The Condition of Urban School Finance: Efficient Resource Allocation in Urban Schools

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Selected Papers in School Finance

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Introduction

Urban schools have long been a focus of public attention. Much of this concern has centered on inter-district disparities in per pupil expenditure. However, as state governments have come to play a larger role in school finance, local tax bases have become a less important factor in determining educational resources. Today, per pupil expenditures in many (though not all) urban school systems match those of more affluent suburbs. Yet the performance of urban school systems (as measured by such indicators as student test scores, graduation rates, and a variety of student behaviors) continues to lag behind those of other systems (Lippman, 1996). There is no doubt that poor educational outcomes are due in large part to high concentrations of poverty and to other social and economic barriers faced by disadvantaged minorities in urban centers. However, critics have also charged urban schools with waste and inefficiency (Wilson, 1992). Many of these same criticisms have been directed at public schools in suburban and rural locations as well. Yet public dissatisfaction with schools appears to be particularly high in urban districts, as evidenced by the interest shown in these communities in such alternatives to traditional public education as charter schools and voucher programs. This dissatisfaction suggests it would be useful to look more closely at the way resources are allocated in urban schools to ascertain whether charges of inefficiency are warranted.

Methodology

The starting point for this investigation of urban education consists of several criticisms that have been made of public, if not specifically urban, schools. Policies pursued by public schools are said to be inefficient or wasteful in the following respects:

1. Too small a share of district resources actually make it to the classroom (i.e., are spent on instruction as opposed to administration or other support services) (Walberg, 1994).

2. Schools and school districts are too large. Students have been shown to learn

more effectively in smaller, less impersonal settings, offsetting whatever economies may be achieved by operating on a large scale (Walberg and Fowler, 1987) (Fowler and Walberg, 1991).

3. Public school systems are excessively bureaucratic (Chubb and Moe, 1990).

4. Teacher compensation is unresponsive to market conditions and provides little if any incentive to improve performance (Hanushek et al., 1994).

. . . This paper relies on a comparative methodology, contrasting urban public schools with public schools in suburban and rural communities.

While these criticisms provide a useful focus for the investigation, none of them specifies criteria for determining when urban schools (or, indeed, any) are inefficient. Benchmarks for efficient performance are missing. Consider, for example, the charge that public schools systems are excessively bureaucratic. Given that schools cannot function without some bureaucratic oversight, how much oversight is excessive? Similarly, without knowing what proportion of district resources should be devoted to instruction, it becomes difficult to determine when a given pattern of resource allocation is inefficient.

In the absence of a set of benchmarks for efficient performance, this paper relies on a comparative methodology, contrasting urban public schools with public schools in suburban and rural communities. In places the comparison is extended to private schools. A variety of indicators will be examined pertaining to the criticisms just cited. Systematic differences unfavorable to urban schools will be evidence of inefficiency. This is not fully conclusive, of course, for such differences might arise because urban schools are pursuing the most efficient policies. For two reasons this would be unlikely. First, there is probably at least some truth to each of the criticisms cited above. Thus, a finding that urban schools devote a smaller share of total resources to instruction than other school systems is prima facia evidence of inefficiency. To argue that such a pattern of resource allocation is actually the efficient one would imply that on the whole, public schools devote too large a share of resources to instruction.

Second, because private schools face market competition, they are under pressure to use resources efficiently. Significant differences between public and private schools will reinforce the conclusion that the former are not run efficiently; conversely, the more nearly alike the two types of schools are, the less reason there is for special concern about the practices of urban schools.

Share of Resources Devoted to Instruction

The National Center for Education Statistics (NCES) classifies school districts' current expenditures into three broad categories: instruction, support services, and non-instructional services. Instructional expenditures include salaries of teachers and teachers' aides, and classroom materials. Support services encompass counseling, administration, operations and maintenance, business office activities, and student transportation. Non-instructional expenditures cover food services and adult education and other community services.

To see whether the allocation of funds varies by district location, total dollars spent in each category have been summed for all urban districts, suburban/large town districts, and rural/small town districts.[1] (For conciseness, these groups will henceforth be referred to as urban, suburban, and rural.) The resulting totals are displayed as percentages of current expenditures in table 1. (Expenditures

[1] This classification scheme, which is also due to NCES, defines urban districts as those located in central cities of Standard Metropolitan Statistical Areas (SMSA). Suburban districts are located in SMSAs but are not in central cities. Large towns are outside SMSAs but have a population of at least 25,000 and are defined as urban by the Bureau of Census. Small towns are outside SMSAs and have populations between 2,500 and 25,000. Rural districts are found in places with a population less than 2,500.

Table 1.—Expenditure and staffing patterns

Percent of current expenditures allocated to:	Urban	Suburban	Rural
Instruction	61.1	61.1	61.5
All support services	33.9	34.7	33.1
Administration	7.5	7.7	8.8
Staffing ratios			
All staff to teachers	1.76	1.78	1.78
All staff to teachers and teachers aides	1.49	1.55	1.52
Administrators to teachers	.16	.19	.17

SOURCE: Common Core of Data, Agency Finance Information (Expenditures), Fiscal Year 1992, Agency Staff Information, Academic Year 1992.

on non-instructional services, which are not displayed, are the residual item).

There is virtually no difference between urban schools and others in the percentage of current expenditures allocated to instruction, approximately 61 percent. Suburban systems spend slightly more on support services (and by implication, less on non-instructional services). Urban school systems actually devote a smaller share of current expenditures to administration, almost 15 percent less than rural districts.

Some caution is required in interpreting these numbers, since classification of school expenditures is problematic (Raywid and Shaheen, 1994). All districts do not follow the same accounting practices; there is disagreement even among experts on how to compute school expenditures. When working with district-level data, the problem is compounded by differences in types of districts. Some districts, for example, have been created exclusively to serve special education students. In other districts virtually all expenditures are for support services provided to other school systems.

It was for these reasons that table 1 was prepared by summing expenditures within the urban, suburban, and rural categories. The effect of variation in accounting practices will tend to average out in these aggregates. In addition, totals within these broad categories should not be sensitive to the establishment of special districts to perform limited functions. It is the total spending on the function (and not whether it is one district or another that performs it) that determines the entries in table 1.[2]

Given uncertainty about accounting practices, it is worth seeing whether alternative ways of measuring resource allocation present the same picture. The lower panel of table 1 displays statistics on staffing patterns: ratios of total employees to teachers and administrative staff to teachers. As above, these statistics are computed by first totaling the number of employees within urban, suburban, or rural districts without regard to the particular districts in which they are employed. The results confirm that there is little difference between urban public education and the other categories. The ratio of all staff to teachers is virtually the same across categories. When teacher aides are counted with teachers, urban schools

[2] It may be wondered if a few very large districts (such as the New York City school system, with a million students) have undue influence on the statistics presented in table 1, distorting the picture of expenditure patterns in smaller but much more numerous urban districts. The three largest districts in the United States are the New York, Chicago, and Los Angeles school systems. As a check on the information presented in tables 1 and 2, all statistics on urban districts were recomputed excluding these three systems. There was a very slight change in the findings: the share of current expenditures on instruction fell to 60 percent while those spent on support services rose to 35 percent. However, the ratio of all staff to teachers actually fell slightly (though by less than one-tenth). On the whole, it does not appear that the findings in tables 1 and 2 are distorted by spending and staffing decisions in the largest systems.

are found to allocate a slightly higher proportion of their staffs to teaching than do other systems, a slightly smaller share to administration.

Since urban districts serve a high proportion of disadvantaged students, it is of some interest to know whether the patterns in table 1 hold when urban districts are distinguished by students' economic status. For this purpose, urban districts in which more than 17 percent of school-aged children live below the poverty line have been compared to the remaining urban systems. (Data on this breakdown, not displayed in table 1, are available from the author.) It turns out that the poorer districts employ more, not fewer, teachers relative to administrators and relative to total staff. The administrative share of current expenditures is lower by 0.5 percentage points in these less affluent schools. (Instruction as a share of current expenditures is, however, the same in both groups, 61 percent.)

Scale Economies

As noted, urban schools spend proportionately less on administration and employ fewer administrative staff relative to teachers than either suburban or rural schools. Since urban districts tend to be larger than those elsewhere, these differences may reflect economies of scale. To explore this hypothesis, the two variables pertaining to administration in table 1—the share of administration in current expenditures and the ratio of administrative staff to teaching staff—have been regressed on a variety of district and community characteristics. Two measures of size were used to detect scale economies: district enrollment and the average number of students per school within the district. An inverse relationship between district enrollment and the share of resources devoted to administration presumably reflects economies in central office operations and district-wide services. Increasing the number of students per school would also be expected to save on administration through consolidation of positions (e.g., principals). Other regressors control for the community's demand for certain kinds of school services as well as the educational needs of the school-age population. These variables include the percentage of school-aged children living below the poverty line, median income of district households with school-aged children, and the percentage of household heads with a college degree. Current expenditures per pupil were introduced to allow for the possibility that spending on administration varies with district resources.[3] (For example, as the budget grows, administrators may find additional slack they can divert to their own staffs.)

Earlier remarks about variation in accounting practices across districts are relevant here. In an effort to enhance consistency, the estimation sample was restricted to independent school districts. This category excludes many districts that function in an auxiliary capacity by providing services to other systems and which therefore often exhibit extreme ratios of administrative to other expenditures. In addition, following the initial estimation, observations with extreme values of the dependent variables were dropped from the sample (5 percent at each end). Since the second set of estimates did not differ substantially from the first on the points of greatest interest, only the first is discussed here.

Regression results (table 2) confirm that urban systems spend proportionately less on administration than do rural systems and employ fewer administrative staff relative to teachers than do suburban systems, even with

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[3] It may be wondered if the poverty rate, median income, household education, and per pupil expenditure do not represent too many ways of measuring the same thing, with the resulting multicollinearity yielding unstable and imprecise estimates. These variables are not, in fact, highly correlated. The largest pairwise correlation, between median income and education of the household head, is 0.75. None of the other correlation coefficients exceeds 0.4. Correlations between the estimated coefficients are generally lower. Estimates are only moderately sensitive to the exclusion of other variables from the model. This suggests the various regressors convey independent information.

controls with district characteristics. However, there appear to be few economies of scale in central office functions. An increase in the size of the district by 10,000 students reduces the share of current expenditures devoted to administration by only 0.01 percentage points. Although this estimate is somewhat imprecise (the coefficient fails conventional tests of statistical significance), all estimates within a 95 percent confidence interval are likewise very small. By contrast, average school size does have a statistically significant impact on resources allocated to administration: an increase of 100 students per school reduces the share of administrative expenditures by one-half percentage point. The impact on the ratio of administrators to teaching staff is smaller, at 0.2 percentage points.

Failure to detect savings in administration as district size increases is troubling, since such economies are to be expected. Moreover, given evidence that student achievement tends to suffer with increases in district size (Walberg and Fowler, 1987), if large districts cannot be justified on grounds of scale economies, it may be hard to justify them at all. It turns out that there are economies of district size, but they become apparent only when separate regressions run on subsamples of urban, suburban and rural schools, respectively. (These results, not shown in table 2, are available from the author on request.) In the urban subsample, where average district size is much greater (15,000 students, compared to 5,000 and 1,500 students in the suburban and rural subsamples, respectively), coefficients on district size are an order of magnitude smaller than the corresponding estimates for the suburban and rural samples and are statistically insignificant. This evidence strongly suggests that urban districts by and large exceed the size necessary to realize scale economies. The notion that there are diminishing returns to increasing district size is further supported by the fact that estimated district scale economies are greater for rural districts than for the suburban districts. Thus it

Table 2.—Regression analysis of administrative expenditures and staff (standard errors in parentheses)

		Dependent variables:	
Independent variables:	Mean of independent variables	Administration percentage of current expenditures(%)	Administrative staff/teachers
Intercept	1.0	12.5 (.20)	.09 (.006)
Suburban	.19	.10 (.13)	.014 (.004)
Rural	.74	.51 (.12)	-.002 (.004)
District enrollment (1,000s)	3.15	-.001 (.002)	-.0006 (.00007)
Students per school (100s)	.367	-.51 (.01)	-.002 (.0004)
Median household income (1,000s)	33.4	-.03 (.004)	.0007 (.0001)
Percentage of school-aged children below poverty line	17.8	.002 (.003)	.0004 (.0001)
Percentage of household heads with college degree	15.9	-.005 (.004)	-.0005 (.0001)
Per-pupil current expenditures (1,000s)	5.07	-.032 (.017)	.015 (.001)
R^2		.18	.10
Number of observations	—	12,596	11,864
Dependent variable mean	—	9.7	.18

—Not applicable.

SOURCE: Common Core of Data, Agency School Information, School Year 1991, Agency Staff Information, 1992 School Year, Agency Finance Information, Fiscal Year 1992, Household Information, 1990 Census of Population.

would appear that scale economies at the district level are exhausted somewhere between the typical suburban size (about 5,000 students) and the average urban enrollment of 15,000.

To this point the discussion has considered administrative expenses only. Since there may be scale economies in other functions, it is useful to examine a broader measure that includes spending on operation and maintenance, the business office, student transportation, and food services. Table 3 displays selected results when per-pupil expenditures on these items are regressed on the district characteristics mentioned above. Since the level of spending may be affected by district wealth, in the second panel of table 3 the dependent variable is expressed as a percentage of current expenditure. A decline in this percentage as district or school size rises signals the presence of scale economies and means that resources are freed up for instruction or pupil support services.

As table 3 shows, there are few scale economies in these functions at the district level (and none among urban school systems). Increasing school size does produce savings, but the amounts are small. If one takes the estimates in panel two as more reliable, increasing mean school size by 100 students saves urban districts only 0.27 percent of their current per pupil expenditures, or $14 on average (=.0027 times $5,076). The average savings for all public school districts are $35 (.007 of $5,069), only slightly more than the reduction in administrative expenses reported in table 2. Whether it is worth increasing school size to achieve savings of this magnitude is much in doubt. A growing body of research has found evidence that smaller schools provide a superior learning environment to the large, impersonal, factory-like schools built in great numbers after World War II. In the final analysis, the answer turns on whether the money saved by realizing scale economies can be put to uses that will have a greater impact on student achievement than reductions in

Table 3.—Scale economies

Dependent variable	Sample	Dependent variable mean	Change in dependent variable from an increase in: District size (1,000 students)	Change in dependent variable from an increase in: Average school size (100 students)
Per pupil[1]	All	$1,555	0.2	-106.9[2]
	Urban	1,459	0.5	-75.5[2]
	Suburban	1,565	-8.3[2]	-0.2
	Rural	1,562	-15.9[2]	-147.4[2]
Percentage of current expenditures[1]	All	30.5%	0.01[2]	-0.7[2]
	Urban	28.0	0.00	-0.27[2]
	Suburban	27.2	-0.01	-0.02
	Rural	31.5	-0.03	-1.02[2]

[1] Administration, Operations/Maintenance, Business Office, Transportation, and Food Services

[2] Regression coefficient significant at 1 percent.

NOTE: Estimation samples restricted to Local Education Agencies (LEAs) which are Independent School Districts. Other regressors included percentage of school-aged children in households below the poverty line, median household income, percentage of heads of households who are college graduates, and indicators of urbanicity (in the combined samples).

SOURCE: Common Core of Data, Agency Finance Information (Expenditures), Fiscal Year 1992.

school size. It should also be recognized that the discussion here has focused only on current expenditures and that a full consideration of scale economies must take account of potential savings in capital costs. Unfortunately, data limitations prevent that investigation from occurring here.[4]

Non-Teaching Faculty

Schools have been criticized for assigning teachers to non-instructional jobs where they carry out administrative or even clerical tasks. In addition, some union contracts call for a specified number of teachers to be relieved of classroom teaching responsibilities in order to perform work for the union. Such practices reduce the real level of resources in the classroom in ways that are masked by such statistics as aggregate student/teacher ratios.

. . . Average class size exceeds the school-wide student/teacher ratio largely because teachers spend fewer hours in class each day than do students.

Unfortunately, it is not easy to examine how widespread these practices are. While it has been suggested that a comparison of the school-wide student/teacher ratio to the average class size reveals how many teachers have regular assignments outside the classroom (Picus and Bhimani, 1993), the comparison is misleading: average class size exceeds the school-wide student/teacher ratio largely because teachers spend fewer hours in class each day than do students. Discrepancies in these ratios do not mean, therefore, that some teachers have not been assigned regular classes of students, but rather that teachers are given prep periods and other breaks during the day that reduce at any point in time the number of teachers available to work with students.

This is evident in table 4, where the student teacher ratio measured at the school level (total students/FTE teachers) is contrasted with the average class size reported by teachers. As anticipated, the former ratio is always smaller than the latter. However, class sizes in urban secondary schools are unusually large, given the mean student-teacher ratio. The latter is smaller by 1.4 students than the ratio of suburban secondary school students to teachers, yet urban classes are larger by nearly two students. By contrast, in rural secondary schools, lower student-teacher ratios translate into smaller class sizes. These discrepancies (which are statistically significant at conventional levels) suggest that faculty in urban secondary schools are diverted from teaching in larger numbers than elsewhere. Other explanations, while possible, receive little support from the data. If urban teachers had more prep periods, class sizes would rise for that reason. However, the average number of classes is virtually the same for urban as suburban secondary school teachers. If students took more classes in the urban systems, average class size would increase, but there is no evidence of this, either.[5]

Teacher Effort

More than 90 percent of instructional spending is on salaries and benefits. Teacher absenteeism reduces the real level of classroom resources for a given dollar expenditure. Conversely, the time teachers put in outside school grading homework and preparing lesson plans augments these resources.

By some indications, teacher absenteeism is a greater problem in urban schools than elsewhere. The first rows of table 5 summarize teacher and administrator perceptions of teacher absenteeism in the Schools and Staffing Survey (SASS). The proportion of principals who believe faculty absenteeism poses

[4] The Agency Finance Information file on the Common Core of Data (CCD) contains capital outlay expenditures. However, without information on the vintage of structures and equipment, such data provide a very incomplete picture of true capital costs. There are no imputed rental values for buildings and durable equipment that have been fully amortized. Districts that have recently expanded or upgraded equipment will appear to have relatively high capital costs while other systems may appear to incur no capital costs whatever.

[5] The average length of the school day is the same in the two types of districts. The same number of credits are typically required for graduation.

Table 4.—Student/teacher ratios and class size (standard errors in parentheses)

	Number of schools	Students/teachers (school)	Number of teachers	Average class size
Urban				
Elementary	1,025	19.1 (.16)	3856	26.6 (.29)
Secondary	725	17.1 (.21)	5005	27.0 (.28)
Combined	211	9.3 (.40)	750	16.7 (.54)
Suburban				
Elementary	1,051	20.2 (.16)	3738	26.9 (.25)
Secondary	904	18.5 (.29)	6264	25.4 (.22)
Combined	143	13.0 (1.1)	589	20.7 (.77)
Rural				
Elementary	2,165	18.6 (.13)	7218	25.6 (.22)
Secondary	1,979	16.4 (.14)	12071	23.5 (.16)
Combined	564	14.9 (.33)	2504	21.9 (.33)

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993–94 Schools and Staffing Survey.

at least a moderate problem is 70 percent greater in urban schools. This perception is largely shared by teachers themselves: half again as many urban teachers believe faculty absenteeism is a problem as do their counterparts in suburban districts. In light of these beliefs, it is somewhat surprising that actual measures of teacher absenteeism reported in SASS do not differ more between urban and suburban systems.

The limitations of the data should be borne in mind: absenteeism rates in SASS refer to a single school day (on or just prior to the survey date). Clearly, absenteeism rates on any given day may vary considerably for a single district, though in a sample of many districts one would expect such variation to average out. Still, systematic differences may remain, as shown by differences in the absenteeism statistics based on the 1993–94 survey and the earlier SASS administered in the 1990–91 school year. For whatever reason, absenteeism was higher across the board in 1993–94. Teacher attendance was better in rural districts than elsewhere in both years, but evidence of an urban/suburban difference is much weaker.

When 1990 teacher absentee rates are regressed on a set of school characteristics including size, percentage of black and Hispanic students, and the percentage of students eligible for free or reduced-price lunch (a measure of the incidence of poverty), evidence of any difference between urban schools and others, apart from that explained by these controls, completely disappears. This is not reassuring, for absenteeism increases with higher percentages of poor and minority students. Thus, absenteeism is worst in precisely those schools that can least afford the loss of services of regular teachers. This may help to explain why urban teacher absenteeism is regarded as a greater problem in urban systems even though the measured difference is not large.[6]

The last eight rows of table 5 contain the time teachers report spending on school-related activities outside regular school hours. Responses, which refer to the most recent full week before the survey date, are again displayed for the 1990–91 SASS as well as the 1993–94 survey. Secondary school teachers spend substantially more time with students

[6] Other reasons are possible. Qualified substitutes may be in shorter supply. Urban classes may also be harder to control when the regular teacher is absent.

Table 5.—Teacher absenteeism, time outside class

	Urban	Suburban	Rural
Principals (%) perceiving teacher absenteeism as:			
Serious or moderate problem	17.6%	10.3	10.4
Not a problem	39.8%	50.3	48.4
Teachers (%) perceiving teacher absenteeism as:			
Serious or moderate problem	19.2	12.7	11.1
Not a problem	35.9	45.2	46.7
Teacher absenteeism (%)[1]			
1993–94	5.8	5.8	5.0
1990–91	4.9	4.4	3.9
School-related activities involving students (hours)[2]*			
1990–91:			
Elementary teachers	1.7	1.6	1.5
Secondary teachers	4.5	4.6	5.4
1993–94:			
Elementary	1.8	1.6	1.9
Secondary	4.3	4.7	5.5
Other school-related activities (preparation, grading papers, parent conferences, etc.)[2]			
1990–91:			
Elementary	8.5	9.5	8.3
Secondary	7.6	7.5	7.1
1993–94:			
Elementary	9.1	10.1	8.7
Secondary	8.1	8.7	8.0

[1] Data refer to most recent school day. Absentees include part-time teachers.

[2] Time spent outside regular school hours during most recent full week. Full-time teachers only.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Surveys, 1990–91 and 1993–94.

outside school (e.g., coaching). Elementary teachers devote approximately one more hour per week to activities that do not involve students directly (e.g., grading papers). Differences by district location are less pronounced, with urban teachers occupying an intermediate position. Relative to rural teachers, they spend less time outside school in student activities, but more on other school-related tasks. When compared to suburban teachers, the pattern is reversed, with the biggest difference at the elementary level. These differences shrink slightly when controls are added for teacher experience, marital status, number and age of child dependents, subject taught, and region.

Since teachers are frequently compensated for the time they spend in after-school activities with students, hours spent on tasks like grading papers and preparing lessons may be a truer measure of the extra effort they are putting in. The increase in this variable between 1990–91 and 1993–94 suggests that recent efforts to raise academic standards are having an effect, at least where teachers are concerned. However, while urban teachers compare favorably with rural instructors, they fall behind those in suburban districts.

Table 6.—Categorical aid and special education

	Urban	Suburban/town	Rural
Categorical aid as a percentage of instructional expenditures	15.3	9.8	11.7
State funds for special education, as percentage of instructional expenditures	5.4	4.9	4.3
Percentage of students in special education	9.1	8.3	8.7
Predicted increase in percentage of special education students from:			
25% increase in students below poverty line	0.06%	0.98%**	0.32%*
$10,000 decrease in median family income	-0.15%	0.45%***	0.66%***
10% increase in percentage of students from households where English is spoken 'not well' or 'not at all.'	-1.4%**	-1.15%**	-1.11%***
Regression R^2	0.01	0.05	0.02
Number of observations in estimation samples	841	2,175	8,199

*** (**) (*) Regression coefficient significant at 1 percent (5 percent) (10 percent).

NOTE: Sample restricted to independent school districts.

SOURCE: Common Core of Data, Agency Finance Information (Expenditures and Revenues), Fiscal Year 1992, Household Information (1990 Census of Population).

Excessive Bureaucratization

While we have seen that urban school systems (and large systems in general) actually devote a smaller share of total resources to administration, this is an imperfect way of gauging the degree to which schools suffer from top-heavy bureaucracies. To explore this matter further we need to consider the qualitative side of school management (e.g., how cumbersome and restrictive are the rules under which principals and teachers must operate?).

Resources are often provided by the federal government and the states in the form of aid tied to specific programs. When revenues arrive with strings attached, administrators are denied the flexibility to rebudget as local circumstances require. Arguing for program consolidation in special education, McLaughlin (1996) writes:

> "[T]here is a long way to go in creating the types of flexible educational systems that are being promoted in current federal and state restructuring initiatives...[A] deeply embedded culture of program separation appears to support turf guarding and reinforce the belief that 'different types' of students need very different educational experiences."

Other researchers have commented on increasing specialization and bureaucratization in elementary and secondary education, in which a proliferation of mandates and targeted programs results in "the creation of specialties with an ever-narrowing realm of expertise for each specialist" (Raywid and Shaheen, 1994). As responsibility for school operations is parcelled out among a variety of administrators, each focused narrowly on the program(s) for which he is accountable, opportunities are diminished to balance competing interests in order that reasonable tradeoffs be made among various goals.

> "Is there some way...that we can hold officials responsible in any significant way for more than their own operations?... Ultimately, this is the

sort of question that must be addressed if we are ever to make major improvements as to the cost-effectiveness of all schools... Solutions are difficult, but it seems safe to conclude that minimally it will require removing the present incentives to focus narrowly and to deliberately ignore the broader context" (Raywid and Shaheen, 1994).

Are such problems particularly serious in urban schools? Table 6 displays the proportion of instructional expenditures financed with categorial or "tied" aid. Included are revenues from state or federal sources for the following programs: special education, compensatory or basic skills education, bilingual education, programs for the gifted and talented or children with disabilities, and Chapter 1 aid. Funds received for non-instructional purposes (e.g., child nutrition, transportation) are excluded from this figure. As before, summary statistics are presented for urban schools as a group, for suburban schools, and for rural schools. Because so much attention has focused on the growing share of resources devoted to special education, state aid received for special education is broken out in row two. For purposes of comparison, an alternative measure of the relative size of special education programs—the proportion of students with individualized education programs (mandated by law for all special education students)—is also provided.

Growing special education expenditures have attracted particular concern.

Urban districts finance a significantly higher share of instructional expenditures from categorical aid. While one might suspect that this difference is due to higher concentrations of poverty and other social problems in inner-city neighborhoods, this turns out not to be the case. When the share of categorical aid is regressed on the household characteristics that appear in table 2 plus the percentage of households in which English is spoken 'not well' or 'not at all,' the estimated gap between urban and other districts widens to more than 8 percent. The percentage of children below the poverty line is, of course, a strongly significant predictor of the amount of categorical aid a district receives. An increase of one standard deviation in the poverty rate—about 13 percent—raises the share of categorical aid by 4 percentage points. But unmeasured factors contribute importantly to the amount of federal and state aid received in these categories.

Growing special education expenditures have attracted particular concern. Apart from the fact that special education has proven to be enormously expensive, absorbing resources that could be devoted to general education, questions have been raised about the appropriateness of many placements. Reports in the press have described a variety of abuses: students who are placed in special education because they speak English poorly; racial and ethnic minorities who are discriminated against by teachers who underestimate their cognitive abilities and misread behavior shaped by unfamiliar cultural backgrounds; districts that place large percentages of students into special education to obtain extra state and federal revenues. To investigate these concerns, the percentage of students placed in special education was regressed on the household characteristics in table 2 plus the following additional regressors: the percentage of households in which English is spoken not well or not at all, the percentage of school-age children who belong to racial or ethnic minorities (blacks, Hispanics, Native Americans, Asians) and per-pupil current expenditures less state aid received for special education. Inclusion of this last variable allows us to examine whether districts with fewer resources apart from special education aid respond by placing more students in special education, other things equal.

The lower panel of table 6 presents selected results. While there are doubtless problems in some districts, these results do not support the notion that special education plays a disproportionate role in the schooling of the economically and socially disadvantaged. Very large changes in median income or pov-

Table 7.—Principals' influence and autonomy

	Public			Private	
	Urban	Suburban	Rural	Urban	All
Percent of principals/heads indicating they have 'a great deal' of influence over:					
Curriculum	17.9	20.0	23.4	65.4	63.6
Hiring	52.5	62.0	61.4	81.6	80.2
Discipline policy	52.5	58.7	56.7	82.0	80.8
How budget is spent	36.2	36.3	28.3	63.5	63.0
Percent of principals/heads indicating school or governing boards have little or no influence over:					
Curriculum	12.9	13.6	17.9	33.5	35.4
Hiring	35.6	34.1	21.0	46.5	44.7
Discipline policy	8.9	8.1	6.7	34.0	31.9
How budget is spent	15.0	12.3	6.8	25.4	25.5
Percent of principals indicating little or no influence by state department of education, district staff, or school board over:					
Curriculum	.6	.85	.4	—	—
Hiring	9.5	10.5	8.5	—	—
Discipline policy	4.4	4.8	3.7	—	—
How budget is spent	6.6	4.9	2.8	—	—

— Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1993–94.

erty rates within the district have virtually negligible impacts on the percentage of special education students. There is no evidence that students with English language problems are being shunted into special education on a systematic basis, either in urban districts or elsewhere. Except in rural systems, an increase in the percentage of minority students actually reduces special education placements, though the effects are very small. The very low R^2 in each of these equations is reassuring, as it implies that special education enrollments are not a function of students' socioeconomic characteristics.

In summary, while this analysis has not found signs of systematic abuses in special education placement (and certainly no evidence that there is more abuse in urban systems than elsewhere), urban districts do receive a significantly higher proportion of revenues as programmatic aid. If the views cited above are correct, the regulations and oversight that accompany such funding may constrain local decision makers. This is only one reason why urban administrators and teachers might enjoy less autonomy and flexibility than educators elsewhere. In addition, the well-publicized problems of urban schools may have prompted efforts to fix the system from above by imposing additional rules and constraints on teachers and principals. The sheer size of urban school systems is apt to enhance the power and prerogatives of central district bureaucracies. As a result, administrators at the school level may find themselves unable to allocate funds as cost-effectively as possible or to hire job applicants of their own choosing in a timely manner, to cite only two policy concerns.

Describing reforms in school finance that would provide a foundation for higher student achievement, Allan Odden identifies "a focus on the school as the key organizational unit" and the "devolution of power over the budget

and personnel to schools" as key components (Odden,1994).

> "Findings from multiple strands of research suggest that a decentralized, high involvement organization and management strategy (i.e., school-based management) should explicitly be made part of systemic reform. This research concludes that SBM would work most effectively if information, knowledge, power and rewards are decentralized to the school level."

How far public schools are from realizing this objective is shown, in part, by principals' perception of the limits of their authority. The top panel of table 7 displays responses to the 1993–94 SASS on the part of public school principals and private school heads when questioned about their influence over curriculum, hiring, discipline, and the budget. While urban principals generally indicate they have less influence than do their counterparts in suburban and rural districts, the most striking contrast is between public principals and private school heads, who have substantially more say about the way their schools are run in each policy area.

Also important is the extent to which principals' managerial prerogatives are constrained by decisions taken at higher levels. The middle panel displays the percentage who indicated that school boards (governing or diocesan boards in the case of private schools) exercised little or no influence over policy. Again, responses show that private school heads are far more likely to run their schools without interference from above. In fact, these responses understate the magnitude of this type of interference in the public sector, where state Departments of Education and central district offices also exercise regulatory oversight and shape educational policy. The bottom panel of table 7 displays the percentage of public school principals who indicated that none of these other bodies had appreciable influence over policy in the same four areas. As one would expect, the percentages are very small.

This is not to suggest that public schools would be better managed if school boards and Departments of Education exercised no regulatory oversight. Under the present system of public education, this oversight is the principal means by which schools financed with taxpayer dollars are held accountable to the public. What the comparison with private schools reveals is that alternative mechanisms for preserving accountability exist that offer school heads considerably more autonomy. The chief mechanisms within private education are, of course, the competitive market and consumer sovereignty.

Much of the current interest in school choice within public education derives from the belief that educational performance will improve if public schools are also exposed to competitive market forces. By creating opportunities for parents to select other schools if they are not satisfied with the school to which their child was assigned by virtue of residential location, choice plans put pressure on administrators and teachers to correct deficiencies in their programs.

Much of the current interest in school choice within public education derives from the belief that educational performance will improve if public schools are also exposed to competitive market forces.

Responses to the 1993–94 SASS show that nearly half of all urban school systems offer parents some form of school choice. One-fifth have established one or more magnet schools, one-fourth offer choice of schools within the district, and nearly 40 percent allow parents to choose schools outside the district. An almost equal percentage accept students from other districts. All of these measures are higher than the corresponding rates among non-urban schools.

Whether these plans are likely to improve efficiency is another matter, however. Parental participation rates are much less impressive. Only 7 percent of the students in urban systems containing magnet schools actually attend one of these schools (though this is more

Table 8.—Salary incentives in public schools

Purpose of incentive and location	Percent of districts	Percent of schools	Percent of teachers	Percent of schools with unfilled vacancy
Shortage subject				
Urban	9.3	23.6	30.4	37.2
Suburban	8.8	13.5	13.6	23.8
Rural	8.3	8.7	8.9	14.2
Undesirable location				
Urban	4.4	11.1	13.7	17.2
Suburban	2.8	6.9	6.7	9.4
Rural	5.2	5.3	5.4	4.9
Merit pay				
Urban	15.0	16.5	16.3	14.7
Suburban	5.9	10.7	10.7	9.6
Rural	12.1	13.4	13.7	13.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990–91.

than twice the rate of suburban and rural systems). Participation rates in other choice plans are still lower and do not differ systematically by urbanicity. In those urban districts that allow within-district choice, only 11 percent of students actually exercise it. Ratios are substantially lower for inter-district plans. There is, moreover, a significant difference between urban districts and others in the direction in which students are likely to travel: while urban systems are more likely to receive students from other systems than to see their own students leave, the reverse is true of suburban and rural districts. This may indicate that urban students are at a relative disadvantage in learning about opportunities outside the district or finding transportation into neighboring communities. It may also show that these communities have found ways to discourage the participation of inner-city students.

In sum, urban systems are more likely to offer various types of school choice than are suburban or rural districts. However, participation rates are low. Combined with evidence that urban students may have fewer de facto opportunities to attend schools outside their home districts, it seems doubtful that school choice, at least in most communities where it is found, operates on the scale needed to have a significant effect on school performance.

Teacher Salaries

Teacher compensation in public schools is determined by salary schedules that reward teachers for experience (and/or seniority in the district) and for earning advanced degrees or college credits. As a rule, schedules make no distinction by subject taught or quality of teaching performance. Compensation for subject area knowledge of teaching expertise is generally provided, if at all, through add-ons such as merit pay or policies that allow administrators to make exceptions to the schedule (e.g., placing a teacher on a higher step than he would be entitled to on the basis of education and experience). These special provisions aside, the use of single salary schedules to determine the compensation of all teachers in a district has been criticized for (1) inflexibility in the face of varying market conditions; (2) rewarding attributes that bear little or no observed relationship to teaching effectiveness (e.g., advanced degrees); (3) providing no incentive for improved performance.

As shown in table 8, the majority of school districts do not use special incentives to recruit teachers in subjects where there is a shortage of qualified instructors, to staff positions in undesirable locations (e.g., high-crime, high-poverty inner city neighborhoods), or to reward merit. Urban districts are somewhat more likely to use these incentives than other systems. District size also has an important influence on whether pay incentives are available to recruit teachers in shortage areas: although the percentage of urban systems that use such incentives is only 9 percent, fully 30 percent of urban teachers work in these systems. Similarly, almost 14 percent of urban teachers work in systems that reward teachers for accepting a position in an undesirable location (though only 4.4 percent of districts use incentives for this purpose). Finally, schools were more likely to use these incentives if they had one or more unfilled vacancies, suggesting that salary flexibility is more likely to be found in districts that have trouble recruiting.

Table 9 displays further information on this point. Schools are distinguished not only by urbanicity but also by the ease with which they recruited teachers in the seven subjects listed. Schools classed as D reported that they found it very difficult or impossible to fill a vacancy in these subjects; the remainder, ND, found it easy or only moderately difficult. (Schools that did not recruit in these subjects are omitted from the analysis.) Two things stand out. As a rule, schools that had trouble filling positions were more likely to use some kind of incentive pay for teachers in that subject. This is especially true of urban schools. However, in no category did the use of incentive pay even approach 50 percent. Thus, too few schools use these incentives, while in those that do use them, the extra pay does not appear to have solved the problem: recruitment in these subjects remains a problem.

Unfortunately, SASS did not ask teachers who received these incentives how much extra compensation they obtained. As a result, this question must be investigated by estimating teacher earnings equations. The estimation sample comprised full-time teachers from the 1990–91 SASS. The dependent variable was the natural logarithm of a teacher's base salary plus bonuses. Independent variables included controls for starting pay within the district and for a teacher's education and experience. The data contained discrepancies: some teachers claimed to receive extra compensation from districts that did not acknowledge using the incentive in question. Statistical analysis suggested that most of these cases represented response error on the teachers' part.[7] As a result, only those teachers who claimed to receive extra compensation from districts affirming the use of such an incentive were treated as bona fide recipients.[8]

Selected results are displayed in table 10. Coefficients on incentive pay in the public sector equation are small and almost always statistically insignificant. The largest in magnitude, for teaching in an undesirable location, are actually of the wrong sign (though imprecisely estimated). Only merit pay in rural schools enters with a significant positive coefficient.

Although there were not enough observations in the private school sample to estimate separate coefficients for urban schools, the overall results suggest that merit pay makes a significantly larger contribution to the salaries of private school recipients. In fact, the difference is considerably understated by the coefficients in table 10. Further analysis of re-

. . . schools were more likely to use these incentives if they had one or more unfilled vacancies, suggesting that salary flexibility is more likely to be found in districts that have trouble recruiting.

[7] As a group, these teachers were paid no more than other instructors at the same schools (controlling for experience and education). In fact, there was marginally significant evidence in the case of self-styled merit pay recipients that they received less.

[8] A second set of dummy variables identified all teachers (not just recipients) employed in districts with special incentives for teaching in shortage fields and undesirably locations, for merit, and for mentoring. These additional controls were introduced so that the coefficients on incentive recipients would not pick up purely district level effects.

Table 9.—Percentage of schools using pay incentives to recruit teachers, by shortage area

Subject area	Urban		Suburban		Rural	
	Not difficult	Difficult	Not difficult	Difficult	Not difficult	Difficult
English as a second language	35.7	29.3	6.5	4.5	7.3	7.7
Biology	3.5	27.2	2.6	0.0	1.9	2.8
Physics	4.5	32.4	2.9	0.0	1.7	7.5
Mathematics	7.6	30.4	3.8	7.0	2.9	8.2
Special education	17.1	24.0	8.9	15.7	4.9	6.1
Foreign languages	4.0	12.8	1.7	5.7	1.4	2.7
Vocational education	4.4	7.2	1.8	5.5	1.9	2.3

NOTE: Schools that did not recruit in specified subjects were not used in computations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990–91.

Table 10.—Teacher earnings (standard errors in parentheses)

Percentage change in salary for	Public	Private[1]
Shortage subject		3.6 (5.4)
Urban	1.2 (1.3)	
Suburban	-.4 (2.5)	
Rural	-.3 (2.1)	
Undesirable location		([2])
Urban	-1.1 (1.9)	
Suburban	-3.2 (3.3)	
Rural	-5.4 (3.6)	
Merit pay		8.7 (2.5)***
Urban	1.3 (1.4)	
Suburban	.7 (1.3)	
Rural	2.6 (.9)***	
Elementary level	-.5 (.2)***	-3.7 (.8)***
Number of observations	38,069	3,576
R^2	0.76	0.69

*** Coefficient significant at 1 percent.

[1] Excludes teachers employed in schools that do not use salary schedules and teachers contributing services for less than market wages (e.g., members of religious orders).

[2]Not asked of private school teachers.

NOTE: Additional regressors included district's starting pay for new teacher with a bachelor's degree, additional pay for new teacher with master's degree, average annual increment in pay for each additional year of experience (censored at 20 years), previous part-time experience, possession of sixth-year certificate or Ed.D., marital status, race (black), ethnicity (Hispanic), age, gender. Private school sample also includes binary indicators for teachers receiving in-kind compensation (tuition for faculty children, meals, housing), Catholic and other-religious schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990–91.

sponses to the 1990–91 SASS shows that most private schools using merit pay award it as a step increase on the salary schedule or build it into the teacher's base in some other manner. Fewer than 30 percent make one-time cash awards. By contrast, more than 60 percent of the public schools that use merit pay award it as a one-time cash bonus. Thus, not only are merit awards larger at a single point in time in the private sector, but these awards are more likely to be received on a recurring basis.

Table 10 also shows that public elementary school teachers earn virtually the same salaries as secondary teachers. This is not surprising, of course, given the widespread adoption of uniform salary schedules for all teachers in a district. It also shows how unresponsive public school salaries are to market conditions. By every indication schools have little difficulty recruiting elementary teachers. Eighty-four percent of the public schools that recruited elementary teachers reported to SASS that it was 'easy' to fill these vacancies. By contrast, the percentage for physics was 50 percent, for mathematics 58 percent, and for foreign languages 42 percent. Yet teachers in all subject areas are paid according to the same schedule.

On this score, compensation policies in the private sector appear to be just about as rigid, since the estimated difference for elementary teachers in the private school equation is also small, just under 4 percent. However, the model controlled for starting pay at the school as well as the salary increments (again at the school) for teachers who obtain a master's degree and for an additional year of experience. Since most of the difference between elementary salaries and secondary salaries in the private sector arises between schools rather than within a school, the coefficient in table 10 substantially understates the amount by which elementary and secondary salaries differ. This is clearly seen when school-level controls are removed from the model and teacher pay is regressed on teacher experience, education, and a dummy variable for school level: elementary school teachers in the private sector earn an average of 16 percent less than secondary teachers with comparable degrees and experience. The difference remains substantial (13 percent) when controls are added for race, gender, marital status, and age. When the same equation is run for the public sector, the gap between elementary and secondary pay on average is only 2 percent. With the addition of demographic variables it falls to 1 percent.

Summary and Conclusion

In some respects, urban public schools compare favorably with public school systems elsewhere. The proportion of current expenditures allocated to instruction is no lower than in suburban and rural districts. Urban districts are more likely to use pay incentives to recruit teachers, particularly in areas where qualified instructors are in short supply. They are also more likely to offer students and their parents some form of school choice. They occupy an intermediate position between suburban and rural districts with respect to the time teachers devote to school-related activities outside regular school hours. Although a slightly larger percentage of urban students are enrolled in special education, there is no evidence of systematic abuses (i.e., increasing special education enrollments associated with poverty, race, ethnicity, or use of language other than English at home). This is not to say that urban schools could not accomplish more with the resources they have, only that on these counts they appear to be following as effective a set of policies as public school systems in suburbs, towns, and rural communities.

By several indications, however, there are problems with the urban policy mix. First, there is virtually no evidence that urban school systems are benefitting from economies of scale at the district level. The average district has three times the enrollment of the average

[While], in some respects, urban public schools compare favorably with public school systems . . . there are problems with the urban policy mix.

suburban district, yet there appear to be no savings in administration or other central office operations. This suggests that the typical urban district exceeds the size at which scale economies have been realized. Similarly, while there is evidence of scale economies at the school level, the savings per student is quite low, on the order of $25 to $50. Given findings in the education production literature that students benefit from smaller, more personal learning environments, one must question whether savings of this magnitude justify current school sizes.

Some of the comparisons that appear to favor urban schools turn out to be less favorable when one looks beneath the surface.

A larger proportion of urban revenues is received as programmatic aid, a circumstance that tends to increase administrative costs and deprives local officials of flexibility. Teacher absenteeism appears to be a greater problem, though not necessarily because absentee rates are actually higher. Rather, urban districts may have more difficulty finding (or affording) capable substitutes or dealing with the disruptions caused when regular classroom teachers are not present. There is some evidence, albeit indirect, that urban systems also employ more teachers in non-teaching roles: class sizes tend to be larger, though aggregate student/teacher ratios are actually lower.

Some of the comparisons that appear to favor urban schools turn out to be less favorable when one looks beneath the surface. Although more urban systems have established school choice programs, the proportion of students who actually participate in these programs is low and not very different from that found in suburban and rural systems. On paper there is choice, but in reality few families exercise it. Similarly, while a much higher proportion of urban systems indicate that they use salary incentives to recruit teachers, especially in shortage subject areas, most of the districts that do so continue to experience difficulty recruiting. Moreover, analysis of teacher salaries fails to find any evidence that teachers who receive these incentives (by their own report) are actually paid more than those who do not.

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