level.

Interviewees provided other examples where loss of economies of scale could be a concern, including instructional materials, educational technology, office supplies, and contracted services. Some of the case study districts have established systems and procedures to avoid this problem; for example, Denver set up a centralized purchasing system that allows schools to place their own orders while retaining the large-scale buying power with vendors.

Some respondents also expressed uneasiness with changing roles under WSF. For example, some principals and district administrators in case study districts expressed concerns about the evolving role of school leaders as entrepreneurs focused on a "business model" that involves securing funds. Some respondents also reported that the close monitoring of student enrollment for specific types of students and the recruitment of students to increase school budgets required adapting their leadership and their thinking regarding student population shifts.

Perceived Benefits of Increased Autonomy

Principals interviewed as part of the case studies often perceived themselves as being best suited to make staffing decisions to meet the needs of their schools. As one principal asserted, "I know what's best for my school because I'm in the school," adding that the district had never opposed her staffing decisions. In describing the benefits of giving principals autonomy, another principal reported, "Principals likely know more than the [district] what it takes to make their school successful. Principals are engaged in . . . analyzing their data and seeing what their schools need."

Principals also often reported appreciating the opportunity that autonomy gives them to innovate and try new things. One case study principal said: "I love being able to manage budget and being able to make instructional choices. It's allowed us to do cool things like instructional services, the recreation center, the wrap-around services, and the field trips. The contracts we have are very innovative." Another principal noted that "[the] type of latitude [WSF offers] really allows you to do a lot of things to meet the needs of your particular school and the demographic that you serve."

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Principal Capacity to Develop and Manage Budgets

In six of the nine WSF case study districts, district administrators reported challenges related to building and sustaining principal capacity around planning and budgeting, specifically citing concerns about principals' understanding of the financial aspects of making resource allocation decisions.

Interviewees often reported that managing the business aspects of running a school is not part of a principal's traditional skill set. Several district respondents spoke about the unevenness in principals' knowledge of budgeting, particularly among less experienced principals and districts with high principal turnover. District respondents focused on principals' inability to connect funding [to budgeting decisions] to effectively support the needs of their students. One school board member stated that there is substantial variation in principal knowledge and that more training is needed:

> *I think [principal knowledge about budgeting] is all over the place. Some are very good. Some of them are clueless. One of the things we do not have in this system is a good principal preparation system. We have relied to some degree on the universities more than we should have. There's no principal academy, and there have been some talks about that, but we haven't ever created it.*

Principals and district administrators in WSF districts reported a variety of district supports for budget development and management.

According to survey responses, principals in WSF districts often reported having a specific district staff person assigned to their school to assist with budget development and management (75 percent). Other supports included making district staff available to provide technical assistance as needed, either by phone (73 percent) or in-person (62 percent), and providing online resources such as documents, videos, and/or training modules (66 percent). Similarly, high percentages of district administrators also reported providing these supports (Exhibit 21).

Exhibit 21.   Percentage of principals and district administrators in WSF districts reporting that their district offers schools various supports for budget development and management

	Principals	District administrators
A specific district staff member is assigned to our school to assist with budget development and management	75%	64%
District staff are available by phone to provide technical assistance as needed	73%	89%
District staff are available for in-person technical assistance as needed	62%	89%
Online resources are available, including documents, videos, and/or training modules	66%	88%

Exhibit reads: Seventy-five percent of principals in WSF districts reported that a specific district staff member was assigned to their school to assist with budget development and management.

Source: Principal survey, Q31 (*n* = 104); District survey, Q24 (*n* = 13).

Accountability and Support Systems

Under WSF systems, districts typically implement accountability and support systems to ensure that schools do not spend over or under budget; the goal is to "zero out" the annual allotted budget. In addition, WSF districts may institute accountability measures that focus on ensuring that positive student outcomes arise from schools' budgeting and programming decisions. In many districts across the country, budgetary accountability is overseen by the district finance office, and accountability for student outcomes is overseen by the academic office. Survey findings and case study interviews provide information about both types of accountability systems.

Because district administrator and principal perceptions regarding accountability may differ, we compared the responses between these two groups. However, principal response rates for these survey items were relatively low (about 54 percent of all WSF principals responding to the survey), and we did not conduct tests of statistical differences between the administrator and principal responses due to the small sample sizes, so the reported differences should be interpreted with caution.[27]

District Actions If Schools Overspend

Principals in WSF districts reported that the most common consequence of a school spending more than its allotted amount was that the amount overspent could be deducted from the school's budget the following year.

Fifty-seven percent of principals and 60 percent of district administrators in WSF districts reported that if a school's spending exceeded its budget, the overage could be deducted from the school's budget the following year (Exhibit 22). Approximately two-thirds of district administrators in WSF districts also reported that principals could be given additional training in budget development (60 percent) or budget monitoring (66 percent) if they overspent their budgets. No district administrators and few principals (6 percent) reported that overspending could result in the principal being given control over a smaller proportion of the budget the following year.

District leaders in the case study districts stated that they were providing supports to principals to help them meet accountability requirements related to budgets; district administrators specifically described monitoring school plans throughout the budget process. For example, one administrator commented,

> *From a budgeting perspective, the accountability piece is in the budget collaboratives [budget meetings between district and school staff], along with the back-and-forth of whether the principal's plan for the school will be able to meet the requirements and regulations. Because we have that check early on, they don't have the freedom to do something which will get them out of line from a budget regulations standpoint.*

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[27] The principal survey items reported in Exhibits 22 and 23 were only asked of respondents in WSF districts. Several items at the beginning of the survey were intended to identify whether respondents were from WSF or non-WSF districts, but principals in WSF districts often did not answer the filter questions in a way that accurately identified whether they were in a WSF district. Therefore, many principals in WSF districts were skipped out of those survey items even though they were in fact in WSF districts, leading to low response rates for the items in these two exhibits.

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Principals in the case study districts reported that, in reality, it is difficult and rare for a school to overspend, given the frequent district oversight and guidance. Indeed, some principals interviewed in WSF districts reported that it is impossible to overspend, given the systems in place.

Exhibit 22.   **Percentage of WSF principals and district administrators reporting that certain actions could take place if a school's end-of-year spending was more than its discretionary budget**
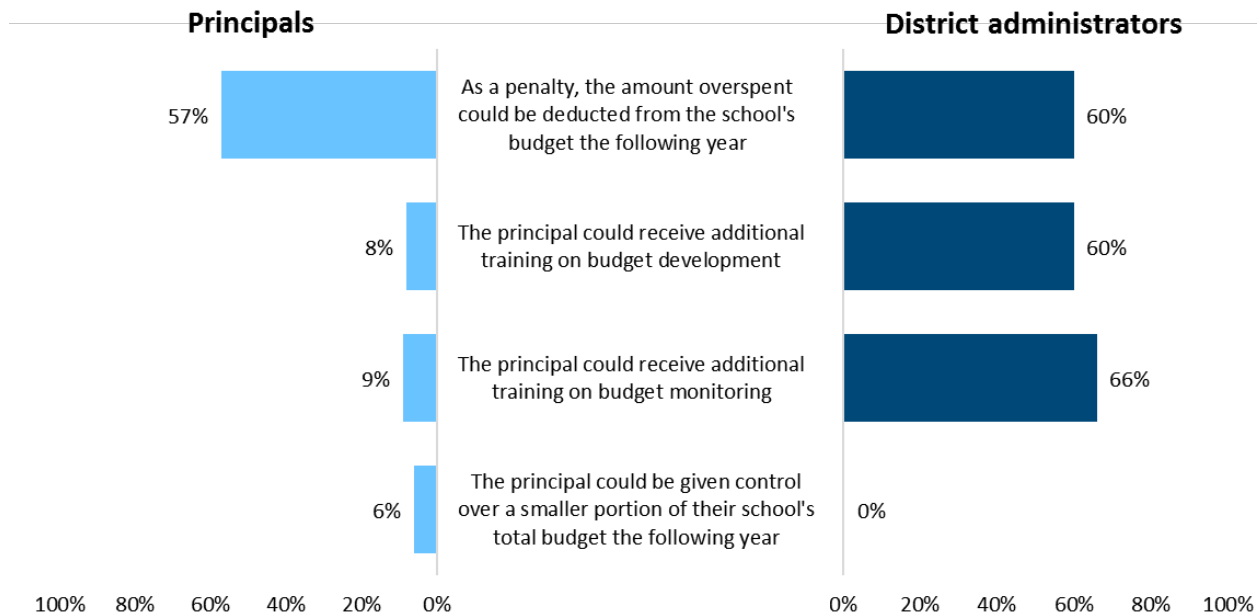
Exhibit reads: In WSF districts, 57 percent of principals reported that if a school spent more than its discretionary budget in a given year, the amount of overspending could be deducted from the school's budget in the following year.

Note: Differences between districts and principals were not tested for statistical significance due to small sample sizes responding to this survey item; therefore, differences should be interpreted with caution.
Source: Principal survey, Q36 (*n* = 56); District survey, Q28 (*n* = 12).

Interviewees in case study districts largely described accountability through district monitoring systems. For example, one district program officer commented,

> *You don't just get your money and do what you want outside of the locked positions. There's a space for you to justify. There are times when they come back throughout the year to look at the plan and see how it is going, in an effort to see a return on investment.*

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District Actions If Schools Do Not Meet Academic Performance Targets

More than half of principals and district administrators in WSF districts indicated that not meeting performance targets could result in closer district evaluation and monitoring of budget development and implementation.

For example, 74 percent of principals reported that a school not meeting performance targets could result in the district more closely *evaluating the school's proposed budget* and site plan for the next year, and 52 percent said the district could more closely *monitor implementation of the school's budget* and site plan (Exhibit 23). Smaller percentages reported that principals could lose some of their autonomy over hiring and personnel decisions (27 percent of principals) or be given control over a smaller portion of the school's budget (11 percent).

Exhibit 23. **Percentage of WSF principals and district administrators reporting that certain actions could take place if schools did not meet performance targets**
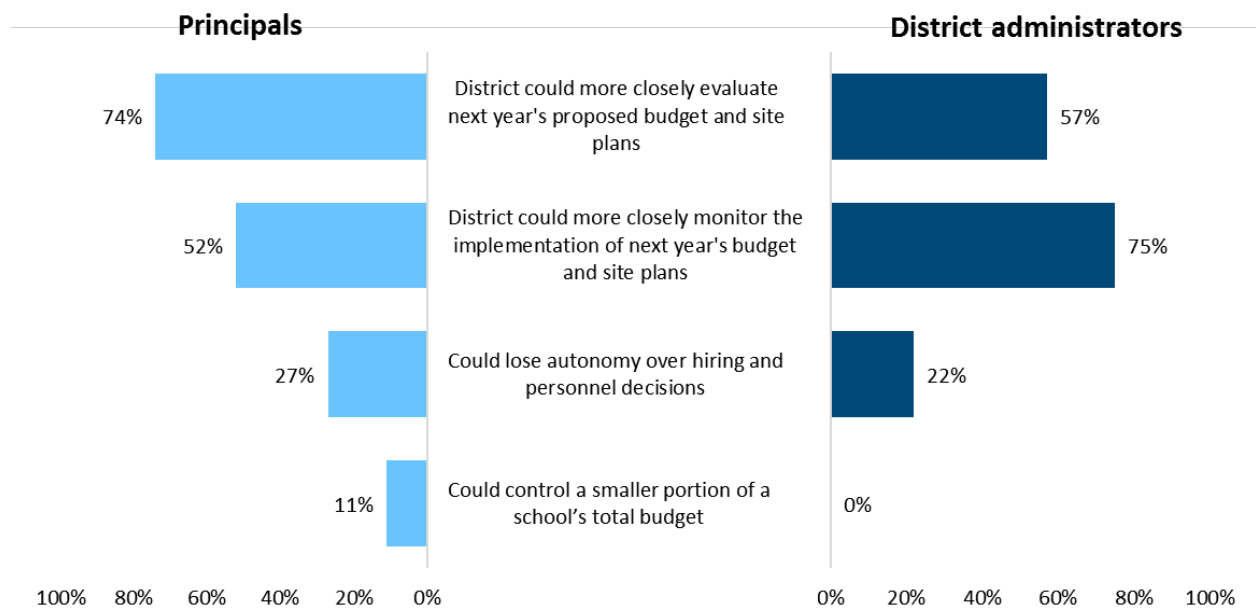

	Principals	District administrators
District could more closely evaluate next year's proposed budget and site plans	74%	57%
District could more closely monitor the implementation of next year's budget and site plans	52%	75%
Could lose autonomy over hiring and personnel decisions	27%	22%
Could control a smaller portion of a school's total budget	11%	0%

Exhibit reads: Among WSF districts, 74 percent of principals reported that the district could more closely evaluate next year's budget and site plans if a school did not meet performance targets.

Note: Differences between districts and principals were not tested for statistical significance due to small sample sizes responding to this survey item; differences should be interpreted with caution.
Source: Principal survey, Q37 (*n* = 57); District survey, Q29 (*n* = 12).

The case study data suggest that accountability systems for academic performance may not be directly connected to WSF financial systems.

Although the survey results indicated that principals and district administrators often believed that certain consequences related to school-level budgeting "could" occur if a school did not meet academic performance targets, interviewees in the case study districts were unable to point to any specific mechanisms or formal procedures that addressed this. In addition, no interviewees provided specific examples of budgetary consequences that occurred for schools that did not meet performance targets.

Chapter Summary

WSF systems aim to give more spending autonomy to schools, to allow school personnel who work directly with students to make decisions about how to use school resources to meet their students' specific needs. Our survey data show that WSF districts provided more than six times as much discretionary funding to schools than did non-WSF districts. WSF principals reported that decisions about hiring teachers and other staff, selecting instructional materials, and instructional programming were mostly made by school staff and stakeholders. In addition, WSF principals reported having more autonomy in a number of areas than did their counterparts in non-WSF districts, including more school-level control over hiring instructional coaches, selecting curricular materials and instructional software, and making decisions about extended time programs and professional development. However, in the case study interviews, principals often reported that their autonomy was constrained to some degree by non-negotiable staff positions required by districts, collective bargaining agreements, or limited amounts of flexible resources.

WSF districts often experienced challenges with principals' capacity to serve in a planning and budgeting role, which was new to many principals. Districts in turn provided training and other supports to help prepare principals to serve in this capacity. Principals reported that accountability measures for both academic performance and budget management are in place, and that these include consequences such as increased district monitoring or deductions of overspent funds from the following year's budget. Districts, however, often had support and monitoring systems in place to make school overspending unlikely to happen.

4. Funding Equity

A key goal of WSF systems is to improve equity in the distribution of resources among schools within a district — indeed, interviewed staff in seven of the nine case study districts cited equity as the primary motivation for adopting a WSF system. To explore equity outcomes under WSF systems, this chapter uses school-level expenditure data provided by the nine WSF case study districts to examine equity patterns in the most recent available year using two measures: a simple comparison of per-pupil spending levels in higher-need versus lower-need schools, and a statistical analysis that uses multiple regression to compute "implicit weights" for various indicators of student needs. In addition, we examine changes in these two measures before and after implementation of the WSF system, in the five districts that were able to provide school-level expenditure data for at least two years before and after adoption of the WSF system.

Each of the equity analyses in this chapter has limitations, and the results should not be interpreted as evidence of the effectiveness of WSF systems for improving equity. First, the equity analyses were conducted only in the nine WSF case study districts, and we do not have a control group of non-WSF districts with which to compare them. The cross-sectional analyses that include all nine WSF districts are based on a single year, which reflects different timepoints in the evolution of each district's implementation of WSF. For the longitudinal analyses, we excluded four of the nine districts because they were not able to provide school expenditure data for at least two years before and after adoption of the WSF system. Even among the five districts that were able to provide more extensive longitudinal data, one was able to provide data for only two years prior to WSF implementation, and one provided only two years of post-implementation data.

Various factors may influence the effectiveness of WSF systems in promoting an equitable distribution of funds, including the share of total school funding allocated through the WSF formula, the types of weights used, and the relative strength of those weights. In addition, a district's use of average salaries rather than actual salaries to charge personnel expenditures against each school's budget may undermine the potential equity effects of its WSF formula. Higher-poverty schools often have less experienced, lower-paid staff (Goldhaber, Lavery, and Theobald 2015; Roza and Hill 2004), but using average salary figures to charge personnel expenditures against school budgets may mask those differences, with the result that the actual expenditures in those schools may be considerably less than the amounts that they receive "on paper."[28] This is why it is important to examine *actual* expenditures to more accurately examine how equity evolved in WSF districts, and not rely only on analyzing the progressivity of WSF formulas and weights. Indeed, the equity analyses presented in this chapter rely on actual per-pupil expenditure data for individual schools, and not simply the per-pupil allocations provided through the WSF formulas.

For this chapter, we have masked the district identities because the intent here is not to evaluate individual districts' effectiveness and outcomes but rather to explore equity outcomes for a group of WSF districts and to demonstrate some approaches that districts can use to examine their own equity outcomes.

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[28] Alternatively, charging those actual, below-average salaries against these schools' budgets would leave them with additional funds "left over" with which they could purchase additional staff or other resources.

Methods Used to Examine Equity Outcomes

All nine WSF case study districts provided school-level expenditure data for at least five school years — in one case for as many as 16 years. However, as noted above, four of the districts were not able to provide data for at least two years before and after the initial implementation of WSF; these districts had adopted WSF either very recently or many (more than eight) years ago. Consequently, most of this section examines change in funding patterns in the five districts that were able to provide at least two years of pre and post data.[29] We do, however, begin with a cross-sectional examination of equity patterns in the most recent available year (2016–17 for eight districts and 2015–16 for one district) for all nine case study districts.

For both the cross-sectional and longitudinal analyses, we focus on expenditures made from unrestricted funds (general funds) and exclude restricted (categorical) funds; however, we also briefly look at how equity patterns differ when restricted funds are included. Whether it is appropriate to include restricted funds in examining the equity outcomes of WSF systems may depend on the specific types of restricted funds under consideration and whether any dollars from those funds are distributed through the WSF formula. For example, federal education funds typically carry a requirement that they supplement, not supplant, state and local funds; to the extent that federal and other restricted funding sources are intended to supplement an equitably distributed base of unrestricted funds, it may be more meaningful to examine the equity of the unrestricted funds. Indeed, in the nine case study districts, the funding distributed through the WSF formula consisted almost exclusively of unrestricted funds. That being said, it is also of interest to better understand how implementation of a WSF may impact resource equity in terms of spending from both restricted and unrestricted funding sources. We therefore present a brief analysis of changes in equity associated with WSF when all funding sources are considered.

Throughout this section, we use two approaches to examine the extent to which student need factors are related to school expenditure levels within a district: 1) a simple comparison of per-pupil spending levels in higher-need versus lower-need schools, and 2) a statistical analysis that computes "implicit weights." For both measures, we use three indicators of student need: students eligible for free and reduced-price lunch, students identified as English learners, and students with disabilities.

For the first approach, we divided schools within each district into three equally sized groups — or terciles — based on the level of a specific student need characteristic, and then compared average per-pupil expenditures in the highest and lowest terciles, calculating the relative (percentage) difference between these two groups for each school year.

For the second approach, we used multiple regression analysis to estimate models that relate school-level, per-pupil spending to various measures of student need and other school characteristics. In addition to variables for the percentage of FRPL students, ELs, and SWDs, we also included measures of school size and the proportions of school enrollment served in the elementary, middle, and high school grade ranges. Each of these regression analyses generates a constant term that represents the estimated base level of per-pupil spending — in a particular district and year — for the average student with no specific need characteristics attending an average-sized school with all of its enrollment in the

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[29] These five districts each provided between 8 and 16 years of school expenditure data. The four districts for which we did not conduct longitudinal analyses provided between 5 and 7 years of data; one of these districts could provide data for only one post-implementation year, and the other three were not able to provide any pre-implementation data. Equity outcome results by year for all nine districts are provided in Appendix D, in Exhibits D-14 through D-19.

elementary grades. In addition, the regressions provide coefficients that represent an estimate of the additional amount of per-pupil spending associated with each variable (student need and other school characteristics).

These additional spending amounts are not directly comparable across districts or years because spending levels vary across jurisdictions and time. To create a consistent metric, we divided the additional spending amounts by the estimated base per-pupil spending to produce an implicit weight for each variable. For example, in District 1, the estimated base per-pupil spending amount was $5,487, and the additional per-pupil spending associated with each student with a disability was $1,781, producing an implicit weight of 0.32 (Exhibit 24).

Exhibit 24. **Example showing estimated base per-pupil spending level, and additional amount of per-pupil spending and implicit weights associated with various school characteristics in District 1, in 2016–17**

	Estimated base per-pupil spending	Estimated additional per-pupil spending	Implicit weight
Percentage of students with disabilities	$5,487	$1,781	0.32**
Percentage eligible for FRPL	$5,487	$1,426	0.26**
Percentage in high school grades (9–12)	$5,487	$875	0.16**
Percentage of English learners	$5,487	−$502	−0.09
Percentage in middle school grades (6–8)	$5,487	−$506	−0.09**
Enrollment (relative to mean)	$5,487	−$1,564	−0.29**

Exhibit reads: In District 1, the estimated base per-pupil spending level was $5,487 and estimated additional amount of spending associated with each student with a disability was $1,781, resulting in an implicit weight of 0.32.

Notes: FRPL = free and reduced-price lunch. "Base spending" represents the estimated amount spent on elementary students with no additional needs attending a school with average enrollment. "Additional spending" represents the estimated additional dollar amount associated with one unit of each variable (e.g., one student with a disability). "Implicit weight" represents the relative difference from the base amount associated with a particular characteristic and is calculated by dividing the additional per-pupil spending by the base per-pupil spending. Asterisks denote a statistically significant difference from zero (**$p < .05$).
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

The asterisks in Exhibit 24 indicate whether the implicit weights estimated by the regression model are statistically significantly different from zero. In the following analyses, we only discuss implicit weights that are statistically significant. Note that we do not use such asterisks in the analyses of tercile differences because those are based on simple comparisons and not a statistical model.

The two approaches — tercile differences and implicit weights — have different advantages and disadvantages. The tercile approach is simple to calculate and easy to understand, and it provides an intuitive descriptive measure of whether higher-need schools receive more (or less) than lower-need schools.[30] However, it does not take into account other school characteristics that may potentially have a stronger influence on school expenditure patterns. For example, high-poverty schools often have higher concentrations of students with disabilities and EL students than do low-poverty schools, and

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[30] A similar approach has been used in studies of the targeting of federal funds among school districts, which have commonly examined the distribution of funds among district poverty quartiles based on census poverty data (for example, Chambers et al. 2009; Stullich, Eisner, and McCrary 2007). For our analysis, we used terciles rather than quartiles due to the relatively small number of schools within each case study district, and we used FRPL data because census data are not available at the school level. Within each district, schools were ranked by their percentage of FRPL students, and high- and low-poverty schools were defined as those in the top and bottom thirds of the ranking.

these factors could contribute to the spending differences found between schools in the high- and low-poverty terciles.

In contrast, the implicit weight approach uses regression analysis to try to disentangle the multiple associations between school-level spending and various school characteristics and isolate the relationship between each individual school characteristic and per-pupil spending while holding other variables constant.[31] However, it is also more complicated to calculate and may be harder for district and school stakeholders to understand.

For both measures, a positive number indicates a *progressive* system, in which higher-need schools have higher per-pupil spending levels than lower-need schools, while a negative number indicates a *regressive* system, in which higher-need schools have lower per-pupil spending levels than lower-need schools.

The line graphs used to present the longitudinal data on trends in tercile differences and implicit weights were designed to present all five districts on a single page, but may be somewhat difficult to read. The full data for each chart are provided in Exhibits D-14 through D-19 in Appendix D.

As a reminder, the per-pupil expenditure data used for these analyses are not the same as the per-pupil allocations provided through the WSF formulas for two reasons. First, the WSF allocations are budgeted amounts determined at the beginning of the school year, whereas expenditure data reflect the amount of funds that were actually spent. Second, WSF allocations per pupil are generally less, sometimes considerably less, than the total expenditures that occur at the school level because of funds that are distributed outside of the WSF formula. This is why when examining equity outcomes, it is important to use actual expenditure data rather than simply examining WSF formulas and allocations.

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[31] The regression modeling used is consistent with the body of research on school finance equity analysis (Chambers et al. 2008; Duncombe and Yinger 2005, 2011; Gronberg et al. 2004; Gronberg, Jansen, and Taylor 2011; Imazeki 2008; Levin et al. 2013; Taylor et al. 2018).

Equity With Respect to Student Poverty

In six of the nine WSF case study districts, high-poverty schools had higher per-pupil spending from unrestricted funds, on average, than low-poverty schools, in the most recent year for which data were available.

In three of these six districts, the additional amount in schools in the high-poverty tercile amounted to 18–20 percent over the average per-pupil spending level in the low-poverty tercile of schools. In the other three districts, the additional amount was 5–6 percent of spending levels in low-poverty schools. Among the three districts where high-poverty schools had *lower* per-pupil spending than their low-poverty counterparts, the differential amounted to 22 percent less than the average spending level in low-poverty schools in one district; in the other two districts, this differential was 5 percent (Exhibit 25).

Exhibit 25.   Estimates of the relationship between students from low-income families and school per-pupil spending from unrestricted funds, using the tercile and implicit weight approaches, in nine WSF districts, in the most recent year for which data were available

	Tercile Approach			Implicit Weight Approach		
	High-poverty schools	Low-poverty schools	Relative difference	Base spending	Additional spending	Implicit weight
District 1	$7,268	$6,156	18%	$5,487	$1,426	0.26**
District 2	$10,054	$8,404	20%	$5,116	−$1,290	−0.25
District 3	$10,163	$8,497	20%	$6,108	−$507	−0.08
District 4	$7,509	$7,896	−5%	$6,429	−$1,650	−0.26**
District 5	$4,744	$4,520	5%	$4,668	−$226	−0.05
District 6	$5,622	$7,201	−22%	$5,921	−$1,427	−0.24
District 7	$8,491	$8,980	−5%	$8,623	−$1,721	−0.20**
District 8	$7,099	$5,999	18%	$5,452	$2,208	0.40**
District 9	$8,593	$8,162	5%	$7,726	−$2,311	−0.30**

Exhibit reads: In District 1, average per-pupil spending in the high-poverty tercile of schools ($7,268) was 18 percent higher than in the low-poverty tercile of schools ($6,156). Using the implicit weight approach, base per-pupil spending was estimated as $5,487, and additional spending for poor students was estimated as $1,426 per pupil, resulting in an implicit poverty weight of 0.26.

Notes: Data are for 2016–17 for eight districts and 2015–16 for one district. Asterisks denote a statistically significant difference from zero (**$p < .05$). Exhibit D-10 in Appendix D provides the regression results used to generate the implicit weights in each of the nine case study districts.
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

It may seem surprising that not all WSF districts have higher per-pupil spending in their higher-poverty schools, given that WSF formulas allocate funds to schools at least in part based on indicators of student needs. However, equity outcomes may be influenced by a variety of factors, including the specific student categories receiving higher weights and the size of those weights, the share of total funding distributed through the formula, and the use of actual versus average salaries for budgeting the funds that are allocated through the formula.

For example, three of the nine case study districts did not have weights for students from low-income families, and the remaining six case study districts had weights that ranged from 0.02 to 0.15. A district

that uses a larger weight for low-income students may be able to achieve a more progressive distribution of funds than a district that uses a smaller weight or no weight for low-income students.

A second factor is the extent to which some funds flow to schools outside the WSF formula. For example, if "side pots" of funding are distributed to schools in a regressive manner (such as to support special programming for higher-performing students), this could counteract the potential benefits of a progressive WSF formula.

A third factor is that if a district uses districtwide average salaries for budgeting and charging salary expenditures against a school's budget, rather than the amounts actually paid to those teachers, then schools with lower-paid teachers will have lower actual per-pupil expenditures than they appear to have "on paper." Multiple studies have found that high-poverty schools tend to have teachers with less experience and lower salaries than teachers in low-poverty schools. Consequently, even if the WSF formula itself is progressive, the use of average salaries could result in lower per-pupil expenditures in higher-poverty schools than in lower-poverty schools.

> **Two of the nine WSF districts had a positive implicit poverty weight for unrestricted spending that was statistically significant, indicating that higher-poverty schools in that district had higher levels of per-pupil spending, on average, than schools with lower poverty rates, after controlling for other factors that may affect per-pupil spending.**

Looking at the second half of Exhibit 25, the implicit weight approach indicates that in Districts 1 and 8, an elementary school with average enrollment, a poverty rate of 100 percent, and no other student needs spent 26 percent and 40 percent more per pupil, respectively, compared with an otherwise similar school with no poor students. An alternative, and perhaps more intuitive, interpretation is as a student weight: An elementary student from a low-income family in District 1, with no additional needs and attending a school with average enrollment, was associated with, on average, 26 percent more spending than an otherwise similar student who is not from a low-income family.

In contrast, three of the districts had a significant negative implicit poverty weight for unrestricted spending, and four had implicit poverty weights that were not statistically different from zero. This outcome indicates that most of the WSF case study districts spent similar amounts or less per pupil on high-poverty schools than did lower-poverty schools with otherwise similar characteristics.

At first glance, the results of the tercile analysis and the implicit weight analysis examining the relationship between the percentage of student poverty and levels of per-pupil spending may appear to be contradictory. However, an important difference between these two methods is that the implicit weight analysis simultaneously controls for other factors thought to drive spending whereas the tercile analysis does not. District 2 showed the largest difference in results between the tercile and implicit weight analysis. As shown in Exhibit 26, the school characteristic associated with the largest increase in per-pupil spending in District 2 was the percentage of students with disabilities, and this percentage was almost twice as high in high-poverty schools as in low-poverty schools (26 percent vs. 14 percent). After controlling for this and other school characteristics, the per-pupil spending differential associated with the implicit poverty weight was negative (−$1,241 in high-poverty schools). This result indicates that the higher spending in high-poverty schools found in the tercile analysis may be driven by differences in other student needs that are associated with poverty (in particular, disability status), rather than poverty itself.

Exhibit 26.   Example of using implicit weights to estimate the additional per-pupil spending associated with various school characteristics in high- and low-poverty schools in District 2, 2016–17

School characteristic	Implicit weight	Observed average values		Estimated base spending level and additional spending based on implicit weight	
		High-poverty schools	Low-poverty schools	High-poverty schools	Low-poverty schools
Base per-pupil amount				$5,116	$5,116
Percentage of students with disabilities	2.89	26%	14%	$3,844	$2,070
Percentage in grades 6–8	0.94	22%	19%	$1,058	$914
Percentage in grades 9–12	0.44	21%	33%	$473	$743
Enrollment (relative to mean)	−0.61	−14%	−9%	$437	$281
Percentage of English learners	0.45	12%	7%	$276	$161
Percentage eligible for FRPL	−0.25	97%	69%	−$1,241	−$883
Estimated overall per-pupil spending (base + estimated additional spending)				$9,963	$8,402

Exhibit reads: In District 2, the school characteristic associated with the largest increase in per-pupil spending was the percentage of students with disabilities (SWDs), with an implicit weight of 2.89, and high-poverty schools have a higher concentration of SWDs than low-poverty schools (26 percent vs. 14 percent). The additional per-pupil spending that was associated with SWDs was $3,844 in high-poverty schools and $2,070 in low-poverty schools.

Notes: The additional spending amounts associated with each school characteristic was calculated by multiplying the implicit weight by the base spending level and the observed average values for high- and low-poverty schools. For example, for high-poverty schools, the additional spending amounts associated with SWDs is calculated as 2.89 × $5,116 × 26% = $3,844.

Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

Looking at total school-level expenditures, rather than just spending from unrestricted funds, provides a more positive view of school spending patterns in relation to poverty.

Restricted funds are those that are targeted to specific student groups or programs, such as Title I of the *ESEA* and other federal programs, state or local compensatory education programs, and programs serving English learners and students with disabilities. Typically these restricted funds are not allocated to schools through WSF formulas, which is why our primary analyses focus on unrestricted funding. However, when districts design their WSF formulas, they may take into consideration certain restricted funding streams as they choose specific categories and weighting levels. For example, a district might decide not to use weights for ELs in allocating unrestricted funds to schools because state categorical programs are providing funds to meet the additional needs of those students.[32]

Exhibit 27 compares the tercile and implicit weight outcomes when using spending from only restricted funds and when using spending from both unrestricted and restricted funds. For the tercile analysis, the number of districts showing that high-poverty schools received more than low-poverty schools rose from five to seven districts. For the implicit weight analysis, the three districts showing that high-poverty schools received less than low-poverty schools, after controlling for other factors, all changed to

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[32] However, a district may not use federal Title III funds to provide English learners with the core instructional program that it is required to provide to meet its civil rights obligations. Those funds may only be used to supplement and not supplant state, local, and other federal funds.

showing no statistically significant differences related to poverty rate. Overall, seven of the eight districts showed no significant difference when examining both unrestricted and restricted funds, and one showed a significant positive implicit poverty weight of 0.50, indicating that an elementary school with average enrollment, a poverty rate of 100 percent, and no other student needs spent 50 percent more per pupil, compared with an otherwise similar school with no poor students.[33]

Exhibit 27. **Estimates of the relationship between students from low-income families and school per-pupil spending from unrestricted funds and total funds (unrestricted plus restricted)**

	Tercile differences		Implicit weights	
	Unrestricted funds	Unrestricted + Restricted	Unrestricted funds	Unrestricted + Restricted
District 1	18%	NA	0.26**	N/A
District 2	20%	33%	−0.25	−0.18
District 3	20%	22%	−0.08	0.05
District 4	−5%	1%	−0.26**	−0.18
District 5	5%	16%	−0.05	0.11
District 6	−22%	−19%	−0.24	−0.12
District 7	−5%	3%	−0.20**	−0.03
District 8	18%	24%	0.40**	0.50**
District 9	5%	18%	−0.30**	0.03

Exhibit reads: In District 2, the high-poverty tercile of schools spent 20 percent more than the lowest poverty tercile when considering just unrestricted funds, but 33 percent more when restricted funds are also included.

Notes: District 1 is not included in the analyses of total funds because it did not provide data on school-level spending from restricted revenue sources. Data are for 2016–17 for eight districts and 2015–16 for one district. Asterisks denote a statistically significant difference from zero (**$p < .05$).
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

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[33] Exhibit D-13 in Appendix D shows similar comparisons of equity outcomes (based on unrestricted funds alone versus both unrestricted and restricted funds) in relation to EL students and SWDs.

Equity Trends With Respect to Student Poverty

Examining equity trends in WSF districts is challenging due to the difficulty in obtaining detailed school-level expenditure data both before and after the implementation of WSF. Although the nine case study districts were asked to provide expenditure data for years prior to WSF implementation, sometimes the data systems were limited in their ability to provide this information, especially if the data systems and/or WSF systems were old. Even among the five districts that were able to provide more extensive longitudinal data, one was able to provide data for only two years prior to WSF implementation, and one provided only two years of post-implementation data. **Because of the lack of more extensive pre-implementation and post-implementation data, the trend analyses in this report should be interpreted with caution. More specifically, they are presented as descriptive analyses and should not be interpreted as the causal effect of WSF systems on equity.**

> **In four of the five districts with sufficient data to examine trends before and after WSF implementation, the high-poverty tercile of schools showed gains in per-pupil spending from unrestricted funds, relative to low-poverty schools, after adopting WSF.**

Three of the four districts showed a progressive relationship between poverty and per-pupil spending that became more progressive after the adoption of WSF (Districts 1, 2, and 3). District 5 showed a regressive relationship prior to WSF that became progressive after WSF; this district — for which we have 14 years of post-implementation data — lost some ground after about seven years of implementation, but the most recent years appear to show a trend toward increasing progressivity based on the tercile measure. In contrast, District 4 became more regressive after WSF, continuing a trend that appeared in the years prior to WSF adoption (Exhibit 28).

> **Trends in implicit poverty weights appear to show some improvement in three of the five districts after WSF implementation.**

District 3 showed the clearest pattern of improvement. Before WSF implementation, District 3's implicit poverty weight was regressive, ranging between −0.30 and −0.54 during the four years prior to WSF. In the first year of WSF implementation, the implicit weight for poverty showed an immediate improvement, falling from −0.46 to −0.24, and it continued to improve over the next several years, reaching −0.03 in the fourth year of implementation.

District 1 is the only one of the five districts that showed positive implicit poverty weights prior to WSF, and this relationship became more progressive in the first two years under WSF. Because this district began its WSF system very recently, data are not yet available to examine longer-term outcomes.

In District 5, the implicit poverty weights show a fluctuating pattern similar to that for its tercile differences — initially they became less regressive (particularly in the first four years of implementation), but then worsened, reaching levels similar to their pre-WSF implicit weights. In the most recent year, the implicit weight improved again, but it remains to be seen whether this is the beginning of a trend toward more equity or simply another data fluctuation.

For Districts 2 and 4, the implicit poverty weights showed regressive funding patterns before and after WSF implementation, with no discernible progress on this measure after the adoption of WSF.

Exhibit 28.   Trends in tercile differences and implicit weights for school per-pupil spending from unrestricted funds relative to students from low-income families, in five WSF districts
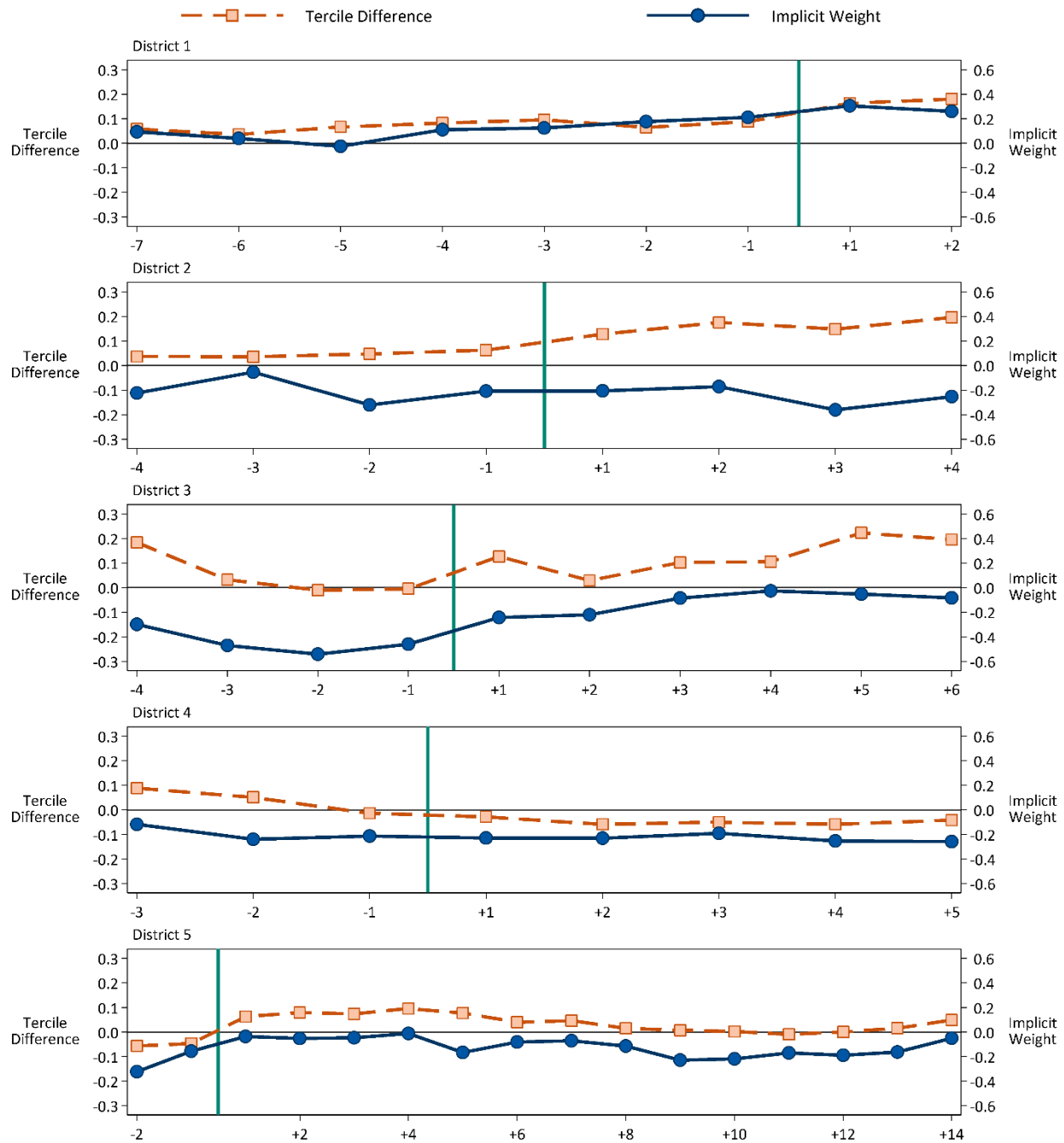

Exhibit reads: In District 1, schools in the high-poverty tercile had higher per-pupil spending from unrestricted funds than low-poverty schools, indicating a progressive funding pattern, and the degree of progressivity increased after the adoption of WSF. In the same district, the implicit weights for student poverty also indicate a progressive pattern, after controlling for other school characteristics, that increased after WSF implementation.

Note: The vertical green line in each panel represents the first year of WSF implementation. Tercile differences and implicit weights for each year are provided in Exhibits D-14 and D-15 in Appendix D.
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

Equity With Respect to English Learners

In four of the nine WSF case study districts, schools with higher concentrations of English learners spent more on average than low-EL schools.

District 8 had the highest tercile difference for this measure, with high-EL schools spending 14 percent more than low-EL schools. In the other three districts with higher spending in high-EL schools, the relative differences ranged from 2 percent to 8 percent. In contrast, five districts had lower average spending levels in high-EL schools than in low-EL schools. Among these districts, the range of relative differences was from −5 percent to −18 percent (Exhibit 29).

Exhibit 29. **Estimates of the relationship between English learners and school per-pupil spending from unrestricted funds, using the tercile and implicit weight approaches, in nine WSF districts, in the most recent year for which data were available**

	Tercile approach			Implicit weight approach		
	High-EL schools	Low-EL schools	Relative difference	Base spending	Additional spending	Implicit weight
District 1	$6,151	$7,009	−12%	$5,487	−$502	−0.09
District 2	$9,151	$8,842	4%	$5,116	$2,284	0.45**
District 3	$9,459	$8,731	8%	$6,108	$901	0.15
District 4	$7,906	$8,503	−7%	$6,429	$2,015	0.31**
District 5	$4,688	$4,575	2%	$4,668	$267	0.06
District 6	$5,576	$6,838	−18%	$5,921	−$1,233	−0.21
District 7	$8,649	$9,134	−5%	$8,623	−$264	−0.03
District 8	$7,017	$6,149	14%	$5,452	−$1,219	−0.22
District 9	$8,063	$8,681	−7%	$7,726	$717	0.09

Exhibit reads: In District 1, average per-pupil spending in high-EL schools ($6,151) was 12 percent lower than in low-EL schools ($7,009). Using the implicit weight approach, base per-pupil spending was estimated as $5,487 and the per-pupil spending differential associated with EL students was estimated as −$502 per pupil, resulting in an implicit EL weight of −0.09.

Notes: EL = English learners. Data are for 2016–17 for eight districts and 2015–16 for one district. Asterisks denote a statistically significant difference from zero (**p < .05). Exhibit D-10 in Appendix D provides the regression results used to generate the implicit weights in each district.
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

Two of the nine WSF districts had a positive implicit weight for EL students for unrestricted funds that was statistically significant, indicating that higher-EL schools in those districts had higher levels of spending on average than otherwise similar schools with lower percentages of EL students.

In Districts 2 and 4, the implicit weights for ELs were 0.45 and 0.31, indicating an EL student in these districts was associated with 45 percent and 31 percent more funding, respectively, than an otherwise similar student. In the other seven districts, the implicit EL weights were not statistically significant (Exhibit 29).

Among the five districts with sufficient trend data, two showed relative gains after WSF implementation for the high-EL tercile of schools, and three showed increases in implicit EL weights.

For Districts 3 and 5, the tercile measure showed the relative level of per-pupil spending in high-EL schools increased after WSF adoption; however, District 5 later began to lose ground, and after 14 years of implementation, the relative spending level in the high-EL schools was about the same as prior to WSF adoption. In contrast, District 4 became more regressive after WSF, continuing a trend that appeared in the years prior to WSF adoption. The remaining two districts showed fluctuations with no clear pattern (Exhibit 30).

In the implicit weight analysis, Districts 1 and 2 showed increases in the implicit EL weight after implementing WSF. District 5 also showed increases in about half of the 14 post-WSF years available for this district, but its implicit weight in the most recent year was similar to those in the two years before WSF implementation. In the other two districts, the implicit EL weight in the post-WSF time period was either lower (District 3) or stayed relatively constant (District 4).

Exhibit 30.   Trends in tercile differences and implicit weights for school per-pupil spending from unrestricted funds relative to English learners, in five WSF districts
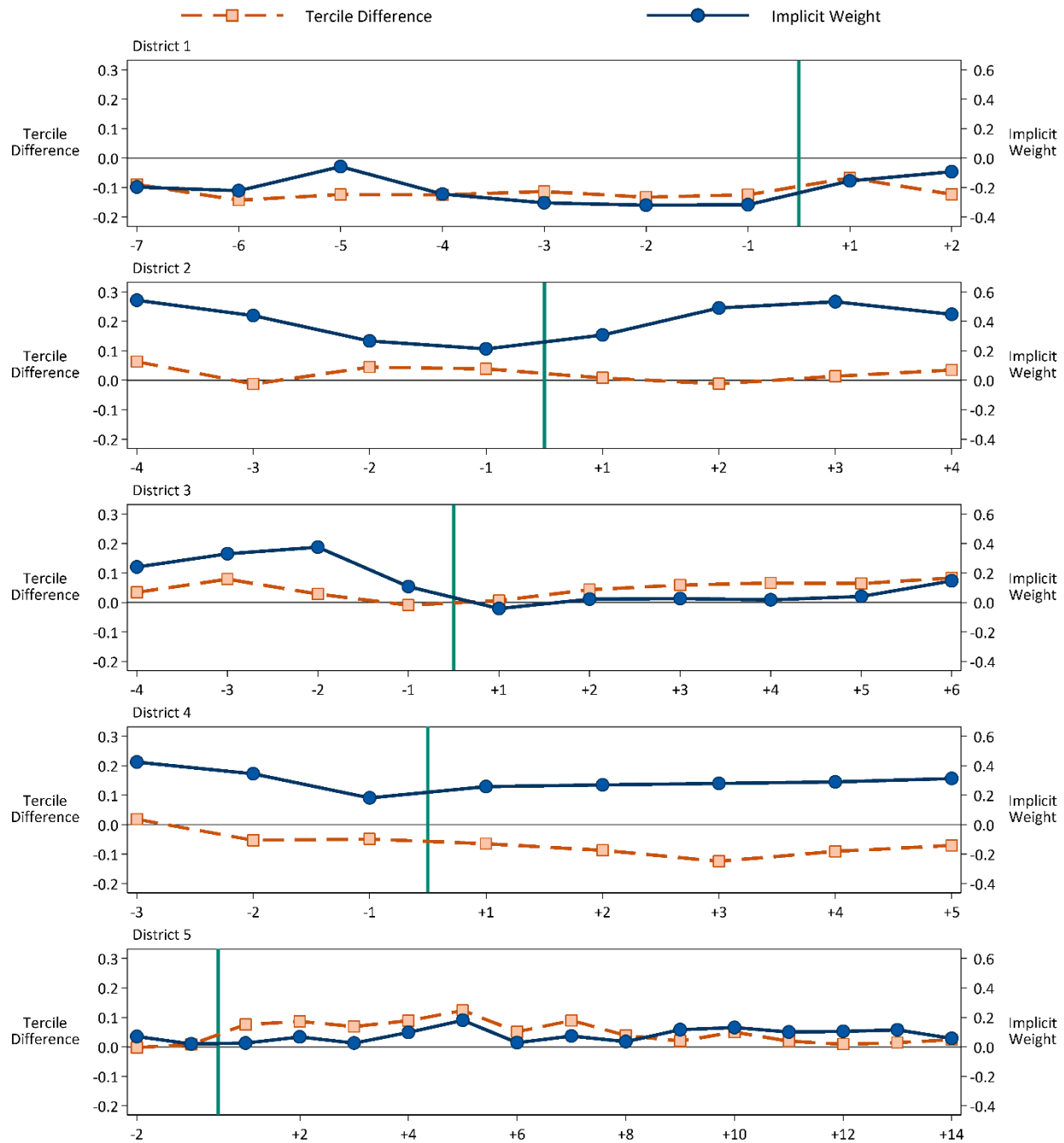

Exhibit reads: In District 1, schools in the high-EL tercile had lower per-pupil spending from unrestricted funds than low-EL schools, and their relative funding level did not increase after the adoption of WSF. In the same district, the implicit weights for EL students, after controlling for other school characteristics, increased after WSF adoption.

Notes: EL = English learners. The vertical green line in each panel represents the first year of WSF implementation. Tercile differences and implicit weights for each year are provided in Exhibits D-16 and D-17 in Appendix D.
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

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Equity With Respect to Students With Disabilities

In eight of the nine WSF case study districts, both the tercile approach and implicit weights indicated that schools with higher concentrations of students with disabilities had higher spending levels than other schools.

Additionally, the relative tercile differences and the estimated implicit weights were much higher than the implicit weights for poverty or EL. Whereas the largest implicit weights for poverty and EL were 0.40 and 0.45, respectively, those for students with disabilities were greater than 1.20 in six districts and greater than 2.60 in three districts. District 5, however, shows quite different results, with negative figures for both the tercile and implicit weight analyses, indicating that in this district, schools with higher concentrations of students with disabilities tended to have lower per-pupil spending levels than other schools (Exhibit 31).

Exhibit 31. **Estimates of the relationship between students with disabilities and school per-pupil spending from unrestricted funds using the tercile and implicit weight approaches, in nine WSF districts, in the most recent year for which data were available**

	Tercile Approach			Implicit Weight Approach		
	High-SWD schools	Low-SWD schools	Relative difference	Base spending	Additional spending	Implicit weight
District 1	$7,155	$6,076	18%	$5,487	$1,781	0.33*
District 2	$10,677	$8,208	30%	$5,116	$14,791	2.91**
District 3	$11,175	$7,909	41%	$6,108	$17,099	2.80**
District 4	$9,401	$7,680	22%	$6,429	$17,278	2.69**
District 5	$4,583	$4,698	−2%	$4,668	−$3,326	−0.71**
District 6	$6,887	$5,726	20%	$5,921	$7,316	1.24*
District 7	$9,986	$8,490	18%	$8,623	$11,835	1.37**
District 8	$7,103	$6,029	18%	$5,452	$5,180	0.95
District 9	$9,463	$7,701	23%	$7,726	$12,236	1.59**

Exhibit reads: In District 1, average per-pupil spending in high-SWD schools ($7,155) was 18 percent higher than in low-SWD schools ($6,076). Using the implicit weight approach, the additional spending associated with students with disabilities was estimated as $1,781 per pupil, resulting in an implicit SWD weight of 0.33.

Notes: SWD = students with disabilities. Data are for 2016–17 for eight districts and 2015–16 for one district. Asterisks denote a statistically significant difference from zero (**$p < .05$, *$p < .10$). Exhibit D-10 in Appendix D provides the regression results used to generate the implicit weights in each district.

Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

While improvements in the distribution of spending with respect to poverty (and perhaps ELs) might be expected when implementing a WSF system, it seems less obvious that WSF systems would be expected to target more resources from unrestricted funding sources to their SWDs than they had prior to adopting WSF. Under *IDEA*, individualized education programs determine the specific services that must be delivered to eligible SWDs, and requirements for the level of resources to support these students must be met regardless of whether a WSF system is in place;[34] this type of requirement does not exist for ELs or students from low-income families. Readers may want to take this context into account when examining the trend data.

Four of the five case study districts with pre- and post-WSF data on special education largely maintained their distribution of resources with respect to students with disabilities in the post-WSF time period.

Only District 2 appears to have consistently targeted more school-level spending for special education students in the post-WSF time period than it had prior to the adoption of WSF. District 3 showed increases in Years 5 and 6 after WSF adoption, though not in earlier years. District 4 showed some declines in funding for SWDs after WSF, but its implicit weights were relatively high both before and after WSF adoption. Districts 1 and 5 showed fluctuating patterns with no clear trends after WSF implementation (Exhibit 32).

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[34] District 3, for example, largely determined the special education weights in its WSF formula by calculating what weights would be needed to maintain the necessary ratios of staff to special education students.

Exhibit 32.   Trends in tercile differences and implicit weights for school per-pupil spending from unrestricted funds relative to students with disabilities, in five WSF districts
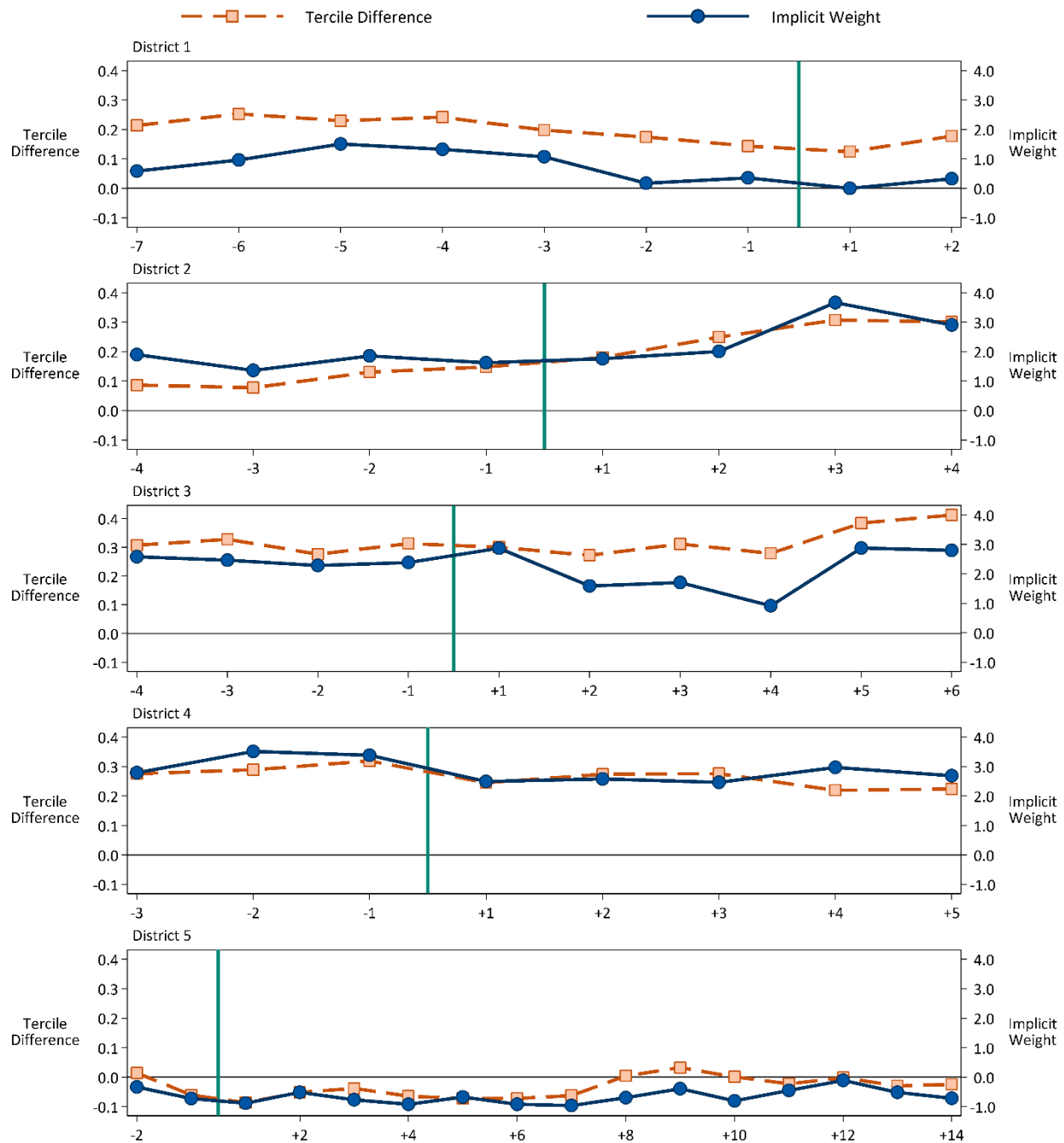

Exhibit reads: In District 1, schools in the high-SWD tercile had higher per-pupil spending from unrestricted funds than low-SWD schools, and this relationship did not change substantially after the adoption of WSF. In the same district, the implicit weights for SWDs were positive, after controlling for other school characteristics, and did not increase after WSF implementation.

Notes: SWD = students with disabilities. The vertical green line in each panel represents the first year of WSF implementation. Tercile differences and implicit weights for each year are provided in Exhibits D-18 and D-19 in Appendix D.
Source: Calculations based on district-provided data on school-level expenditures, student enrollment, and other demographic characteristics.

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Chapter Summary

Examining equity funding outcomes in WSF districts is challenging, due to the difficulty in obtaining detailed school-level expenditure data before and after the implementation of WSF. Because of the limited amount of pre- and post-WSF implementation data, the trend analyses in this report are presented as descriptive, not causal, analyses.

The findings from this study regarding equity are mixed. While some WSF districts had progressive equity outcomes and appeared to make equity gains after WSF implementation, others did not. In six of the nine WSF case study districts, higher-poverty schools had higher per-pupil spending levels than lower-poverty schools in the most recent year of data. However, after controlling for other school characteristics, only two had a statistically significant positive relationship between poverty and spending, while three had a statistically significant negative relationship. Among the five districts with sufficient data to examine school spending patterns before and after WSF implementation, three appeared to show some gains in relative funding levels for high-poverty schools after WSF implementation, after controlling for other school characteristics.

For EL students, two of the nine districts tended to have higher per-pupil spending in schools with higher concentrations of EL students than in those with lower EL rates, after controlling for other factors. Two of the five districts with sufficient trend data showed a more positive relationship between school percentage of EL students and per-pupil spending after WSF was implemented. For students with disabilities, all but one of the case study districts had substantially higher spending levels in schools with higher concentrations of students with disabilities than other schools before adopting WSF; these patterns were generally sustained after WSF was implemented.

The question that remains is why we did not observe stronger positive equity outcomes for WSF districts. One contributing factor may be the types of weights used and the relative sizes of those weights. Three of the nine case study districts did not have weights for students from low-income families, and the remaining six districts had weights that ranged from 0.05 to a high of 0.275. A second factor is the extent to which some unrestricted funds flow to schools outside the WSF formula. For example, if "side pots" of funding are distributed to schools in a regressive manner (such as to support special programming for higher-performing students), this could counteract the potential benefits of a progressive WSF formula.

A third factor is the use of districtwide average salaries rather than actual salaries for budgeting the funds that WSF formulas allocate to schools. If WSF systems use actual salaries, then a high-poverty school with below-average salaries would have additional funds left over after paying for a standard allotment of teachers, which it could use for supplemental resources such as additional teachers or instructional materials and equipment. However, if they use average salaries, then schools with lower-paid teachers may end up with lower per-pupil expenditures even if the WSF formula itself is progressive. Although all WSF case study districts reported using average teacher salaries, two districts allowed schools to opt in to using actual teacher salaries — and the schools that did so were generally higher-poverty schools.

In short, WSF is a tool that may be used to direct higher levels of funding to schools with greater needs, but its effectiveness in improving the equitable distribution of funds will be influenced by the details of the formula, the share of funds distributed through the formula, and the use of actual versus average salaries for budgeting the funds that are allocated to schools through the WSF formula.

5. Conclusions

A growing number of policymakers and educators have shown interest in the WSF approach as a means for promoting principal and school autonomy over budget decisions and increasing funding equity among schools. As of the 2018–19 school year there were 27 school districts nationwide, predominantly large urban districts, that were implementing WSF. In addition, the 2015 authorization for a SCF pilot program was intended to encourage more districts to implement WSF systems, although so far few have expressed interest and none are currently approved. This study is not directly examining the SCF pilot program, but its findings may help to illuminate some of the options and challenges facing districts and policymakers as they seek to implement the program, as well as more broadly informing those who are considering adopting a WSF system or refining their existing system.

The surveys of principals and district administrators indicate a number of differences between WSF districts and those with traditional resource allocation systems. Respondents in WSF districts were more likely than their non-WSF counterparts to indicate that principal autonomy and transparency were key priorities. WSF districts reported allocating, on average, over half of their total operational spending to schools to be used under principals' discretion — more than six times the amount reported by non-WSF districts. However, the share of funds reported as under school discretion varied and was as low as 27 percent in one case study district.

Principals themselves reported more autonomy in WSF districts than in non-WSF districts in a number of areas, including hiring instructional coaches, selecting curricular materials and instructional software, and making decisions about extended time programs and professional development. In the case study interviews, however, principals often said their autonomy was constrained by requirements to fill specific staff positions, collective bargaining agreements, and the amount of resources under their control. District and principal interviewees also discussed challenges related to principals' budgeting skills and additional workload for principals that may extend beyond their training.

The specifics of the WSF formulas varied considerably across the nine districts examined in the case studies. Although the districts often used weights to direct additional funding to schools with higher concentrations of students from low-income families, English learners, and students with disabilities, they varied considerably in the magnitudes of the weights they chose — with weights for low-income students, for example, ranging from a low of 0.05 to a high of 0.275. In addition, the districts developed other funding adjustments to reflect their priorities, such as performance-based funding adjustments to provide additional resources for low-performing or at-risk students, and supplemental allocations for specialized programing, such as career and technical education, International Baccalaureate programs, and performing arts schools. Although all WSF case study districts reported that their schools use average teacher salaries in developing their budgets, some also used actual salaries, either for some of their schools or by incorporating them into their weighting scheme — which may suggest strategies that districts applying for the federal SCF pilot could propose to meet this requirement.

In case study interviews, district leaders in seven of nine WSF districts indicated that improving equity of resource distribution was a driving motivation for implementing the WSF system. However, the findings from this study on whether they achieved that goal is mixed. Analyses of expenditure data in the nine case study districts found that while some WSF districts showed progressive equity patterns and appeared to make equity gains after WSF implementation, others did not. This is perhaps unsurprising given the variation in the size and structure of the weights that these districts used, and the fact that

most used average rather than actual salaries for budgeting school personnel expenditures. Although WSF is a tool that may be used to direct higher levels of funding to schools with greater needs, its effectiveness in improving the equitable distribution of funds is influenced by the types and sizes of weights used, the share of total funding distributed through the formula, and whether schools use of actual or average salaries for budgeting the funds that are allocated to them.

The WSF districts in this study have grappled with a variety of challenges in their efforts to use this approach to increase equity and school autonomy. Their ability to direct more funds to schools with greater needs — as well as principals' ability to use flexibility to produce meaningful changes in school programming and quality — may depend in part on the broader fiscal environment, such as whether the overall district budget is expanding or contracting. Other challenges may include navigating district policies and practices that potentially conflict with the goal of school autonomy and the need to provide additional training and support for principals to help them use their autonomy effectively. Some districts have just begun to implement their WSF approach or are in the process of deciding whether to embark on this path, while others have seen their systems evolve over many years and changes in leadership — yet all may benefit from learning from the examples and experiences of other districts that have pursued this approach to improving equity and governance in education.

References

Baker, Bruce. 2016. *Does Money Matter in Education? Second Edition.* Washington, DC: Albert Shanker Institute. Accessed May 28, 2019. http://www.shankerinstitute.org/sites/shanker/files/moneymatters_edition2.pdf

Baker, Bruce, and Scott Thomas. 2006. *Review of Hawaii's Weighted Student Formula.* Honolulu: Hawaii Board of Education.

Boston Public Schools. 2018. "FAQ: Opportunity Index." Accessed December 8, 2018. https://www.bostonpublicschools.org/Page/6745

Chambers, Jay, Irene Lam, Kanya Mahitivanichcha, Phil Esra, Larisa Shambaugh, and Stephanie Stullich. 2009. *State and Local Implementation of the No Child Left Behind Act, Volume VI–Targeting and Uses of Federal Education Funds*. Washington, DC: U.S. Department of Education. Accessed August 16, 2019. https://www2.ed.gov/rschstat/eval/disadv/nclb-targeting/nclb-targeting.pdf

Chambers, Jay, Larisa Shambaugh, Jesse Levin, Mari Muraki, and Lindsay Poland. 2008. *A Tale of Two Districts: A Comparative Study of Student-Based Funding and Decentralized Decision Making in San Francisco and Oakland Unified School Districts.* Palo Alto, CA: American Institutes for Research. Accessed July 24, 2019. https://www.air.org/sites/default/files/A_Tale_of_Two_Districts_Final.pdf

Chingos, Matthew. 2016. "No More Free Lunch for Education Policymakers and Researchers." Accessed December 7, 2018. https://www.brookings.edu/research/no-more-free-lunch-for-education-policymakers-and-researchers/

Cochran, William. 1968. "The Effectiveness of Adjustment by Subclassification in Removing Bias in Observational Studies." *Biometrics* 24: 295–313.

Duncombe, William, and John Yinger. 2005. "How Much More Does a Disadvantaged Student Cost?" *Economics of Education Review* 24, no. 5: 513–32.

Duncombe, William, and John Yinger. 2008. "Measurement of Cost Differentials." In *Handbook of Research in Education Finance and Policy*, edited by Helen Ladd and Edward Fiske, 238–56. New York: Routledge.

Duncombe, William, and John Yinger. 2011. "Are Education Cost Functions Ready for Prime Time? An Examination of Their Validity and Reliability." *Peabody Journal of Education* 86, no. 1: 28–57.

Education Resource Strategies. 2018. *Transforming School Funding for Equity, Transparency, and Flexibility: An Introduction to Student-Based Budgeting.* Accessed February 1, 2019. https://www.erstrategies.org/cms/files/4007-transforming-school-funding-for-equity-transparency-and-flexibility-a-nuts-and-bolts-guide-to-implementing-student-based-budgeting.pdf

Food Research and Action Center. 2018. *Direct Certification Improves Low-Income Student Access to School Meals: An Updated Guide to Direct Certification*. Washington, DC: Author. Accessed September 23, 2019. http://frac.org/wp-content/uploads/direct-cert-improves-low-income-school-meal-access.pdf

Goldhaber, Dan, Lesley Lavery, and Roddy Theobald. 2015. "Uneven Playing Field? Assessing the Teacher Quality Gap Between Advantaged and Disadvantaged Students." *Educational Researcher* 44, no. 5: 293–307.

Gronberg, Tim, Dennis Jansen, Lori Taylor, and Kevin Booker. 2004. *School Outcomes and School Costs: The Cost Function Approach*. College Station: Texas A&M University. Accessed September 26, 2019. https://www.researchgate.net/publication/266866526_School_Outcomes_and_School_Costs_The_Cost_Function_Approach

Gronberg, Tim, Dennis Jansen, and Lori Taylor. 2011. "The Adequacy of Educational Cost Functions: Lessons From Texas." *Peabody Journal of Education* 86, no. 1: 3–27.

Hoffman, Lee. 2012. *Free and Reduced-Price Lunch Eligibility Data in EDFacts: A White Paper on Current Status and Potential Changes.* Washington, DC: U.S. Department of Education. Accessed December 8, 2018. https://files.eric.ed.gov/fulltext/ED556048.pdf

Honig, Meredith, and Lydia Rainey. 2013. "Autonomy and School Improvement: What Do We Know and Where Do We Go From Here?" *Educational Policy* 26, no. 3: 465–95.

Imazeki, Jennifer. 2008. "Assessing the Costs of Adequacy in California Public Schools: A Cost Function Approach." *Educational Finance and Policy* 3, no. 1: 90–108.

Indianapolis Public Schools. 2018. "2018–19 SBA FAQs." Indianapolis: Indianapolis Public Schools.

Koteskey, Tyler, and Lisa Snell. 2016. *Trends in the National Student-Based Budgeting Landscape: Exploring Best Practices and Results*. Los Angeles: Reason Foundation. Accessed September 26, 2019. https://allovue.com/files/fefs2016/session-d/trends-sbb/trends-sbb-fefsummit.pdf

Levin, Jesse, Jay Chambers, Diana Epstein, Nick Mills, Mahala Archer, Antonio Wang, and Kevin Lane. 2013. *Evaluation of Hawaii's Weighted Student Formula*. San Mateo: American Institutes for Research.

Malen, Betty, Justin Dayhoff, Laura Egan, and Robert Croninger. 2015. "The Challenges of Advancing Fiscal Equity in a Resource-Strained Context." *Education Policy* 31, no. 5: 615–42. Accessed May 2, 2019. https://journals.sagepub.com/doi/pdf/10.1177/0895904815613445

Miller, Kristy. 2018. *FY 2019 Student-Based Budgeting Funding Model and Reference.* Upper Marlboro, MD: Prince George's County Public Schools.

Mizrav, Etai. 2014. *Could Principal Autonomy Produce Better Schools? Evidence From the Schools and Staffing Survey*. Accessed May 1, 2019. https://repository.library.georgetown.edu/handle/10822/709855

Roza, Marguerite, Tricia Davis, and Kacey Guin. 2007. *Spending Choices and School Autonomy: Lessons From Ohio Elementary Schools* (Working Paper 21). Seattle: University of Washington Center on Reinventing Public Education, School Finance Redesign Project. Accessed May 1, 2019. http://www.crpe.org/sites/default/files/wp_sfrp21_rozaohio_jul07_0.pdf

Roza, Marguerite, and Paul Hill. 2004. *How Within-District Spending Inequities Help Some Schools to Fail*. Brookings Papers on Education Policy 2004, 201–218. Brookings Institution Press. Accessed May 2, 2019. https://www.crpe.org/sites/default/files/roza_hill.withindistrictinequities.pdf

Rubenstein, Ross, Amy Ellen Schwartz, and Leanna Stiefel. 2006. *Rethinking the Intradistrict Distribution of School Inputs to Disadvantaged Students*. Paper prepared for the conference "Rethinking Rodriguez," Boalt Hall School of Law, Berkeley, CA. Accessed May 28, 2019. https://www.law.berkeley.edu/files/rubenstein-schwartz-stiefel_paper.pdf

Seattle Public Schools. 2008. *2020 Facilities Master Plan*. Seattle: Seattle Public Schools. Accessed December 14, 2018. https://www.seattleschools.org/UserFiles/Servers/Server_543/File/District/Departments/Capital%20Projects%20and%20Planning/facilities_master_plan/2020fmp_chapter1-5.pdf

Seattle Public Schools. 2019. *Adopted Budget: 2018–19 School Year*. Seattle: Seattle Public Schools. Accessed April 12, 2019. https://www.seattleschools.org/UserFiles/Servers/Server_543/File/District/Departments/Budget/2019%20Budget%20Development/adoptedbudget19.pdf

Shambaugh, Larisa, Jay Chambers, and Danielle DeLancey. 2008. *Implementation of the Weighted Student Formula Policy in San Francisco: A Descriptive Study of an Equity-Driven, Student-Based Planning and Budgeting Policy* (REL 2008-061). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory West. Accessed May 1, 2019. https://ies.ed.gov/ncee/edlabs/regions/west/pdf/REL_2008061_sum.pdf

Snell, Lisa, and Katie Furtick. 2013. Weighted Student Formula Yearbook 2013. Los Angeles, CA: Reason Foundation. Accessed May 28, 2019. https://reason.org/policy-study/weighted-student-formula-yearbook/

Steinberg, Matthew. 2014. "Does Greater Autonomy Improve School Performance? Evidence From a Regression Discontinuity Analysis in Chicago." *Education Finance and Policy* 9, no. 1: 1–35. Accessed May 1, 2019. http://www.mitpressjournals.org/doi/pdf/10.1162/EDFP_a_00118

Stullich, Stephanie, Elizabeth Eisner, and Joseph McCrary, Policy and Program Studies Service, Office of Planning, Evaluation and Policy Development. 2007. *National Assessment of Title I, Final Report: Volume I: Implementation*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Accessed July 24, 2019. https://ies.ed.gov/ncee/pdf/20084012_rev.pdf

Taylor, Lori, Jason Willis, Alex Berg-Jacobson, Karina Jaquet, and Ruthie Capras. 2018. *Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students: A Cost Function Approach*. San Francisco: WestEd. Accessed September 26, 2019. https://kasb.org/wp-content/uploads/2018/03/Kansas_Adequacy-Study_Cost-Function_20180315FINAL_02.pdf

U.S. Department of Education, Office of Elementary and Secondary Education. 2018. *Local Flexibility Demonstration Agreements for Student-Centered Funding Authorized by Section 1501 of the ESEA: Frequently Asked Questions*. Washington, DC: U.S. Department of Education. Accessed September 11, 2019. https://www2.ed.gov/policy/elsec/leg/essa/scfp/faqs.pdf

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