

Funding a Better Education

CONCLUSIONS FROM
THE FIRST THREE YEARS OF
STUDENT-BASED BUDGETING
IN HARTFORD



PUBLIC IMPACT

Public Impact is a national education policy and management consulting firm based in Chapel Hill, N.C. We are a team of researchers, thought leaders, tool-builders, and on-the-ground consultants who help education leaders and policymakers improve student learning in K–12 education. We believe that if we focus on a core set of promising strategies for change, we can make dramatic improvements for all students. This report was prepared for Achieve Hartford! by Daniela Doyle, Lyria Boast, Jacob Rosch, and Bryan Hassel of Public Impact.



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Achieve Hartford! is an independent nonprofit organization of business and community leaders focused on student achievement and supporting effective and sustained school reform in the Hartford Public Schools.

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Executive Summary

Shortly after Dr. Steven Adamowski became superintendent of Hartford Public Schools in 2006, he proposed a reform strategy built on two pillars. The first pillar was school choice, allowing students' families to choose the schools their children would attend. The second pillar was Managed Performance Empowerment (MPE), giving schools the autonomy and accountability to promote high performance.¹ Critical to both pillars was a new school funding model that allocates funding according to student enrollment and need: student-based budgeting.

Student-based budgeting

The student-based budgeting (SBB) model holds that the amount of funding a school receives for each student should reflect the student's educational need, and that funding should follow students to the schools they attend, where school leaders can use those funds to improve student performance. In Hartford, schools may receive additional funding based on a student's grade level, academic achievement, special education (SPED) status, or on whether the student is an English language learner (ELL). Coupled with policies on principal autonomy, SBB also gives Hartford principals greater authority over their budgets.

Through SBB, district leaders sought to increase funding equity, improve budgeting and accountability, and increase transparency, all in an effort to improve student performance. Three years later, this report asks:

Have the goals of SBB been achieved?

In so doing, the evaluation considered **four research questions**:

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

RESEARCH QUESTION 2

Has the allocation of school funding become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need?

RESEARCH QUESTION 3

Has SBB increased principals' sense of accountability at the school level?

RESEARCH QUESTION 4

Has SBB brought greater transparency to the district's funding process?



The answer to all questions is “yes”

We found that the answer to each of the research questions was a very clear “yes”:

yes

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

FINDING

- SBB allocates funding using a much different process than Hartford’s old system, and as a result, almost all schools received a different amount of funding in 2010–11 than they would have received without SBB.
- Consistent with the school board’s intent, the SBB formula allocates funds to schools based on expected student enrollment and the expected educational needs of those students.
- However, between the time the district approved the school budgets and the start of the new school year, the enrollment size and student composition of a school often changed. But funding was not reallocated to match final school enrollments, causing some schools to receive more funding than the SBB formula calculated based on final enrollment, while others received less.
- According to district officials, reallocating funds after the school year started would have likely forced some teachers to change schools, so they chose not to reallocate funds to minimize classroom disruption.

RESEARCH QUESTION 2

Has the allocation of school funding become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need?

yes

FINDING

- The allocation of school funding has become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need.
- Funding equity commonly refers to funding that increases with student need to provide necessary resources. Schools enrolling the highest concentrations of ELL, SPED, and low-performing students (“highest need” quartile) received modestly more funding under SBB than schools enrolling the lowest concentrations (“lowest need” quartile) of those students, an improvement over the pre-SBB period.
- The principals we spoke to said that the SBB formula is equitable because schools are budgeted the same amount of funding for Hartford students with the same characteristics.
- The process of charging schools average teacher salaries as opposed to actual teacher salaries makes the distribution of resources less equitable, because

schools with more-expensive teachers are effectively charged less than those teachers cost the district, freeing up funding for other uses, while schools employing less-expensive teachers experience the opposite effect. District leaders face difficult trade-offs to address the inequity.

RESEARCH QUESTION 3

Has SBB increased principals' sense of accountability at the school level?

FINDING

- SBB, coupled with greater autonomy over their budgets, has given principals the sense that they have greater control over and can truly be held accountable for student outcomes.
- SBB has led principals to approach their budgets more strategically, better aligning resources with student needs, including, at times, staffing their schools differently and changing the way they deliver instruction.
- Principals have more budget responsibility under SBB, requiring greater time and new skills.
- Because funding levels depend largely on enrollment levels, a handful of principals see an opportunity and obligation to market their schools to maintain desired enrollment levels.

yes

RESEARCH QUESTION 4

Has SBB brought greater transparency to the district's funding process?

FINDING

- SBB provides much greater transparency to the district's funding process.
- The school-level budgets in the district's annual budget book, coupled with the simplicity of the SBB formula, make it possible to easily see how the district allocates the majority of funds to each school.
- Although budgeted numbers are highly transparent, the data resulting from the district's reconciliation of budgeted funding to actual funding is not readily available to the public.
- The formulas governing the allocation of special funds are not as transparent as the SBB formula.

yes



Opportunities for improvement

In theory, SBB requires that the district adjust funding allocations to schools according to shifts in enrollment levels and demographics, and that the district allocate all funds included in the SBB funding stream based on the number and types of students a school enrolls. If SBB is implemented this way, school funding can be fully responsive to the needs of the student body at each school. In practice, however, HPS concluded that strict adherence to the principles of SBB would lead to undesirable consequences, and chose a different approach. Although SBB has already had a positive impact in Hartford, addressing the following issues could result in an even greater impact:

- **Predicted enrollment versus actual enrollment.** The district has struggled to accurately predict school enrollments for the upcoming year. The difference between actual enrollments determined on October 1st and predicted enrollments calculated the previous May resulted in several schools receiving more funding in 2010–11 than their level of need would indicate using the SBB formula. Although there are trade-offs to adjusting funding after school budgets are approved, updating enrollment projections throughout the spring and summer and making adjustments to school budgets based upon more accurate enrollment data is possible, and consistent with the principles of SBB.
- **Average teacher salary versus actual salary.** The district pays teacher salaries, but to do so, it charges every school the same “average” salary for each of its teachers. As a result, schools essentially get a discount on their most expensive teachers who cost the district more than the average salary, and then get “overcharged” for newer, relatively inexpensive teachers who cost the district less than the average teacher salary. As a result, schools with very expensive teachers *essentially* receive more funding than the SBB would calculate *based on the level of need reflected in their student body*, while the opposite holds true for schools with less-expensive teachers. District officials have concluded that the negative consequences of using actual salaries outweigh the benefits of doing so, and will continue to use average salaries, at least for the time being. Whether or not the district decides to use actual teacher salaries in the future, it is essential that the district make actual teacher costs at the school level readily available so that policymakers, the public, and district officials can compare the “true” costs of running each school and ensure that actual funding levels align with the level of student need in each school.

Conclusion

Hartford's implementation of student-based budgeting represents a complete overhaul of the district's old system and has had a measurably positive impact on schools. Implementation has not been without its challenges, however, and is still a work in progress.

The district acknowledges that the system is not yet where the district wants it to be, and we find that Hartford can do more to minimize complications from enrollment uncertainties, which prevent more accurate funding levels for schools. In addition, Hartford can increase the level of transparency by publicly reconciling actual spending on teachers and all major line items within a school's budget so that it is possible to see exactly how much it costs to run each school.

Overall, however, SBB is off to a strong start in Hartford. Funding levels at schools are moving in a direction that better reflects student needs. Principals feel more accountable for managing their budgets in ways that result in the highest possible impact on student achievement. The budgeting system has become much more transparent. Additionally, SBB is a powerful partner with other key reforms, including school choice and principal autonomy. By addressing the challenges highlighted in this report, Hartford can make SBB even more supportive of its overall reform effort.





Funding a Better Education

Conclusions from the first three years of student-based budgeting in Hartford

When the Connecticut State Department of Education published its first district report cards in 2003, it was obvious that the Hartford Public Schools district was struggling. Fewer than half of its students were proficient on the state reading exam.² Math performance was better, but 63 percent of 10th-graders and 43 percent of younger students failed to meet proficiency benchmarks. Compared with the state, Hartford looked even worse; its proficiency rates trailed by as many as 39 percentage points. Proficiency rates for 10th-graders remained stagnant over the next four years, but things got worse for younger students. On average, the percentage of students proficient on the state exam in third through eighth grades dropped 3 percentage points in reading and 11 percentage points in math, and the proficiency gap between the district and the state grew by as many as 13 percentage points.

The arrival of Steven Adamowski as district superintendent in 2006 began a new chapter at Hartford Public Schools (HPS). Within months, Adamowski introduced a plan to improve the quality of a Hartford education. HPS would close chronically underperforming schools, open new school models, become an all-choice system, cut back central district expenses to push more funding to schools, and increase principals' autonomy. HPS would also pursue another important reform that received less attention—addressing the district's antiquated inputs-based funding model, which provided funding based on staffing formulas and ratios with little consideration of student need.

In 2008, Hartford Public Schools released the findings of a study of school financing across the district.³ Grossly unequal funding ranked among the top issues the authors highlighted. Although some Hartford schools received only about \$4,000 per student, the study showed that others received as much as \$18,000—a difference of 450 percent. Even among schools serving similar student populations, the funding that schools received varied greatly. “Our current funding model is unfair, difficult to understand, and difficult to explain,” the report concluded.

Soon after the study, Hartford implemented a new funding model based on the principles of student-based budgeting. Student-based budgeting (SBB) allocates

school funding based on the number of students schools enroll and the needs of those students. Through SBB, district leaders sought to accomplish three goals:⁴

- increase funding equity,
- improve budgeting and accountability, and
- increase transparency, all in an effort to improve student performance.



Now, three years later, is SBB meeting these goals?

This report seeks to answer that question by analyzing six years of budget data and through interviews with Hartford principals running schools both before and after SBB implementation. Using these data, we evaluate the progress the district has made in implementing SBB. In so doing, the report considers four research questions:

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

RESEARCH QUESTION 2

Has the allocation of school funding become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need?

RESEARCH QUESTION 3

Has SBB increased principals' sense of accountability at the school level?

RESEARCH QUESTION 4

Has SBB brought greater transparency to the district's funding process?

SECTION I

Student-based budgeting in Hartford

Before 2008, Hartford, like most districts, allocated the bulk of school funding using an inputs-based model. Under an inputs-based funding model, the cost of various inputs, such as teachers and materials, drove funding, without taking into consideration the students each school served. For example, schools received funding for an additional teacher, janitor, or other staff person for a certain number of students (see Figure 1).

Many believe, however, that inputs-based models are both inefficient and inequitable.⁵ Critics argue that using inputs to guide funding decisions is inefficient because they fail to target resources where they would be most useful—to students with the greatest needs. Meanwhile, research suggests that disadvantaged students are more expensive to educate than their peers with more advantages, and schools that serve them require additional resources to ensure all students can achieve at high levels.⁶

Figure 1. Funding template under Hartford’s old budgeting system

Base Allocation	=	\$
No. of Teachers	=	\$
1 Principal	=	\$
1 Assistant Principal	=	\$
Secretary	=	\$
# Guidance Counselors	=	\$
# Custodians	=	\$
Materials & Supplies	=	\$
Program Allocation	=	\$
Total Budget	=	\$

Source: Re-created from Hartford Public Schools. (2008). *Hartford, a system of schools: Guide to student-based budgeting 2008-09*. Hartford, CT. Retrieved from <http://www.hartfordschools.org/documents/RevisedSBBGuide.pdf>

Student-based budgeting

In contrast, student-based budgeting (SBB) is a funding model that holds that the amount of funding a school receives for each student should reflect the student’s educational need, and that funding should follow students to the schools

they attend, where school leaders can best target those funds to improve student performance. Under SBB, all students receive some minimum level of funding, often called the “foundation amount.”⁷ Then students with additional needs generate extra funding, such as low-performing students or English language learners, who require additional services to achieve at high levels, and are therefore costlier to educate (see Figure 2).

Figure 2. Funding under student-based budgeting

Foundation amount × Number of students	=	\$
English language learner (ELL) supplement × Number of ELL students	=	\$
Total Budget	=	\$

The potential of SBB

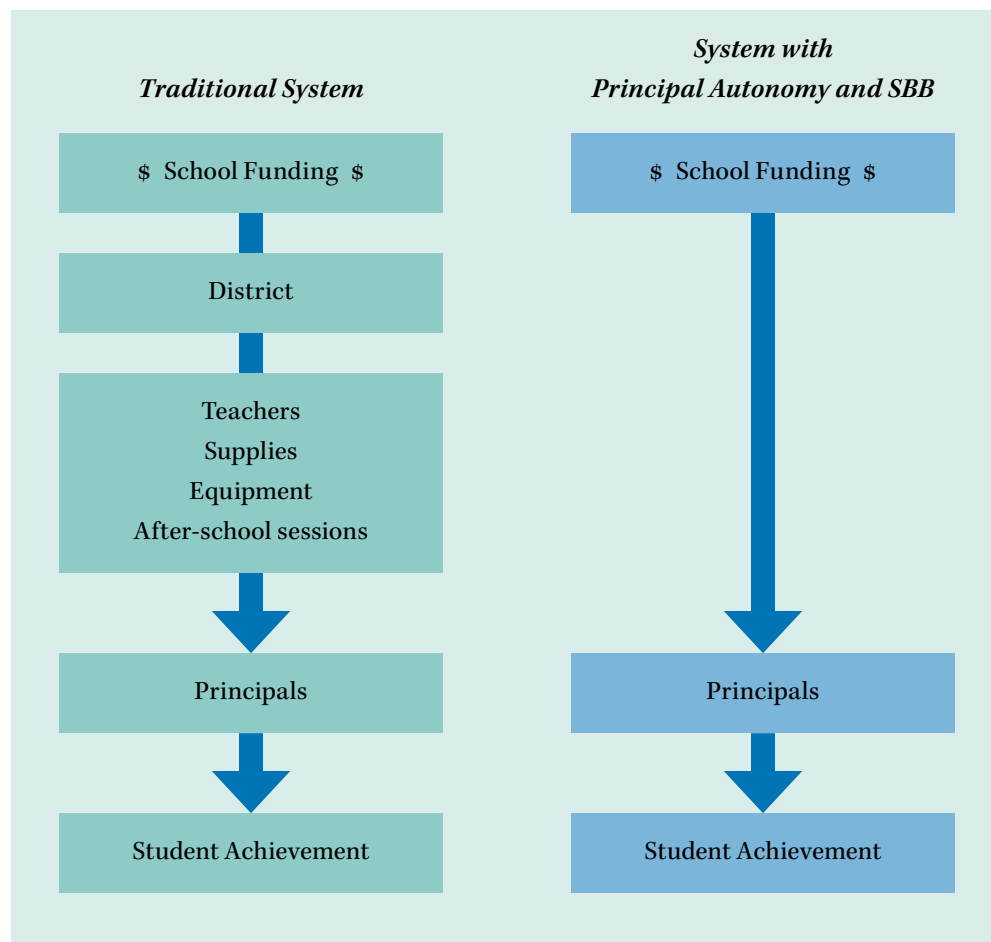
Advocates for SBB in Hartford schools believe that it offers an attractive alternative to the old funding system.⁸ They argue that by making student enrollment and need the most important factors that determine school funding, SBB ensures that financial resources are allocated fairly and in a targeted way. They also claim that the use of a single, straightforward formula to allocate the bulk of education funds makes SBB a far more transparent funding system than what HPS used previously.

In addition, they believe SBB ensures the district’s financial sustainability. To begin, SBB ensures that funding is aligned with student need, so dollars get to the right place. But Hartford’s SBB model also helps fund the changes necessitated by reform, such as breaking a large high school into smaller ones or developing a new school model, without draining funds from schools’ regular operating budgets. For example, special funds cover the cost of a new school start-up, and then the SBB funds that a school generates via its student enrollment sustain the school over time.

SBB advocates also argue that the funding model has the potential to hasten the pace of reform by serving as a sort of “necessary precondition” through which other reforms can take place.⁹ SBB can significantly enhance the benefits of two complementary reforms, principal autonomy and school choice:

- **Principal autonomy** refers to flexibility for school leaders to make decisions that will benefit their students. In contrast, districts often dictate how the principal must handle different situations, including hiring and firing teachers, how much time to spend on instruction, and curriculum pacing and sequencing. Many districts dictate how principals must spend the vast majority of the school funding they receive (see Figure 3). When principals can decide how best to use each dollar, and receive the resources they need to serve disadvantaged students, they have the financial ability to address the unique needs of their student population, rather than those of the “average student.”¹⁰

Figure 3. Resource allocation in a traditional education system vs. a system with principal autonomy and SBB



- **School choice** refers to a school assignment method in which families have the opportunity to choose the schools their children will attend. In most districts, the only options for parents are an assigned school or a specialized magnet or charter. Hartford, however, is Connecticut’s only all-choice district. Every school in HPS is a school of choice, and every family must choose a school for its child. Together, school choice and SBB offer a powerful accountability mechanism. Ideally, if schools are low-performing, parents will not choose them, and the school will experience declining enrollments. In theory, schools receive funding only for the students they enroll under SBB. As a result, low-performing schools experiencing declining enrollments face two choices—improve education and attract new students, or continue to lose students and eventually close for lack of funding.

Although SBB is not a panacea to the obstacles that urban education systems like Hartford face, advocates believe it can support an environment in which other reforms can gain traction.

The Hartford model

The SBB model Hartford adopted in 2008–09 is a radical break from the district’s budgeting practices of the past. Before SBB, the district calculated how many teachers, support staff, and supplies to send to a school based largely on what that school received the year before, and to a lesser extent, the number of students enrolled. As with most school districts across the country, schools in Hartford received most funding as staff positions, and therefore received very few actual dollars with which leaders could purchase what they wanted for their schools. In contrast, SBB directs the majority of funding to schools based on the students they enroll and the needs of those students. With principal empowerment or autonomy also in place, the new budgeting process leaves it up to the principal to make most spending decisions. In this section we discuss how Hartford’s SBB model operates.

BASICS OF THE HARTFORD MODEL

Hartford’s SBB model provides every school with a base level of funding for every student and additional funding based on four weights—grade level, prior achievement, being an English language learner (ELL), and special education (SPED). Each of these need factors has subcategories that generate more or less funding, with funding increasing as student need increases (see Table 1, page 13). District leaders chose not to allocate additional funding based on student poverty because they believe the best way to identify students with greater need is to look at past academic performance.¹¹

Grade-level weights incorporate the “foundation” amount—\$6,483 in 2010–11. The district determines whether a child is eligible for an “achievement” weight based on his performance on the Developmental Reading Assessment (DRA) in grades K–3, and on the state exam (CMT or CAPT) in all other tested grades.¹² The district conducts special assessments to identify students as ELL and SPED, and to determine a qualifying student’s level of need. Every year, Hartford also revisits the weights and funding categories used in its SBB formula to better reflect the costs of educating different students and the availability of resources.

HARTFORD MODEL IN PRACTICE

In 2010–11, a fourth-grader who was proficient on the state exam and did not require additional services generated the base funding amount—\$6,483—for his school. A ninth-grade student who was “well below standards” on the state exam and required the most intensive ELL support generated \$11,648 for his school. Meanwhile, a third-grader who was reading on grade level but required Level 1 SPED services generated \$12,457 for his school. And a school received \$7,759 for an eighth-grade student who scored in the highest proficiency category on the state exam. Just as in the previous examples, the district determines a funding amount for each student based on the weights in the SBB formula, and then it allocates the appropriate funding amount to each school (see Table 2, page 15).

Table 1. Hartford student weights 2010–11

	Category	Weight	Associated Funding
Foundation Amount	\$6,483		
Grade	Pre-K	0.92	\$6,000
	K	0.85	\$5,511
	1–3	1.20	\$7,779
	4–6	1.00	\$6,483
	7–8	1.10	\$7,132
	9–12	1.30	\$8,428
Achievement	Developmental Reading Assessment (K–3)	0.10	\$627
	High	0.10	\$627
	Below	0.05	\$314
	Well Below	0.10	\$627
ELL	0–30 months	0.40	\$2,593
	Transition to mainstream	0.25	\$1,621
	60+ months	0.13	\$843
Special Education	Level 1	0.80	\$4,678
	Level 2	1.30	\$7,600
	Level 3	2.40	\$13,981
	Level 4	4.07	\$23,735

Hartford Public Schools. (2010). Hartford Public School’s adopted education budget FY 2010–11. Retrieved from <http://www.hartfordschools.org/documents/2010-2011ADOPTEDBUDGETBOOK.pdf>

In addition, schools enrolling fewer than 260 students were eligible to receive a supplement—\$265,000 per school in 2010–11.

As Table 2 demonstrates, the amount of funding a school receives depends on the number and types of students enrolled. School 2 received significantly more total SBB funding because it enrolls more students. But School 2 also receives more funding per pupil because a higher proportion of its students qualify for additional funding based on the criteria in the formula.

SPECIAL FUNDS

It is important to note, however, that Hartford does not allocate all funding through its SBB formula. SBB funds are all general funds, over which school leaders have a lot of flexibility around spending. In contrast, state and categorical funds, other special education funds, and some program funds are allocated through different methods due to restrictions in how they can be used and their funding structures.

For example, magnet operating funds are state funds for use by magnet schools only; school readiness funds must go toward high-quality preschool; and special education program funds are designated by law for a specific set of special education services. Many other special funds, including Title I and priority school district funds, can be allocated only to schools with high levels of student need.

In 2010–11, HPS budgeted more than 70 percent of all school funding through SBB.¹³ It allocated the remaining 30 percent, “special funds,” through a series of other formulas. We did not analyze special funds for two reasons. First, they are not part of the SBB formula. Second, special funds are not included in the district’s SBB formula because the district faces defined federal and state criteria and other restrictions on how those funds are allocated. We limited our study to those funds over which HPS had control of allocation.

A TRANSITION

Since school funding and student need were not well aligned in Hartford before SBB, implementation of the new funding model meant that school funding levels would shift. Recognizing that schools would need time to adjust to new funding amounts, Hartford developed a three-year transition plan that capped a school’s funding gains and losses in the first two years (see Appendix B for details). As a result, 2010–11 was the first year Hartford fully implemented its SBB model.



Table 2. Sample school allocation budgets of SBB funds, 2010–11

	Weight	Per Capita	School 1			School 2		
			Students	=	Funding Allocation	Students	=	Funding Allocation
Grade Weights								
Pre-K	0.92	\$6,000 ×	18	=	\$108,000	0	=	\$0
K	0.85	\$5,511 ×	46	=	\$253,506	0	=	\$0
1–3	1.20	\$7,779 ×	176	=	\$1,369,104	0	=	\$0
4–6	1.00	\$6,483 ×	192	=	\$1,244,736	0	=	\$0
7–8	1.10	\$7,132 ×	129	=	\$920,028	0	=	\$0
9–12	1.30	\$8,428 ×	0	=	\$0	700	=	\$5,899,600
Need Weights								
ACADEMIC INTERVENTION								
DRA (K–3)	0.10	\$627 ×	119	=	\$74,613	0	=	\$0
Well Below Standards	0.10	\$627 ×	47	=	\$29,469	49	=	\$30,723
Below Standards	0.05	\$314 ×	56	=	\$17,584	47	=	\$14,758
High Achievement	0.10	\$627 ×	0	=	\$0	0	=	\$0
ENGLISH LANGUAGE LEARNERS								
0–30 Months	0.40	\$2,593 ×	30	=	\$77,790	64	=	\$165,952
Transition to Mainstream	0.25	\$1,621 ×	2	=	\$3,242	1	=	\$1,621
30 + Months	0.13	\$843 ×	22	=	\$18,546	118	=	\$99,474
SPECIAL EDUCATION								
Level 1	0.80	\$4,678 ×	49	=	\$229,222	123	=	\$575,394
Level 2	1.30	\$7,600 ×	6	=	\$45,600	32	=	\$243,200
Level 3	2.40	\$13,981 ×	6	=	\$83,886	4	=	\$55,924
Level 4	4.07	\$23,735 ×	0	=	\$0	0	=	\$0
Total SBB FORMULA				=	\$4,475,326		=	\$7,086,646
Foundation				=	\$0		=	\$0
Total SBB Allocation					\$4,475,326			\$7,086,646
Total SBB Allocation Per Pupil					\$7,977			\$10,124

Hartford Public Schools. (2010). Hartford Public School's adopted education budget FY 2010–11. Retrieved from <http://www.hartfordschools.org/documents/2010-2011ADOPTEDBUDGETBOOK.pdf>

SECTION II

Measuring the effects of SBB



The remainder of this report examines the extent to which Hartford's experience with SBB has met expectations. Specifically, we seek to answer four research questions:

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

RESEARCH QUESTION 2

Has the allocation of school funding become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need?

RESEARCH QUESTION 3

Has SBB increased principals' sense of accountability at the school level?

RESEARCH QUESTION 4

Has SBB brought greater transparency to the district's funding process?

To answer these questions, we conducted a quantitative analysis of school budget data from 2004–05 to 2010–11. Additionally, we conducted interviews with nine Hartford principals who were school leaders in Hartford both before and after the implementation of SBB, and had multiple conversations with district leadership. See Appendix B for more information about data sources and methodology.

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

yes

Hartford's SBB formula represents a clear break from the district's old funding system, which based funding largely on staffing formulas and ratios. Consistent with the school board's intent, the SBB formula allocates funds to schools based on students' educational needs and expected enrollment. As a result, we find that schools receive a different amount of funding through SBB than they would have received under the district's old allocation model.

EVIDENCE THAT SCHOOL FUNDING ALLOCATIONS HAVE CHANGED

As outlined in Section I of this report, Hartford’s SBB formula is new. Changing the funding formula, however, does not necessarily mean the amount of funds a school actually receives is different from before.

To evaluate whether funding levels are different, we applied the 2010–11 SBB funding formula to 2007–08 enrollment data to estimate how much funding schools would have received from relevant funding streams had the formula been in effect then (see methodology for details).¹⁴

The results show that SBB does in fact represent a large shift in funding amounts from the old allocation process. As we explain in depth in the methodology, this analysis relies on a number of assumptions and estimates, so the numbers presented below are mainly illustrative. However, they provide a useful framework for evaluating how SBB affected school funding levels across the district.

In Figure 4, each bar represents a school and shows the difference between what schools actually received in 2007–08 and the funding they would have received had the district allocated funds using the 2010–11 SBB formula. Although SBB does not change the total amount of available funding from relevant sources, we find that some schools would have received more funding and others less.¹⁵

Figure 4. Difference between what schools would have received using the 2010–11 SBB formula and what they actually received from relevant funding streams in 2007–08

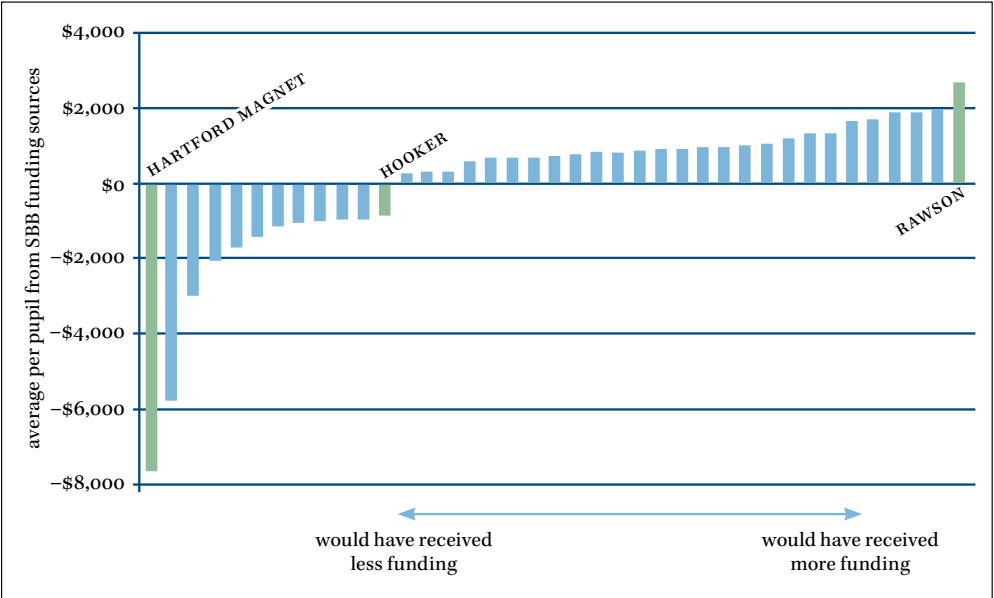


Figure 4 also illustrates that the extent of the impact would have differed considerably by school. Each bar represents one school in 2007–08, showing the difference between what the school received from relevant funding streams in 2007–08 and what it would have received using the 2010–11 SBB formula. These figures include only relevant funding streams (general funds minus utilities and the special education line item) divided by the number of resident students (students living

in the HPS boundaries). Out-of-district students attending magnets and magnet operating funds, which are not part of general funds, are not included in these calculations.

Schools on the left side would have received thousands less per pupil had the district allocated relevant funds using the 2010–11 SBB formula. Schools on the right would have received thousands more. For example, Hartford Magnet Middle received a vastly higher per-pupil funding amount from relevant funding streams in 2007–08 than most other schools in the district—about \$14,400 per resident pupil compared with \$7,500 per resident pupil at the average school—magnet or traditional—in the district. According to our estimates, SBB would have brought funding from relevant funding streams at Hartford Magnet Middle in line with other schools in the district, decreasing per-pupil funding by nearly \$8,000. Meanwhile, Rawson would have received about \$2,650 more per pupil, and Hooker would have received about the same amount of funding from relevant funds. We estimate that the per-pupil amount would have changed by more than \$1,000 for about half of schools, and most schools (69 percent) would have received more funding.

EXPLAINING THE DIFFERENCE IN FUNDING LEVELS

As described earlier, SBB assigns a weight for different student characteristics, such as grade level, student performance, or eligibility for ELL or SPED services, and these weights generate additional funding. School funding should therefore more closely align with these categories of student need under SBB than under the district's old allocation formula.

The graphs in Figure 5 (page 19) plot per-pupil funding from SBB funding streams against the average student weight at each school. Each school is represented on the graphs twice, once with a green dot and once with a blue dot. The green dots estimate how much funding schools would have likely received from relevant sources in 2007–08 had the district used the 2010–11 SBB formula, while the blue dots show how much funding schools actually received from relevant sources in 2007–08.

Both dots appear in the same spot on the graphs horizontally, because the level of student need does not change. But vertical placement of the green and blue dots often differs considerably for the same school. As the formula would predict, the line of green dots shows perfect alignment between funding level and student need. As the cloud of blue dots show, however, there was little correlation between student need and per-pupil funding from SBB sources under the old system.

Again, our results rely heavily on a number of estimates and assumptions, and are therefore mainly illustrative. The impact of aligning funding with student need, however, becomes very apparent when we look at a few schools with a similar level of student need, shown in Figures 5a and 5b. Hartford Middle Magnet, Noah Webster, and Rawson all had a similar level of student need in 2007–08, as did Parkville, Milner, M.D. Fox and Simpson Waverly. As the green dots show, the schools would therefore have received a similar level of per-pupil funding from

Figure 5. Correlation between funding and weights for student characteristics, 2007–08

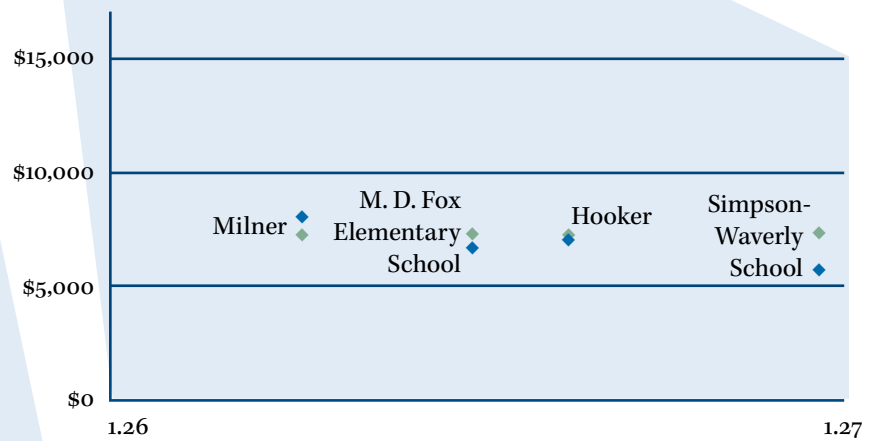
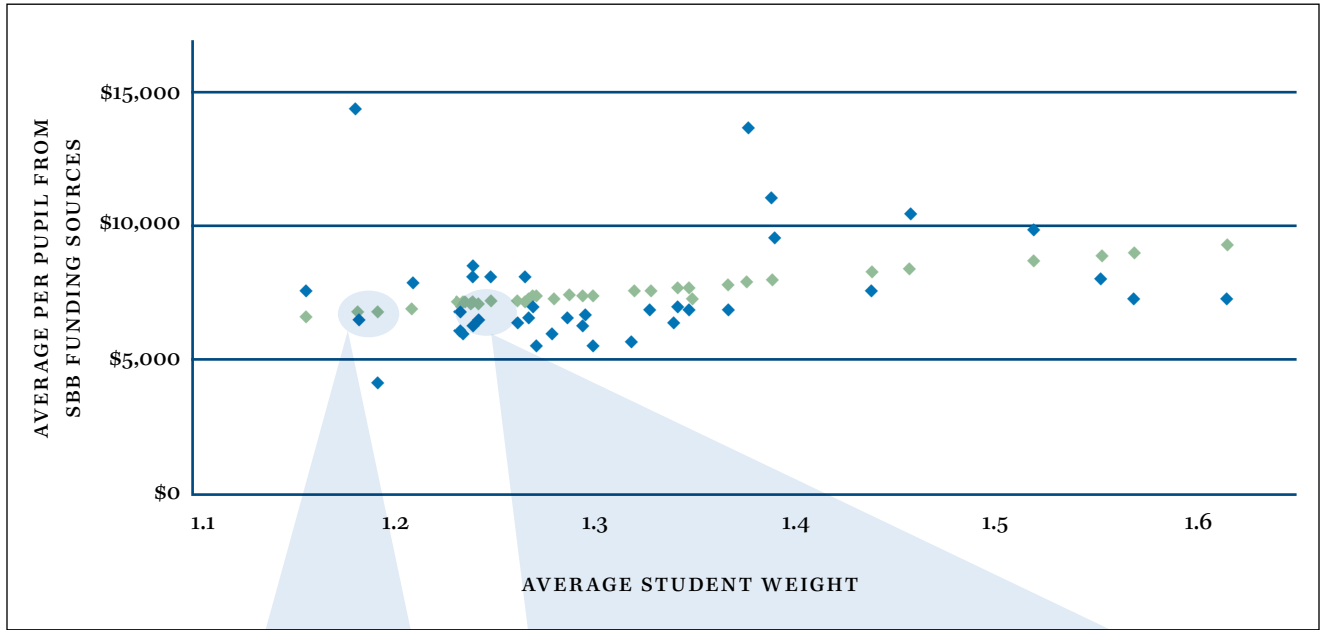


Figure 5b.

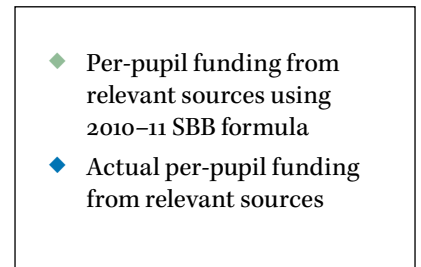
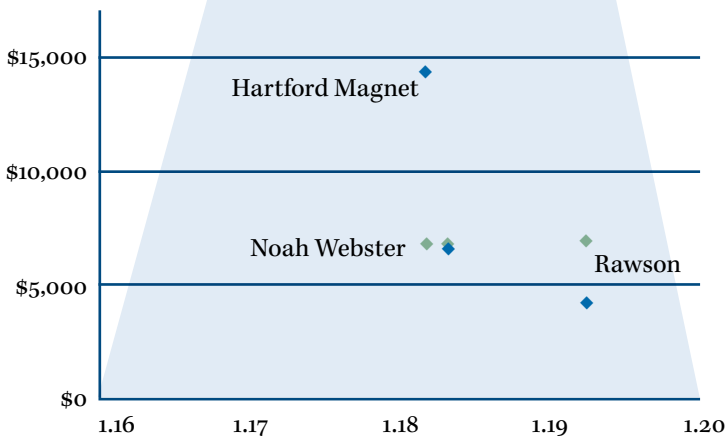


Figure 5a.



relevant sources using the 2010–11 funding formula—between \$6,800 and \$6,900 for the schools in Figure 5a and between \$7,200 and \$7,350 for the schools in Figure 5b.¹⁶

But in 2007–08, Hartford Magnet Middle received about three times as much funding per pupil from relevant funds (general funds minus utilities and special education) as Rawson received. Although this is an extreme example, Figures 5a and 5b show many instances where schools with similar levels of student need received very different funding amounts. For example, Noah Webster, another magnet school, received nearly \$8,000 less than Hartford Magnet Middle. More than \$2,400 separated Milner and Simpson-Waverly—both traditional schools, while Hooker, a magnet school, received an additional \$1,300 per pupil compared to Simpson-Waverly.

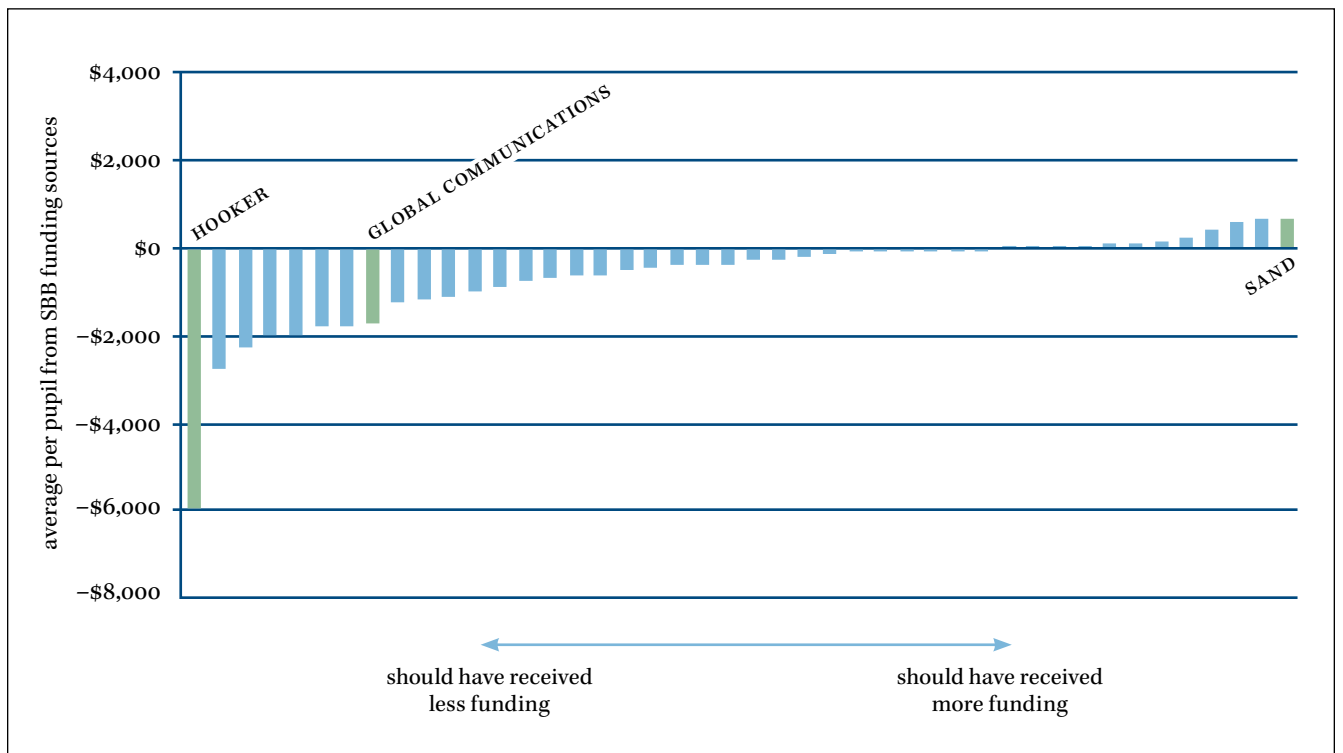
THE IMPACT OF A CHANGING ENROLLMENT

Each spring, Hartford creates a budget for the following school year based on the district's projections for student enrollment, including both the number of students expected to enroll at each school and the anticipated needs of those students. But between spring and the first official count date months later, those student enrollment numbers often change.

In theory, SBB requires that the district adjust funding allocations to schools according to shifts in enrollment levels and demographics, making school funding fully responsive to the needs of the student body at each school. We wanted to evaluate the extent to which Hartford's SBB system addressed these changes in student enrollment in 2010–11. To do so, we applied the 2010–11 SBB formula to the best and most recent enrollment counts available for 2010–11, repeating the same analysis done in Figure 4 (page 17).¹⁷ This time, however, we looked only at the 2010–11 school year, comparing the funding schools actually received in 2010–11 with what we would have expected schools to receive based on their final 2010–11 enrollments.

The blue bars in Figure 6 (page 21) show the difference between what each school should have received had the SBB formula been applied to final enrollment numbers, and what each school actually received from relevant funding streams. Schools on the left side received more per pupil than they should have according to their final enrollment and level of student need. Schools on the right received less. But if Hartford had used final enrollment numbers and done more to reallocate resources among schools after the initial budgeting process, there would have been almost no difference between what any school should have received according to the formula, and how much it actually received.

Figure 6. Difference between what schools should have received had the SBB formula been applied to final school enrollments and what they actually received from SBB funding streams in 2010–11¹⁸



Reasons for the mismatch between actual funding and funding schools should have received in 2010–11

Changes in student enrollment were the main reason for the inconsistency between actual funding and the amount of funding schools should have received according to the formula. In 2010–11, Hartford estimated that district enrollment would grow by about 1,000 students. In reality, it shrank by about 300.¹⁹

As a result, many school enrollment projections were too high, so many schools received more funding than the 2010–11 SBB formula predicted based on final enrollment. In the spring of the 2009–10 school year, for example, HPS projected that 313 district students would attend Mary Hooker. But just 209 district students attended, a difference of more than one-third.²⁰ The district estimated that 483 students would enroll at Global Communications Academy, but actual enrollment in 2010–11 was just 373—a difference of 30 percent of actual enrollment.

Projected enrollment for a few schools, however, was lower than final enrollment in a few instances, resulting in those schools receiving less funding than they should have received. HPS predicted that 429 Hartford students would attend America’s Choice at SAND, but 463 students enrolled.²¹ As a result, several schools were budgeted more than they should have received according to the formula, while a few others were not budgeted enough.

Choosing the best option

Strict adherence to the principles of SBB would require that the district allocate all dollars included in the SBB funding stream based on the actual number and types of students a school enrolls, even if doing so requires the district to adjust funding allocations to schools when enrollment numbers or the level of student need shifts up or down at a school.

According to district personnel, HPS tried to get back some of the overage allocated to schools such as Hooker and Global to redistribute those funds, but by the time it did so, many of the overfunded schools had already spent the funds or committed them to staffing positions. At that point, the district's only option for recouping and redistributing the funds would have been to move staff among schools after the school year had started. According to the district, though, this option was not ideal for at least three reasons:

1. **Disrupted classrooms.** If HPS shifted funds based on actual enrollments, some schools would inevitably have had to redistribute funds for staffing, as salaries represent the bulk of schools' budgets. Moving teachers after the start of the school year would have meant disrupting classrooms in at least two ways. First, class size would have changed, with some classes becoming smaller, others growing larger. Second, all of the students involved would have had to adapt to new teachers months into the school year.
2. **Mismatch between teacher training and school design.** As part of Hartford's reform plan, many schools have been redesigned, and as part of that redesign process, some teachers received specialized training. Moving teachers after the start of the year because of funding decreases would have meant that teachers trained in a school's particular approach would have been placed at schools using a different model, preventing a school from reaping the full potential of that teacher.
3. **Timing would not support good hiring.** Moving staff after the start of the school year would have prevented principals from taking the time they need to conduct a rigorous selection process. In addition, hiring guidelines would have required that principals at underfunded schools choose new staff from a pool of teachers already on the district payroll, rather than conducting a wider search for teachers who fit best with the school culture and needs.

Given these realities, the district had to make a choice between reallocating funds according to actual enrollments and student characteristics, or keeping staff where they were and straying from the formula in 2010–11. Leaders at HPS chose the latter, a decision they felt was better for students and teachers.

The impact of SBB on school funding:

- SBB allocates funding using a much different process than Hartford’s old system, and as a result, almost all schools received a different amount of funding in 2010–11 than they would have received without SBB.
- Consistent with the school board’s intent, the SBB formula allocates funds to schools based on expected student enrollment and the expected educational needs of those students.
- However, between the time the district approved the school budgets and the start of the new school year, the enrollment size and student composition of a school often changed. But funding was not reallocated to match final school enrollments, causing some schools to receive more funding than the SBB formula calculated based on final enrollment, while others received less.
- According to district officials, reallocating funds after the school year started would have likely forced some teachers to change schools, so they chose not to reallocate funds to minimize classroom disruption.



RESEARCH QUESTION 2

Has the allocation of school funding become more equitable under SSB?

School funding is equitable when two things happen: schools enrolling students with greater needs receive more funding, and schools receive the same amount of funding for students with the same level of need. The analysis found signs that equity has indeed improved since SBB’s implementation in 2008–09. Principals who led schools both before and after SBB believe they now receive a fair level of funding relative to other schools, and the data indicate that school funding is better aligned with student need than under Hartford’s old budgeting system. The data also show, however, that the district’s method for charging schools for the teachers they employ is a source of inequity, but that resolving the issue involves difficult trade-offs and unintended incentives.

yes

GREATER EQUITY WITH RESPECT TO STUDENT NEED

We evaluated how equitably SBB funding has been distributed both before and after SBB based on four indicators of student need: being eligible for free or reduced-price lunch, being an English language learner, qualifying for special education, and being a low performer. For each indicator, we divided schools into four groups based on the percentage of students with that characteristic. Then we compared how much funding schools in the group enrolling the highest percent-

ages of those students (the “high-needs” group) received, compared with schools in the group enrolling the lowest percentages of those students (the “low-needs” group). In an equitable system, we would expect schools in the high-needs group to receive more funding from SBB funding streams than the low-needs group. Although this analysis is simple, Table 3 provides a snapshot of how funds are distributed across schools with different levels of need.

In 2010–11, the first year SBB was supposed to be fully implemented, we found that schools in the high-needs groups consistently—but modestly—received more funding than schools in the low-needs group, across all indicators of student need, as indicated by the green shading. In contrast, high-needs schools seldom received a higher per-pupil amount from relevant sources than low-needs schools in the pre-SBB period, with the exception of schools enrolling the highest concentrations of ELL students.

Table 3. Comparison of per-pupil funding for schools enrolling students with the highest and lowest concentrations of student need

		Per-Pupil Funding through SBB Funding Streams			
Student Need Indicator	School Group	2010–11	2007–08	2006–07	2005–06
FRL*	High Needs	\$9,830	\$7,572	\$5,719	\$5,006
	Low Needs	\$9,378	\$7,365	\$6,123	\$7,020
ELL	High Needs	\$9,671	\$7,786	\$5,298	\$4,908
	Low Needs	\$9,628	\$6,932	\$4,867	\$5,213
SPED	High Needs	\$11,235	\$8,446	\$5,721	\$5,360
	Low Needs	\$9,059	\$8,517	\$6,314	\$6,381
Low Performance	High Needs	\$9,076	\$7,769	\$5,352	n/a
	Low Needs	\$8,955	\$8,427	\$6,095	n/a

Note: Performance data were not publicly available in 2005–06.

Note: Green shading indicates that high-needs schools received more funding. Blue shading indicates that low-needs schools received more funding.

*In 2010–11, more than half of all schools reported 100% of students eligible for free or reduced-price lunch. Rather than breaking schools into quartiles based on FRL enrollment in 2010–11, we defined “high-need” schools as 100% FRL enrollment, and “low-need” schools as less than 100% FRL enrollment.

Despite the execution issues highlighted in the previous section, SBB still represents a significant improvement in equity with respect to student need. As Table 3 demonstrates, high-needs schools often received hundreds of dollars less per pupil than low-needs schools in the pre-SBB period, but under SBB in 2010–11, high-needs schools consistently received more funding. Interestingly, schools enrolling the highest percentages of FRL, ELL, and low-performing students received only slightly more funding per pupil compared with schools enrolling the lowest proportions of these students. Given that 2010–11 was the third



year Hartford implemented SBB—and the first year SBB was fully implemented—we would have expected a greater difference between the amount of funding that low-needs and high-needs schools received.

EXPLAINING SBB'S MODEST IMPACT ON EQUITY

As described earlier, the first step in the SBB budget process is to propose a budget. The proposed budget is fully aligned with the SBB formula, and the SBB formula provides additional funding for students with any of the four need indicators examined above. SBB therefore *starts* from a more equitable point than did Hartford's old funding system.

As discussed in the previous section, however, the number and types of students enrolled at each school often change from the time the district creates its budget to the first student count date, and HPS has not yet fully adjusted funding amounts to reflect those enrollment changes. As a result, SBB has not yet offered as large an improvement as it could. Ideally, funding would not only be more equitable at the extremes, but also increase incrementally across each school as student need increases. Our data analysis shows that this is not yet the case. We expect, however, that equity with respect to student need will only improve as the district improves its implementation of SBB, following through with needed adjustments to funding levels based on actual enrollment numbers.

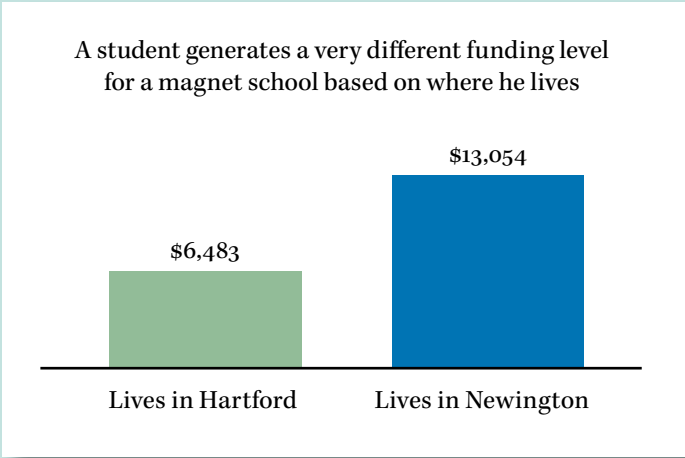
PRINCIPALS INTERVIEWED CONSIDER SBB FORMULA FAIR

When we asked principals whether their schools received a fair level of funding relative to other schools, the answer was almost always yes. Principals told us that under SBB, they understand how the district allocates funds to schools and why funding levels at their school may shift from year to year. Even the majority of principals with whom we spoke whose schools have lost funding under SBB believed that funding was fair, because each school budget followed the same formula for allocating SBB funds, providing the same amount of funding for students with the same level of need. One principal did express concern that the enrollments used to develop her school's budget did not reflect actual enrollments, resulting in less funding than she believed her school deserved.

Several district school principals, however, were quick to point out that funding for out-of-district students attending magnet schools in Hartford does not follow the SBB formula because magnet funds are special funds. As a result, magnets receive a large funding advantage. "Out-of-district magnet students generate more funding" on page 26, explains how Hartford magnet funding works.

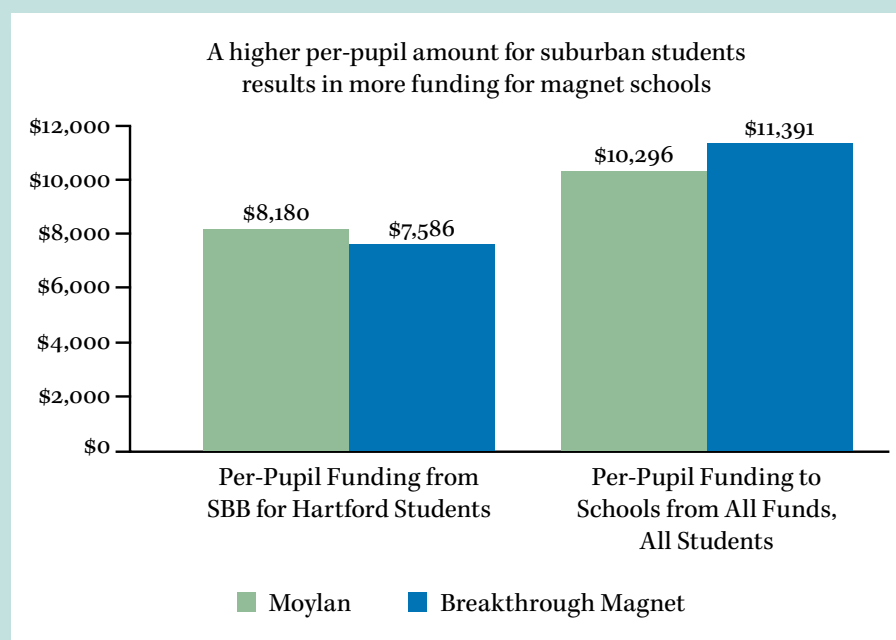
Out-of-district magnet students generate more funding

The SBB formula allocates funding for students living within the borders of the Hartford Public Schools district. About half of the students enrolled in Hartford’s magnet schools, however, live outside the district. The state funds these students through a separate source designated for magnet schools, at a flat per-pupil rate—just over \$13,000 per pupil in 2010–11. This means that if a fourth-grade student without any additional need characteristics lives in Hartford, he would generate \$6,483 for his school. But if that child lives in Newington and attends a magnet school in Hartford, he generates more than \$13,000—more than twice as much.



Consider Breakthrough Magnet and nearby Moylan Elementary, a traditional district school. In 2010–11, the district projected that Moylan’s student body would have greater educational needs than Breakthrough Magnet’s district students. As a result, the district budgeted \$8,180 per Moylan student through SBB, compared to \$7,586 for every Breakthrough Magnet student who resided in Hartford—a difference of nearly \$600.

But approximately half of Breakthrough Magnet’s students were expected to live outside the district, and each of those students brought more than \$13,000 to the school. Once the district accounted for *all* funding, SBB and special funds included, Breakthrough Magnet was slated to receive nearly \$1,100 *more* per pupil overall than Moylan. This might have been justified if Breakthrough Magnet’s suburban students had higher levels of need, but the data show that the opposite is true.



Other special funds also could have contributed to the funding difference, but since many of those funding streams are related to student need, such as Title I funding, they should have raised per-pupil funding at Moylan above that of Breakthrough Magnet. The effects of such need-based funding, however, were not large enough to outweigh the additional magnet operating funding. Breakthrough Magnet received more than \$380,000 more than it would have received at Moylan’s per-pupil level—enough to hire at least half a dozen teachers.

Although the data show that magnet schools have lost the most funding as a result of SBB, when we look at all funding dollars, including state magnet operating funds, magnet schools still receive more funding than district schools would receive for educating students with the same characteristics. This inequity is not lost on traditional district schools, which must compete with magnets for students.²²

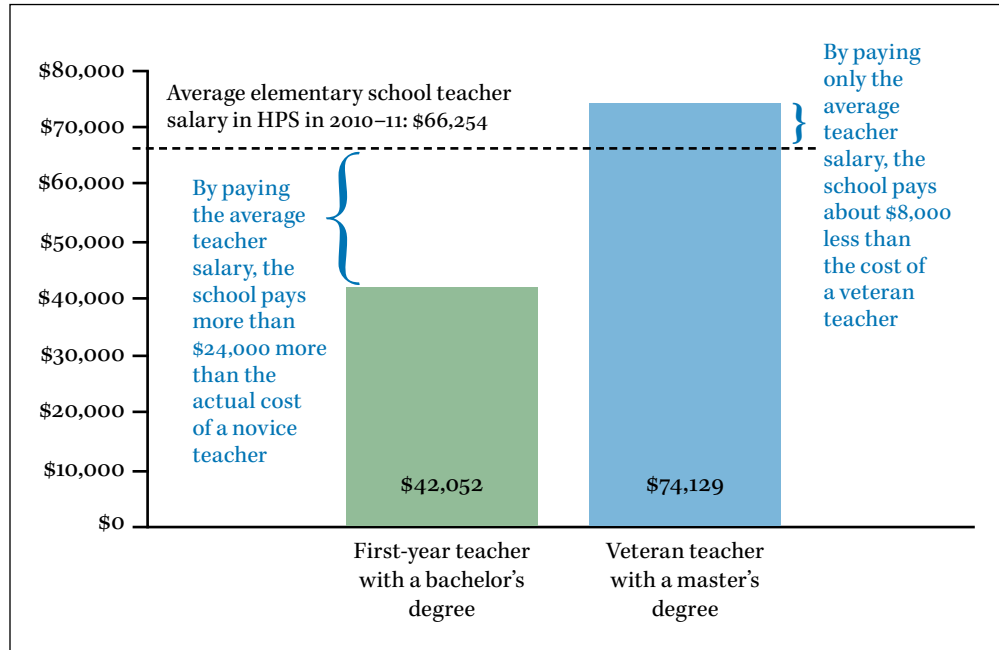
It is worth noting, however, that the suburban per-pupil reimbursement was set as part of the settlement in *Sheff v. O’Neill* (1996), a landmark education lawsuit that led Connecticut to expand its system of state-funded interdistrict magnet schools. The reimbursement rates for out-of-district magnet students were set to compensate Hartford for the per-pupil cost of educating nonresident students.

USE OF AVERAGE SALARY AFFECTS EQUITY

At least one factor outside the SBB formula also affects funding equity: the amount the district “charges” schools for each teacher. Two factors have the largest impact on teacher pay—years of experience and the credits a teacher earns above her bachelor’s degree. A teacher’s salary generally increases as her years of experience and credits earned increase. As a result, newer teachers with fewer credits cost less money, while veteran teachers, especially those with a master’s degree or other advanced degree, cost more money.

Teachers receive their salaries from the district, rather than from their individual schools, but the district “charges” the schools for those salaries. Rather than charging the actual salary that each teacher will be paid through the district central office payroll system, however, the district charges the schools the same average teacher salary for every teacher it hires. As a result, a school is effectively charged more for every new teacher with a bachelor’s degree than it costs the district to pay that teacher. Conversely, for every 20-year veteran teacher with a master’s degree whom a school hires, that school is effectively charged less than it costs the district to pay that teacher. As a result, schools overpaid more than \$24,000 for every new teacher with a bachelor’s degree in 2010–11—more than half of that teacher’s actual salary. Meanwhile, schools saved almost \$8,000 on every veteran teacher with a master’s degree (see Figure 7 and corresponding endnote).

Figure 7. Effect of using average vs. actual teacher salary²³



In 2010–11, the average elementary teacher at Breakthrough II cost the district less than \$58,000, while the average elementary teacher at MD Fox ComPACT School cost the district more than \$73,000.²⁴ Each school was charged the average cost of an elementary school teacher—about \$66,000. On average, Breakthrough II therefore *overpaid* about \$8,000 on each of its seven elementary teachers—about \$56,000 that could have been spent on students. In contrast, MD Fox *underpaid* \$7,000 on each of its 35 teachers on average—\$245,000 the school was able to spend on additional teachers, supplies, and student supports.

When the district charges schools the same average salary for any teacher, schools employing more-expensive teachers actually receive funding above their SBB budgeted amount, while schools employing less-expensive teachers receive funding below their SBB budgeted amount. As one principal told us, this process creates a system whereby schools employing less-expensive teachers are effectively subsidizing schools employing more-expensive teachers. As long as HPS continues to use average teacher salary, certain school budgets will always be under-representing their true costs, while other budgets are over-representing their costs. From an equity standpoint, this process is problematic because by definition, funding that is equitable increases or decreases with student need. The *real* cost of running a school varies by staff salary levels, just like any organization. By charging schools the average salary for every teacher, however, the district erases that variation, undermining the relationship between student need and funding levels.



Budgeting process offers additional funding advantage for magnet schools

Traditional schools in Hartford receive the vast majority of their funding from general funds, the bulk of which are allocated through the SBB formula. In contrast, Hartford's magnet schools, which enroll students from both Hartford and the surrounding areas, receive approximately half of their funding from a special fund designated for magnet schools. As a result, magnet schools have two budgets for which they are accountable: a district budget for their Hartford students based on SBB, and a magnet operating budget for suburban students required for state reporting.

Similar to any traditional district school, magnet schools can save money on their most expensive teachers because the district charges only the *average* district salary for them. However, because the state charges magnet schools the *actual* salary for any teacher the school lists as being paid using those funds, the budgeting process for magnet schools allows them to pay the *actual* salary for their least expensive teachers, providing a unique funding advantage.

Because magnet schools have flexibility regarding which costs they charge to their SBB budget and which costs they charge to their magnet operating budget, they have an opportunity to save money. The magnet school leaders we spoke to said they put their least expensive teachers, who cost less than the average teacher, on the state magnet operating budget, where the school is charged the actual salary for those teachers. Principals then put the more expensive teachers, for which they are charged the average teacher salary, on the school's SBB budget. As a result of two different budgeting systems for accounting for teacher salaries, magnets can create a lower cost structure, allowing them to spend less than district schools would have to spend for the same teachers and freeing up funds with which to purchase other resources. For example:

A school needs to employ six teachers with the following salaries:

Teacher 1: \$42,000 Teacher 3: \$50,000 Teacher 5: \$67,000
 Teacher 2: \$76,000 Teacher 4: \$86,000 Teacher 6: \$45,000

The traditional school will be charged the average salary for each teacher:

6 teachers × 2010–11 average teacher salary (\$66,000) = **\$396,000**

The magnet school, however, can be charged the actual salary for its least expensive teachers, and the average salary for its most expensive teachers:

Magnet Budget	SBB Budget
Teacher 1: \$42,000	Teacher 2: \$76,000
Teacher 3: \$50,000	Teacher 4: \$86,000
Teacher 6: \$45,000	Teacher 5: \$67,000
Total Cost: \$41,000 + \$50,000 + \$45,000	Total Cost: \$66,000 × 3
\$137,000	\$198,000
Grand total = \$335,000	

As a result of this dual budgeting process, the magnet school has \$61,000 that it can now allocate to other resources, while employing the same teachers as a traditional school.

District leaders have acknowledged this issue and say they are actively seeking potential remedies. In the meantime, they point to the importance of SBB as a tool with which to bring transparency to the magnet budgeting process and to highlight this and other funding inequities between traditional district and magnet schools.

FORCES PUSHING TOWARD AVERAGE SALARY

The district charged schools the average teacher salary before SBB. According to the district, it decided to keep the practice in place in the first year of SBB because the transition would have a large, negative effect on some schools, specifically a funding loss for schools employing more-experienced and higher-paid staff. However, the district planned to charge schools actual salaries starting in 2009–10.²⁵

In 2010–11, however, the district still used average teacher salaries. According to the district, this apparent inequity again represents a policy decision arising from the tension between theory and practice. As described earlier, teachers' credentials and experience dictate their salaries. As a result, charging schools actual salaries introduces new problems:

- 1. Potential for discrimination in hiring.** Older teachers almost always earn more than younger teachers under the current salary schedule. If the district charged schools actual teacher salaries, rather than the average, some principals may have a financial incentive to replace their older, more-expensive teachers, with younger, less-expensive educators. The district does not want to create this incentive.
- 2. Short-term transition is difficult.** Initially, the transition from average to actual salaries would create winners and losers from funding-level changes. Schools employing less-expensive teachers would have more funding to use as they see fit. But schools employing very expensive teachers would see more of their school's budget taken up by staff costs. Regular reconciliation of actual salary costs at the school level would let the district know how many school budgets would be heavily affected by a transition to budgeting with actual salaries. If the district did want to make the transition, it could institute measures to help certain schools minimize large funding swings and the impact on classrooms.

Funding equity under SBB:

- The allocation of school funding has become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need.
- Funding equity commonly refers to funding that increases with student need to provide more resources. Schools enrolling the highest concentrations of ELL, SPED, and low-performing students ("highest need" quartile) received modestly more funding under SBB than schools enrolling the lowest concentrations ("lowest need" quartile) of those students, an improvement over the pre-SBB period.
- The principals we spoke to said the SBB formula is equitable because schools are budgeted the same amount of funding for Hartford students with the same characteristics.
- The process of charging schools average teacher salaries as opposed to actual teacher salaries makes the distribution of resources less equitable because schools with more-expensive teachers are effectively charged less than those teachers cost the district, freeing up funding for other uses, while schools employing less-expensive teachers experience the opposite effect. District leaders face difficult trade-offs to address the inequity.



RESEARCH QUESTION 3

Has SBB increased principals' sense of accountability at the school level?

yes

Interviews with principals and discussions with the district indicate that principals feel more accountable for their funding and spending decisions under SBB than under the district's old budgeting system. Most notably, many of the principals with whom we spoke said that together, SBB and budget autonomy give them access for the first time to the resources they need to support their students. As a result, principals reported that SBB has strongly affected how they use funds, leading them to better target resources towards student need, change staffing patterns, and introduce new methods of instructional delivery. In exchange for more autonomy and greater access to resources, most of the principals interviewed also expressed a willingness to be held accountable for student outcomes, even if more is now required of them.

PRINCIPALS FIND ACCOUNTABILITY WARRANTED UNDER SBB

Principals have long been held accountable for student outcomes. According to some principals, however, it was not fair before SBB to hold them accountable because they had so little control over the staff and resources related to those outcomes. Now that they have greater autonomy over their budgets and think that their schools are fairly funded compared to other schools, some of the principals with whom we spoke believe that accountability is finally warranted. "Principals have always been held ultimately accountable," one principal explained, "but now I can be held accountable truly for my decisions, and not someone else's."

SBB AND BUDGET AUTONOMY IMPROVE ALIGNMENT BETWEEN RESOURCES AND STUDENT NEED

The majority of the principals with whom we spoke said that SBB has had a positive effect on their schools, and in almost every instance, principals cited an increase in budget autonomy as SBB's greatest benefit.

Previously, principals largely received materials and staff from the district based on its analysis of each school's needs. In contrast, principals now receive a budget based on their projected student enrollment and the projected needs of those students, and can spend as they wish on staff and materials within a set of guidelines. As a result, principals reported that SBB has strongly affected how they use funds, leading them to better target resources toward student need, change staffing patterns, and introduce new methods of instructional delivery.

Principals said this new budget autonomy allows the specific needs of their students to drive budgeting decisions. "I've started making decisions that are in the best interest of children," one principal told us. "Now I look at the demographics of my students and figure out what we need," another principal explained.

Staffing patterns

Some of the most significant changes in spending have occurred around staffing. Some principals shared examples of eliminating support positions to increase the size of the teaching staff; others shared examples of using more noncertified and part-time staff to increase direct support to students at a lower cost, and creating new positions to reflect the school's changing needs:

- SBB allowed one school to reconsider how each staff position affected student achievement. This process led the principal to reduce the secretarial and security staff and increase the number of paraprofessionals and special education teachers.
- Under SBB, one school doubled the number of certified teacher-tutors it employed. The principal values the direct support that teacher-tutors offer students, and because they get fewer benefits than full-time teachers, teacher-tutors represent a cost-effective way to provide remediation for students.
- An office assistant slot was empty for four years at one school because the principal was not able to hire the right person. Under SBB, the principal cut the existing position and created a new support position with a more specific set of secretarial roles she actually needed.

Restructuring instructional delivery

Principals have also changed the way schools deliver instruction. Schools have adopted new special education models, reconsidered the delivery of subject area instruction, and reexamined the roles teachers can play:

- Rather than a special education classroom, one school has created an “exceptional center” to serve students with multiple disabilities. The room has all of the equipment needed to educate students in comfort and to provide physical therapy. More adults staff the room than would have been possible before SBB, according to the principal, providing students with more individualized support.
- Faced with low writing scores, one principal decided to replace a social studies position with a third English language arts (ELA) position. The new ELA teacher uses social studies materials to teach writing.
- Rather than using a new teacher in a classroom, one school is using her as a resource teacher for all of the first-grade classes.

SBB MEANS GREATER RESPONSIBILITY FOR PRINCIPALS

Budget autonomy under SBB clearly has many benefits, but it also requires significantly more time and skill from principals. Previously, the district told principals what resources their schools would receive. Now, principals need to make those decisions themselves.

SBB expands the principal's role

According to one principal, the first years of SBB have been difficult for many principals, as they've not only had more work, but also had to learn how to operate

under a new finance system. To be successful, principals need to employ strategic planning and problem-solving skills, in addition to budgeting skills.

For some principals, budgeting came naturally. To others, SBB was difficult and unfamiliar in the beginning, but after training from the district and hard work on their part, they feel comfortable with their new role. But for a third group, SBB has asked too much of them. “Many of my colleagues could not grasp SBB,” one principal said.

Most principals interviewed welcome extra responsibility

For many principals, the added work of SBB is a necessary and acceptable trade-off because it allows them greater control over the educational outcomes for which they have long been responsible. Although SBB demands more of their time, many principals told us they believe principals absolutely need to go through the process of assessing their schools’ needs and matching resources to those needs. “SBB requires more from the principal,” one principal admitted. “But the principal needs to know the things that SBB requires and should be in touch with the data anyway.”

Many principals also believe they are in a better position than the district to serve the unique needs of their students, because they know their students better. “The autonomy allows us to serve kids,” one principal said. “Central office doesn’t understand what each student needs. They can’t make informed decisions for each individual Hartford school.”

For a handful of principals, however, the extra work isn’t warranted. “The biggest difference with SBB is that we [at the school] do most of the work for the budgeting process now,” one principal said.

THE INTERACTION OF SBB AND SCHOOL CHOICE

As mentioned in the first part of this report, HPS introduced school choice about the time SBB went into effect. Families now choose the school they want their child to attend, within certain guidelines. The combination of SBB and school choice should provide a mechanism through which schools are held accountable for giving students a high-quality education. In theory, “failing” schools would lose students, preventing them from generating enough funding to operate, and eventually, those failing schools would have to close. Nearly 20 schools have been closed and redesigned in Hartford. However, since the district has opted to close and redesign its lowest-performing schools before financial sustainability has become an issue, school choice, together with SBB, has not yet created a mechanism through which low-performing schools have thus far had to close. According to our interviews, however, the interplay between school choice and SBB has caused some principals to rethink their responsibility to maintain a healthy student enrollment.

MARKETING AND ACCOUNTABILITY FOR ENROLLMENT

We did not focus on choice dynamics in our interviews, but a few principals noted that they are quite aware that they need to enroll a certain number of students

to stay financially sustainable, and that they are competing with other schools for students. “You have to create an in-house marketing structure,” one district school principal told us. “Marketing is important as we have an SBB structure combined with a choice structure.” Another principal added, “We see the need to differentiate ourselves and develop a strategic plan to attract the students that we want to enroll in our school. If we don’t stay competitive and our enrollment doesn’t stay high, we will have budgeting problems.” Most of the principals interviewed were aware of the role of “marketing” to attract students, though not all schools dedicated time and resources to a marketing effort.

Impact of SBB on school-level accountability:

- SBB, coupled with principals’ greater autonomy over their budgets, has led principals to feel like they have greater control over and can truly be held accountable for student outcomes.
- SBB has led principals to approach their budgets more strategically, better aligning resources with student needs, including, at times, staffing their schools differently and changing the way they deliver instruction.
- Principals have more budget responsibility under SBB, requiring greater time and new skills. Because funding levels are largely dependent upon enrollment levels, a handful of principals see an opportunity and obligation to market their schools to maintain desired enrollment levels.



RESEARCH QUESTION 4

Has SBB brought greater transparency to the district's funding process?

yes

Overall, we found that SBB is a more transparent funding process compared with the inputs-based funding model it replaced. SBB data made available via the budget books published by the district each year are very transparent, which greatly enhances stakeholders' ability to compare funding levels and student need and to hold the district accountable for funding schools fairly. Principals understand how the formula works and can see that they are budgeted as much funding as any other school for the same kinds of students. The simplicity of the SBB formula also allows the public, researchers, policymakers, and taxpayers to examine how the district allocates funds. Although it may have been possible to audit the district funding allocation as we did for this report before SBB, it is much easier to do so with the new funding formula.

OPPORTUNITIES FOR IMPROVEMENT

Despite significant improvement, this project uncovered two areas in which Hartford could increase funding transparency:

Showing adjustments for actual enrollment. As discussed above, actual enrollments are seldom the same as predicted enrollments used for budgets. Although the district tries to shift funding to adjust for changes in enrollment, it does not provide documentation showing those changes. The district lacks an accessible year-end reconciliation showing the amounts allocated and spent next to the original budget assumptions for each school. Having an early report on individual school enrollment variations as well as a year-end reconciliation of the amounts allocated and spent, in a format similar to the original budget books, would further enhance budget transparency.

Special Funds. Though outside the scope of this report, the allocation of special funds—roughly 30 percent of all district funds—is not as transparent as the district's allocation of general funds. There are reasonable explanations for this, including that multiple formulas distribute these funds, most of which are governed by strict federal and state guidelines. Although student need is often a component of these formulas, greater detail in the budget books explaining how special funds have been distributed to schools would increase overall transparency.

Transparency under SBB:

- SBB provides much greater transparency to the district's funding process.
- The school-level budgets in the district's annual budget book, coupled with the simplicity of the SBB formula, makes it possible for those interested to easily see how the district allocates the majority of funds to each school.
- Although budgeted numbers are highly transparent, the data resulting from the district's reconciliation from budgeted funding to actual funding is not readily available to the public.
- The formulas governing the allocation of special funds are not as transparent as the SBB formula.

Summary of Findings

We started this report by posing a question: After three years, are there signs that SBB is meeting the goal that the Board of Education and district leadership intended? To answer this question, we considered four research questions. The table below presents our findings for each:

RESEARCH QUESTION 1

Has SBB changed the amount of funding individual schools receive?

FINDING

- SBB allocates funding using a much different process than Hartford’s old system, and as a result, almost all schools received a different amount of funding in 2010–11 than they would have received without SBB.
- Consistent with the school board’s intent, the SBB formula allocates funds based on expected student enrollment and the expected educational needs of those students.
- However, between the time the district approved the school budgets and the start of the new school year, the enrollment size and student composition of a school often changed. But funding was not reallocated to match final school enrollments, causing some schools to receive more funding than the SBB formula calculated based on final enrollment, while others received less.
- According to district officials, reallocating funds after the school year started would have likely forced some teachers to change schools, so they chose not to reallocate funds to minimize classroom disruption.

yes

RESEARCH QUESTION 2

Has the allocation of school funding become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need?

FINDING

- The allocation of school funding has become more equitable, both in providing schools with the same amount of funding for students with the same characteristics, and in allocating more funding for students with greater need.
- Funding equity commonly refers to funding that increases with student need to provide more resources. Schools enrolling the highest concentrations of

yes

ELL, SPED, and low-performing students (“highest need” quartile) received modestly more funding under SBB than schools enrolling the lowest concentrations (“lowest need” quartile) of those students, an improvement over the pre-SBB period.

- The principals we spoke to said that the SBB formula is equitable because schools receive the same amount of funding for Hartford students with the same characteristics.
- The process of charging schools average teacher salaries as opposed to actual teacher salaries makes the distribution of resources less equitable, because schools with more-expensive teachers are effectively charged less than those teachers cost the district, freeing up funding for other uses, while schools employing less-expensive teachers experience the opposite effect. District leaders face difficult trade-offs to address the inequity.

RESEARCH QUESTION 3

Has SBB increased principals’ sense of accountability at the school level?

yes

FINDING

- SBB, coupled with greater autonomy over their budgets, has given principals the sense that they have greater control over and can truly be held accountable for student outcomes.
- SBB has led principals to approach their budgets more strategically, better aligning resources with student needs, including, at times, staffing their schools differently and changing the way they deliver instruction.
- Principals have more budget responsibility under SBB, requiring greater time and new skills.
- Because funding levels depend largely upon enrollment levels, a handful of principals see an opportunity and obligation to market their schools to maintain desired enrollment levels.

RESEARCH QUESTION 4

Has SBB brought greater transparency to the district’s funding process?

yes

FINDING

- SBB provides much greater transparency to the district’s funding process.
- The school-level budgets in the district’s annual budget book, coupled with the simplicity of the SBB formula, make it possible for those interested to easily see how the district allocates the majority of funds to each school.
- Although budgeted numbers are highly transparent, the data resulting from the district’s reconciliation of budgeted funding to actual funding is not readily available to the public.
- The formulas governing the allocation of special funds are not as transparent as the SBB formula.

Recommendations for improving implementation

SBB is off to a strong start in Hartford and having a real impact on the way schools operate, but the district acknowledges that the system is not yet where the district wants it to be. To maximize the benefits of SBB, the district must address implementation barriers.

- 1. Minimize enrollment uncertainties and report changes transparently.**

Student enrollment drives school funding under SBB. The district will never be able to predict student enrollment with complete accuracy. Consequently, some budget adjustments will always be necessary. As the choice process matures and more consistent enrollment patterns emerge, HPS will have access to more and better information, allowing it to more accurately predict student enrollment.

At the same time, the district should make every effort to reconcile predicted versus actual enrollment figures as early and as often as possible *before* the start of the school year, when it is easier to reallocate funds. Hartford has indicated that it plans to adjust the budget earlier in the year. The time between May and September gives the district a significant opportunity to obtain a more accurate count on the number and types of students enrolling at each school, minimizing the difference between predicted and actual enrollments.

In 2010–11, the district required schools to put aside 5 percent of their budgets until midyear to allow for adjustment. This set-aside seems appropriate and represents sound planning that can help minimize the impact of budget shifts based on enrollment. The district could take other steps as well, such as being more conservative in its enrollment estimates and putting aside a portion of SBB funds to distribute according to the formula once actual counts are available. Again, this option has its own trade-offs, mainly in denying schools all available resources before the year begins, while planning takes place. We expect, however, that all of these measures will become less important over time as enrollment projections improve and reconciliations can occur earlier in the year.

- 2. Address the salary issue.** Equity issues arise when schools are charged average teacher salaries instead of actual salaries. The district gave a number of compelling reasons for not charging schools actual teacher salaries, largely driven by the desire not to create unintended incentives to hire less-experienced—and less-expensive—teachers. We acknowledge the difficult trade-offs the district faces. Regardless of whether the district uses average versus actual salaries in its budgeting process, we recommend that it show actual teacher costs per school next to the amount schools were charged for those teachers. This information is crucial to understanding the true costs of running each school, and to understanding the impact of allowing magnet schools to use a different budgeting process.

- 3. Enhance principal training and recruitment.** SBB has increased the responsibilities of Hartford principals, particularly surrounding budgeting. As

the district recruits new leaders, it should seek individuals with well-honed budgeting skills. In addition, the district should increase the SBB training it provides to principals, so that every principal in Hartford can speak to the impact that strategic resource allocation can have on student outcomes.

4. **Increase transparency.** Although funding transparency has improved under SBB, the district should account for differences between actual funding and the funding schools should have received based on their student enrollments. Additionally, the district should provide an explanation of how special funds are allocated to each school, so that stakeholders can get a more complete picture of how funding aligns with student need at each school.

Conclusion

Hartford's implementation of student-based budgeting represents a complete overhaul of the district's old system and has had a measurably positive impact on schools. District leaders acknowledge, however, that the SBB system is not yet where they want it to be. We find that Hartford can do more to minimize complications from enrollment uncertainties, enhance principal training and recruitment, and increase the level of transparency of its school-level financial reporting. Nonetheless, we find that SBB is off to a strong start in Hartford, with funding levels at schools moving in a direction that better reflects student needs, and principals feeling more accountable for managing their budgets in ways that result in the highest possible impact on student achievement. Additionally, SBB is a powerful partner with other key reforms, including school choice and principal autonomy.

Appendix A

A Transition Plan for SBB in Hartford

To prevent drastic reductions in a school's budget under SBB, HPS phased in the new formula over three years by capping the amount of funding a school could gain or lose compared with the 2007–08 Adopted General Budget.

If the new formula budget was higher or lower than the district's 2007–08 Adopted General Budget, *and* district enrollment stayed within 5 percent of 2007–08 enrollment, the school's funding gain or loss was capped at one-third of the difference between the 2007–08 Adopted Budget and the new SBB formula budget.

Example for schools with enrollment changes within 5 percent

	Calculation	Amount
SBB Uncapped Allocation		\$1,500,000
Adopted 2007–08 General Budget		\$2,000,000
Funding Gain/Loss	\$2,000,000–\$1,500,000	(\$500,000)
Enrollment Change		2%
Maximum Gain in 2008–09	33% *\$500,000	\$165,000
New 2008–09 SBB Budget	\$2,000,000–\$165,000	\$1,835,000

The cap worked a bit differently for schools whose enrollment increased or decreased by more than 5 percent. To calculate the maximum allowable gain or loss, the district determined the percentage change in enrollment, and added 33 percent.

Example for schools with enrollment changes +/-5 percent

	Calculation	Amount
SBB Uncapped Allocation		\$1,500,000
Adopted 07–08 General Budget		\$1,000,000
Funding Gain / Loss	\$1,500,000 - \$1,000,000	\$500,000
Enrollment Change		10%
Enrollment Change Plus Initial Cap	10% + 33%	43%
Maximum Gain in 2008–09	43% * \$500,000	\$215,000
New 2008–09 SBB Budget	\$1,000,000 + \$215,000	\$1,215,000

Appendix B: Methodology

Appendix B outlines the methodology we used for both our budget analysis and interviews with Hartford principals.

Data sources

We received the following data directly from HPS:

- General and special funds by school
- Number of students qualifying for free or reduced-price lunch, ELL services, and SPED services
- Number and/or percentage of suburban students enrolling in each Hartford school (2007–08 through 2010–11 only)

All other data come from public sources or are estimations based on the data available to us.

Analysis 1. Calculating 2007–08 school funding levels using the 2010–11 SBB formula

Hartford’s SBB formula is new. Changing the funding formula, however, does not necessarily mean the amount of funding a school actually receives changes from previous years. The first analysis therefore estimates how much funding schools would have received in 2007–08, the year before HPS implemented SBB, had the 2010–11 SBB formula been in place. Next, it compares predicted funding using the SBB formula to what schools actually received in 2007–08. We present these results graphically in Figure 4 in the report.

ESTIMATES

Analysis 1 relies on several estimates:

Identifying relevant funding in the pre-SBB period

Most, although not all, education dollars are distributed through Hartford’s SBB formula. Our main objective in this analysis was to determine how the distribution of those funds has changed from the pre-SBB period to the 2010–11 school year. To do so, we needed to isolate the relevant funds, even though “SBB funds” did not technically exist before 2008–09. According to HPS, “SBB funds” include

all general funds, excluding special education program funds and utilities. We received general funds data from the district, but had to estimate utilities and special funds data for 2007–08.

Utilities

Utilities data were not available for the pre-SBB period. We therefore estimated the cost of utilities by finding the percentage of general funds that went towards utilities at each school in 2009–10 and 2010–11, and taking the average. We then multiplied that value by the 2007–08 general funds figure for each school. If the school did not exist in 2009–10 or 2010–11, we used the district average to estimate the school’s utilities costs.

Student need

The 2010–11 SBB formula calculates school funding based on the needs of the students attending each school, including low or high performers, grade level, ELL status, and special education status. We collected grade-level enrollment data from the state website, but needed to estimate all of the other categories:

- **Performance data:** State data files provide information on the number of students scoring at each level of the state exam in reading and math, separately. To receive additional funding based on performance through the 2010–11 SBB formula, a student had to receive a particular score on both exams. We did not have access to student-level performance data, so we calculated the maximum number of students who could have fallen into each performance category given performance on the previous year’s CMT and CAPT tests.
- **ELL and SPED:** State data files provide counts of the number of students receiving ELL and SPED services. The 2010–11 SBB formula allocates a different amount of funding for these students based on their level of need (e.g. for ELL, 0–30 months, 60+ months). We estimated 2007–08 ELL and SPED enrollments by using the school’s average distribution from the 2009–10 and 2010–11 budget books. If, for example, the 2009–10 and 2010–11 budget books showed that on average, 75 percent of SPED students were designated as Level 1, we estimated that 75 percent of SPED students in the school received the Level 1 SPED funding supplement in 2010–11.

CALCULATING SCHOOL-LEVEL FUNDING

To calculate how much funding each school would have received in 2007–08 using the 2010–11 SBB formula, we applied the formula using the student counts estimated above. Schools receive funding for Hartford students only through the SBB formula. For suburban students residing outside the district, schools receive a flat per-pupil amount that falls under “special funds.” We therefore counted only students residing within Hartford for this analysis.

In addition, we adjusted the base funding amount for inflation using a two-step

process: 1) We calculated what percentage of 2010–11 SBB funds relevant student funds comprised in 2007–08 (89 percent), and 2) We multiplied the value found in step 1 (89 percent) by the base funding amount.

PRECISION OF RESULTS

Ideally, the sum of all SBB funds estimated using the 2010–11 SBB formula would have matched the total of actual relevant funds in 2007–08. Using our methodology, however, predicted SBB funds exceeded actual relevant funds by about \$10 million, or 7 percent.

It is not clear why the predicted funding exceeded actual funding, although the difference likely reflects the many estimates and assumptions we had to rely on to reach our final answer. Despite this mismatch, we have no reason to believe that our methodology favors any particular school. The results therefore provide a useful framework for evaluating the impact SBB has had at the school level across HPS.

If we adjust each school’s allocation on a pro-rata basis so that the total predicted funding using the 2010–11 SBB formula exactly equals total actual funding in 2007–08, we see similarly large changes by school. Per-pupil funding would have changed by even more than Figure 4 shows at 12 out of 39 schools, including Hartford Magnet Middle.

Analysis 2. Correlation between funding and weights for student characteristics, 2007–08

SBB assigns a weight for different student characteristics, such as grade level, student performance, or eligibility for ELL or SPED services, and these weights generate additional funding. School funding should therefore more closely align with these categories of student need under SBB than under the district’s old allocation formula.

To test this hypothesis, we calculated an “average student weight” for each school based on the student counts for ELL, SPED, high performers, and low performers estimated in the first analysis. Then we plotted actual per-pupil funding in 2007–08, using the average student weight as the X-axis.

Analysis 3. Difference between what schools should have received had the SBB formula been applied to final school enrollments and what they actually received from SBB funding streams in 2010–11

Each spring, Hartford creates a budget for the following school year based on the district’s projections for student enrollment, including both the number of students expected to enroll at each school and the anticipated needs of those stu-

dents. But between spring and the first official count date months later, those student enrollment numbers often change.

In theory, SBB requires that the district adjust funding allocations to schools according to shifts in enrollment levels and demographics so that school funding can be fully responsive to the needs of the student body at each school. We wanted to evaluate the extent to which Hartford’s SBB system addressed these changes in student enrollment in 2010–11.

To do so, we applied the 2010–11 SBB formula to the best and most recent enrollment counts (“final enrollment”) available for 2010–11, repeating the same analysis done in Figure 4 above. This time, however, we looked only at the 2010–2011 school year, comparing the funding schools actually received in 2010–11 to what we would have expected schools to receive based on final 2010–11 enrollments.

ESTIMATES

Analysis 3 relies on several estimates:

Utilities and special education programs funds

To identify SBB funds, we needed to subtract utilities costs and special education program funds from the general funds figure we received from the district. To estimate actual utilities costs and special education program funds, we used the values in the 2010–11 budget book. The analysis excludes any school in 2010–11 that showed \$0 in utilities expenditures.

Categories of student need

We did not have detailed final student counts for high performers, low performers, ELL, and SPED students by category. To estimate these student counts, we multiplied the proportion of students in each of these groups from the 2010–11 budget book by the final enrollment counts we did have—total enrollment, grade-level enrollment, total SPED enrollment, and total ELL enrollment. For example, if the 2010–11 budget book showed that 75 percent of SPED students were designated as Level 1, we estimated that 75 percent of all SPED students in the school received the Level 1 SPED funding supplement in 2010–11.

Note on enrollment

In 2010–11, the total enrollment data did not match the sum of enrollment by grade level for some schools. In those instances, we used the sum of enrollment across grade levels to be consistent with other years.

CALCULATING SCHOOL-LEVEL FUNDING

To calculate how much funding each school should have received in 2010–11 using the 2010–11 SBB formula, we applied the formula using the student counts estimated above. Again, since schools receive funding for Hartford students only through the SBB formula, we counted only those students in our analysis.

DIFFERENCE BETWEEN PREDICTED FUNDING AND ACTUAL FUNDING

As with the first analysis, we would have expected the sum of all SBB funds that were predicted using the 2010–11 SBB formula to match the total of actual SBB funds in 2010–11. Using our methodology, however, actual SBB funds exceeded the predicted SBB funds by about \$6 million, or 4 percent. The mismatch in funding explains why Figure 6 shows that most schools received more funding than they should have according to the 2010–11 SBB formula.

Unlike with the first analysis, however, the main cause for the funding mismatch goes back to budgeting. The district budgeted for 1,300 students more than actually enrolled in HPS. As a result, HPS had additional resources available. According to district personnel, HPS tried to get back some of the overage and redistribute those funds, but by the time it did so, many of the overfunded schools had already spent the funds or committed them to staffing positions. As a result, the mismatch was not as large as it could have been, but many schools received more funding than the formula would have allocated based on final enrollment.

Analysis 4. Quartile comparisons

In addition to understanding whether school-level funding had changed as a result of SBB, we wanted to know whether it had changed to become more equitable. School funding is equitable when two things happen: schools enrolling students with greater needs receive more funding, and schools receive the same amount of funding for students with the same level of need.

The quartile analysis compared average per-pupil funding from SBB funds in the neediest quartile of schools to per-pupil funding from relevant funds in the least needy quartile of schools, to determine if needier schools received more funding relative to the least needy schools, over time. We defined need in four ways:

1. As the percentage of students qualifying for free or reduced-price lunch
2. As the percentage of students eligible for ELL services
3. As the percentage of students qualifying for SPED services
4. As the percentage of students scoring below basic on the state exam (calculated as the average percent for math and ELA)

Case studies

We spoke with principals across the district who led schools or served as an administrator before and after SBB implementation. Forty-seven schools operated in Hartford in 2010–11. Of those schools, 17 were led by principals who were administrators before SBB was in place, and could therefore speak to the changes resulting from the new budgeting system. We spoke with nine, representing about half of such principals, and 19 percent of schools in the district.

The principals with whom we spoke led schools representing a cross-section of the district. Enrollment in interview schools was typical of the district with just

one exception. These schools had a wide range of ELL populations, ranging from 2 percent to 29 percent. The special education population at these schools ranged from 9 percent to 21 percent. One of the principals had fewer than five years of experience, three had 10 or more, and the other five had between five and 10 when we spoke to them. The sample includes magnet and non-magnet schools, schools that have been redesigned and schools that have not, elementary, middle, and high schools, and schools located in each of the four city zones.

CAVEATS TO INTERVIEW FINDINGS

Although we spoke to most of the Hartford principals who led schools both before and after the implementation of SBB, the sample is not necessarily representative of principals district-wide. Some principals did not accept our invitation to talk about SBB. While their lack of participation may have been due to time constraints, it may also reflect discomfort with SBB.

Similarly, the majority of school leaders with whom we spoke lead schools that have not been redesigned, which suggests that they are some of the district's most effective school leaders. Research on leadership suggests that the best leaders are driven to succeed, regardless of obstacles. So perhaps their positive viewpoint reflects their competence, rather than the effects of SBB.

Third, several principals said that they knew school leaders who were struggling under SBB. Although we spoke to 19 percent of all school leaders in the district, perhaps further interviews would have highlighted more areas of concern with SBB.

Finally, although we promised anonymity, interviewees may have still self-censored their responses.

NOTES

1. Hartford Public Schools. (2009). *3-year strategic operating plan*. Retrieved from <http://www.hartfordschools.org/learn-about-hps/documents/HartfordPlano21709FINAL.pdf>

2. All statistics in this paragraph from: Connecticut State Department of Education. (2010). *Connecticut adequate yearly progress*. Retrieved from <http://ctayp.emetric.net/>

3. Hartford Public Schools. (2008). *Hartford, a system of schools: Guide to student-based budgeting 2008–09*. Hartford, CT: Author. Retrieved from <http://www.hartfordschools.org/documents/RevisedSBBGuide.pdf>

4. Hartford Public Schools. (2008). *Hartford, a system of schools*.

5. See, for example: The Thomas B. Fordham Institute. (2006). *Fund the child: Tackling inequity and antiquity in school finance*. Washington, DC: Author. Retrieved from <http://www.eric.ed.gov/PDFS/ED495066.pdf>; Center on Reinventing Public Education. *School finance redesign project*. Retrieved from <http://www.crpe.org/cs/crpe/view/projects/3>; Snell, L. (2009). *Weighted student funding handbook*. Los Angeles: Reason Foundation. Retrieved from <http://reason.org/news/show/weighted-student-formula-yearb>; Hassel, B. C., & Doyle, D. (Public Impact). (2009). *The tab: How Connecticut can fix its dysfunctional education spending system to reward success, incentivize choice and boost student achievement*. New Haven, CT: ConnCAN. Retrieved from <http://conncan.org/sites/default/files/research/TheTab.pdf>; Public Impact, & West, M. (n.d.). *Fund the student: A plan to fix Rhode Island's broken public school finance system*. Retrieved from http://publicimpact.com/publications/Fund_the_Student_Rhode_Island.pdf; Public Impact & Partnership for Learning. (2011). *Student-based budgeting: Revamping school funding in Washington to improve performance*. Chapel Hill, NC: Public Impact; and Seattle, WA: Partnership for Learning. Retrieved from <http://www.partnership4learning.org/priorities/initiatives/studentbasedbudgeting>

6. Duncombe, W., & Yinger, J. (2007). Measurement of Cost Differentials. In H. Ladd & E. Fiske (Eds.), *Handbook of research in education finance policy* (pp. 238-256). New York, NY: Routledge.

7. Pre-K students are the only exception to this rule. HPS funded pre-K through programmatic funding in 2008–09, rather than incorporating pre-K into the SBB formula. Beginning in 2009–10, pre-K has been included in the SBB formula, but funding is allocated on a per-capita basis.

8. Hartford Public Schools. (2008). *Hartford, a system of schools*.

9. We use the term “student-based budgeting” in this brief to refer to any funding mechanism where students generate funding based on need, and that funding follows students to their schools or districts. Such systems go by many other names as well, such as weighted student funding, fair student funding, and results-based budgeting. The policy is said to have originated in Edmonton

School District in Alberta, Canada, in the 1970s. More recently in the United States, the Thomas B. Fordham Institute, the Center on Reinventing Public Education at the University of Washington, and the Reason Foundation have come forth as strong advocates. See, for example: Thomas B. Fordham Institute. (2006). *Fund the child*; Center on Reinventing Public Education. *School finance redesign project*; Snell, L. (2009). *Weighted student funding handbook*; Hassel & Doyle. (2009). *The tab*; Public Impact & West, M. (n.d.). *Fund the student*; Public Impact and Partnership for Learning. (2011). *Student-based budgeting*.

10. See, for example: Adamowski, S., Therriault, S. B., & Cavanna, A. P. (2007). *The autonomy gap*. Washington, DC: Thomas B. Fordham Institute. Retrieved from <http://www.edexcellence.net/publications-issues/publications/autonomygap.html>

11. Hartford Public Schools. (2008). *Hartford, a system of schools*. p. 19.

12. In 2008–09, HPS used a student's eligibility for free or reduced-price lunch to determine whether the student qualified for an “achievement” weight in grades K–3. Previously the district used performance on the Developmental Reading Assessment (DRA) instead. In grades 4–12, students who score a Level 5 on the state exam receive a “high” achievement weight; students who score a Level 1 in both reading and math are considered “well below”; and students who score Level 1 in either math or reading, or a score of Level 2 in both math and reading are “below standards.”

13. Hartford Public Schools. (2010). *Hartford Public School's adopted education budget FY 2010–11*. Retrieved from <http://www.hartfordschools.org/documents/2010-2011ADOPTEDBUDGETBOOK.pdf>

14. Although SBB did not exist prior to the 2008–09 school year, we were able to estimate which funding streams would have been used in an SBB formula in the pre-SBB period by subtracting utilities and special education program funds from general funds. We also adjusted for inflation. See Appendix B: Methodology for details.

15. Our methodology estimates that in total, schools would have received more funding through relevant funding streams using the 2010–11 SBB formula than they actually received from those funding streams in 2007–08, a difference of about \$10 million, or 7 percent of 2007–08 funding. It is not clear why the predicted funding amount exceeded the actual funding amount, although the difference likely reflects the many estimates and assumptions we had to rely on to reach our final figures. Despite this mismatch, we have no reason to believe that our methodology favors any particular school. If we adjust each school's allocation on a pro-rata basis so that the total predicted funding using the 2010–11 SBB formula exactly equals total actual funding in 2007–08, we see similarly large changes by school. Per-pupil funding would have changed by even more than Figure 4 shows at 12 out of 39 schools, including Hartford Magnet Middle.

16. Since Twain closed before 2010–11, estimate student counts based on district averages.

17. These include actual grade-level enrollment counts and estimations of student subgroups. See the “Analysis 2” section of Appendix B: Methodology for more on estimation methods.

18. Figure 6 shows that most schools in Hartford received more funding than they should have received according to the SBB formula and actual student enrollments in 2010–11. Our analysis found that it was possible for HPS to overfund so many schools because it distributed approximately \$5.9 million more funding through SBB than the formula required. This happened in large part because the district budgeted for 1,300 more students than actually enrolled in HPS. As a result, HPS had additional resources available. Ideally, however, any additional resources would have been allocated through the SBB formula by adjusting the base per-pupil amount or student weights.

19. Projected 2010–11 enrollment data from Hartford Public Schools. (2010). *Hartford Public Schools' proposed education budget FY 2010–11*. Retrieved from <http://www.hartfordschools.org/documents/BoardAdopted2010-11forWebsite5-3-105-5-10.pdf>; Actual 2010–11 enrollment data from Hartford Public Schools. (2011). *Hartford public schools proposed education budget SY 2011–12*. Retrieved from <http://www.hartfordschools.org/documents/11-12ProposedBudgetApril11.pdf>

20. In addition, 65 magnet students attended Mary Hooker. Source: Hartford Public Schools. “10–11 Magnet Enrollment.” Sent via email May 17, 2011; Hartford Public Schools. (2010). *Hartford Public Schools' adopted education budget FY 2010–11*.

21. Hartford Public Schools. (2010). *Hartford Public Schools' adopted education budget FY 2010–11; Hartford Public Schools proposed education budget FY 2011–12*. Retrieved from <http://www.hartfordschools.org/documents/11-12ProposedBudgetApril11.pdf>

22. For more information about problems with the state funding formula, see: ConnCAN. (2011). *Spend smart: Fix our broken school funding system*. Retrieved from <http://www.conncan.org/sites/default/files/research/Spend%20Smart%20Web.pdf>

23. Figures based on 2010–11 pay schedule, available in the 2008–11 Collective Bargaining Agreement, retrieved from <http://ct.aft.org/1018/index.cfm?action=cat&categoryID=4827cd1f-8008-4897-b8f4-544239492d57>. Salary for veteran teachers corresponds with Step 11 for a teacher with a master's degree. Average teacher salary from Connecticut State Department of Education. “Staff.” Connecticut Education Data and Research (CEDAR). Accessed October 25, 2011. Retrieved from: http://sdeportal.ct.gov/Cedar/WEB/ct_report/StaffDT.aspx

24. Connecticut State Department of Education. “Staff.” Accessed October 25, 2011.

25. Hartford Public Schools. (2008). *Hartford, a system of schools*.