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Fiscal Brief

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New Funding Formula Seeks to Alter School Budget Disparities

Also available...

Contributing Factors: Disparities in 2005 Classroom Spending

... at www.ibo.nyc.ny.us

SUMMARY

WITH AN ACKNOWLEDGMENT that there have been longstanding disparities in the distribution of funds to the city's public schools, the Department of Education has begun a new system for funding individual school budgets. Called Fair Student Funding, the new system uses a weighted, needs-based approach to making school budget allocations. The weights are calculated for each student at a school based on factors such as grade level, academic performance, proficiency in English, and special education services.

This year schools received $5.5 billion—about two-thirds of the money that goes directly into their budgets—under the new approach. But the Department of Education only partially implemented the new allocation formula. If the formula determined a school would receive less than under the old system, the school received the old formula amount. If a school would receive more under Fair Student Funding than under the old system, the school was given only a portion—55 percent or $400,000 of the difference, whichever was less—of the level of funding it would have received under full implementation of the new formula.

Despite the hold harmless provision and the cap on additional funding, IBO finds that under the new formula, schools with higher needs students were allocated more per student when school size and teacher costs were held constant. Among our other key findings:

- The 693 schools under-funded relative to what their allocation would be under full implementation of Fair Student Funding received $110 million more this school year than they would have under the old system, with an average increase of $217 per student.
- The education department over-funded 661 schools relative to what their budgets would be under full implementation of Fair Student Funding, allocating $237 million to prevent these schools from losing funds.
- Compared to the average over-funded school, the average under-funded school has a higher share of students in poverty, larger proportion of students who are English Language Learners, a smaller share of students who are in special education-only classes, and a similar share of students who are low academic achievers.

Providing the under-funded schools with their full Fair Student Funding allocation would have cost an additional $122 million. Had the education department fully implemented Fair Student Funding and funded each school's budget based solely on the formula—with no caps or hold harmless provisions—there would have been $115 million remaining to allocate among the schools. The education department intends to increase funding to under-funded schools next year, contingent on availability of funds, while maintaining hold harmless allocations.

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INTRODUCTION

Soon after the state Legislature gave Mayor Michael Bloomberg control of the city's school system in June 2002, the Department of Education (DOE) launched a rolling set of school reforms under the banner of Children First.[1] Among the most recent set of Children First reforms, announced in January 2007, are changes ranging from a revamping of how teachers earn tenure to the elimination of the regional offices that had been created in 2004. The latest set of reforms also included a new way of allocating a large portion of the funds provided to schools for classroom instruction. With the intent of making the allocation process fairer, the new system uses a weighted formula to distribute funds based on the needs of students at each school.

The new allocation process, called Fair Student Funding (FSF), has already gone into effect for the current school year. It is being used to allocate much of the city and state funds that are intended for direct instructional purposes—$5.5 billion of the $8.7 billion in funds budgeted directly to schools. In theory, the previous method of allocating these instructional funds, which are a combination of city dollars and unrestricted state aid (often collectively referred to as tax-levy funds), should have resulted in per student spending that was similar for schools with a similar mix of grades. In practice, however, the situation was quite different.

In *Contributing Factors: Disparities in 2005 Classroom Spending*, a report released concurrently with this one, IBO analyzed per student spending for portions of 2005 school expenditures that correspond to the funds that are being allocated under the new formula. IBO's work confirmed the education department's contention that:

- There were significant differences in per student spending for schools that should be fairly similar, and
- There was little correlation between student needs and per student spending of city tax-levy dollars.

DOE argues that Fair Student Funding will make school budgets simpler and fairer. Instead of haphazard differences between schools that have evolved over time, the new formula is designed to more systematically distribute instructional resources towards students with the greatest educational need. The "fairness" of the new system depends greatly on the weights assigned to different categories of students based on their needs. While the weights are critical to the outcomes, in this report IBO focuses on describing FSF and assessing its distributional impact rather than assessing whether the categories and weights assigned by DOE are appropriate or adequate.

Fair Student Funding applies to a very discrete pot of money, city tax-levy funds for instruction at schools, though DOE did exclude certain high-priority initiatives, such as parent coordinators, from the new formula. It also excludes administrative spending as well as centralized costs, such as pupil transportation and food. State and federal funds restricted for special groups of students are also not part of the new allocation formula; for example, federal Title 1 funds aimed at schools with high levels of students from poor households.

A portion of the schools' special education costs are also funded through FSF. Funding is not allocated under the new formula for the high-needs special education students who attend schools under the auspices of the education department's District 75. But for other special education students funding is partly distributed through Fair Student Funding and partly through direct school allocations.

For these special education students, FSF includes funds to cover "regular education services" (also referred to as classroom service spending). Regular education services include the basic costs, such as teachers and textbooks, needed to fund both self-contained special education classes (with only special education students) and Collaborative Team Teaching classes (also known as inclusion classes because general education and special education students are in the same class with two teachers). Any additional services needed by individual special education students are funded through separate school-level allocations.

New Funding Sparks New Formula. An earlier attempt by the Bloomberg Administration to address inequities in school funding was largely abandoned in the face of opposition from communities whose schools faced budget cuts. At the time, the Mayor's office conceded that further moves toward equalization would have to await a time when growing educational resources could ease implementation.

The renewed interest in equalizing and rationalizing school budgets this year coincided with the expectation of additional education funding in both the city and state budgets for fiscal year 2008 primarily due to the resolution of the Campaign for Fiscal Equity (CFE) lawsuit. This year's state budget brought $939 million in additional state funding. It is expected that the resolution of CFE will generate even larger amounts of additional state and city resources after 2008. This situation has created an opportunity for the city to address disparities by allocating new resources to schools that are under-funded without necessarily taking money away from existing budgets.

This report begins with a discussion of the concerns and

reaction prompted by the announcement of the FSF initiative. It then proceeds to a description of the FSF formula and implementation, followed by our review of school allocations under FSF in 2008, the current school year. Next, we report the results of our analysis of the characteristics of schools considered under-funded and over-funded by the FSF formula.

Initial Public Reaction and Response. The initial proposal for Fair Student Funding was opposed by the United Federation of Teachers, advocacy groups like Education Priorities Panel, and Community Education Councils in communities facing possible budget reductions. Much of this initial reaction to the FSF proposal focused on teacher salaries. Under the system being replaced, schools were allocated a base number of teachers determined by enrollment and grade level and were able to fill those positions without regard to salary. In other words, there was no budgetary cost for a school that could attract more experienced, higher paid teachers. Many observers of the city's schools have assumed that differences in average teacher salaries account for much of the difference in per student spending between schools. (As discussed below, IBO's analysis indicates that while important, average teacher salary is not the most important determinant of per student spending.)

An effort to fully equalize per student funding might leave a school that has a teaching force with above average salaries unable to afford those teachers once funding was adjusted. To allay these fears, the initial FSF proposal stated that DOE would hold schools harmless for their current teaching staff, but would gradually make schools accountable for the actual cost of new teachers hired to fill future vacancies. The DOE proposal left open the possibility that a move towards more equalized spending could also result in budget cuts at some schools in 2008 even if the current set of teachers were protected.

In a compromise announced in April 2007, Mayor Bloomberg promised that schools would be protected with hold harmless allocations for two years. Thus, schools that have been receiving extra funding, as defined under the new formula, will be allowed to keep that additional funding. The DOE will not cut any school's budget for 2008 or 2009, but will "direct new state dollars toward schools that are not getting their fair share of funds today—overwhelmingly, high-needs schools."[2]

WHAT IS FAIR STUDENT FUNDING?

With Fair Student Funding, a majority of a school's tax-levy budget is calculated based on relative needs of the students attending the school.[3] Under FSF, two schools with similar student populations and mix of grades would be much more likely to receive similar tax-levy funding on a per student basis than is true today.

Fair Student Funding combines funding streams totaling $5.5 billion in annual allocations, representing 63 percent of the 2008 school budget allocations of $8.7 billion.[4] Funds formerly allocated separately under the headings of tax levy instructional programs, special needs/academic intervention, special education base instruction, and 15 other individual programs are now distributed with the single FSF formula.

Fair Student Funding applies only to certain tax-levy instructional dollars budgeted at the school level. Dollars spent at a school but that are not a part of a school's budget, such as the costs of food services, building maintenance, and student transportation are excluded from FSF. Further, dollars not spent at the school, such as central administration and fringe benefits for staff are not included. Funding for charter schools and expenses paid by the education department for private schools (for example, tuition for special education students who require services not available in the city's schools) are also not included.

Some School Dollars Excluded. Some dollars in school budgets are not allocated through FSF. These include several high-priority city-funded initiatives exempted from FSF by the education department, as well as restricted state and federal aid, and certain special education funding.

The largest city tax-levy funded school programs exempted from the new formula by DOE are parent coordinators, "transitional coaches" to help improve academic performance in Title I schools, and summer instructional programs. These programs represent about 2.9 percent of total budget allocations to the schools as of August 2007. (Because DOE's allocations to schools are made on an ongoing basis throughout the year, it is not possible to know the total allocations until the school year is over. We estimate that 96 percent of funds for 2008 had been allocated by August 14, 2007 and report shares based on those allocations.)

Since state and federal categorical funding streams are allocated for specific purposes according to state and federal law, they are also not included in FSF. Externally restricted funding represents about 13.2 percent of school budgets for 2008. The largest categorical program is the federally funded Title I program ($542 million allocated). Allocations for early grade class size reduction, comprised of federal and state funds, are $278 million or 3.3 percent of school allocations**.** Also not included in the FSF formula is $176 million for prekindergarten (excluding funding for pre-k programs provided by community-based organizations).

As discussed above, FSF includes allocations for a portion of a school's special education costs associated with regular education services, such as teachers for either self-contained or integrated special education classes. Beyond these funds, an additional $1.3 billion is allocated for school budgets for "other special education" funds. One portion of other special education funds, $651 million, is allocated to fund the citywide special education district (District 75) for severely disabled students. The remaining other special education funds cover costs for additional services for special education students in community school districts, such as paraprofessionals or assistive technology.

The transfer schools (for drop-outs or students that have fewer credits than they should for their age) that used to be in the citywide alternative school (District 79) have been shifted back into the high school districts and receive funding though FSF. Alternative programs, which are academic programs for over-age and under-credit students delivered in nontraditional settings, are not funded under FSF.

Determining the FSF Budget. The Fair Student Funding budget has two components: a foundation allocation and a per student allocation. Each school receives a foundation allocation of $200,000. Prior to FSF, schools received a foundation allocation based on the school level and year established, with extra start up funding for new schools. In 2006, foundation allocations ranged from $230,000 to $430,000.

Since the foundation is a fixed allocation, larger schools receive less per student than smaller schools in foundation funds. For example, a school of 500 students receives $400 per student in foundation dollars, compared to $100 per students for a school of 2,000. While foundation aid favors smaller schools on a per student basis, the fixed costs of running a school, such as a principal, assistant principals, and administrative staff are also higher on a per student basis at small schools. Hence, the higher per student foundation allocation results from higher per student fixed costs at smaller schools.

Base Weights. The far larger portion of a school's FSF budget is determined by the make-up of its student body. Each student receives a base weight (ranging from 1.00 to 1.08) determined by his or her grade, with children in higher grades receiving slightly larger weights. Additional weights are primarily assigned based on student needs.[5] "Portfolio" schools with specialized admissions, such as Stuyvesant and LaGuardia high schools, and vocational schools also receive additional weight. A weight of 1.0 represents $3,788 in student funding.

Needs-Based Weights. There are three categories of needs-based weights: academic intervention for low-performing students, English Language Learners, and special education.

The academic intervention weight is assigned when a student enters a school (0.24 to 0.50). If a student's achievement is

Grade and Needs-Based Weights for Fair Student Funding

	Weight	$ Per Student
BASE WEIGHT		
Grade		
K-5	1.00	$3,788
6-8	1.08	4,091
9-12	1.03	3,902
SPECIAL NEEDS WEIGHTS		
Academic Intervention		
Entering Before 4th Grade		
Poverty	0.24	909
Entering 4th to 5th Grade		
Below Standards	0.25	947
Well Below Standards	0.40	1,515
Entering 6th to 8th Grade		
Below Standards	0.35	1,326
Well Below Standards	0.50	1,894
Entering 9th to 12th Grade		
Below Standards	0.25	947
Well Below Standards	0.40	1,515
English Language Learner		
K-5	0.40	1,515
6-12	0.50	1,894
No Child Left Behind (NCLB) Transfer		
NCLB Transfer	0.53	2,000
Special Education		
Less than 20 Percent of Day	0.56	2,121
20 Percent to 60 Percent of Day	0.68	2,576
Over 60 Percent, Self-Contained		
K-8	1.23	4,659
9-12	0.73	2,765
Over 60 Percent, Inclusion		
K-8	2.28	8,637
9-12	2.52	9,546
PORTFOLIO WEIGHTS		
Specialized Academic	0.25	947
Specialized Audition	0.35	1,326
Career and Technical Education		
Nursing	0.26	967
Health, Trade, Technical	0.17	629
Business	0.12	451
Home Economics, Arts	0.05	193
Transfer	0.40	1,515

SOURCES: IBO; Department of Education.

below standards when he or she starts at the school and his or her performance subsequently improves, the school retains the additional funding. Conversely, if a student is at or above standard when he or she first enrolls and then falls below standards while in that school, he or she is not assigned an additional weight for achievement. These rules are intended to avoid penalizing schools for success or rewarding schools for poor performance. For schools where students enter before third grade when standardized tests have been administered, living in poverty is used as a proxy for low academic achievement. Starting with the fourth grade, a student can be considered either below standards or well below standards, depending on test results, with a higher weight for students who are well below standards. In response to the sharp drop in achievement in middle schools, the weight is higher for poorly performing students entering a school in grades six to eight than if they entered in earlier or later grades.

Students who are English Language Learners receive an additional weight (0.40 to 0.50), with the weight slightly higher at the middle and high school levels. There is also a weight if a child transfers from a school classified as needing improvement under federal No Child Left Behind Act standards to a school meeting the federal standards (0.53).

Weights for special education students (0.56 to 2.52) are based on the portion of the school day that the child requires special education classes and whether the child is in a class with general education students (inclusion) or in a class consisting solely of special education students (self-contained). These weights are significantly higher than the other needs-based weights, especially for students in special education for more than 60 percent of the day. The weights reflect the higher costs associated with providing regular education services to special education students due to higher staffing needs. For example, the typical self-contained special education class has 12 students along with one teacher and one paraprofessional.

In order to provide adequate funding for special education services in elementary and middle schools, the education department will fund both the filled and projected unfilled seats for self-contained and inclusion special education classes. This provision allows schools to establish special education classes and offer mandated services without being penalized for unfilled seats and will be phased out by the 2010 school year. As noted previously, there is substantial additional money allocated to provide supplementary mandated special education services to students outside of the FSF formula.

While there is some possibility that schools would try to game the system to maximize funding, most of the weights have been designed to minimize such actions (such as the low-achievement weight). However, schools could try to unnecessarily categorize students as special education. We expect DOE will closely monitor school data to guard against intentional misclassification.

Portfolio Weights. Lastly, the education department included enhanced weights for portfolio high schools to recognize the additional costs needed to provide these educational models (0.05 to 0.40). There are four types of portfolio schools: specialized academic schools (10 schools), specialized audition schools (six schools), career and technical education (21 schools), and transfer schools (30 schools).

Determining the 2008 School Budgets. The 2008 school budgets released in May 2007 were determined using a blend of both the old budget formula and the new FSF budget formula. Schools were considered either "over-funded" or "under-funded" (IBO's term) based on a comparison of what their budgets would have been under the two methods. If the Fair Student Funding formula produced a higher allocation than the old formula, a school was under-funded; conversely, if FSF produced a lower allocation than the old formula, the school was over-funded. Over-funded schools were not penalized—their allocations were held harmless. But under-funded schools did not receive the full amount to which they would be entitled under FSF.

The table on top of page 6 shows the calculations for three illustrative examples. For the over-funded schools (School 1 in the table), where a school's budget is lower under FSF than the pre-FSF approach, the school receives a "base" allocation equal to their FSF budget. In addition, the school receives a "hold harmless" allocation equal to the difference between the base and the pre-FSF allocation. Viewed from a different perspective, over-funded schools receive the budgets they would have gotten under the old system separated into an FSF portion and a hold harmless portion. There are 661 schools receiving hold harmless allocations equal to $237 million.

The education department has stated that in 2009, assuming availability of sufficient state and local funds, over-funded schools will continue to receive the hold harmless allocation (with adjustments for increases in teacher salaries) on top of their FSF budget. Of course, changes to the FSF weights might also increase their funding. DOE has not made commitments regarding hold harmless allocations for the 2010 school year and beyond.

On the other hand, under-funded schools—where the Fair Student Funding level is greater than the pre-FSF formula—receive a base allocation equal to their budget under the pre-

Determining the 2008 School Budget under Fair Student Funding

Budget Comparison	School 1 Over-Funded	School 2 Under-Funded	School 3 Under-Funded
Budget under Pre-FSF Formula	$2,000,000	$2,000,000	$2,000,000
Budget under FSF Formula	1,750,000	2,250,000	3,000,000
Difference	*-$250,000*	*$250,000*	*$1,000,000*
2008 Allocation			
Base	$1,750,000	$2,000,000	$2,000,000
Hold Harmless	250,000		
Extra FSF		137,500	400,000
Actual Allocation	$2,000,000	$2,137,500	$2,400,000

SOURCES: IBO; Department of Education.

FSF system (Schools 2 and 3 in the above table) and an "extra" allocation of new FSF dollars. The extra allocation is either 55 percent of the difference between the pre-FSF and FSF formulas (School 2) or $400,000 (School 3), whichever is lower. Therefore, the under-funded schools receive a higher allocation than under the pre-FSF system, but not their full FSF budgets. Across the 693 under-funded schools, extra FSF allocations for 2008 total $110 million.[6]

Principals must spend the extra $110 million in accord with the state's new Contract for Excellence requirements, which are tied to the funding increase from Albany that provides the source of the additional allocation for the under-funded schools. There are five purposes the money can be used for: 1) improving quality of teachers and principals, 2) reducing class size, 3) increasing student time-on-task, 4) restructuring middle and high schools, and 5) providing full-day prekindergarten. Additional new state resources beyond the $110 million are also governed by the Contracts for Excellence. Since the principals have discretion among these areas, we do not yet know exactly how the additional FSF allocations will be spent.

The education department has said that in the 2009 school year the extra allocations to under-funded schools will increase—an effort to bring them to their full FSF allocation, contingent on availability of sufficient state and local funds.

FAIR STUDENT FUNDING ALLOCATIONS

As of May, preliminary budget allocations to schools covered by FSF totaled $7.2 billion—out of the $8.7 billion budgeted for schools for the entire school year. The $7.2 billion in allocations is the basis of analysis for this report and represents nearly 43 percent of DOE's total budget. (The preliminary total school budgets do not include schools and programs not funded under FSF, namely the citywide special education district and the programs in the citywide alternative school district, or funds not allocated as of May 2007.)

Total individual budgets for the schools in our study range from $840,812 to $30 million, with a median of $4.5 million. Of the $7.2 billion, $5.5 billion is being allocated through the Fair Student Funding procedure described above (the base plus hold harmless or extra FSF funding). The FSF school allocations range from a low of $585,307 to a high of $24.7 million, with a median of $3.3 million.

The education department is also opening 35 new schools in 2008, which receive their full FSF formula budgets for 2008. Total allocations for new schools are $31.9 million.

Using the projected enrollment net of self-contained special education students, we can calculate per student FSF allocations. Per student FSF allocations have a median value of $6,172, ranging from $4,132 to $29,432 per student (only two schools' FSF allocations are over $14,000 per student).[7]

Under-funded Schools. As currently being implemented, Fair School Funding will raise the budgets of under-funded schools in 2008, but because no under-funded school will receive more than 55 percent of the gap between its pre-FSF and full FSF budgets, these schools remain under-funded. In contrast, the budgets of schools that are over-funded will not be cut, at least through 2009.

The average funding increase for under-funded schools is $158,703. The increase ranges from $43 to $400,000 and has a

Descriptive Statistics: Preliminary School Budgets for 2008

Statistic	Preliminary Total	FSF Allocation	Per Student FSF Allocation
Number of Schools	1,391	1,391	1,356
Mean	$5,211,344	$3,922,841	$6,115
Median	$4,529,478	$3,278,540	$6,172
Minimum	$840,812	$585,307	$4,132
Maximum	$30,318,915	$24,706,837	$29,432
Sum	$7,248,978,887	$5,456,671,142	

NOTES: The Preliminary Total Budgets are those released by the DOE on May 8, 2007. The Per Student FSF allocation is based on the estimated number of students for 2008 and excludes new schools for which enrollment was not available. Per student mean weighted by estimated 2008 enrollment.
SOURCES: IBO; Department of Education.

Descriptive Statistics: Under- and Over-Funded Schools

Statistic	Extra FSF Allocation, 2008	Hold Harmless Allocation, 2008
Number of Schools	693	661
Mean	$158,703	$358,332
Median	$125,822	$248,312
Minimum	$43	$1,416
Maximum	$400,000	$2,466,138
Total Allocated	$110,000,000	$236,857,419

NOTE: Under-funded schools receive Extra FSF allocations, while over-funded schools receive Hold Harmless allocations.
SOURCES: IBO; Department of Education.

median of $125,822. As schools are capped either at 55 percent of their total FSF need or $400,000, whichever is lower, no under-funded school is receiving its full FSF formula budget. Ten percent of schools are capped by the $400,000 limit, while 90 percent are capped by the 55 percent limit. In other words, the 67 schools capped at $400,000 are not even getting 55 percent of their FSF need filled by the additional allocation.

These 67 schools are under-funded by an average of $1.2 million, ranging from $720,000 to $3 million. These are large schools (enrollments between 729 and 4,336 students, net of self-contained special education) with an average enrollment of 1,749. As expected, their budgets are also substantial, with FSF budgets under full implementation ranging from $4 million to $23 million. They are divided among the school levels: nine have only elementary grades, 18 only middle school grades, 12 combine elementary and middle school grades, 27 are high schools, and one has middle and high school grades.

Over-funded Schools. On the other hand, 661 schools are retaining their funding from prior years under the hold-harmless provision. The total being allocated to keep schools from losing funds under Fair Student Funding is $237 million—2.2 times the additional FSF funding for under-funded schools. The median hold harmless allocation is $248,312, almost twice the median extra FSF allocation for under-funded schools. The average hold harmless allocation is $358,332, ranging from $1,416 to $2.5 million.

For over 75 percent of over-funded schools (505 schools), the difference between the allocations under the pre-FSF and FSF formulas is less than $500,000. Another 18 percent of over-funded schools (116 schools) have differences ranging from $500,000 to $1 million. The remaining 40 over-funded schools (6 percent) have pre-FSF budgets that are more than $1 million higher than the FSF formula budgets.

Bringing Under-funded Schools to Full Funding. To give all 693 of the under-funded schools their full FSF budget, the Department of Education would need to allocate another $122 million for these schools, on top of the $110 million already allocated this year. In other words, for these 693 schools, the difference between their full FSF allocation and what they would have received under the system being replaced (the "full FSF gap") is $232 million, with an average of $335,387 per school. The gap has a median of $226,301 and ranges from a minimum of $78 to a maximum of $3.0 million.

Alternatively, DOE could have redistributed funds from over-funded to under-funded schools rather than holding the budgets of over-funded schools harmless. Had the education department chosen to redistribute funds, the 661 schools over-funded by the FSF formula would have lost funding, while the 693 schools under-funded according to the new formula would have gained sufficient funding to eliminate the FSF gap entirely. The total needed to fill the gap is $232 million—$115 million less than the $337 currently allocated to bring under-funded schools closer to what their full budget would be under FSF and to keep over-funded schools from losing support.[8]

The potential increase or cut in budgets under full Fair Student Funding implementation (with redistribution) would have varied greatly. Four-fifths of schools would have seen increases or cuts of less than 15 percent. Forty-one schools (3 percent) would have seen their budgets cut by one-quarter while 10 schools (less than 1 percent) would have seen an increase of at least 25 percent. One school would have seen its budget double while one school would have had its budget cut in half.

Allocations Per Student. Under the Fair Student Funding system in place for 2008, funding at under-funded schools averages $1,181 less per student than at over-funded schools. This difference is smaller than it would have been under the pre-FSF approach, but larger than if the additional payments to under-funded schools were not capped or if the hold-harmless provision were eliminated.

There are two reasons for the difference between average per student funding at the under-funded and over-funded schools. First, schools under-funded in relation to their full FSF level have a lower base allocation, by $650 per student. The base allocations for these schools equal the pre-FSF formula budgets, while the base allocations for the over-funded schools equal their full FSF budget. Since the base is by design lower for the under-funded schools, the allocation per student is also lower. Second, there is a cap on how much extra support can be provided to the under-funded schools, but no such cap on the amount needed

to keep over-funded schools from losing support. As a result, the additional dollars per student above the base are lower for an under-funded school: $248 per student compared to $780 per student, on average.

The left panel on the chart below shows that the average per student allocation for under-funded schools increases from $5,506 under the pre-FSF formula to $5,723 under the Fair Student Funding formula for 2008, an increase of $217. Full FSF funding, without caps, would have brought the average per student allocation to $5,964, a further increase of $241. The total gap, from the pre-FSF to the full FSF allocation is $458. Therefore, in 2008, DOE is funding 47 percent of the full gap.

Conversely, on the right-hand side of the chart, we see that due to the hold-harmless provision, the average per student allocation is the same under pre-FSF and the FSF system used for this school year. With full FSF, including elimination of the hold-harmless provision, the average per student allocation would decrease by $626 to $6,013. The average per student full FSF allocation is not the same for all of the schools because the student needs are not identical; in fact the average per student allocation is $49 higher among the over-funded schools because on average they have a larger share of students in special education.

ANALYSIS OF SCHOOL CHARACTERISTICS

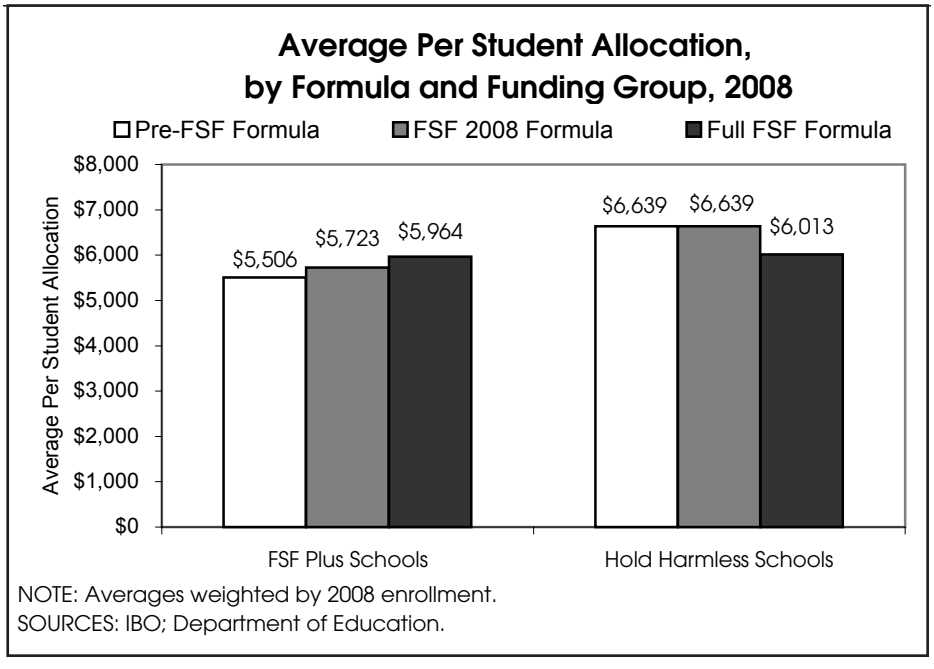
Fair Student Funding is intended to address inequity in school funding. With the first year allocations, we can test whether FSF as implemented by the education department successfully targeted funding to schools with concentrations of the types of high-needs students identified by DOE. We find that schools with higher shares of students who are in special education, are English Language Learners, or have low academic achievement, receive higher per student allocations, holding teacher staffing, enrollment, and grades present constant.

Data. Our main data sources are two files released by DOE: Citywide Budget Data for 2008 and School Funding Data for 2006. Teacher costs at a given school depend on average teacher salary and the school's pupil to teacher ratio. The 2008 file included a *school wide average teacher salary* for 2008. As noted previously, DOE has cited differences in average teacher salaries among schools as one of the main factors leading to historical differences in per student expenditures.

The education department also estimated a *pupil-teacher ratio* for 2006. This ratio is based on the number of tax-levy funded teachers, excluding those teachers funded with dollars for Collaborative Team Teaching or teachers of self-contained special education students. If the allocation of teacher positions was simply based on the number of students by grade—which is how the old allocation system was supposed to work—there should be little variation in the ratio among schools with similar grades and the ratio should not be associated with per student expenditures, once we control for enrollment and grades present.

The DOE data file included three measures of student need, the *percent in self-contained special education, percent living in poverty,* and *percent who are English Language Learners* (all for 2006). While the DOE data files did not have a figure for the percent of students who are low academic achievers, IBO was able to use the *percent low academic achievement* from the Special Needs/ Academic Intervention Services School Allocation Memorandum for 2005. This measure of students who have low academic achievement is not the same as students who would qualify for an academic intervention weight because it only captures students who would qualify for the weight for well below standards, while missing students who would receive weights for being below standards. Since the FSF formula specifically targets students in special education classes, with low English proficiency, and with low academic achievement (or in poverty) as high need, we would expect to see positive relationships between the needs measures and allocations per student.

To account for potential economies of scale, where larger schools spend less per student on fixed expenditures, we use the total reported *enrollment* from 2006. Since weights differ by grade, we



NOTE: Averages weighted by 2008 enrollment.
SOURCES: IBO; Department of Education.

School Characteristics by Funding Group

School Measure	FSF Plus		Hold Harmless	
	Average	Median	Average	Median
Pupil to Teacher Ratio, 2006	15.4	14.6	14.2	13.1
Schoolwide Average Teacher Salary, 2008	$66,178	$64,076	$69,238	$68,120
Total Enrollment, 2006	1380	628	1073	533
Percent Poverty, 2006	68.0%	77.0%	60.5%	71.0%
Percent Self-Contained Special Education, 2006	4.3%	2.9%	5.8%	5.3%
Percent English Language Learners, 2006	16.9%	11.7%	11.0%	7.7%
Percent Low Academic Achievement, 2005	26.9%	29.6%	25.9%	26.4%
Percent White, 2005	12.1%	2.4%	18.2%	2.8%
Percent Black, 2005	29.3%	24.9%	36.1%	29.9%
Percent Hispanic, 2005	43.0%	46.8%	33.7%	28.4%
Percent Asian or Other, 2005	15.7%	4.7%	11.9%	3.3%

NOTE: Averages weighted by 2006 enrollment.
SOURCES: IBO; Department of Education.

used three indicators for the presence of *elementary school grades*, *middle school grades*, and *high school grades*. Elementary grades were kindergarten to fifth, middle school grades were sixth to eighth, and high school grades were ninth to twelfth.[9] The grade ranges are based on the School Report Card database and Register for 2005.

Characteristics of Under- and Over-funded Schools. We find evidence that schools receiving additional dollars under FSF were serving a larger share of high-needs students, at least on some measures. Under-funded schools have, on average, higher poverty rates and greater proportions of English Language Learner students. Unexpectedly, schools receiving additional FSF funding have a smaller percentage of students in self-contained special education, though this varies by grade level.

While the average percent of students who are low academic achievers is just 1 percentage point higher at the under-funded schools, the median shares of low academic achievers differ by 3.2 points, suggesting that under-funded schools have larger shares of low-performing students (though our measure is not capturing all students who would receive the academic intervention weight).

Schools under-funded based on the Fair Student Funding formula averaged larger enrollments. On teacher costs, these schools appear to have more students per teacher and lower average teacher salaries.

Elementary and middle schools were slightly more likely to receive allocations to prevent them from losing funds under the new formula (54 percent) than to receive funds to bring them closer to their full Fair Student Funding budget (46 percent). Among the high schools, 51 percent received allocations to bring them closer to full FSF funding. Under-funded elementary schools had higher average teacher salary and lower pupil to teacher ratios than over-funded elementary schools. This pattern is reversed for middle and high schools, where under-funded schools had lower average teacher salaries and higher pupil-teacher ratios.

On measures of student need, the under-funded schools at all grade levels averaged higher shares of students who are English Language Learners or live in poverty. Under-funded elementary schools had a larger average share of self-contained special education students but a lower average share of low academic performing students than the over-funded elementary schools. For middle schools, the results are flipped, with under-funded schools having a higher percent of low academic achievement but a lower percent of self-contained special education. For high schools, the percent self-contained special education is the same in both under- and over-funded schools, but the average percent of low academic achievement is higher among the under-funded schools. To summarize, under-funding for elementary schools is associated with higher shares of self-contained special education students, while at middle and high schools, the under-funding stems more from the higher share of students with low academic achievement.

Regression Models to Predict Per Student Allocations. Based on our research on the predictors of per student expenditures under the pre-FSF funding system, we ran regression models predicting the per student allocations under this school year's Fair Student Funding formula, with caps on school budget increases and hold harmless provisions to prevent cuts. Regression models allow us to test whether the positive relationship between need and per student allocations exists after we control for teacher staffing, school size, and grade composition (the factors we found to be the most important predictors in the pre-FSF system).

In the table on page 10, we report the results of our model for the per student allocation under this year's implementation of Fair Student Funding. We find that the measures of student need (English Language Learners, special education, and low academic achievement) are positively associated with per student expenditures after controlling for staffing,

Coefficients for Regression Model

Dependent Variable: Per Student Allocation

School Measure	FSF Allocation, 2008
Average Teacher Salary, 2008	0.052***
	(0.005)
Pupil-Teacher Ratio, 2006	-249.660***
	(13.342)
Enrollment, 2006	-0.474***
	(0.045)
Percent Students in Poverty, 2006	-4.757***
	(1.326)
Percent Students English Language Learners, 2006	4.305*
	(1.894)
Percent Self-Contained Special Education, 2006	109.545***
	(6.596)
Percent Students Low Academic Achievement, 2006	16.668***
	(2.090)
Has Elementary School Grades	-575.804***
	(60.573)
Has Middle School Grades	140.165**
	(47.062)
Intercept	6,516
	(426)
N	1237
R^2	0.6535

NOTE: FSF Allocation, 2008 is the actual per student allocation for 2008, representing implementation of FSF *with caps and hold harmless* .

Standard errors given in parentheses.

*, **, *** mean statistically significant at the .05, .01, and .001 levels, respectively.

SOURCES: IBO; Department of Education.

enrollment, and school level. On the other hand, the relationship between per student expenditures and the percent of students from poor households is negative, probably due to the higher rates of poverty in the under-funded schools that have lower per student funding.

When we control for the mix of grades present at the school we find that schools with elementary grades were allocated less per student than schools with only high school grades (holding other factors constant) but schools with middle school grades only were allocated more than those with only high school grades. This finding shows that the extra weight assigned to provide additional funding for middle schools—where the drop off in achievement is greatest—generated the desired result.

The relationships found between teacher staffing and per student expenditures under the pre-FSF system (schools with lower pupil-teacher ratios and higher average teacher salaries had higher per student expenditures) persist in the model for this school year's Fair Student Funding allocation. This suggests that Fair Student Funding, as implemented this year, does not lessen the relationship of staffing to per student funding.

Based on our regression results, an increase of 10 percentage points in the share of students who are English Language Learners at a school is associated with an increase of $43 in the per student expenditures, while a 10 point increase in the percent who are low academic achievers is associated with a $167 dollar increase in per student expenditures. The predicted change in the per student expenditure is greater for changes in the percent of self-contained special education students, with a 10 percentage point increase in the student population at a school associated with a $1,095 increase in per student expenditures.

Summing up, under the new FSF funding formula being implemented for 2008, our regression model shows that schools with higher-needs students were being allocated more per student, when school size and teacher costs were held constant. This result contrasted with our analysis of data from 2005, which found that under the old system there was little evidence of a relationship between student need and per student expenditures, controlling for school characteristics. This indicates that even with the large hold harmless provision, partial implementation of Fair Student Funding is improving the alignment of city education resources with student needs. In comparison to full implementation of FSF, the implementation of FSF this year gradually begins to align funding with student needs (see supplemental table and discussion online).

CONCLUSION

The FSF formula being implemented by DOE for 2008 is an attempt to gradually remove some of the inequities present in the current system. We found positive relationships between the percent of students who are English Language Learners, have low academic achievement, and in self-contained special education classes and the per student FSF allocation, holding teacher staffing, school size, and grades present constant. The cap on additional FSF funding and the hold harmless provision limited how far the Department of Education could go in equalizing school budgets, given the amount of resources committed to that goal.

This report prepared by Ana Champeny

ENDNOTES

[1]For more information on Children First and the specific reforms, visit the DOE website at http://schools.nyc.gov/AboutUs/ChildrenFirstToday/default.htm.
[2]Department of Education (April 2007). We Heard You.
[3]More information on Fair Student Funding is available from the DOE on their website at http://schools.nyc.gov/AboutUs/BudgetsFairStudentFunding/Materials/default.htm.
[4]The total DOE budget for 2008 is $16.9 billion. Beyond the $8.7 billion for school budgets, $4.7 billion is spent on support services, administration and programs outside of schools, $2.1 billion for fringe benefits, and $1.3 billion for charter and non-public school costs.
[5]Please see the DOE's publication on Fair Student Funding for a more detailed discussion of the weights (available at http://schools.nyc.gov/NR/rdonlyres/49E192E9-02A7-452D-B0A3-C3CDBEF14845/0/FSFGuide_05080707092007.pdf).
[6]There are two schools which would have been eligible for increases under FSF but we kept at their pre-FSF formula budgets. These are Urban Peace Academy (M695) with an FSF allocation of $1.4 million and IS 174 Eugene T. Maleska (X174) with an FSF allocation of $4.1 million.
[7]These two schools with per student unadjusted FSF allocations over $14,000 are included in descriptive analysis, but because of sensitivity to extreme measures, they are dropped from regression analysis. The two schools are P.S. 198 in the Bronx (X198) and IS 55 Ocean Hill Brownsville Intermediate School (K055).
[8]This scenario assumes that the allocations for the 35 new schools and 2 schools whose budgets are not increased (see note 10) are kept the same.
[9]A school would receive a 1 if any one of the grades were present and a 0 otherwise. A school could be coded as having both elementary and middle school grades, so the groups are not mutually exclusive. A school that is K-8 would appear as both an elementary and middle school.