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A Policy Analysis for Decision Makers

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HOW TO FIND OUT WHERE THE MONEY GOES IN THE PUBLIC SCHOOLS

INTRODUCTION

There is a widespread assumption that the key to better quality education in American's schools is more money. This assumption has led, among other things, to court-ordered actions to equalize the money spent on each student within districts and states. It has also led to pressure to raise spending on schools.

Lost in this is the issue of how money is spent within school systems. It turns out that in the public school system there is very little connection between dollars spent per pupil on schooling and the educational performance of those pupils. Dismal results from increased funding of public school education are not confined to money from the taxpayer. Financial support from the corporate sector does not produce significant results either. Some 75 percent of businesses contend that their efforts to improve public education have not made a difference, according to a 1989 survey conducted by *Fortune* magazine and the Allstate Insurance Company.[1]

Corporate giving to education totaled a staggering $2.4 billion in 1990.[2] Although only 11 percent of business' $2.4 billion educational contributions for 1990 went to support for pre-college education, that still amounted to $264 million, which hardly can be dismissed as inconsequential. Moreover, the percentage of total education spending by business on elementary and secondary education has jumped from 3 percent thirty years ago to 11 percent today.

Disappointment with the results of this investment has induced many firms to switch their efforts to other forms of assistance, forming partnerships with individual schools, for instance, promising hiring preference for graduates in return for improved grades and reduced truancy on the part of the students. In the school year (SY) 1989-90, some 51 percent of all school districts reported the existence of such partnerships.[3] Yet in stark contrast with their standard business practices, corporations have been notably lax in monitoring the return on

1 *Fortune* magazine/Allstate Insurance Company, *Business Response to Education in America* (New York, N.Y.: Times Inc. Magazine Co., 1989), p. 106.

2 Council for Aid to Education (CAE), *Corporate Support of Education, 1990* (New York, N.Y.: CAE, 1992), p. 4, table 2.

3 Anna David, "Public-Private Partnerships: The Private Sector and Innovation in Education," Reason Foundation *Policy Insight* No. 142, July 1992, p. 1.

their money, both with regard to these partnerships and to general support to schools.[4] According to Patrick J. Keleher, who is president of TEACH America, a coalition of Chicago business leaders seeking to improve schools, by

> not insisting on a return on its massive education investment with payback in the form of increased academic achievement, [and] by waiving cost/benefit justifications where education is concerned... business is failing to provide the economic reality-check that education in this country so desperately needs.[5]

Several recently released and privately conducted audits of public school districts suggest strongly that one of the reasons large public and private investments in the public schools fail to produce results is that only a fraction of the money ever gets used for classroom instruction. Much goes to fund a burgeoning administrative bureaucracy.

Among the results from recent audits:

- ✘ In the state of Wisconsin, only 33.5 percent of every elementary school education dollar actually makes it to the classroom.
- ✘ In Milwaukee, Wisconsin, only 25.7 percent of its elementary school funds are devoted to classroom learning.
- ✘ In the New York City secondary schools, the proportion of funds reaching the classroom is 32.3 percent.
- ✘ In the state of Indiana, the proportion of funds reaching the classroom is 38.0 percent.
- ✘ In Indianapolis, Indiana, the proportion of funds reaching the classroom is 35.9 percent.

Moreover, while organizations representing the education establishment often assert that urban schools spend a similar proportion of their budgets on instruction as do rural and suburban schools, this uses a very generous definition of what constitutes instruction. For instance, one of the audits described below notes that the definition of "instructional spending" used by education authorities in Milwaukee, Wisconsin, includes such items as the catering expenses for administrative meetings. It is unlikely that the average American sees much connection between *hors d'oeuvres* and school books.

A precondition for effective change in the public school system is for local reformers to discover how money actually is spent in their school system. This usually is no easy task, since the needed figures tend to be buried within labyrinthine accounting practices and misleading definitions. But the audits conducted in a number of cities suggest a set of steps, explained in more detail later, which should be taken.

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4 David, "Public-Private Partnerships," p. 1.

5 Patrick J. Keleher, Jr., "Business Leadership and Education Reform: The Next Frontier," *Heritage Lecture* No. 257, 1990, p. 3.

Step #1: Examine the school system's allocations within each "layer" of spending. This is needed to find out how much money goes in central administrative costs.

Step #2: Decide whether primary or secondary education is the main concern. Spending levels tend to be quite different in the two sectors, and so must be treated separately to obtain an accurate picture of a typical school.

Step #3: Calculate the aggregate per-pupil expenditures for individual schools. A school district's central office may not have budget or enrollment figures for individual schools, or these may not be accurate. More precise information can be obtained from individual schools.

Step #4: At the school-site level, ascertain how budgets are divided. Schools themselves budget their funds differently, and so the prevailing pattern needs to be known if conclusions are be drawn about the district.

Step #5: If possible, separate "instructional" spending from "instructionally related" spending. The definition of instruction itself is central to any audit of a school system, and many districts include highly questionable items in their definition of what is spent "in the classroom."

The total spending per pupil in any school district says little about how much money is really spent on educating a child. Nor does it tell parents and other supporters of the school system whether the money spent on instruction is used wisely. That is why would-be reformers are so easily misled about what is going on within the school budget.

For beneficial change to take place, and for financial supporters of school systems to know where their help is needed, reformers need to know exactly where the dollars currently go. The way to find that out is not to use official data from a district's central office, but to conduct the kind of audit that has been so revealing in several cities. Armed with such data, reformers are more likely to generate popular support for real change.

THE FISCAL FACTS

President Bill Clinton and Education Secretary Richard Riley, among others, make frequent reference to America's declining educational "investment" in recent years.

This much of the claim is true: Public school funding fell as a percentage of gross national product (GNP) from 4.2 percent in 1970 to 3.6 percent in 1987.[6] Still, in SY 1986-87, the U.S. spent a greater share of gross domestic product (GDP) on elementary and secondary schooling than all the other Group of Seven (G-7) industrialized countries, except Canada and France.

Moreover, and most significantly, there has been a substantial increase in real spending per enrolled student during recent years. Public school spending per student in constant 1991-92 dollars rose from $4,367 in SY 1980-81 to $6,043 in SY 1992-93, an increase in real terms of

6 U.S. Department of Education (Office of Educational Research and Improvement, National Center for Education Statistics), NCES 90-681, *The Condition of Education, 1990*, Vol. 1, Elementary and Secondary Education (Washington, D.C.: Government Printing Office, 1990), pp. 80-81.

38.4 percent.[7] Over a longer period, there was an inflation-adjusted increase in total federal, state, and local per-pupil expenditure of 153.5 percent between 1961 and 1990. Spending on each child in the U.S. public school system averaged $2,378 in SY 1961-62, but had risen to $6,028 in SY 1990-91 (in constant 1991-92 dollars).[8]

Despite this huge investment, educational standards have declined markedly. For example, combined verbal/math high school Scholastic Aptitude Test (SAT) scores for college-bound youngsters deteriorated from 958 points in SY 1966-67 to 900 in SY 1989-90. It is certainly true that the SAT alone is a questionable measure of the health of the entire American educational system. But other test results provide the same sad conclusion: Money alone is not the answer.

For example, U.S. Department of Education data indicate that the correlation between a state's per-pupil expenditure and its students' scores in the eighth-grade National Assessment of Education Progress (NAEP) math test is a slightly negative and statistically insignificant, the coefficient of correlation $r = -.012$ (df 36, P not significant).[9] The coefficient of determination is negligible, $r^2 = .00014$, meaning that in statistical terms only 0.014 percent of the variation between the schools' mean scores can be explained in terms of funding.

PERCENTAGE OF GDP SPENT ON ELEMENTARY AND SECONDARY EDUCATION IN THE G-7 COUNTRIES

Canada	4.1
France	3.7
United States	3.6
United Kingdom	3.5
Japan	3.0
Italy	2.9
West Germany	2.7

Source: U.S. Department of Education (Office of Educational Research and Improvement, National Center for Educational Statistics), NCES 92-096, *The Condition of Education, 1992* (Washington, D.C.: Government Printing Office, 1992), p. 338, Table 49-1.

In addition, and in contrast to conventional wisdom, the coefficient of correlation between a state's average class size and its students' scores in the NAEP math test also is insignificant $r = -.167$ (df 36, P not significant). The coefficient of determination is minimal, $r^2 = .028$.[10] This implies that class size accounts for only 2.8 percent of the variance between states' tests results, despite the frequent complaints from the teachers and parents about the need for smaller classes.

Disturbingly, one of the strongest correlations exists between the proportion of a state's pupils who are black or Hispanic and its overall students' scores in the NAEP math test, $r = -.791$ (df 36, $P < .01$).[11] The coefficient of determination is high, $r^2 = .626$. In fact, nearly two-thirds of the variation in scores can be traced to the presence or absence in the classroom of children from these two groups. Unfortunately, the correlation is negative. In other words, the greater the proportion of children in these categories, the less the state's mean test scores.

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7 U.S. Department of Education (Office of Educational Research and Improvement, National Center for Education Statistics), NCES 92-097, *Digest of Education Statistics, 1992*, p. 159, table 156.

8 U.S. Department of Education, *Digest, 1992*, p. 159, table 156. Adjustments to current dollars to account for inflation calculated by author.

9 Calculated from data in U.S. Department of Education (Office of Research and Improvement, National Center for Education Statistics), NCES 91-697, *Digest of Education Statistics, 1991*, p. 126, table 127 and pp. 156-157, table 159. For an explanation of the use of statistics in this *Backgrounder*, see Note in Appendix.

10 Calculated from data in U.S. Department of Education, *Digest, 1991*, p. 72, table 61 and p. 126, table 127. Note that Louisiana's 1989-90 class-size figures were unavailable; correlation run using the state's 1988-89 figures.

11 Calculated from data in U.S. Department of Education, *Digest, 1991*, p. 58, table 44 and p. 126, table 127.

SPENDING PER PUPIL AND NATIONAL TEST RESULTS: MORE MONEY DOES NOT MEAN BETTER SCORES

	Average Per pupil Expenditure	SAT Rank	NAEP Rank
New Jersey	$9,159	39	14
New York	8,500	42	22
District of Columbia	8,210	49	42
Connecticut	7,914	35	11
Alaska	7,877	31	x
Rhode Island	6,989	43	23
Pennsylvania	6,534	45	14
Massachusetts	6,351	33	12
Maryland	6,184	32	25
Delaware	6,016	37	27
Wisconsin	5,946	7	6
Maine	5,894	41	4
Vermont	5,740	36	x
Ohio	5,639	24	18
New Hampshire	5,504	28	4
Virginia	5,360	38	18
Oregon	5,291	26	x
Minnesota	5,260	3	3
Michigan	5,257	20	18
Wyoming	5,255	21	8
Montana	5,184	19	x
Florida	5,154	40	31
Illinois	5,062	10	x
Indiana	5,051	47	17
West Virginia	5,046	27	34
Washington	5,045	30	x
Kansas	5,009	6	x
Hawaii	5,008	44	37
Georgia	4,860	50	31
Iowa	4,839	1	1
California	4,826	34	29
Colorado	4,809	23	12
North Carolina	4,802	48	34
Nevada	4,564	29	x
New Mexico	4,446	15	31
Missouri	4,415	13	16
Kentucky	4,390	18	28
Nebraska	4,381	8	6
South Carolina	4,327	51	29
Texas	4,238	46	25
Arizona	4,231	25	23
Louisiana	4,012	16	40
Oklahoma	3,742	11	18
South Dakota	3,730	5	x
Tennessee	3,707	9	34
North Dakota	3,685	2	1
Alabama	3,648	14	39
Arkansas	3,334	17	38
Mississippi	3,322	12	41
Idaho	3,200	22	8
Utah	2,993	4	8
National Average	**$5,261**		

X = state does not participate in the NAEP testing program.
Sources: Department of Education, Center for Education Statistics, 1991-1992; College Board, New York, New York, 1992; Department of Education, "Mathematics Report Card for the Nation and States," 1992.

Yet this in turn appears to be traceable to social breakdown in many minority communities. The Education Department does not present relevant socio-economic figures as such in the annual statistical digests used for this Heritage analysis. But in 1990, while only 15.1 percent of white children under 18 lived below the poverty line, 37.7 percent of Hispanic children did, as did 44.2 percent of black children. Among families headed by a single woman, the difference between the races was even starker. Among female-headed households in 1990, 46.9 percent of white children and 47.9 percent of Hispanic children lived in poverty. But within black female-headed families, 80.5 percent of children lived below poverty.[12]

This poverty has in large part been the result of a soaring rate of family breakdown and illegitimacy, especially within the black community. In 1988, 63.5 percent of black births were out of wedlock, compared with 17.7 percent of white births.[13] Increased levels of poverty flow directly from the surge in single-parent households, and dismal school performance is strongly related to family status.[14] The reestablishment of the family thus would probably do more than anything else, including increased spending on schools, to improve black educational attainment.

The supposition that social factors and resulting economic factors are the root cause of correlations between race and school performance is buttressed by the work of Herbert Walberg, Research Professor of Education at the University of Illinois at Chicago, and William Fowler, Senior Research Associate at the U.S. Department of Education, who report a strong correlation between academic achievement and students' socio-economic status (SES). Put into statistical format, the Pearson's r coefficient of correlation is .73, yielding $r^2 = .532$. This suggests, write the researchers, "that 53 percent of the variance in achievement at the aggregate level is associated with SES by itself, disregarding financial and educational factors."[15]

What these statistical relationships seem to indicate is that increased spending in the schools serving children from broken families and communities has little impact. If the school performance of these children is to improve significantly, social factors must first be addressed. Thus, raising the District of Columbia's per-pupil spending from its SY 1989-90 rate of $8,904 to, say, $10,000 a year would be unlikely to improve student performance. (The District placed last in the NAEP "league table," despite having amongst the highest per-pupil expenditure in the country.) The reason is that a large number of students still would come from drug-ridden, violent, fatherless neighborhoods.

The relationship between spending and educational results does not become any stronger even if only urban areas are considered, despite the claim that schools in these areas are most in need of increased funding. Among those demanding more assistance for urban schools is the Council of the Great City Schools (CGCS) which is a non-profit research institution made up of superintendents and school-board members from urban school districts. "Large urban school districts devote the same percentage [of their budgets] to classroom instruction as suburban districts," claims the council, "but this commitment amounts to $506 less per child be-

12 U.S. Department of Commerce (Economics and Statistics Administration, Bureau of the Census), *Statistical Abstract of the United States: 1991* (Washington, D.C.: Government Printing Office, 1991), p. 46, table 58.

13 U.S. Department of Commerce, *Statistical Abstract: 1991*, p. 67, table 92.

14 See Barbara Defoe Whitehead, "Dan Quayle Was Right," *The Atlantic*, April 1993, pp. 77-78.

15 Herbert J. Walberg and William J. Fowler, Jr., "Expenditure and Size Efficiencies of Public School Districts," Heartland Institute *Heartland Policy Study* No. 22, September 27, 1988, p. 2.

cause the total pot is smaller."[16] The CGCS points out in its September 1992 report, *National Urban Education Goals*, that while the national per-pupil spending for SY 1990-91 was $5,512, the 47 CGCS districts it surveyed could budget only an average of $5,200 for each student. (See Table 1, in the Appendix to this study, for a listing of the cities in question.)[17]

But despite the fact that the CGCS schools *budgeted* less for each student than did the nation as a whole, it is also the case that they *received* more per pupil. The SY 1990-91 national per-student revenue from federal, state, and local sources was $5,339, while the CGCS schools' average was a $5,874.[18] Of the 47 CGCS districts for which data were available, 25 had per-capita revenue above the national average. More pertinently, given the oft-made claims about rich suburban versus poor urban schools, 20 out of 45 were funded approximately at or above their *states*' average per-pupil figures (as calculated by the National Education Association).[19] Though the NEA's state average-daily-attendance per capita expenditure figures are not directly comparable to the CGCS's fall-enrollment head-count numbers, the statistical impact of the discrepancy is minor.[20]

With these more relevant data, the coefficient of correlation between a city's per-pupil revenue and the proportion of its students beating the national norm for standardized mathematics tests is insignificant, $r = .108$ (df 42, P not significant). The coefficient of determination also is small, with $r^2 = .012$.[21] The coefficient of correlation between a city's per-pupil revenue and the proportion of its students exceeding the national norm for standardized reading tests also is not significant, $r = .190$ (df 40, P not significant). As with mathematical scores, the coefficient of determination was trifling, $r^2 = .036$.[22]

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16 Council of the Great City Schools (CGCS), *National Urban Education Goals: Baseline Indicators, 1990-1991* (Washington, D.C.: CGCS, 1992), p. xv.

17 CGCS, *National Urban Education Goals*, p. xvii. The CGCS's per-capita spending figure of $5,512 is slightly different from the U.S. Department of Education figures for the same year: $5,320 (fall enrollment) and $5,748 (average daily attendance). Michael Casserly, the CGCS's interim executive director and the author of the report, suggests that the difference—which is small—is simply the result of the CGCS's having used a data base other than the Education Department's for its figures (telephone conversation with author, February 24, 1993).

18 CGCS, *National Urban Education Goals*, fold-out appendices. See also National Education Association (NEA), *Rankings of the States, 1991* (Washington, D.C.: NEA, 1992), p. 44, table F-2.

The CGCS states that per-pupil revenue numbers "are not comparable to average per-pupil expenditures" (p. 112), though some explanation is required as to why. Oddly, *expenditure* figures "are based on budget numbers rather than actual expenditures" (pp. 112-113), whereas the higher *revenue* figures refer to the dollars actually received, including carry-over monies from the previous year (Casserly, conversation of February 24, 1993).

19 Data unavailable for two cities. Figure of 20 includes Toledo, funded at $9.00 below Ohio average. CGCS, *National Urban Education Goals*, p. 118-211; NEA, *Rankings of the States*, p. 44, F-2.

20 For example, the CGCS's figure for average U.S. revenue per student is $5,339, while the NEA's figure is $5,811. The reason for this is that the NEA uses average-daily-attendance calculations, while the CGCS utilizes fall-enrollment figures. Average-daily-attendance per-capita expenditure figures are always bigger than fall-enrollment spending figures. This is because, as students take absences or drop out, the budgeted money is being divided by fewer pupils. CGCS, *National Urban Education Goals*, fold-out appendices; NEA, *Rankings of the States*, p. 44, table F-2.

21 Calculated from data in CGCS, *National Urban Education Goals*, pp. 118-211.

22 Calculated from data in CGCS, *National Urban Education Goals*, pp. 118-211.

WHERE THE MONEY REALLY GOES

It should be obvious that the problem with education in America is not money. The table below reveals how little some of America's industrial rivals spent on education over SY 1986-87 (in 1988-89 dollars) relative to the U.S., while achieving considerably better results in a 1989 geography test administered to 18- to 24-year-olds by the Gallup polling organization.[23] In and of itself, cash does not buy quality.

One major reason that the performance of children in the public school system shows almost no correlation with spending is that per-pupil spending has little to do with the quantity and quality of resources devoted to classroom instruction. The public educational sector spends far more on non-instructional expenses than private schools do. This is especially the case in urban areas, though not exclusively so. Yet ironically, despite huge bureaucracies, public schools devote few competent officials to keeping proper track of spending. "Many school systems have no idea how their money is spent in schools," says Robert Martin, the former executive director of the Center for Workforce Preparation and Quality Education at the U.S. Chamber of Commerce.[24]

PER-PUPIL EXPENDITURES IN SELECTED INDIVIDUAL COUNTRIES AND GEOGRAPHY TEST RANKING

SY 1986-87 Expenditure Rank		Achievement Rank (maximum score = 15)	
Canada	$3,743	Germany (West)	11.2
UNITED STATES	3,622	Japan	9.5
United Kingdom	2,634	Canada	9.3
France	2,271	France	9.2
Germany (West)	2,114	United Kingdom	9.0
Japan	2,074	UNITED STATES	6.9

Correlation: r = -.648 (df 4, P not sig.)

Source: Department of Education, *Digest 1992*, p. 418, 393; U.S. Department of Education, *The Condition of Education, 1992*, p. 338, Table 49-1. Expenditure figures are for SY 1986-87; each nation's expenditure converted to constant 1988 U.S. dollars utilizing purchasing-power indices.

Example: The Office of the Texas Auditor has found that over 50 percent of the state's 135 school districts have no internal auditor.[25]

Example: In Washington, D.C., enrollment between 1979 and 1991 dropped by 29 percent. Nonetheless, system-wide "non-school based instructional support" employees increased by 20.8 percent, from 1,732 to 2,092. Staff levels in the central administrative office increased from 511 to 1,037, or 102.9 percent. However, faced with a need to cut the school system's 1993 budget request, District Superintendent Franklin L. Smith in December 1992 suggested initially only that 430 teachers be laid off. No mention was made of administrators until a minor public outcry forced a change of policy.[26]

Example: New York City has more school supervisors than France does. The state of New York has more than the whole of Europe.[27]

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23 U.S. Department of Education, *Digest, 1992*, p. 418, table 393. Respondents were asked to identify the following on a blank map: Canada, Central America, Egypt, France, Italy, Japan, Mexico, Pacific Ocean, Persian Gulf, South Africa, United Kingdom, United States, Soviet Union, West Germany, and Vietnam.

24 Thomas Toch, "The Perfect School," *U.S. News & World Report*, January 11, 1993, p. 50.

25 Toch, "The Perfect School," p. 50.

26 Editorial, "Cuts in the D.C. Schools," *The Washington Post*, December 29, 1992, p. A14.

27 Tony Brown, "A New Vision for Black America," Heritage Foundation *Point of View*, January 15, 1993, p. 3.

Example: Because of mismanagement and wasteful spending, the state of New Jersey took over the management of the Jersey City school district in 1989, and Paterson's in 1991. The state currently is taking steps to supersede Newark's local authority over its schools, too. Newark students' 1990 combined SAT scores lagged well behind the state average, 663 to 896 points, despite per-pupil spending above the level in the typical New Jersey public school.[28] Over SY 1992-93, Newark spent $9,150 per student, compared with a state average of $7,592.[29]

Example: Non-instructional staff can be a costly drain, as a recent example again from New York City demonstrates. In November 1992, Special Commissioner of Investigation Edward F. Stancik released a report detailing the abuses committed by the school system's 915 janitors, who function as independent contractors. The custodians work part-time, are required to clean classrooms only every two days, and they must mop floors merely three times a year. They may charge fees for opening schools for extra-curricular activities after 6:00 p.m. Significantly, the only ethics-and-practices supervision the custodian's union is suject to, under state law, comes from a board made up exclusively of former custodians. Despite all this, janitors earn considerably more than New York City's teachers do: an average of $58,000 annually, compared with the 1990-91 basic starting teacher salary of $26,375 and the maximum teacher salary of $52,750[30]

While such individual abuses have provoked anger for many years, it has been difficult or impossible for taxpayers or corporations contributing to school systems to discover just what proportion of school funding is diverted to administrative overhead. Four important studies released in recent years, however, have cataloged the misspending of public dollars on education, and provide analytical tools for accounting specialists to conduct similar analyses in other districts.

Study #1, conducted by Fordham scholars Bruce Cooper, Robert Sarrel, and Toby Tetenbaum, found that in 1990, of the $6,107 spent per pupil in New York City's high schools, only $1,972—or 32.3 percent—was spent in the classroom.[31]

Study #2, a 1989 report by the Wisconsin Policy Research Institute (WPRI), found that only 33.5 percent of education dollars made it to the classroom in a sample of 110 elementary schools from the state's 431 school districts.[32]

Study #3, a 1990 follow-up study by WPRI, found that Milwaukee's public elementary schools spent a mere 25.7 percent of their $6,451 per-pupil allocation in the classroom.[33]

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28 Charles Strum, "Decision Soon on Schools in Newark," *The New York Times*, April 12, 1993, p. B1.

29 Charles Strum, "Report Assails Newark Schools as Mismanaged," *The New York Times*, May 10, 1993, p. B1; see also Strum, "Newark School-Takeover Talk Called Premature," *The New York Times*, April 13, 1993, p. B1.

30 Editorial, "Lawless School Custodians," *The New York Times*, November 11, 1992, p. A14; John C. Fager, "School Custodians' Dirty Tricks," *The New York Times*, December 18, 1992, p. A39; Board of Education of the City of New York (Bureau of Salary Differentials and Status), "Salary Schedule Effective October 1, 1991."

31 Bruce S. Cooper, Robert Sarrel, and Toby Tetenbaum, "Choice, Funding, and Pupil Achievement: How Urban School Finance Affects Students—Particularly Those at Risk," unpublished paper delivered to the American Educational Research Association, April 18, 1990, p. 11.

32 Sammis B. White and Richard C. Rue, "Fiscal Accountability in Wisconsin's Public Elementary Schools: 'Where Does the Money Go?'," Wisconsin Policy Research Institute *Report*, Vol. 2, No. 1, January 1989, pp. 1, 12.

Study #4, by the Indiana Policy Review Foundation (IPRF), reported in January 1993 that 38.8 percent of that state's education spending went on instruction and essential materials, a figure that fell to just 35.9 percent in Indianapolis.[34]

One should note the large variation in how schools divide their per-pupil allotments. Table 2, in the Appendix, shows how much the CGCS schools spend on instruction relative to their surrounding states. During SY 1988-89, of the CGCS cities, Memphis, Tennessee, claimed to spend the highest proportion of its total expenditure on instruction, some 68.5 percent, leaving only 31.5 percent for overheads and administration.[35] By contrast, the Fort Lauderdale-area Broward County schools spent only 42.1 percent of their total disbursement on instruction.[36] Of 46 cities, 23 claimed to have spent the same or a greater proportion of their spending on instruction as or than their home states.[37]

Intuitively, one might suppose that the schools that devoted the greatest percentages of their budgets to teaching would see the best results and that this variation would correct for the lack of any significant correlation between overall per-pupil spending and academic achievement. At face value, however, the figures do not appear to bear this out. The correlation between a city's budget percentage spent on instruction in 1988-89 and its percentage of students bettering national math norms in 1990-91 is a quite insignificant -.024 (*df* 41, *P* not sig.), yielding $r^2 = .00058$.[38]

Nonetheless, this is misleading because, unlike the careful accounting in the four studies mentioned, what school districts report as "instructional" spending is often no such thing. Michael Fischer, author of the WPRI's Milwaukee report, points out that what that city calls "instructional" spending includes: the costs and salaries for eight central office bureaus, the overhead and capital costs for the building and maintaining of the district superintendent's office, catering and hotel costs for administrative meetings, all the expenses of administering the district's Compact for Educational Opportunity busing program, and 60 percent of all consultants' fees.[39] In other words, what the districts refer to as "instructional" costs may have little bearing upon what is actually being spent on teaching. The CGCS's claim that urban schools spend slightly more of their per-capita expenditures on classroom "services" than the national average—62 percent, as opposed to 61.5 percent—thus must be regarded with caution.[40] It is for this reason that the methodology of the four studies cited is so important.

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33 Michael Fischer, "Fiscal Accountability in Milwaukee's Public Elementary Schools: 'Where Does the Money Go?'," Wisconsin Policy Research Institute *Report*, Vol. 3, No. 4, September 1990, pp. 1, 19.

34 William Styring III, "How Much Does It Take to Get Less than $2 Billion into the Classroom? Answer: More than $5 Billion," *Indiana Policy Review*, Vol. 4, No. 1, January 1993, pp. 2, 4, table IIa.

35 Calculated from data in U.S. Department of Commerce (Economics and Statistics Administration, Bureau of the Census), Series GF-89-10, *Public Education Finances: 1988-89* (Washington, D.C.: Government Printing Office, 1991), pp. 26-53, table 16.

36 Calculated from data in U.S. Department of Commerce, *Public Education Finances: 1988-89*, pp. 26-53, table 16.

37 Calculated from data in U.S. Department of Commerce, *Public Education Finances: 1988-89*, pp. 26-53, table 16 and p. 17, table 11.

38 Figures do not currently exist to enable a same-year comparison, as the Census Bureau's most recent district-level spending figures are for 1988-89.

39 Fischer, "Fiscal Responsibility in Milwaukee's Public Elementary Schools," p. 1.

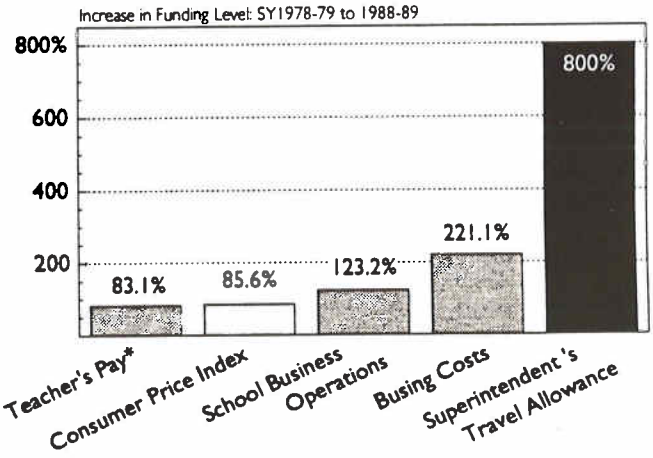
40 CGCS, *National Urban Goals*, p. 91, table 6.

The Wisconsin Studies

The two WPRI studies, the 1989 "Fiscal Accountability in Wisconsin's Public Elementary Schools," by Sammis B. White and Richard C. Rue, and the 1990 "Fiscal Accountability in Milwaukee's Public Elementary Schools," by Michael Fischer, find a disturbingly small proportion of educational funding making it to the classroom.

Of the two studies, Fischer's is by far the more detailed, and comparison between the two is complicated by differing methodologies and by differing definitions of what constitutes "classroom spending." White's and Rue's definition is very restrictive, probably too much so: just teachers' salaries and benefits. Fischer, by comparison, is more inclusive, including teachers' salaries and other compensation, along with all classroom supplies, books, and furniture. Wisconsinites may well have been displeased at White's and Rue's finding that an average of 33.5 percent of per-pupil expenditure is spent on elementary teacher compensation, with a range of 21.4 percent in the Flambeau district to 45.9 percent at West Bend.[41] If so, they will have been considerably more dismayed by Fischer's findings, which are that only 25.7 percent of total Milwaukee per-pupil funding winds up in the classroom, especially when recalling that Fischer's definition of classroom spending is rather wider than White's and Rue's.

Setting Priorities in Milwaukee's Public Schools: Teacher's Pay at Bottom, Superintendent's Travel Budget at the Top



Note: *Teacher's Pay includes total compensation package.
Source: Michael Fischer, *Fiscal Responsibility in Milwaukee's Public Elementary Schools*, 1990.
Heritage DataChart

The trends also, Fischer finds, are toward an ever-smaller proportion of funding going to the classroom. Even using the Milwaukee Public Schools' (MPS) highly generous definition of "instructional spending" (including all those consultants' fees and so on), Fischer finds instructional spending to have decreased as a percentage of the total budget, from 70 percent in 1968, to 55 percent in 1978, and down to 45 percent in 1989.[42] Meanwhile teacher's compensation packages increased by only 83.1 percent from SY 1978-79 to SY 1988-89, slightly below the Consumer Price Index (CPI) increase of 85.6 percent. By contrast, the district superintendent's travel allowance increased by 800.0 percent, from $5,000 a year to $45,000. District business operations (food, transportation, and business administration costs) increased by 123.2 percent in

41 White and Rue, "Fiscal Responsibility in Wisconsin's Public Elementary Schools," pp. 4-6, table 1.
42 Fischer, "Fiscal Responsibility in Milwaukee's Public Elementary Schools," pp. 1, 13.

non-inflation adjusted dollars, from $48.3 million to $107.8 million. The cost of busing alone went up from $11.9 million to $38.2 million, an increase of 221.1 percent.[43]

Even taking account of Fischer's use of current, as opposed to inflation-adjusted, dollars does not detract from the magnitude of these non-instructional spending increases. And within the small amount left over for the classroom, priorities may seem odd to most observers. The expenditures per pupil for reading materials were $9.87 in SY 1988-89. But spending on art books and supplies was a relatively high $1.66. Per-student expenditure on science material, by contrast, was just 21 cents.[44]

The results of this allocation of spending are distressing. American College Testing (ACT) scores in the Milwaukee public schools are below national and state averages. In SY 1991-92, the MPS schools attained 19.1 on the ACT, next to 21.6 for Wisconsin as a whole; the U.S. average was 20.6.[45] The maximum score possible was 36. (SAT scores cannot be used as an accurate gauge of academic performance in Wisconsin because only 11 percent of students take the test, most instead taking the ACT. At the national level, 40 percent of students take the test.)[46] Tellingly, the MPS declined to participate in a voluntary aptitude test administered to 88 percent of Wisconsin's schools during SY 1992-93.[47]

Not surprisingly, the burden of Milwaukee's miseducational system is borne by minorities. In 1990, only 32 percent of MPS black students graduated high school.[48] Throughout the whole state, the 1990 ACT score for black pupils was 17.6, compared with 22.1 for whites and 21.3 for Asians.[49] While ACT scores for the MPS specifically have not been made available to this writer, the bulk of Wisconsin's black students attend the MPS. Every year, 26.9 percent of the MPS student body drops out of school, and at some high schools the *average* grade point average for black students is F+.[50] All this, despite the fact that MPS per-pupil spending rose 190 percent between 1976 and 1988.[51] This is a nominal-dollar figure (not adjusting for inflation),[52] but clearly it is well in excess of the 85.6 percent increase in the Consumer Price Index for approximately the same period, as discussed by Fischer.

The New York Study

The Fordham University study, "Choice, Funding, and Pupil Achievement," released in March 1990, uses broadly the same methodology as Michael Fischer's. The study finds similar patterns of spending in New York City as Fischer's discovered in Milwaukee. The Fischer report surveys the 107 elementary schools of the MPS. The Fordham group—Bruce S.

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43 Fischer, "Fiscal Responsibility in Milwaukee's Public Elementary Schools," p. 11, figure 2.
44 Fischer, "Fiscal Accountability in Milwaukee's Public Elementary Schools," p. 27, figure 9.
45 Dan Parks, "Average ACT Score at MPS Holds Steady," *Milwaukee Sentinel*, September 10, 1992, p. 10.
46 Michelle Wucker, "Math Scores on SATs Rise for State Students," *Milwaukee Sentinel*, August 28, 1990, p. 10.
47 Dan Parks, "State Pupils Score High on Tests," *Milwaukee Sentinel*, May 12, 1993, p. 1A.
48 Charles J. Sykes, "Fuller's Chance: After All the False Messiahs, Is Howard Fuller Finally the Real Thing?" *WI: Wisconsin Interest*, Vol. 1, No. 1, pp. 11-20, at 11.
49 Gretchen Schuldt, "Wisconsin ACT Scores Tie for Best Among 28 States," *Milwaukee Sentinel*, September 11, 1990, p. 9.
50 Sykes, "Fuller's Chance," p. 11.
51 Sykes, "Fuller's Chance," p. 11.
52 Sykes, telephone conversation with author, July 9, 1993.

Cooper, Robert Sarrel, and Toby Tetenbaum—examines a comparable number of schools, the 116 secondary schools of the New York City public school system (NYCPS).

For the school year 1988-89, the city's schools had a total expenditure allocation of $5.89 billion divided between 935,336 elementary and secondary students, yielding an average per-pupil figure of $6,107. This was considerably above that year's national average of $4,866, and approximately on par with the rest of the state.[53] However, once each layer of bureaucracy and each suballocation had been cut, a considerably smaller figure was left for classroom instruction in the NYCPS high schools. The money went through five levels:

1) the NYC Board of Education and the Central Allocation Unit;
2) the High School Division Allocation Unit;
3) the individual school total allocation;
4) the school allocation for instruction and instructionally "related" concerns; and
5) the allocation for instruction alone.

Every year, the per-pupil spending amount, in this case $6,107, is decreased by Board overhead costs. The remainder is passed down to the Central Allocation Unit, which divides the money by function: secondary schools, elementary schools, security, transportation, etc. Once this is done, a certain amount is allocated to the High School Division Allocation Unit, which in SY 1988-89 received $3,138 per pupil, or 51.4 percent of the original $6,107.

The High School Division Allocation Unit then more or less repeats the Central Allocation Unit's division by function, after subtracting funding for its subcentrally administered programs, such as special education, and of course its own overhead. This in SY 1988-89 left $3,005 to be allocated to the average school, or 49.2 percent of the initial $6,107 allowance for each child.

Do American Schools Need More Money? In New York City, Less Than a Third of Educational Expenditures Reaches the Classroom

48.6%	School Board Overhead and Central Allocation Unit
2.2%	High School Division Allocation Unit
8.6%	High School Administrative Costs
4.9%	High School Support Costs
3.4%	Instructionally Related Costs
32.3%	**Classroom Spending**

Source: Cooper, Sarrel, and Tetenbaum, *Choice, Funding and Pupil Achievement*, unpublished paper, April 1990.

Heritage DataChart

Graphic by Thomas J. Timmons

53 Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 8.

Each school then has its own administrative and support costs to take into account. In 1988-89 in the typical school this consumed respectively $527 and $299 per pupil, for a total of $826. This left $2,179 of the $6,107, or 35.7 percent, for instruction and instructionally related matter. "Instructionally related" duties—mainly teacher supervisory obligations and various guidance-type programs—ate up another $207 per student. At the end of all this, only $1,972 made it to the classroom, or just 32.3 percent of the original $6,107.[54]

Unfortunately, Cooper, Sarrel, and Tetenbaum never delineate exactly what they mean by "direct instruction," other than to say that it is "primarily teacher costs."[55] One must assume, therefore, that their definition is a restrictive one, like that utilized by White and Rue in the 1989 WPRI study.

This author's correlations, detailed earlier, find no relationship between educational results —or "outputs," by insider parlance—and the proportion of money allocated to "instruction." But the Fordham study finds a strong correlation. This is because the figures this author ran as "instructional" used the *official* definition of that term, which would therefore include such things as the budget allocation for the all-you-can-eat buffets at Wisconsin education consultants' conferences. The Fordham study, on the other hand, finds a positive correlation between output and what might be called "real" instructional spending.[56] In the average NYCPS high school, the correlation between increased scores in the nationally administered Degrees of Reading Power test (DRP) and 1988-89 dollars spent on instruction *alone* was, according to the Fordham analysis, a significant .39 ($P < .01$).[57] This dropped slightly when "instructionally related" spending was added .37 ($P < .01$).[58] On the other hand, increased expenditure on administration had a highly negative relationship to performance, -.41 ($P < .01$).[59] Just as this study also suggests, the Fordham group finds that output's highest, and most negative, correlation is with the poverty of the children, -.76 ($P < .01$).[60] In other words, the correlative factor with the highest impact on education—poverty—is not one that can be addressed through ever greater infusions of capital into the public-school edifice.

The Indiana Study

Released in January 1993, the Indiana Policy Review Foundation (IPRF) audit of Indiana's and Indianapolis's schools—elementary and secondary—reveals that for the schools over the state as a whole, only 38.0 percent of spending reaches the classroom, and just 35.9 percent in

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54 Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 11.

55 Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 11.

56 Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 18, table 6.

57 The definition of "instruction funding" used here by the Fordham study "refers to those dollars directly allocated by the school principal for teaching," Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 17.

58 Here "instructionally related" expenses "refer to staff who deal directly with students, but not as teachers: for example, librarians, guidance counselors, and coaches," Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 17.

59 Here, administration refers "to the cost of running the school: principals, administrative assistant principals, secretaries, and any other personnel who work directly in running the school," Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Achievement," p. 18.

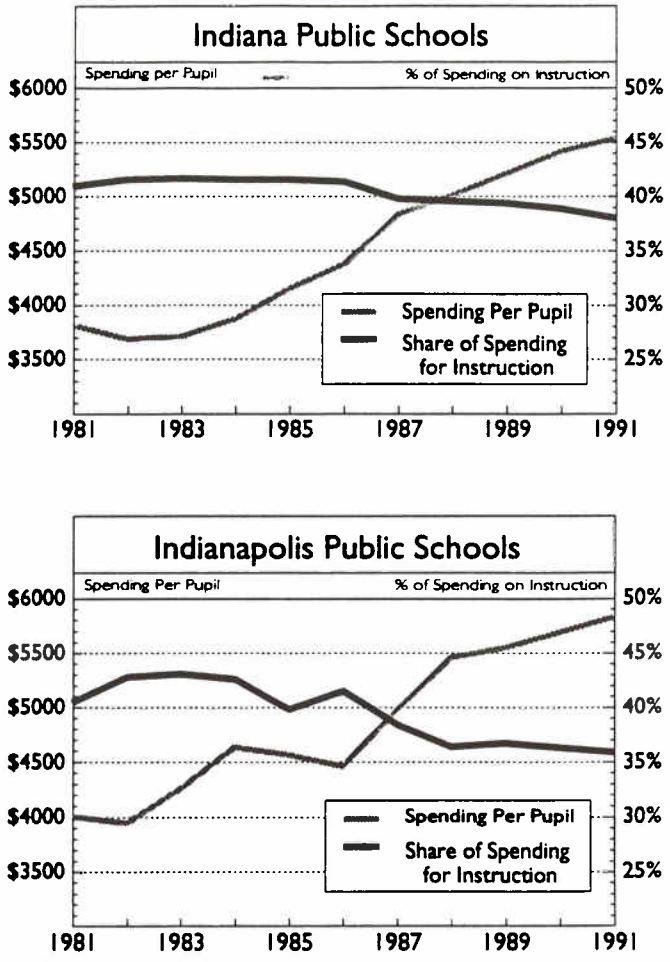
60 The Fordham group's poverty or socio-economic status variable "refers to the percent of students deemed poor, using federal 'Lunch Program' criteria," Cooper, Sarrel, and Tetenbaum, "Choice, Funding, and Pupil Achievement," p. 18.

the city.[61] Unlike the two previous reports discussed, the IPRF's study systematically tracks spending proportions over of a number of years.

Author William Styring III knew two facts at the outset of his report: that schools all over the state made what he calls "continual assertions" of insufficient funding,[62] while at the same time having been on the receiving end of a nearly 50 percent increase in inflation-adjusted per-pupil monies between 1981-91. In constant 1991 dollars, Indiana schools overall received funds for a 45.2 percent increase in per-pupil spending, while the Indianapolis Public School system (IPS) got a 45.4 percent increase.[63] These expenditures are illustrated in the adjacent charts.

So why had there been no improvement in classroom performance over this ten-year period? Styring's starting hypothesis: "This study was undertaken because of a suspicion that government agencies—in this case, public schools—tend over time to spend less of their resources on accomplishing their mission."[64] As the charts show, the numbers certainly appear to support this suspicion.[65]

As Public School Spending Increases, Less Funding Reaches the Classroom



Source: William Styring III, "How Much Does It Take to Get Less Than $2 Billion Into the Classroom? Answer: More Than $5 Billion," *Indiana Policy Review*, vol. 4, no. 1, Jan. 1993.

Heritage DataChart

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61 Styring, "How Much Does It Take...?" p. 2.

62 Styring, "How Much Does It Take...?" p. 3.

63 Styring, "How Much Does It Take...?" p. 4, table 2.

64 Styring, "How Much Does It Take...?" p. 2.

65 Styring is correct to note that, to be fair to the IPS system, because busing costs are counted as administrative costs, this increases administration spending proportion, reducing the percentage spent on classroom activities. The rest of the state does not bear such a financial burden relative to its education budgets. The expense of busing programs can be enormous, in the case of the IPS the cost was $23,738,793 for 1992. The state's busing expenses rose 206 percent in

Over the course of a decade, in both the state and city, a dwindling proportion of funding has been spent in the classroom, although the trend has been more pronounced in Indianapolis than in the state as a whole (the figures for which include Indianapolis). Further, if these instructional figures appear quite high when compared with the Wisconsin and New York studies, it ought to be noted that Styring's definition of classroom spending is the least restrictive of the three. It includes salaries of non-licensed instructional personnel (teachers' aides) for example, as well as "purchased instructional services."[66] The other studies do not include teachers' aides and it is not clear whether they include "purchased services"; neither makes mention of any such disbursement.

Whether or not Indiana's instructional-spending rates are better than Wisconsin's or New York's is not, however, of prime concern. What Styring focuses on, in a manner that the WPRI and the Fordham groups do not, are the trends. And these are disturbing. The number of teachers statewide increased by 2.0 percent from SY 1973-74 to SY 1990-91. For administrative or "ASGA" staff,[67] the increase was 8.8 percent. The 1973-74 ratio of students to teachers was 22.2 to one; in 1990-91, the ratio was 17.2 pupils for each teacher. This represents a modest change compared with the equivalent figures for administrators: here the 1973-74 ratio was 159.7 to one; that of 1990-91, 115.8 to one.[68] For the IPS schools, the situation was more stark. There was a very similar improvement in the pupil-to-teacher ratio from 22.6 to 17.0; but a change in the administrative ratio from 141.5 to 108.5.[69] By contrast, the Indianapolis Roman Catholic parochial schools have been getting by on a pupil-to-administrator ratio of 190 to one.[70] At the same time, they have been turning out considerably better educated children.

This public-sector increase in the numbers of administrative staff over teaching staff would have been disturbing enough at the best of times, but it should be added in this case that all these changes in personnel have occurred in a setting of *declining* student enrollment: a drop of 21.1 percent in the state, and 41.7 percent in the city.[71] How can the public schools get away with an ever-expanding administrative work force even in the face of reduced enrollment, when the parochial schools manage on a fraction of the number of administrators? Styring concludes it is because the parochial schools face competition. The public schools, of course, must endure no such thing. So over the 1970s and 1980s, while the number of pupils declined, writes Styring;

> statewide, both the total number of FTE [full-time equivalent] classroom teachers and the number of FTE ASGA personnel have proved *remarkably immune* to declines in the number of students they actually educate. It is as if there were an unstated assumption that everyone chose

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constant dollars from 1980 to 1992 (from $96,861,349 to $296,226,120), while those for the IPS rose 718 percent (from $2,901,864 to $23,738,793). Styring, "How Much Does It Take...?" pp. 5, 15, note 7.

66 Styring, "How Much Does It Take...?" p. 14, note 5.

67 Administrators are defined as administrative, supervisory, guidance and auxiliary (ASGA) staff. This is the schools' definition, so in all likelihood it underestimates the true number of staff in administrative capacities. Styring, "How Much Does It Take...?" p. 6.

68 Styring, "How Much Does It Take...?" p. 6, table 4.

69 Styring, "How Much Does It Take...?" p. 7, table 5.

70 Styring, "How Much Does It Take...?" p. 11.

71 Styring, "How Much Does It Take...?" pp. 6-7, tables 4 and 5.

> to run a school system with a fixed number of adults no matter how many kids showed up [emphasis in the original].[72]

In sum, then, all the reports present a picture of a public education system that is stifled by an excess of bureaucrats. In Milwaukee, only a quarter of education dollars makes it to the classroom. And the Indiana study suggests the trends are not improving. Quite the reverse, in fact. This is particularly disturbing in light of the Fordham group's finding of strong correlations between increased instructional spending and improved student output. To be sure, schools need some services and administration but, as Cooper, Sarrel, and Tetenbaum put it, "whether these activities are worth two-thirds the budget is an open question."[73]

HOW TO CONSTRUCT AN AUDIT

The Fischer and the Fordham studies are similar in many respects, in that they explain exactly where every dollar is spent. The Indiana study does not do this in such detail. But unlike the other two, it does present tracking data. Both approaches have considerable merit.

If an organization wished to conduct an audit of a state or city school system, it would be wise to combine both approaches. This would suggest the following steps.

Step 1: In the manner of the New York study, examine allocations within each "layer" of spending.

Specifically, the audit group should contact its local school board and ask for two figures:

a) the total budget for education and

b) the number of pupils enrolled, for whichever year is of interest (probably the most recent).

Dividing (a) by (b) yields the overall per-pupil spending within the system as a whole.

The next items of information needed are:

c) the total amount disbursed to all students (elementary and secondary), and

d) the budgets of all centrally administered programs, and add them up.

Adding (c) to (d) and dividing the sum by total pupil enrollment produces a figure slightly smaller than the first, overall per-pupil expenditure figure. The difference between the two reflects the *administrative* costs per student of the school board and the central allocation bureau.

Step 2: Decide whether primary or secondary education is the main concern.

Choosing *either* secondary *or* elementary schools reduces one's sample to a manageable size. Moreover, spending on elementary and secondary education is radically different, so it is helpful to consider them separately. Assume that secondary education is the concern. Auditors need to contact the relevant division of the state education department. In New York City, this is called the High School Division, but it may be called something else in other

72 Styring, "How Much Does It Take...?" p. 10.

73 Cooper, Sarrel, and Tetenbaum, "Choice, Funding, Pupil Achievement," p. 14.

states. Ask what the division's total budget allotment from the school board and central allocating body is, and how many students are enrolled in that division. Again, divide one by the other. This will give the *per-pupil spending* for high-school students. This figure will most likely be considerably lower than the total per-pupil allotment, as it will not include the costs of transportation, security, and so forth. It will also reflect the *total program and administrative disbursement* costs of the school board and the central administrative office, and should be about equal to item (d) above. If the school district does not have separate divisions for elementary and secondary education (Baltimore City, Maryland, for instance, does not), auditors should proceed directly to Step 3.

Step 3: Calculate the aggregate per-pupil expenditures for individual schools.

The high-school division may or may not have individual school budget and enrollment figures available. If it has, auditors can simply aggregate budgets and enrollment figures to calculate the mean school-site per-student expenditure. But if the high-school division does not have such figures, auditors will have to contact schools directly.

The sum of the individual school enrollments and the total enrollment figure given by the high-school division in Step 2 may not be exactly the same. This will not significantly change the final result, unless the difference is large. These differences arise because there is often very little communication of such figures from one level of administration and the next. Individual schools may use average daily-attendance enrollment figures, for instance, while the education-department bureaus may use first-day enrollment figures. The latter will be larger than the former.[74] Also, busing complicates matters. Some levels of bureaucracy will count the students bused *in* as part of a district's enrollment, while another level may count the students bused *out*. But on the whole these discrepancies should not normally make a large difference to the final figures.

In any event, the sum of site-level budgets divided by the sum of site-level enrollments will give a per-pupil spending figure reflecting the subtraction of the high-school administrative divisions's overhead and program costs.

Step 4: At the school-site level, ascertain how budgets are divided.

As the division of budgets will vary considerably from school to school, it is important to include as many schools as possible in the audit sample, preferably all the schools in the division. Once all the budgets are collected, the auditors must analyze and aggregate the proportions devoted to classroom expenditure and compare with other costs. Again, divide the resulting average figure by the enrollment figures from Step 3. This will yield a mean class-activities per-pupil disbursement.

Step 5: If possible, separate "instructional" spending from "instructionally related" spending, in the manner of the Fordham report.

This separation may already be clear within the budgets. Or auditors may have to add separate components from the classroom-activities sub-budgets that they feel constitute "instructional" spending. These could include teachers' compensation only, or teachers' compen-

74 See footnote 20.

sation and school supplies, or these two plus other expenditures auditors think merit inclusion. The choice is somewhat subjective.

Whichever items are included, auditors must be sure to explain exactly what they have included in the "instruction" category in their final report, so that there is no confusion and so that meaningful comparisons can be made between audits in different jurisdictions. Once these school-site "instruction" figures, however defined, are added together, and then divided by the Step 3 enrollment figures, the result will be the district average per-pupil instructional spending. If existing audits are any guide, this figure is likely to be only a small fraction of the figure obtained in Step 1.

How to Compute Trends

To obtain tracking data, as in the Indiana study, the most accurate method would be to repeat the above steps with the budget and enrollment figures from as many previous years as are of interest or are available. The problem is that auditors are quite likely to find that a great quantity of data are *not* available any longer, at least not at the school-site level. It may, however, still be possible to obtain education-department figures that might make the construction of a time-line possible. But it is wise to bear in mind that this probably would force the use of central office definitions of instructional spending and other items. But, as the Milwaukee study indicates, school officials tend to be extremely loose in their definition of "instruction."

CONCLUSION

The only investments that will pay off in the long run are those that promote educational reform, rather than simply doling out more funds. The 1989 *Fortune*/Allstate report, *Business Response to Education in America*, cited earlier, notes that company executives find the causes of poor U.S. educational attainment to be ill-disciplined and unmotivated students, uninterested parents, ineffective teachers, and declining educational requirements of students.[75] None of these factors can be improved simply by the injection of greater quantities of taxpayer cash.

Before corporations and other financial supporters of public schools invest more money with little to show for it, they would be wise to find out exactly where the money currently goes. This information would enable them to propose specific reforms to improve the way in which resources are used. Using the step-by-step audit procedure outlined above, they could obtain this benchmark information.

The next step is for business and parent organizations to support initiatives that will lead to reform. This has not been happening to any great extent. While 77 percent of U.S. companies report donating money to education, only 33 percent have pressed for reform of the system.[76]

As the Reason Foundation's Anna David notes, "Much of the private sector's help to schools amount[s] to well-intentioned donations of time, equipment and money, not always bound by the critical link of accountability."[77] That needs to change. By making local tax-

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75 *Fortune*/Allstate, *Business Response*, p. 5.
76 *Fortune*/Allstate, *Business Response*, p. 76.
77 David, "Public-Private Partnerships," p. 16.

APPENDIX

TABLE 1
SCHOOL YEAR 1990-91

City/ Metro Region	Per-Pupil Revenue		Percentage of City Pupils Scoring above National Mean	
	City	State	Math	Reading
Anchorage, AL	NA	9,057	61.3	61.4
Atlanta, GA	**6,174**	5,049	51.0	46.1
Baltimore, MD	4,333	6,797	33.0	29.6
Boston, MA	**6,939**	6,914	57.4	51.0
Broward County, FL*	**6,768**	6,211	54.3	47.7
Buffalo, NY	7,384	9,254	NA	NA
Chicago, IL	5,249	6,063	27.2	23.5
Cincinnati, OH	5,325	6,059	46.2	44.0
Cleveland, OH	**6,651**	6,059	34.0	39.1
Columbus, OH	**5,040**	6,059	54.4	41.3
Dade County, FL*	**6,510**	6,211	34.8	30.5
Dallas, TX	4,371	4,762	**51.5**	**36.2**
Dayton, OH	6,399	6,059	42.0	37.0
Denver, CO	6,582	5,296	38.0	35.2
Detriot, MI	5,440	5,639	43.4	40.9
Duval County, FL*	6,880	6,211	57.8	55.2
East Baton Rouge, LA	4,133	4,396	47.3	43.6
El Paso, TX	3,880	4,762	55.2	43.9
Fresno, CA	4,721	5,405	53.4	46.8
Houston, TX	4,004	4,762	57.1	44.4
Indianpolis, IN	**6,328**	5,528	51.4	47.3
Long Beach, CA	4,199	5,405	49.9	39.9
Los Angeles, CA	**5,919**	5,405	44.4	29.9
Memphis, TN	3,554	3,845	44.9	40.4
Milwaukee, WI	5,867	6,386	43.2	39.0
Minneapolis, MN	**7,186**	6,174	57.1	49.4
Nashville, TN	**4,112**	3,845	52.0	50.4
New Orleans, LA	4,174	4,396	NA	NA
New York City, NY	7,539	9,254	60.8	54.5
Norfolk, VA	**5,664**	5,638	47.2	41.1
Oakland, CA	4,305	5,405	39.7	29.5
Oklahoma City, OK	3,652	4,465	49.3	40.6
Omaha, NE	4,544	4,638	65.6	62.2
Philadelphia, PA	6,781	7,197	53.3	42.3
Phoenix, AZ	**5,007**	4,791	31.5	36.5
Pittsburgh, PA	**7,973**	7,197	60.7	55.3
Portland, OR	**6,750**	5,572	NA	NA
Rochester, NY	**9,370**	9,254	54.6	NA
Sacramento, CA	4,195	5,405	54.3	40.4
Saint Louis, MO	**7,601**	5,422	35.9	30.3
Saint Paul, MN	5,929	6,174	47.0	45.6
San Diego, CA	4,562	5,405	52.4	49.8
San Francisco, CA	4,676	5,405	56.8	35.3
Seattle, WA	**6,478**	5,891	57.0	53.8
Toledo, OH	**6,050**	6,059	51.3	49.2
Tucson, AZ	4,011	4,791	44.4	43.5
Washington, DC	6,837	NA	52.6	40.1

Figures in **bold** indicate a city whose per-pupil revenue is at or above the state average.

* The major cities in each of these counties are, respectively, Metropolitan Fort Lauderdale, Metropolitan Miami, and Metropolitan Jacksonville.

Source: Council of the Great City Schools (CGCS), *National Urban Education Goals: Baseline Indicators, 1990-91* (Washington, D.C.: CGCS, 1991), pp. 118-211; National Education Association (NEA), *Rankings of the States, 1991*, (Washington, D.C.: NEA, 1992), p. 44, Table F-2.

payers who pick up the tax much more aware, that change can be wrought. But taxpayers will have a long wait if they expect the public school bureaucracy to furnish them with the financial data they need. That information can only be compiled by private sector organizations determined to achieve real change in the public school system.

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TABLE 2
SCHOOL YEAR 1989-90

City/ Metro Region	Proportion of Expenditure Spent on Instruction*	
	City	State
Anchorage, AL	**47.6**	45.6
Atlanta, GA	50.5	**54.2**
Baltimore, MD	**57.5**	55.6
Boston, MA	57.7	**59.1**
Broward County, FL*	42.1	45.1
Buffalo, NY	59.6	60.8
Chicago, IL	52.9	54.0
Cincinnati, OH	**52.4**	51.9
Cleveland, OH	46.1	**51.9**
Columbus, OH	49.5	**51.9**
Dade County, FL*	**49.3**	45.1
Dallas, TX	50.3	**50.8**
Dayton, OH	46.4	51.9
Denver, CO	**61.8**	53.4
Detriot, MI	**53.5**	51.2
Duval County, FL*	**46.1**	45.1
East Baton Rouge, LA	**52.0**	50.6
El Paso, TX	**52.2**	50.8
Fresno, CA	**58.8**	55.7
Houston, TX	**52.0**	50.8
Indianpolis, IN	46.2	50.9
Long Beach, CA	53.8	55.7
Los Angeles, CA	**57.6**	55.7
Memphis, TN	**68.5**	67.0
Milwaukee, WI	**57.7**	57.0
Minneapolis, MN	**58.4**	55.6
Nashville, TN	**64.0**	67.0
New Orleans, LA	**50.6**	50.6
New York City, NY	**68.2**	60.8
Norfolk, VA	**67.2**	65.4
Oakland, CA	**60.2**	55.7
Oklahoma City, OK	**66.8**	63.4
Omaha, NE	**46.2**	**47.1**
Philadelphia, PA	**48.9**	**53.4**
Phoenix, AZ	**43.6**	**45.6**
Pittsburgh, PA	**50.2**	**53.4**
Portland, OR	45.4	48.7
Rochester, NY	56.3	60.8
Sacramento, CA	**57.1**	55.7
Saint Louis, MO	47.9	51.8
Saint Paul, MN	**56.5**	**55.6**
San Diego, CA	**55.5**	**55.7**
San Francisco, CA	**52.6**	**55.7**
Seattle, WA	**43.9**	**48.2**
Toledo, OH	50.5	51.9
Tucson, AZ	**54.0**	45.6
Washington, DC	45.8	NA

* Utilizes state education department's definitions of "instructional spending." Numbers in bold indicate a city whose total spending on instruction is the same or higher than the state average.

* The major cities in each of these counties are, respectively, Metropolitan Fort Lauderdale, Metropolitan Miami, and Metropolitan Jacksonville.

Source: U.S. Department of Commerce (Economics and Statistics Administration, Bureau of the Census), Series GF-89-10, Public Education Finances: 1988-89 (Washington, D.C.: Government Printing Office, 1991), pp. 26-53, Table 16.

Note:

Pearson's r coefficients of correlation function as follows. The range of possible results runs from -1 to +1. A figure of +1 would imply a perfect one-to-one correlation between pairs of data: in other words, the more of A, the more of B; or the more candy bars I buy, the more money I will have to pay. A figure of -1 implies a perfect one-to-one negative correlation: the more of A, the less of B; or the higher off the ground an elevator is (more distance), the closer to the ground its counterweight will be (less distance). Fractions between -1 and +1 indicate the degree to which the two sets of variables are related. A figure of zero implies no relationship at all.

The significance one can accord to a given fraction is related to its degrees of freedom (df). The df figure is equal the number of pairs of data from which the correlation is derived, minus two. When calculating averages, the fewer data utilized, the less can be inferred with confidence from the results. Similarly, the fewer pairs of data from which the correlation is calculated (that is, the smaller the df figure), the less significance one should attach to the correlation. Where the df figure is small, the correlation fraction must be large to indicate a relationship; where the df is large, a smaller fraction is sufficient. Whether or not a correlation is significant is included in parentheses. Furthermore, significance at $P < .01$, is stronger than significance at $P < .05$.

It is important to note that correlations do not prove anything. They only imply a relationship between variables, but they cannot indicate causality. Therefore, while common sense tells us that SAT scores are higher in certain states because fewer children sit the examination, in statistical terms the correlation could equally well tell us that fewer children sit the test because SAT results are high.

Pearson's r^2 coefficients of determination function as follows. The range of possible results runs from 0 to +1. Fractions between these figures indicate a percentage value that may be ascribed to the effects upon one set of data by another. In other words, this statistical device indicates just how much of the variance in results (scores, etc.) of the set of data under observation may be caused by the effects of the "suspect" variable.

For example, let us assume that the coefficient of determination between athletes' body weight and the number of pounds each can bench-press is $r^2 = 0.5$. This would tell us that half of variation in these particular athletes' weight-lifting abilities may be attributed to their body weight. The other half of the variance in their respective strength abilities may simply be coincidence.

The drawback of Pearson's r^2 is that it always results in a positive figure. It therefore cannot — unlike Pearson's r coefficient of correlation — indicate whether the relationship in question is a positive or negative one. For this reason, the two measures are often used in conjunction.

For further information . . .

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