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ABSTRACT

This report sets up a structure for examining the real costs of public education. It defines three approaches of gathering and reporting cost information: narrow (salaries and current expenditures, excluding capital outlays); generally accepted accounting principles (GAAP) (costs are recorded during the period in which they occur); and broad (all inputs in the system, including time, are measured). The paper's aim is to develop a better measure of the cost of public education in three Ohio school districts, and to establish that public schools in Ohio's three largest districts are suffering from rising costs combined with falling achievement. The document discusses education achievement in the three areas and examines enrollment as a measure of quality. It found no meaningful relationship between overall spending per pupil and student achievement. It states that more solid structures of school organization may be obtained from voucher systems, charter schools, tax credits for tuition payments, and other programs that link rewards directly with parent satisfaction. The text emphasizes that a real program of school choice that gives parents and students more options will instill necessary incentives for improvement in the public schools. Four appendices list GAAP estimates of expenditures, problems with proficiency examinations, and other concerns. (Contains 50 references and notes.) (RJM)

Public Choices, Private Costs:

An Analysis of Spending and Achievement in Ohio Public Schools

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Public Choices, Private Costs:

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Executive Summary

When spending and other school "inputs" are examined for their relationship to the "output" of student achievement, there exists a wide gap between these costs and expected results. Nowhere is this more evident than in Ohio's three largest public school districts – Cleveland, Columbus, and Cincinnati.

Enrollment as a Measure of School Quality

- The urban school districts of Cleveland, Columbus, and Cincinnati have experienced a signature pattern of declining enrollment. For the class graduating in June 1997, the three districts declined in enrollment from 14,663 to 7,130 students between 1990 and 1997 – a loss of 51.4% of their students.

Analysis of School Spending

- Because schools do not use Generally Accepted Accounting Principles (GAAP), the reported spending per student is vastly underestimated. When miscellaneous expenses, interest expenses, depreciation, and capital outlay are included, annual public school spending per pupil has a median of $6,996 in Ohio's 611 school districts.
- Using improved GAAP figures, Columbus public schools spent $7,665, Cincinnati public schools spent $10,099, and Cleveland public schools spent $10,962 in fiscal year 1997.
- Using GAAP, 70 of Ohio's 611 school districts (or, 11.5%) spend more than $10,000 per student. (See Appendix 1.)

Spending and Achievement Analysis

- Overall, school spending, teacher salaries, advanced teacher education, teacher experience, classroom spending, and student-teacher ratios have no discernible effect on student achievement in urban school districts in Cleveland, Columbus, and Cincinnati.

Solutions

- Given that traditional reforms such as boosting spending per pupil and reducing class size have little positive effect on student performance, and that school innovation and autonomy do have this desired effect, policymakers and school reformers would be wise to focus on more fundamental solutions – like parental choice in education.

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Public Choices, Private Costs

"It's time to admit that public education operates like a planned economy, a bureaucratic system in which everybody's role is spelled out in advance, and there are few incentives for innovation and productivity. It's no surprise that our school system doesn't improve: It more resembles the communist economy than our own market economy."[1]

Albert Shanker
former president,
American Federation of Teachers

1. Introduction

Ohio, like many states, spends an enormous amount of its government budget on education. During the 1997 fiscal year, education spending in Ohio totaled over $11.7 billion.[2] The amount spent for Ohio public schools, even after adjusting for inflation, far exceeds what was spent by previous generations: Ohio public schools spent on average $6,627 per student in 1997, three times more than they spent in 1960.[3] Voters who reject tax increases for other purposes often endorse them when the purpose is to fund public schools.

This commitment by taxpayers and politicians is understandable. Economists such as John W. Kendrick of George Washington University, one of the leading experts on productivity, has suggested that 70 percent of a nation's productivity can be explained by "the knowledge factor" – the knowledge and skills of its workers.[4] And Cornell University economist John H. Bishop has argued that 10 percent of the productivity slowdown in the 1970s, 20 percent of the productivity slowdown in the 1980s, and perhaps 40 percent of the 1990s' slowdown may be attributable to declining educational achievement.[5]

But while education may be vitally important to "national productivity," the real importance of education is more personal: said one writer, "[e]ducation used to be a poor child's ticket out of the slums; now it is part of the system that traps people in the underclass."[6]

"Education used to be a poor child's ticket out of the slums; now it is part of the system that traps people in the underclass."

American students perform very poorly in comparison with students from other countries.

Despite this huge public commitment to education, public school performance is failing. Particularly in urban districts, ever-higher spending levels seem to have no effect on declining graduation rates and declining test scores.

Of course, some public school administrators, teachers, and union employees (as well as some academics) dispute this fact. Princeton University economics professor Alan B. Krueger argues that, "The evidence suggests that the perceived crisis in education has been greatly exaggerated, if indeed there is a crisis at all." [7] But this is not the view of all education researchers. University of Rochester economist Eric A. Hanushek states that such myopic views ignore a series of more fundamental organizational problems and facts: American students perform very poorly in comparison with students from other countries.[8]

Why is this decline happening? This study analyzes public school spending and the corresponding results. Because the schools with the most students, and quite often the most problems, are urban schools, this study focuses on Ohio's three largest cities and their school districts — Cleveland, Columbus and Cincinnati.

In most other market endeavors, there is precisely the opposite result: productivity is increasing – inputs *decrease* relative to *increasing* outputs. In other words, other enterprises are seeing *increased* productivity, while public education is seeing *decreased* productivity. Ten years ago, Hudson Institute researcher Lewis J. Perelman calculated that had the education industry maintained the same productivity as the computer industry over the last 40 years, a person could get both a high school and college education in 10 minutes at a cost of 5 cents.[9] While this example is extreme, it does illustrate the relative stagnation of the public education industry.

This report will (1) develop a better measure of the cost of public education in Ohio's three districts based on generally accepted accounting principles; and (2) establish that public schools in Ohio's three largest districts are suffering from rising costs (measured by such factors as teacher salaries, the number of teachers, and so forth) combined with falling achievement (measured by such factors as proficiency exam scores and graduation rates).

Measuring inputs, measuring outputs

"Cost/benefit analysis" is difficult with respect to education. In other endeavors, the comparison is relatively easy since costs can be measured against revenues earned for the sale of goods and services. Total profit or loss signifies how efficiently the producer uses his or her resources. Non-profit education, by definition, lacks a clear, easily-quantifiable bottom line.

As William A. Niskanen, chairman of the Cato Institute and former member of the Council of Economic Advisors, states, "[a] school produces many types of outputs, but not all of them can be easily measured. Furthermore, they differ substantially in how they are valued by voters, taxpayers, employers, parents, and students. For these reasons, no one measurable condition suffices as an index of the outputs of primary and secondary schools, or more important, of the value of these outputs."[10]

Graduation rates and proficiency exam scores will serve as a starting point in the assessment of public school success in educating students. These traditional measures such as test scores, dropout rates, and graduation rates provide meaningful barometers of achievement. In Cleveland, enrollment figures also help illustrate what taxpayers are getting for their money. In other cities, student achievement on proficiency exams may provide the most consistent evidence of public school success.

Compared to these outputs, the inputs into public education are easier to gauge. Inputs can be measured by years, dollars or other easily quantifiable units. Public school accounting methods, however, are not designed to detail costs as business accounting does. Public school accounting routinely omits large expenses, such as capital equipment and building depreciation, thereby understating total costs. Moreover, school districts vary the ways that they report expenditures to the state Department of Education. Any attempt to measure the inputs into public education, accordingly, presents challenges of its own.

As a framework for discussion, however, this study sets up a structure for examining the real costs of public education, defining three approaches of gathering and reporting cost information: narrow, GAAP, and broad. Such a structure is necessary in order to measure the success of public schools in educating children. The study will then measure the variation in school success using data provided by the Ohio Department of Education.

Public school accounting methods, however, are not designed to detail costs as business accounting does.

2. Costs in Ohio public schools: Cleveland, Columbus, and Cincinnati.

Estimating the real cost of public schools

Myron Lieberman, a Senior Research Scholar at the Social Philosophy and Policy Center at Bowling Green State University in Bowling Green, Ohio, observes that statistics on public schools omit several substantial costs. Among the costs routinely left out of public education accounting methods are

1. education costs incurred by state and local governments, including tax collection costs for school financing;
2. costs to higher education for remedial courses (i.e., those high school-level courses college students take to catch up);
3. federal government costs of research-and-development and educational programs like Head Start; and,
4. teacher education coursework.

"No one knows the costs of public education from our own pockets or the government's," says Lieberman. "These costs are extremely diffuse and intermingled with others beyond identification. Even with the help of a supercomputer, it is impossible to ascertain what any individual is paying for public education."[11]

Does special education explain the growth in school spending?

Some point to special education as a primary reason public education expenditures have exploded in recent years. Economists Eric A. Hanushek and Steven G. Rivkin point out that special education spending is not the largest influence on per-pupil expenditure growth. While educating a special needs child is, on average, 2.3 times as expensive as educating a typical student, special education accounts for only 17.6 percent of the real school spending growth between 1980 and 1990.

Furthermore, while wide variations in the cost of educating special needs children exist, recent growth in special education spending has been in less expensive categories such as less severe learning disabilities. This growth would tend to reduce the average cost of educating a special needs child.

Thus, although public school spending has increased dramatically over the last several decades, special education cannot be blamed for its substantial growth. And even with public education's large growth, it manages to exclude many real costs.

Source: Eric A. Hanushek and Steven G. Rivkin, "Understanding Twentieth-century Growth in U.S. School Spending," *Journal of Human Resources* 32:1 (Winter 1997), pp. 51-53.

Public school expenditures, narrow vs. GAAP

Per pupil expenditures were between $6,400 and $7,400 for Cleveland, Columbus, and Cincinnati for fiscal year 1997, based on a narrow definition of cost.[12] (See Figure 1.) Like all other Ohio school districts, Cleveland, Columbus, and Cincinnati use a state-prescribed technique to determine expenditure per pupil. Expenditures are totaled for certain categories including instruction and support services, and then that total is divided by enrollment as measured by average daily membership (ADM). Some current expenditures are excluded from the total. These include "some capital outlay, some debt service, some nonpublic, some adult and community activities, and other."

The narrow definition is seriously deficient as a way to compare spending across school districts, since it ignores sizable costs. To move from the school systems' narrow accounting methods to generally accepted accounting principles (GAAP), several changes are necessary:

- Establish a balance sheet, or an acceptable version of it.
- Change from cash accounting to accrual accounting to measure future costs of obligations such as building maintenance, pension liabilities and so forth. Since buildings and land are the largest and most important assets owned by school districts, annual depreciation on these buildings is the largest expense unreported using current narrow methods of determining expenditures.
- Include all transactions of the legal entity under consideration (and included in the current budget) in the income statement.

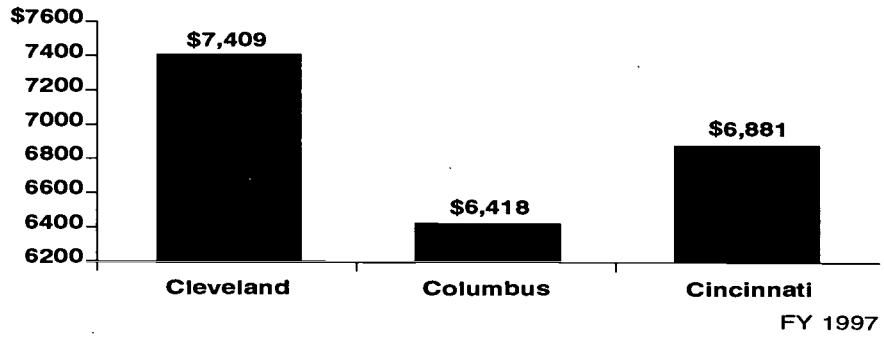
Three approaches for measuring education costs

- The ***narrow approach*** for reporting school spending, which is used by school districts and state education departments, reports cash expenditures for teacher salaries, administrative salaries, and other current expenditures. It excludes interest payments and capital outlays. This approach is currently used to calculate expenditure per pupil and is widely reported in the media.
- The ***GAAP approach*** uses generally accepted accounting principles to calculate an expense. Borrowing accounting principles from the private sector, costs are determined on a basis that matches costs to the period in which they occur ("accrual accounting"). This means that future costs, such as building depreciation and other unfunded obligations (like teacher pensions), are included as current costs after they are discounted with an interest rate.
- A ***broad approach*** to measuring costs of public schools is to measure all of the inputs into the public education system, including the time students and parents spend in school-related activities. Under this approach, cost data must be gathered from institutions other than the state and local school districts.

- Report expenses by function. The existing accounting system reports expenditures based on the separate "funds," not based on the functions they serve.

Debt service (which includes interest payments and debt retirement) and capital outlays are completely excluded from reported per pupil expenditures, but there is no convincing reason why this should occur.

Figure 1: Public school expenditures per pupil, narrowly defined



A significant amount of money is allocated to an "Other" category in public school budgets. The effect of putting expenditures into this "Other" category is to exclude them from per pupil expenditure figures. In Cleveland's case, the omission of "Other" expenditures alone reduced the reported expenditure per pupil by $1,418.

Cleveland's repair estimate has been growing at a rate of $70 million per year in the six-and-a-half-year time span between November 1990 and Spring 1997, or nearly $1,000 per student per year. By ignoring this sizable cost, the schools' narrow accounting system dramatically underestimates the cost to educate a student.

Using buildings is costly, but the current accounting system fails to include this cost when necessary repairs are not made. The repair bill facing Ohio's public schools represents a liability that is omitted from the current accounting system. By adding this liability to public school budgets, a better estimate of cost per pupil can be made.

The improved accuracy of GAAP accounting is evident when building costs are added to the narrow definition for Ohio's three largest school districts. Figure 2 shows the estimated cost per pupil after adding interest payments, capital outlays, "Other" expenditures, and the outstanding building repair liability. This estimate is still not all-inclusive, but it does give a better idea of what costs would be if reported on a GAAP basis. By including capital outlays, as Figure 2 does, GAAP accounting gives a much more ac-

curate portrayal of all the costs to educate a student.

Calculating Ohio's public school GAAP costs

Appendix 1 presents a table of each Ohio school district's GAAP costs. The GAAP costs per pupil are presented as adjusted for ADM ("average daily membership," which is a weighted average of student attendance).

The formula for GAAP costs is:

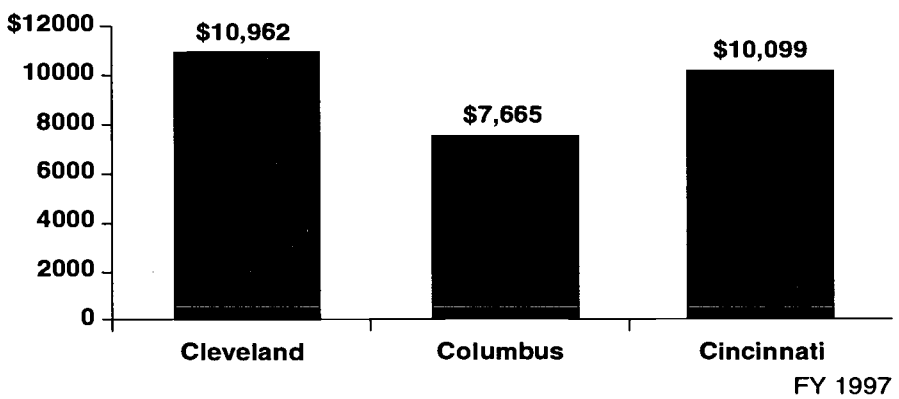
Total Expense as Reported
+ Other Expense as Reported
+ Interest Expense
+ Depreciation
+ Capital Outlay (Revised)
= Total GAAP costs

Where the Capital Outlay figure has been inflated for a single year because of building construction, the report averages the capital outlay over the period 1990-97.

For 611 school districts which have reported data, the median GAAP cost adjusted for ADM for Ohio school districts is $6,996.

GAAP accounting gives a much more accurate portrayal of all the costs to educate a student.

Figure 2: Public school expenditures per pupil, *using GAAP*



... when public school costs are measured using GAAP, the costs are far higher than usually reported.

Of Ohio's 611 school districts, 70 school districts (or 11.5%) have GAAP costs (ADM adjusted) that exceed $10,000 per student.

Obviously, when public school costs are measured using generally accepted accounting principles, the costs are far higher than usually reported.

Tax Collection Costs

Because school districts receive a combination of revenues from federal, state, and local sources, there are tax collection costs at all levels of government that are attributable to public education.

Without including the cost of collecting federal taxes, the cost of state and local tax collection for public schools probably approaches $100 per student per year. This is estimated by dividing the cost of tax collection (about $180 million) by the number of Ohio students (1.8 million). Under a broad approach, all costs associated with the collection of taxes, such as hiring attorneys and accountants, and filing tax appeals, should properly be included in the total.

Costs, Broadly Defined

Spending on public education excluded from estimates of current expenditures and from GAAP figures

- **Federal:** Educational research and development, teacher training, educational programs (e.g., Head Start, Trio)
- **State:** Social security, textbooks, administrative costs, school district labor relations, judicial costs (e.g., costs of operating the justice system related to schools), non-educational agencies performing K-12 services
- **Higher education:** Remedial courses and programs, teacher training, faculty research and time
- **Donations, contributions, fees:** Foundation grants, donated time (e.g., school board time), business contributions, fees and charges paid by parents
- **Other societal costs:** Professional organizations (e.g., teacher's unions), publications, conferences, political activity

Source: Myron Lieberman, *Public Education: An Autopsy* (Cambridge, Mass.: Harvard University Press, 1993), p. 119.

Public school expenditures, broadly defined

To obtain the most precise measure of public education efficiency, a broad definition of costs is needed. Many organizations besides state education departments and local school districts involve themselves in public education. The task of measuring all these costs is beyond the scope of this study, but by listing them here, readers can get an idea of the wide variety of different costs that can be counted as part of the educational enterprise, but are not on the accounting books of local school districts or state departments of education.

One can add the cost of collecting taxes to Lieberman's list. (See box on previous page.) Because choices for public education are made within the political arena, rather than the private sphere, millions of hours must be spent each year in political haggling. A large fraction of the legislature's and its staff's time (measured as a percentage of payroll cost) could also be added to the broad cost. A similar fraction of campaign expenses for legislative and gubernatorial races could be included as part of the public education enterprise, broadly defined.

All told, these difficult-to-measure, broad costs of education represent significant costs per pupil. The inability to account completely for them in no way makes them less real. As a practical matter, using the estimated GAAP figures presented above is a good approach for our purposes and an immense improvement over the widely-reported narrowly defined figures.

A similar fraction of campaign expenses...could be included as part of the public education enterprise...

Private School Costs: Spotlight on Catholic Schools

With nearly 80% of all private school students enrolled in Catholic schools statewide, an examination of their costs is also worthwhile. Although geographically, the Archdiocese of Cincinnati and the dioceses of Columbus and Cleveland do not perfectly overlap the public school districts in each of these cities — indeed the Cincinnati Archdiocese extends to Dayton — their schools educate students of similar socioeconomic backgrounds in similar locations.

Like public schools, cost figures for Catholic schools often omit important areas of spending. In many cases, the school buildings are decades-old (though well-maintained), and, especially at the elementary level, linked to a host church. Accordingly, capital, facilities and maintenance costs are often inextricably linked to a church nearby and not accounted for separately.

However, one can arrive at a reasonable *narrow* estimate of cost. In 1997-98, narrowly defined operating cost per student in the Diocese of Cleveland are reported to be $1,775 for elementary school children and $5,102 for high school students. The weighted-average cost per pupil for a K-12 education in the Cleveland parochial schools amounts to $2,798. K-12 education costs are $2,976 per pupil in the Cincinnati Archdiocese and $2,554 in Columbus.

Parochial schools in Ohio receive some assistance from taxpayers for auxiliary services and materials, administrative costs, transportation services, driver's education, and the Ohio Computer Network which are not reported in the private schools' cost figures. According to the Ohio Department of Education (ODE), the statewide public subsidy per pupil in private schools was $678 in 1997-98.

Adding $678 to the parochial schools costs per pupil leaves a range between $3,200 and $3,700 per pupil.

	Cleveland	Cincinnati	Columbus
Public School Costs	$7,409	$6,881	$6,418
Catholic School Costs	$3,476	$3,654	$3,232

Source: Ohio Catholic Conference, "Catholic Schools in Ohio: Per-Pupil Costs (approximate) by Diocese, 1997-98, n.d. Telefacsimile received March 26, 1998.

3. Educational achievement: Cleveland, Columbus, and Cincinnati.

Only 37 percent of Cincinnati public school students passed the math portion of the test after at least one attempt.

This section will review education achievement (output) in public schools in Cleveland, Columbus, and Cincinnati based on proficiency test scores, dropout rates and enrollment figures. The report will also provide some private school achievement data for comparison.

Scores on Ohio's ninth-grade proficiency test provide a common measure of the quality of education. Since the exam is given to both public and private students, it permits some comparison of public and private schools.[13]

The Ohio Department of Education administers its ninth grade proficiency test to students of both private and parochial schools. The test is intended to cover material up through the eighth grade level. Those failing parts of the exam are permitted to retake it as needed. Passing all sections of the exam is now required for graduation from high school.

The pass rates are shown in Figure 3 for private and parochial schools in Cleveland, Columbus and Cincinnati. Test-takers usually include both students taking the test for the first time and students re-taking portions of the exam that they previously failed. The cumulative results show the passage rates for all currently enrolled students who have taken the tests at any time in the past or present.

In October, 1997, the Cleveland Diocese tested new students or those who had previously failed parts of the test as eighth graders: 99 percent had passed reading and 88 percent had passed math. The corresponding cumulative passage rates for the Cleveland public schools were 65 and 23 percent for the ninth grade proficiency exam.

The Cincinnati Archdiocese scores are noteworthy since they show results for students on their *first* attempt only. (The current attempt data match the cumulative data.) Eighty-three percent passed math on the *first attempt.* By contrast, only 37 percent of Cincinnati public school students passed the math portion of the test after *at least* one attempt.

Figure 3

Proficiency Exam Results for Parochial and Public Schools in Cleveland, Columbus, and Cincinnati, October 1997.

		CURRENT ATTEMPT			CUMULATIVES		
DISTRICT	TEST	# Test	# Pass	%	# Test	# Pass	%
Cleveland Diocese	Writing	357	243	68	4538	4424	97
	Reading	221	155	70	4604	4538	99
	Math	858	363	42	4285	3790	88
	Citizen	425	201	47	4476	4252	95
	Science	785	355	45	4413	3983	90
Cleveland City School District	Writing	2581	951	37	4417	2787	63
	Reading	2356	778	33	4529	2951	65
	Math	4019	339	8	4787	1107	23
	Citizen	3190	530	17	4536	1876	41
	Science	3388	444	13	4175	1231	29
Columbus Diocese	Writing	112	81	72	1373	1342	98
	Reading	79	54	68	1366	1341	98
	Math	293	148	51	1281	1136	89
	Citizen	136	69	51	1335	1268	95
	Science	249	132	53	1326	1209	91
Columbus City School District	Writing	1413	563	40	3654	2804	77
	Reading	1213	406	33	3699	2892	78
	Math	2563	371	14	3708	1516	41
	Citizen	1672	310	19	3641	2279	63
	Science	2145	385	18	3499	1739	50
Cincinnati Archdiocese	Writing	3630	3491	96	3630	3491	96
	Reading	3596	3477	97	3596	3477	97
	Math	3716	3081	83	3716	3081	83
	Citizen	3628	3255	90	3628	3255	90
	Science	3683	3104	84	3683	3104	84
Cincinnati City School District	Writing	1256	553	44	2839	2136	75
	Reading	1078	418	39	2911	2251	77
	Math	2284	335	15	3074	1125	37
	Citizen	1624	333	21	2872	1581	55
	Science	1944	340	17	2955	1351	46

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov

The Cleveland voucher program thus has shown that better educational outcomes might just be possible with far fewer dollars.

Comparison provided by the Cleveland voucher program

The Cleveland voucher program has provided an unusual opportunity to compare public and private school performance. Scholarship recipients were more likely to be disadvantaged, more likely to be African-American, had lower incomes on average, were less likely to have received special education, and were less likely to have been in classes for the gifted compared to Cleveland Public School students.[14] In September 1997 the Harvard Program on Education Policy and Governance (PEPG) released a study of the Cleveland Scholarship Program that compared test scores for K-3 students and survey results from parents of students in public vs. private schools. They interviewed 1,014 parents of scholarship recipients and 1,006 parents who had applied for a scholarship but did not receive one.

The Harvard study's findings about the Cleveland voucher program

- Parents much more satisfied
- Students gained 5 percentile points in reading
- Students gained 15 percentile points in math
- Higher percentage of kids completing the academic year
- Students opting to stay in public schools usually did so for non-academic reasons
- Academic quality and safety were voucher parents' biggest motivators
- Average family income of voucher students lower than non-recipients

The Harvard PEPG team concluded, "In sum, both parental survey and initial test score results provide strong justification for the legislative decision to continue and expand the Cleveland Scholarship and Tutoring Program for another year."[15] These results were obtained after spending about $2,300 per student in both instructional and non-instructional expenditures in the HOPE Academies, compared to over $6,500 in the Cleveland public school system.

The Cleveland voucher program thus has shown that better educational outcomes might just be possible with far fewer dollars.[16]

4. Enrollment as a measure of quality

Another useful measure of quality, often overlooked, is school enrollment. In a free market, sales volume is often viewed as an indicator of quality. School enrollment can be seen as similar to sales volume: the more who choose to attend (or not attend) a particular school, the better (or worse) the school must be.

When parents are willing and able to pay to attend private schools, that is an indicator of schools' quality. When students drop out, it indicates the opposite. In the education marketplace, people can vote with their feet.

Figure 4 shows the number of students in the Cleveland public schools for each grade level for each academic year. For example, in 1996-97, there were 7,515 first graders enrolled in the Cleveland public schools and 2,800 high school seniors. Attrition rates over time are seen by the rows. For instance, of the 3,256 eleventh graders in 1995-96, only the 2,800 were enrolled in twelfth grade the following year, a 14.0% attrition rate.

In the education marketplace, people can vote with their feet.

Figure 4: Enrollment in the Cleveland public schools.

1990-91 No.(Grade)		1991-92 No.(Grade)		1992-93 No.(Grade)		1993-94 No.(Grade)		1994-95 No.(Grade)		1995-96 No.(Grade)		1996-97 No.(Grade)	
												7515	(1)
										7464	(1)	6827	(2)
								7207	(1)	6588	(2)	6287	(3)
						7038	(1)	6396	(2)	6107	(3)	5997	(4)
				6808	(1)	6304	(2)	6058	(3)	5788	(4)	5649	(5)
		6778	(1)	6115	(2)	6032	(3)	5826	(4)	5586	(5)	5592	(6)
6466	(1)	6058	(2)	5850	(3)	5905	(4)	5617	(5)	5332	(6)	5375	(7)
6379	(2)	6192	(3)	5904	(4)	5858	(5)	5699	(6)	5691	(7)	5353	(8)
6093	(3)	6056	(4)	5850	(5)	5670	(6)	6055	(7)	4931	(8)	7421	(9)
5949	(4)	5855	(5)	5633	(6)	6220	(7)	5325	(8)	6718	(9)	4189	(10)
5890	(5)	5646	(6)	6117	(7)	5474	(8)	6671	(9)	3457	(10)	2624	(11)
5475	(6)	5853	(7)	5315	(8)	6379	(9)	4587	(10)	3256	(11)	2800	(12)
5565	(7)	5004	(8)	6281	(9)	4651	(10)	3515	(11)	2744	(12)		
4956	(8)	6106	(9)	4557	(10)	3695	(11)	2724	(12)				
5839	(9)	4577	(10)	3202	(11)	2622	(12)						
4614	(10)	3848	(11)	2799	(12)								
3831	(11)	2984	(12)										
2978	(12)												

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov

In the elementary school years, the pattern is the same for each class: declining enrollment.

The first grade of 1990-91 loses about 1,000 students by 1996-97. In the elementary school years, the pattern is the same for each class: declining enrollment.

A noticeable increase in enrollment occurs at the ninth grade. The ninth grade increase was most pronounced in the 1995-96 and 1996-97 school years when nearly 2,500 students were added to the ninth grade. Some observers attribute this increase to parochial school students moving into the public system. (Parochial school tuition increases dramatically at the secondary level.[17]) Nevertheless, the pattern of attrition resumes in grades 9 through 12.

Enrollment data also provides a way to independently calculate graduation rates for school districts. The Cleveland public schools reported a graduation rate in fiscal year 1996 of 32.46 percent. The graduation rate is defined by the state as the percentage of ninth graders who graduate. The number of graduates reported that year, however, 1,665,[18] is only 27.51 percent of the 6,281 who were counted in the 1992-93 ninth grade class. The reported graduation rate, therefore, overestimates the number of students who successfully complete a course of study within the Cleveland public school system.

Figure 5: Enrollment in the Columbus public schools

1990-91 No.(Grade)		1991-92 No.(Grade)		1992-93 No.(Grade)		1993-94 No.(Grade)		1994-95 No.(Grade)		1995-96 No.(Grade)		1996-97 No.(Grade)	
												6250	(1)
										6031	(1)	5759	(2)
								5846	(1)	5443	(2)	5321	(3)
						5681	(1)	5559	(2)	5230	(3)	5083	(4)
				5944	(1)	5652	(2)	5291	(3)	5057	(4)	4816	(5)
		6317	(1)	5956	(2)	5671	(3)	5395	(4)	5079	(5)	5015	(6)
6002	(1)	5519	(2)	5297	(3)	5100	(4)	4906	(5)	4663	(6)	4458	(7)
5601	(2)	5342	(3)	5215	(4)	5095	(5)	4850	(6)	4413	(7)	4235	(8)
5481	(3)	5354	(4)	5156	(5)	5038	(6)	4781	(7)	4404	(8)	5639	(9)
5495	(4)	5302	(5)	5189	(6)	4917	(7)	4661	(8)	5472	(9)	3974	(10)
5328	(5)	5331	(6)	5062	(7)	4795	(8)	5520	(9)	3740	(10)	3361	(11)
5133	(6)	4921	(7)	4704	(8)	5285	(9)	3885	(10)	3081	(11)	2743	(12)
4807	(7)	4521	(8)	5269	(9)	3892	(10)	3097	(11)	2503	(12)		
4662	(8)	5254	(9)	4227	(10)	3230	(11)	3148	(12)				
5089	(9)	4014	(10)	3340	(11)	2758	(12)						
4229	(10)	3264	(11)	3035	(12)								
3261	(11)	2643	(12)										
3333	(12)												

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov

In Figure 5, the same pattern is seen for Columbus. There is steady decline from first through eighth grade, then the ninth-grade increase, then steep decline again. In recent years the ninth grade increase in Columbus has eccelerated. The school district added 1,235 ninth graders between 1995-96 and 1996-97, compared to a 600-700 student increase in previous years.

Figure 6 shows the same pattern of enrollment decline in the elementary school years for Cincinnati. The first grade class of 1990-91 lost 33 percent of its students by 1996-97. The loss of enrollment from ninth to twelfth grades for the most recent senior class was severe, falling 64% from 4,447 students to 1,587 students.

Figure 7 shows the statewide enrollment data for private schools. The enrollment decline in high school is much more gradual. With the exception of the relatively large drop-off between the eighth and ninth grades, where more students probably leave

For the class graduating in June 1997, the three districts declined in enrollment from 14,663 to 7,130 students between 1990 and 1997 – a loss of over 51% of their students.

Figure 6: Enrollment in the Cincinnati Public Schools

1990-91 No.(Grade)	1991-92 No.(Grade)	1992-93 No.(Grade)	1993-94 No.(Grade)	1994-95 No.(Grade)	1995-96 No.(Grade)	1996-97 No.(Grade)
						4559 (1)
					4865 (1)	4243 (2)
				4984 (1)	4460 (2)	4384 (3)
			4860 (1)	4434 (2)	4468 (3)	3693 (4)
		4709 (1)	4401 (2)	4278 (3)	3703 (4)	3425 (5)
	4931 (1)	4376 (2)	4025 (3)	3638 (4)	3410 (5)	3175 (6)
4965 (1)	4288 (2)	3952 (3)	3844 (4)	3685 (5)	3613 (6)	3308 (7)
4478 (2)	4060 (3)	3925 (4)	3778 (5)	3583 (6)	3526 (7)	3395 (8)
4405 (3)	4044 (4)	3810 (5)	3579 (6)	3915 (7)	4114 (8)	4098 (9)
4271 (4)	3943 (5)	3771 (6)	4550 (7)	4220 (8)	4499 (9)	2295 (10)
4190 (5)	3748 (6)	4456 (7)	3754 (8)	4314 (9)	2695 (10)	1850 (11)
4055 (6)	4506 (7)	3826 (8)	4447 (9)	2866 (10)	2357 (11)	1587 (12)
3917 (7)	3527 (8)	4158 (9)	2787 (10)	2192 (11)	1725 (12)	
3643 (8)	4512 (9)	2818 (10)	2316 (11)	1923 (12)		
4263 (9)	2763 (10)	2238 (11)	1883 (12)			
3077 (10)	2318 (11)	1910 (12)				
2677 (11)	1940 (12)					
2327 (12)						

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov

for cost reasons, private school attrition is fairly modest. Clearly, private schools are not experiencing anything similar to the large city school districts' difficulties in retaining students.

Figure 8 shows the enrollment growth, in percentages, for parochial, private and public schools in the state. The public schools have seen only a 3.7% increase over five years, compared with a 7.1% increase for private schools. Ohio parents, it seems, are "voting with their feet": their dissatisfaction with public education is measured by the increasing enrollment of private and parochial schools.

The most significant fact shown in all the tables is the drop-off in enrollment between ninth and twelfth grades for public schools. In this critical indicator, the three biggest school districts, Cleveland, Columbus and Cincinnati, are among the worst in the state. Based on these enroll-

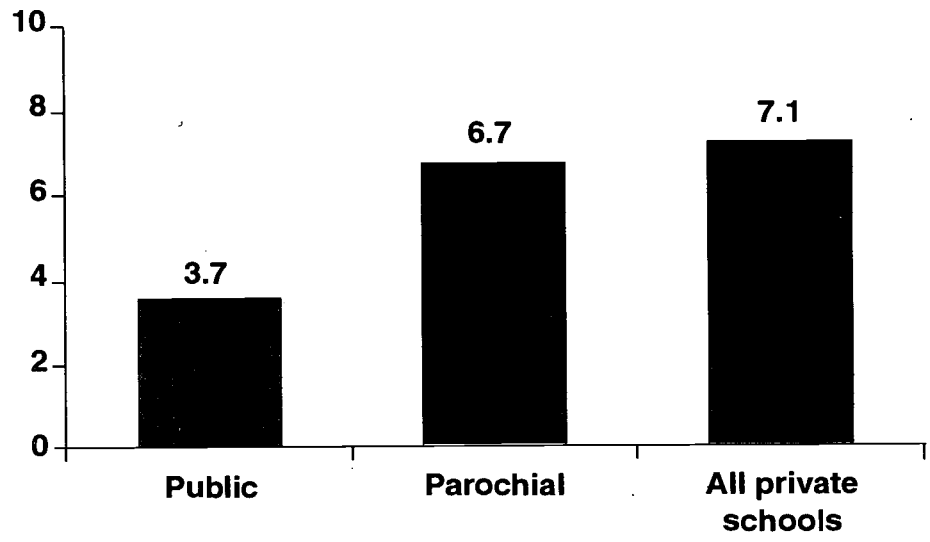
Figure 7: Private School Enrollment in the State Total Enrollment

1991-92 No. (Grade)	1992-93 No. (Grade)	1993-94 No. (Grade)	1994-95 No. (Grade)	1995-96 No. (Grade)	1996-97 No. (Grade)
					23,210 (1)
				22,815 (1)	22,436 (2)
			22,372 (1)	21,640 (2)	21,430 (3)
		21,830 (1)	21,273 (2)	20,789 (3)	20,382 (4)
	22,010 (1)	21,343 (2)	20,981 (3)	20,531 (4)	20,037 (5)
22,047 (1)	21,087 (2)	20,739 (3)	20,345 (4)	19,899 (5)	19,794 (6)
20,946 (2)	19,753 (3)	19,462 (4)	19,218 (5)	19,006 (6)	18,096 (7)
20,203 (3)	19,421 (4)	19,168 (5)	18,994 (6)	18,049 (7)	17,545 (8)
20,115 (4)	19,340 (5)	18,960 (6)	18,281 (7)	17,527 (8)	15,594 (9)
19,642 (5)	18,828 (6)	18,019 (7)	17,631 (8)	15,549 (9)	14,477 (10)
18,934 (6)	17,644 (7)	17,114 (8)	15,312 (9)	14,431 (10)	13,597 (11)
17,371 (7)	16,281 (8)	14,609 (9)	13,861 (10)	13,144 (11)	12,519 (12)
16,030 (8)	13,823 (9)	13,144 (10)	12,503 (11)	12,046 (12)	
14,072 (9)	13,272 (10)	12,716 (11)	12,133 (12)		
12,804 (10)	12,029 (11)	11,761 (12)			
12,207 (11)	12,332 (12)				
11,474 (12)					

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov

ment tables, one can see that the troubled, big-city school districts have a signature pattern of enrollment decline.

Figure 8: Percentage increase in enrollment in Ohio parochial, private, and public schools from 1990 - 96



ADM Week and absenteeism

During the second week of October each year, Ohio students are counted to determine the Average Daily Membership or ADM, an enrollment number that is used to determine each school district's share of state money. The amount distributed during the 1997-98 school year for each student counted during ADM Week was $3,663 per student.[19] With this much money at stake, each district wants to report as high an enrollment as possible.

Just as television and radio stations play their best programs during "sweeps week" in an effort to get higher ratings (and therefore more money), public school districts do their best to get students to school during the ADM week, knowing that if more students show up that week they receive more money. The Cleveland *Plain Dealer* reported on one public employee's attempt to inflate ADM numbers: "Anita Isler has prepared for today with the intensity of a general readying for battle...Isler is offering incentives [to attend school]...Children with perfect attendance at the [Cleveland] West Side school this week will be eligible for a raffle with prizes including book bags, Indians and Cavaliers shirts, and Beanie Babies."[20]

After ADM week, there are continuing efforts to document excused absences for the many thousands of Cleveland children who did not show up to claim promised prizes for good attendance. The district is given until mid-December to collect documentation showing that children were ill during ADM week and could not attend class.[21]

Children with perfect attendance...will be eligible for...prizes including book bags, Indians and Cavaliers shirts, and Beanie Babies.

"District officials estimate that 20 percent of students, or about 14,000 students, skip classes daily."

Despite these efforts, "District officials estimate that 20 percent of students, or about 14,000 students, skip classes daily. High school students miss an average of 45 days during the 180-day school year."[22]

Teaching empty chairs

Reporting cost per pupil figures that include many students who are not in school misleads taxpayers and citizens. If fewer students are being instructed on any given day, the cost per student *actually attending* is higher than reported. Thus, where large numbers of students are known to be absent, cost per pupil could be adjusted accordingly. While Appendix 1 reports costs per pupil using ADM figures, reporting them using actual attendance percentages would increase the cost per pupil.

The Cleveland school district's efforts to boost ADM enrollment figures:

- Awarding gifts and prizes to students.
- Sending 40 administrators from the downtown office to the schools to serve as attendance troubleshooters.
- Hiring 20 year-round attendance officers to track down wayward students.[a]
- Obtaining help from police, who conduct sweeps to nab truants and charge their parents with violating the daytime curfew law. Five sweeps were conducted in September and early October, 1997. In 1996-97, police picked up more than 1,500 truants.[b]
- Sending parents to Municipal Court where they are either fined $155 or ordered to perform community service.[c]
- Revoking the driver's licenses of dropouts 1,697 young Cleveland drivers lost driving privileges in 1991-93 due to a 1990 law that requires school districts to suspend the licenses of 16-and 17-year-olds who drop out of high school.[d]

a "Schools enter attendance sweeps week," Cleveland *Plain Dealer*, October 6, 1997, p. B5.
b "Police to begin nabbing truants," Cleveland *Plain Dealer*, August 27, 1998, p. B1.
c "Truancy roundup nets 47 students," Cleveland *Plain Dealer*, September 3, 1997, p. B1.
d "Lost privileges," *Columbus Dispatch*, November 17, 1996. Obtained from http://www.dispatch.com.

5. Analyzing three school districts: Cleveland, Columbus, and Cincinnati.

The preceding sections of this report have examined anecdotal and other evidence to consider the rising costs and declining achievement of Ohio's three largest school districts. Further evidence may be provided by using statistical methods to analyze the input and output data. Since parents consider a particular school rather than a school district for their child to attend, this report will consider data obtained from individual schools within Ohio.

The Buckeye Institute obtained building-level data for 38 high schools and 217 elementary schools in the Cleveland City School District, the Columbus City School District, and the Cincinnati City School District, the state's largest.[23] These data included information on "inputs" (such as spending per pupil and average number of years teaching per teacher) as well as "outputs" (specifically, proficiency test scores). In particular, the following factors were identified for analysis at the building level within the three school districts:[24]

- overall spending per student
- student attendance rates
- class size measured as the number of students per teacher
- average years of experience of teachers
- percentage of teachers in each school who have masters degrees (ninth grade proficiency exam only)
- racial characteristics of the student body

Although these are among the most measurable of school inputs, researchers have generally found that "differences in [school] quality do not seem to reflect variations in expenditures, class sizes, or other commonly measured attributes of schools and teachers."[25] In other words, good schools are good because of something other than money, class size, and other commonly cited simple solutions.

The first step was to determine what factors or inputs influenced achievement. These factors were analyzed using standard statistical techniques that allow researchers to hold other factors constant. For example, the impact of per pupil spending on student achievement could be measured holding class size, teacher experience, and other variables constant. Thus, it could be determined whether more overall resources, in fact, had an independent effect on student performance.

... good schools are good because of something other than money, class size, and other commonly cited simple solutions.

On no part of the ninth grade proficiency exam – including success on all four parts – did spending make a difference in student exam scores.

The performance measures included the ninth grade proficiency exam and the fourth grade proficiency exam, as well as the fourth grade and third grade competency-based examinations (CBEs). The ninth grade proficiency exam included five measures: math, reading, writing, citizenship, and an aggregate measure of the four sections. The fourth grade proficiency exam included six measures: math, reading, citizenship, writing, and an aggregate measure of the five sections. These tests measure part of what is called "general intellectual achievement" (GIA). Says Cornell University economist John H. Bishop, "[t]hese abilities," together with such competencies as reasoning and thinking critically, "are skills essential for performing many job tasks, the tools for learning new tasks, and the foundation upon which much job-specific knowledge is built."[26]

The 38 high schools were analyzed as an aggregate group throughout the three cities. The 217 elementary schools were analyzed for all three cities. The analysis also includes individual cities. This is the first independent study of *individual schools* to determine the effect on student performance of input factors.

Overall results

No meaningful relationship between overall spending per pupil and student achievement was found in the analysis. For 16 of the 17 aggregate proficiency exam results (for ninth, fourth, and third grades), spending had *no* statistically significant relationship to achievement. On *no* part of the ninth grade proficiency exam – including success on all four parts – did spending make a difference in student exam scores. Only on one measure of the fourth grade proficiency exam – the composition score of the fourth grade CBE exam – did spending make a positive and significant difference in student achievement.

The variation in the spending is noteworthy. The 217 elementary schools spent between $3,922 and $24,586 per student, with instructional expenditures ranging between $2,377 and $16,027 per student. But, in spite of this often high level of expenditure, spending was significant in only three of the twelve exam results.

In fact, on five measures of student achievement (the third grade CBE math score and the fourth grade math, reading, writing, and citizenship scores), more money resulted in *less* achievement, although the result was not statistically significant. These results are consistent with other studies of Ohio students as well as national studies. As economist Eric Hanushek states, "expenditures are unrelated to school performance as schools are currently operated."[27]

Spending may make a significant difference on science scores, although this should not be surprising. Experimental science, such as physics, biol-

ogy, and chemistry, requires proper equipment for instruction. For instance, one reporter for the *Chicago Tribune*, Bonita Brodt, who later won the 1989 Livingston Award for her series of articles titled "Chicago's Schools: 'Worst in America'," found inner-city Chicago students using a popcorn popper to heat their science experiments.[28] Obviously, some magnitude of expense on science results in improved learning. But the current results apply only to fourth grade science scores and cannot be extrapolated to other students in other grades or other areas of study.

The low percentage spent on instructional expenses is notable. No elementary school spent more than 78.9% of its total operating budget on instructional expenditures; one spent only 46.9 % on instructional expenditures. In fact, of the 217 elementary schools, 45 (or 21%) spent less than 60% of their education funds on classroom instruction.

Advanced teacher education also had no effect on student achievement scores. The percentage of teachers within the public elementary schools who had masters degrees ranged from 5.3% to 92.3%, but on no part of the ninth grade proficiency exam did it matter if more of a school's teachers had masters degrees. Likewise, teacher experience – measured by the average number of years spent teaching – resulted in no overall improvement in student achievement scores; it improved student achievement only on the third grade CBE Math score. The average number of years teaching in the elementary schools ranged from 4.9 to 21.3, but teaching experience proved to be an irrelevant predictor of a school's success.

Teacher salaries averaged $42,444 and ranged from $30,386 to $51,025. As Ohio University economist Richard Vedder states, "[i]n terms of 1997 dollars, [Ohio] teacher salaries have risen by about 30 percent since 1960."[29] In spite of this dramatic increase in teachers' salaries, these salaries have no definitive impact on student achievement.

Class size measured by pupil-teacher ratios also made no difference. In fact, the statistical analysis shows that *larger* classes result in *greater* student achievement, although the results were not statistically significant. On seven proficiency exam scores, *smaller* classes resulted in *lower* achievement. (The results were not significant, however.) This is entirely consistent with what other researchers have shown. As Vedder states, "[c]lass size does not matter, or matters so little that it is inappropriate to emphasize it in policy deliberations."[30]

Student attendance seems to make a significant difference on student achievement scores. If a student shows up to school, he will likely do better.

One variable that was statistically significance was the minority status of students. This is not at all surprising,

In fact, the statistical analysis shows that* larger *classes result in* greater *student achievement ...

Figure 9: Number of Public School Districts in U.S., 1937-96

1937-38	119,001
1939-40	117,108
1945-46	101,382
1949-50	83,718
1959-60	40,520
1970-71	17,995
1980-81	15,912
1990-91	15,358
1995-96	14,883

Source: National Center for Education Statistics, Digest of Education Statistics, 1997, (Washington, D.C.: U.S. Department of Education, Office of Education Research and Improvement), NCES 98-015, Table 89, p. 96.

... the most important characteristics distinguishing good schools from poor schools are subtle differences in the school environment that are not related to variations in the measurabe inputs.

because this variable was the only socioeconomic control variable. Therefore, this variable is also measuring other things, such as the percentage of the school's students come from two-parent families, the percentage of a school's students who have parents with college educations (which is perhaps one of the most significant determinants of a schild's success), the percentage of students from households receiving public assistance, and so forth. The effect of race itself must be kept in perspective. As Vedder states, "[w]hile minorities, controlling for other factors, do less well than whites, the importance of this factor is often exaggerated."[31]

Student success, therefore, is likely related to other factors, including individual initiative fostered through responsibility. John E. Chubb and Terry M. Moe argue that the most important characteristics distinguishing good schools from poor schools are subtle differences in the school environment that are not related to variations in the measurable inputs.[32] One of these factors is how the schools are organized. To further illustrate, the number of public school districts have decreased in the last sixty years. Contrary to what has occurred in many market organizations, which have seen enormous *decentalization*, centralization *increased* in public school districts over time, with more students in each school district and less variation in the size of the districts.

Centralization of, and decreased variation in, school districts must necessarily go hand-in-hand. Variation in school organization can come about by expanding school choice.

Understanding the role of money in public education

The issue of school cost does not address whether or not resources are used efficiently or cost effectively. In fact, the relationship between overall spending and student performance is strikingly weak.[33] Studies of school spending and student performance in Ohio schools have failed to produce evidence that increasing overall school spending will boost student

achievement. As Chubb and Moe summarize: "As for money, the relationship between it and effective schools has been studied to death. The unanimous conclusion is that there is no connection between school funding and school performance."[34]

Why does money not improve performance? In the current system, performance is not factored into decisions about funding. For example, about 72% of the Cleveland school spending is tied to instruction. Teacher salaries, however, are determined by collective bargaining contracts which are linked to the number of years they taught and the number of graduate education credits they have earned, not whether they are effective teachers. Teacher experience, therefore, while it *is* a cost-driver, does not affect student performance. Likewise, as Hanushek points out, "[b]ecause teacher salaries are closely linked to experience and education, and because variations in salaries and pupil-teacher ratios are the most important determinants in spending per pupil, the added real resources directly drive spending."[35]

In other words, teacher experience and student-teacher ratios (which are not statistically significant) *do not* affect student performance, but they *do* drive cost-per-pupil. The added real spending, moreover, can *negatively* affect student performance. As Hanushek summarizes, "[b]ecause good and bad teachers or good and bad administrators can expect about the same career progression, pay, and other outcomes, the choice of programs, organization, and behaviors is less dependent on student outcomes than on other things that directly affect the factors in schools."[36]

The factors, then, that are the most important determinants of *spending* per pupil (not student performance) are salaries and pupil-teacher ratios.[37]

More importantly, a substantial portion of the money spent in public schools does not go into the classroom. In Cleveland, almost 30% of the money spent in Cleveland's elementary schools goes *outside* the classroom.[38]

Research confirms other analyses

This school-level research establishes what has been shown at the national and state level. It is consistent with research done by University of Rochester economist Eric Hanushek at the national level and Ohio University economist Richard Vedder at the state level.[39] Both found very little effect of class size reduction on academic performance. "The extensive investigation of the effects of class size on student performance has produced a very consistent picture," notes Hanushek. "There appears to be little

Teacher experience, therefore, while it is a cost-driver, does not affect student performance.

systematic gain from general reductions in class size."[40] Summarizes Vedder: "Reducing class size is an extremely expensive reform, and the results here suggest that it is one that makes little sense on cost-benefit grounds."[41]

Determinants of student success in Cincinnati, Columbus and Cleveland elementary schools

	4th Grade Math	4th Grade All Parts	CBE4 Math	CBE3 Math
Spending per student	✘	✘	✘	✘
Teacher salaries	✔	✔	✘	✘
Student attendance	✔	✔	✔	✔
Teacher experience	✘	✘	✘	✔
Teachers w/ M.A.	✘	✘	✘	✘
% of budget in instruction	✘	✘	✘	✘
Students per teacher	✘	✘	✘	✘

Key: ✔ indicates factor was related to student success and was positively associated with performance
✘ indicates variable was unrelated to student success or was negatively associated with performance

6. Choice and Consequences

If commonly cited factors such as spending and class size are unrelated to performance, it begs an obvious question: What does matter?

Research suggests that school autonomy and innovation — expecially among teachers — are crucial determinants of student success.

Richard J. Munane of Yale University's Institution for Social and Policy Studies and Barbara R. Phillips of Mathematica Policy Research, writing in the journal *Social Science Research* and echoing the results presented here, suggests that "effective teachers do not share common demographic characteristics such as race or sex. Nor do they have more formal education as a group than other teachers do. . . . What effective teachers seem to have in common is an ability to discover techniques that fit the needs of the particular children in their classes."[42]

Murnane and Phillips conclude by stating that "[e]ffective teachers discover the techniques that work with particular children, not by matching techniques to observable characteristics, but rather by a search process, characterized by trial and error. To understand the role of teaching techniques in determining teaching success, we must learn about the nature of this search process and about the factors that influence its effectiveness."[43]

This research was confirmed by Hanushek, who found that differences in school quality do not seem to be related to measurable inputs. "Instead," he writes, "they appear to result from differences in teacher 'skills' that defy detailed description, but that possibly can be observed directly. This interpretation of research findings has clear implications for school policy."[44] Consumers, who in the education marketplace are parents and students, are best equipped to judge these skills through expanded educational choice.

Economists John E. Chubb and Terry M. Moe state: "It is fashionable these days to say that choice is 'not a panacea.' Taken literally, this is obviously true. However, "reformers would do well to entertain the notion that choice is a panacea. . . . It has the capacity *all by itself* to bring about the kind of transformation that, for years, reformers have been seeking to engineer in myriad other ways.[45] Choice, therefore, must not merely be considered one of many reform proposals.

Economic motivation for improved school performance is of two types: incentives and disincentives. Those who operate private schools are subject to both as they are rewarded for enrolling additional students and punished when student enrollment decreases. Since tuition is the dominant source of revenue for the school, enrollment becomes the critical force.

"reformers would do well to entertain the notion that choice is a panacea. . . . "

the educational policy debate should focus on the practical question of how best to structure an incentive system.

If it is true that schools perform best when they have economic incentives, then the educational policy debate should focus on the practical question of how best to structure an incentive system.

More solid structures of school organization may likely be obtained from voucher systems, charter schools, and tax credits for tuition payments. Where these have been tried, they have proven popular and effective. These programs link rewards directly with parent satisfaction, bypassing all the political controversy that must accompany a state program that rewards some schools and punishes others according to an arbitrary formula invented by a legislature or a state education department. A real program of school choice that gives parents and students, particularly those in the central cities, more options will instill necessary incentives for improvement in the public schools.

George Mason University economist Walter E. Williams presents the monopoly effects of public schools on individuals:

> A state monopoly in the production of a good or service enhances the potential for conflict, through requiring uniformity; that is, its production requires a collective decision on many attributes of the product, and once produced, everybody has to consume the identical product whether he agrees with all the attributes or not. State monopolies in the production of education enhance the potential for conflict by requiring conformity on issues of importance to many people.[46]

The direct opposite of this stifling "conformity" is variation, and variation in school organization can only be achieved through greater consumer choice of the educational environment.

A clear understanding of the relationship between incentives and educational performance may move the debate beyond the stage of proposing mere experiments. Decisive action to institute a market-oriented, consumer-driven educational system based on parental and student choice must be taken to improve urban schools.

Appendix 1:

1997 GAAP Costs Per Pupil by county and school district

District	County	Total Expense As Reported	Other Expense As Reported	Interest Expense	Depreciation	Capital Outlay (Revised)	Total Expense	GAAP Cost/Pupil [ADM adj.]
Adams County/Ohio Valley CSD	Adams	26,054,690	36,775,017	2,453,375	6,022,019	6,051,081	77,356,182	14,799
Allen East LSD	Allen	5,107,427	521,273	1,250	249,440	231,402	6,110,792	5,410
Bath LSD	Allen	11,185,666	365,180	0	1,471,500	369,182	13,391,528	6,456
Bluffton Ex Vill SD	Allen	5,351,404	6,552,796	533,220	292,949	312,325	13,042,694	11,203
Delphos CSD	Allen	5,637,475	514,641	21,924	1,158,856	372,523	7,705,419	6,695
Elida LSD	Allen	13,975,849	1,321,493	134,121	2,120,561	497,297	18,049,321	6,181
Lima CSD	Allen	32,222,741	2,534,369	190,854	2,195,996	990,286	38,134,246	6,592
Perry LSD	Allen	4,500,400	151,060	0	568,205	135,835	5,355,499	7,072
Shawnee LSD	Allen	14,261,782	808,427	0	1,006,330	790,197	16,866,737	6,733
Spencerville LSD	Allen	5,009,716	217,117	0	457,368	175,371	5,859,572	5,484
Ashland CSD	Ashland	25,176,804	6,511,512	24,075	8,542,445	750,151	41,004,987	10,293
Hillsdale LSD	Ashland	6,774,064	454,954	0	2,023,077	257,191	9,509,286	7,995
Loudonville-Perrysville Ex Vill SD	Ashland	7,755,733	615,070	0	1,993,293	277,060	10,641,157	7,643
Mapleton LSD	Ashland	5,972,123	316,139	0	1,381,972	156,998	7,827,232	7,023
Ashtabula Area CSD	Ashtabula	28,043,557	1,225,077	0	6,502,788	902,224	36,673,645	7,197
Buckeye LSD	Ashtabula	12,996,620	1,269,216	0	2,226,500	529,208	17,021,544	7,349
Conneaut Area CSD	Ashtabula	12,403,057	1,095,571	29,909	1,187,535	396,399	15,112,471	5,926
Geneva Area CSD	Ashtabula	15,843,314	2,346,271	0	1,820,057	643,436	20,653,078	6,321
Grand Valley LSD	Ashtabula	6,806,981	176,209	0	1,283,995	209,148	8,476,333	6,279
Jefferson Area LSD	Ashtabula	10,362,262	420,561	0	2,064,929	135,049	12,982,801	5,747
Pymatuning Valley LSD	Ashtabula	7,136,986	542,174	0	1,085,001	213,954	8,978,114	6,073
Alexander LSD	Athens	9,226,812	553,315	0	0	290,297	10,070,425	5,719
Athens CSD	Athens	18,927,234	1,743,970	537,331	1,719,500	1,080,471	24,008,506	7,839
Federal Hocking LSD	Athens	9,099,272	6,210,694	241,923	0	1,184,483	16,736,372	10,386
Nelsonville-York CSD	Athens	7,304,104	8,754,439	0	1,872,821	1,285,967	19,217,331	13,577
Trimble LSD	Athens	6,008,588	694,913	56,063	539,705	276,878	7,576,146	6,942
Minster LSD	Auglaize	4,885,146	764,413	19,531	1,801,951	196,776	7,667,817	8,420
New Bremen LSD	Auglaize	4,340,991	9,698,091	301,632	405,379	264,403	15,010,495	16,257
New Knoxville LSD	Auglaize	2,333,720	181,667	0	33,632	93,172	2,642,191	5,445
St Marys CSD	Auglaize	12,042,808	1,004,805	0	3,255,352	599,290	16,902,255	6,574
Wapakoneta CSD	Auglaize	16,106,141	3,196,664	644,531	2,143,168	1,378,092	23,468,596	6,725
Waynesfield-Goshen LSD	Auglaize	3,016,248	1,816,322	72,332	0	582,263	5,487,165	10,112
Barnesville Ex Vill SD	Belmont	7,174,310	902,209	14,700	321,768	199,267	8,612,254	5,933
Bellaire CSD	Belmont	9,820,252	781,984	0	1,701,222	177,241	12,480,699	7,060
Bridgeport Ex Vill SD	Belmont	4,440,859	1,539,314	0	352,712	121,554	6,454,439	7,621
Martins Ferry CSD	Belmont	8,400,081	340,016	5,200	1,270,142	240,810	10,256,249	6,867
Shadyside LSD	Belmont	4,579,343	243,451	0	531,223	99,370	5,453,388	5,937
St Clairsville-Rich LSD	Belmont	8,856,063	413,349	0	1,344,415	316,695	10,930,521	5,655

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Union LSD	Belmont	8,036,785	8,845,819	144,935	2,140,554	994,883	20,162,975	12,547
Eastern LSD	Brown	7,221,821	8,382,034	207,188	1,503,035	1,464,110	18,778,187	12,700
Fayetteville-Perry	Brown	4,102,721	3,430,437	111,871	0	455,611	8,100,641	9,508
Georgetown Ex Vill SD	Brown	4,716,890	2,367,536	17,512	5,328	307,352	7,414,618	6,265
Ripley-Union-Lewis LSD	Brown	6,844,227	805,515	178,079	0	1,626,271	9,454,092	7,252
Western Brown LSD	Brown	14,184,237	958,095	15,089	2,347,834	563,458	18,068,713	6,017
Edgewood CSD	Butler	13,897,922	1,809,646	630,543	0	1,828,015	18,166,125	6,684
Fairfield CSD	Butler	43,455,429	36,068,671	3,207,734	0	7,066,382	89,798,215	10,718
Hamilton CSD	Butler	52,382,761	3,613,907	0	4,183,675	2,405,897	62,586,240	6,384
Lakota LSD	Butler	57,510,179	39,364,817	5,141,939	0	12,592,343	114,609,278	9,182
Madison LSD	Butler	8,211,535	1,307,137	0	725,356	331,934	10,575,962	6,614
Middletown-Monroe CSD	Butler	52,945,150	6,050,216	23,275	9,363,512	1,423,347	69,805,499	7,744
New Miami LSD	Butler	5,224,649	188,017	600	682,404	76,511	6,172,180	6,734
Ross LSD	Butler	12,296,647	1,070,361	0	987,624	696,099	15,050,732	5,832
Talawanda CSD	Butler	17,847,025	2,867,918	133,458	0	1,112,088	21,960,489	6,298
Brown LSD	Carroll	4,963,843	143,816	1,105	903,077	152,234	6,164,074	5,874
Carrollton Ex Vill SD	Carroll	13,394,320	489,944	0	2,856,612	343,094	17,083,970	5,858
Graham LSD	Champaign	9,858,505	1,024,393	0	4,792,390	480,664	16,155,953	7,839
Mechanicsburg Ex Vill SD	Champaign	4,200,395	422,384	781	336,397	174,015	5,133,972	6,933
Triad LSD	Champaign	5,155,411	406,650	11,250	195,513	250,289	6,019,112	6,212
Urbana CSD	Champaign	12,899,441	1,064,381	0	3,238,335	640,240	17,842,398	7,576
West Liberty-Salem LSD	Champaign	5,571,455	580,132	141,750	27,130	188,128	6,508,595	6,121
Clark-Shawnee LSD	Clark	12,066,941	621,241	4,228	1,040,850	244,150	13,977,410	5,669
Mad River-Green LSD	Clark	9,577,403	1,126,333	84,375	4,121,449	229,028	15,138,587	7,034
Northeastern LSD	Clark	16,638,915	4,051,479	311,522	1,591,036	688,626	23,281,578	7,089
Northwestern LSD	Clark	9,895,207	1,471,348	8,772	2,240,151	523,882	14,139,360	7,330
Southeastern LSD	Clark	4,428,885	682,857	0	466,551	247,942	5,826,234	6,846
Springfield CSD	Clark	56,659,908	7,021,630	1,219,310	7,508,988	3,925,771	76,335,608	7,350
Tecumseh LSD	Clark	19,929,178	642,370	0	1,363,639	463,396	22,398,583	6,163
Batavia LSD	Clermont	8,245,483	9,051,700	473,500	44,850	1,405,106	19,220,640	12,031
Bethel-Tate LSD	Clermont	9,317,753	1,169,180	150	0	494,831	10,981,914	5,711
Clermont-Northeastern LSD	Clermont	10,384,566	2,491,571	380,638	0	1,102,541	14,359,316	7,039
Felicity-Franklin LSD	Clermont	6,624,197	7,251,524	84,719	313,503	914,761	15,188,704	11,812
Goshen LSD	Clermont	13,631,121	2,456,802	12,319	326,709	490,832	16,917,784	6,497
Milford Ex Vill SD	Clermont	28,286,682	3,538,053	0	1,596,110	1,213,429	34,634,274	6,284
New Richmond Ex Vill SD	Clermont	20,005,879	7,608,394	175,038	0	3,363,053	31,152,364	11,424
West Clermont LSD	Clermont	43,064,613	7,128,383	931,859	1,505,297	2,359,187	54,989,339	6,009
Williamsburg LSD	Clermont	5,939,810	7,615,920	144,075	471,982	1,109,616	15,281,402	13,387
Blanchester LSD	Clinton	8,153,969	987,564	68,604	570,540	367,742	10,148,418	5,858
Clinton-Massie LSD	Clinton	6,844,182	651,144	225,536	0	594,034	8,314,895	5,318
East Clinton LSD	Clinton	7,301,210	6,601,510	268,837	0	1,405,005	15,576,563	9,760
Wilmington CSD	Clinton	15,282,807	1,979,043	789,029	0	2,252,319	20,303,198	5,993
Beaver LSD	Columbiana	12,358,698	1,082,100	0	2,445,402	482,024	16,368,224	6,992
Columbiana Ex Vill SD	Columbiana	5,630,092	310,067	24,281	681,326	217,897	6,863,664	6,873

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Crestview LSD	Columbiana	6,063,827	1,491,198	200,757	0	1,992,689	9,748,470	8,129
East Liverpool CSD	Columbiana	19,590,559	1,625,720	0	1,148,493	486,553	22,851,324	7,060
East Palestine CSD	Columbiana	7,283,100	10,075,234	60,084	1,172,176	733,458	19,324,052	12,154
Leetonia Ex Vill SD	Columbiana	4,589,513	339,519	0	827,658	206,349	5,963,040	6,657
Lisbon Ex Vill SD	Columbiana	6,087,607	1,046,314	178,438	153,244	647,363	8,112,965	6,403
Salem CSD	Columbiana	15,454,552	3,503,419	11,375	1,292,221	932,115	21,193,681	7,710
Southern LSD	Columbiana	4,722,474	501,742	0	843,983	87,699	6,155,899	6,776
United LSD	Columbiana	6,892,847	300,841	0	470,682	515,512	8,179,881	5,197
Wellsville LSD	Columbiana	5,698,829	253,945	0	589,785	214,908	6,757,467	5,937
Coshocton CSD	Coshocton	11,150,973	490,666	0	1,509,474	463,843	13,614,956	6,263
Ridgewood LSD	Coshocton	7,345,240	873,389	0	761,889	230,097	9,210,615	5,909
River View LSD	Coshocton	13,903,666	513,742	0	1,458,581	316,295	16,192,284	6,094
Buckeye Central LSD	Crawford	3,922,074	293,449	12,513	635,712	148,488	5,012,235	8,258
Bucyrus CSD	Crawford	11,249,205	2,663,108	0	809,589	314,852	15,036,754	7,978
Colonel Crawford LSD	Crawford	5,819,343	271,409	0	773,641	146,493	7,010,886	6,841
Crestline Ex Vill SD	Crawford	5,643,019	345,552	49,302	519,382	203,651	6,760,904	7,306
Galion CSD	Crawford	12,791,634	461,910	12,375	259,971	248,773	13,774,663	5,664
Wynford LSD	Crawford	5,922,886	460,148	0	1,598,933	239,687	8,221,655	7,038
Bay Village CSD	Cuyahoga	16,215,694	1,815,170	469,740	2,631,718	728,835	21,861,158	8,988
Beachwood CSD	Cuyahoga	18,946,027	1,532,532	390,285	0	1,282,146	22,150,989	14,921
Bedford CSD	Cuyahoga	31,846,157	3,076,347	768,247	0	3,479,375	39,170,127	10,122
Berea CSD	Cuyahoga	54,011,405	4,944,967	841,264	764,967	3,617,212	64,179,815	8,029
Brecksville-Broadville Hghts CSD	Cuyahoga	25,317,052	22,999,650	2,108,682	480,202	4,055,491	54,961,077	14,866
Brooklyn CSD	Cuyahoga	11,298,783	2,648,381	0	1,283,608	977,600	16,208,373	12,964
Chagrin Falls Ex Vill SD	Cuyahoga	12,874,720	1,420,316	262,500	0	1,323,170	15,880,705	8,667
Cleveland CSD	Cuyahoga	542,125,297	173,264,567	3,734,741	68,738,252	14,250,192	802,113,049	10,962
Cleveland Hghts-Univ Hghts CSD	Cuyahoga	61,721,304	3,586,234	94,883	2,009,739	2,719,343	70,131,503	9,444
Cuyahoga Hghts LSD	Cuyahoga	9,239,980	1,666,708	319,306	0	1,299,801	12,525,794	15,942
East Cleveland CSD	Cuyahoga	46,229,974	816,626	65,313	5,678,244	422,298	53,212,454	8,891
Euclid CSD	Cuyahoga	43,243,129	5,209,986	0	2,177,477	2,801,664	53,432,256	9,216
Fairview Park CSD	Cuyahoga	13,705,152	7,301,088	41,223	2,160,153	749,967	23,957,583	11,833
Garfield Heights CSD	Cuyahoga	19,685,668	1,284,894	28,611	2,504,475	439,135	23,942,782	7,254
Independence LSD	Cuyahoga	9,128,329	345,960	0	730,773	434,805	10,639,867	11,225
Lakewood CSD	Cuyahoga	49,489,721	5,111,269	1,101,666	2,046,939	2,267,630	60,017,225	7,782
Maple Hghts CSD	Cuyahoga	20,468,471	3,206,775	0	195,280	689,936	24,560,462	6,677
Mayfield CSD	Cuyahoga	28,835,505	2,956,965	220,513	947,632	1,191,569	34,152,183	8,263
North Olmsted CSD	Cuyahoga	32,330,855	2,942,996	0	3,954,393	620,330	39,848,574	7,975
North Royalton CSD	Cuyahoga	23,131,419	7,233,155	1,797,360	0	3,773,411	35,935,345	8,947
Olmsted Falls CSD	Cuyahoga	18,235,301	10,077,448	1,084,323	0	4,000,623	33,397,695	11,716
Orange CSD	Cuyahoga	23,764,871	3,715,028	0	420,865	1,155,314	29,056,078	12,440
Parma CSD	Cuyahoga	84,615,283	9,724,213	0	7,885,219	2,052,127	104,276,842	8,017
Richmond Hghts LSD	Cuyahoga	7,113,357	640,409	0	537,572	353,943	8,645,280	9,405
Rocky River CSD	Cuyahoga	16,145,108	2,780,793	604,500	0	2,432,101	21,962,502	10,611
Shaker Hghts CSD	Cuyahoga	50,642,443	2,459,921	594,257	6,329,563	1,289,599	61,315,782	10,996

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Solon CSD	Cuyahoga	34,051,694	13,452,205	1,550,008	4,021,238	4,817,666	57,892,811	12,918
South Euclid-Lyndhurst CSD	Cuyahoga	33,232,916	5,140,260	798,503	1,538,519	2,108,482	42,818,680	10,401
Strongsville CSD	Cuyahoga	40,877,818	33,281,440	1,131,843	2,319,874	2,006,381	79,617,355	12,014
Warrensville Hghts CSD	Cuyahoga	22,073,746	3,361,750	0	1,886,853	690,407	28,012,756	9,140
Westlake CSD	Cuyahoga	27,945,686	3,883,031	909,305	1,229,107	820,859	34,787,988	9,441
Ansonia LSD	Darke	4,074,558	244,389	0	172,673	113,312	4,604,931	6,585
Arcanum Butler LSD	Darke	5,512,441	383,214	0	2,778,459	193,274	8,867,387	7,425
Franklin-Monroe LSD	Darke	3,843,228	175,251	0	508,403	106,951	4,633,833	6,469
Greenville CSD	Darke	16,042,875	889,480	4,847	5,690,022	528,657	23,155,880	6,662
Mississinawa Valley LSD	Darke	4,601,235	287,424	3,459	240,656	142,350	5,275,125	7,176
Tri-Village LSD	Darke	4,871,297	425,662	44,225	867,885	206,121	6,415,190	7,659
Versailles Ex Vill SD	Darke	6,427,950	385,704	1,175	1,977,423	281,410	9,073,662	6,689
Ayersville LSD	Defiance	4,785,283	272,130	9,537	715,711	181,290	5,963,951	6,848
Central LSD	Defiance	6,414,007	637,788	7,398	875,768	287,866	8,222,826	6,653
Defiance CSD	Defiance	15,528,055	1,589,521	0	2,462,324	566,083	20,145,983	6,733
Hicksville Ex Vill SD	Defiance	5,074,935	514,957	0	930,206	95,151	6,615,250	6,548
Northeastern LSD	Defiance	6,456,282	204,315	0	988,396	169,113	7,818,105	6,476
Big Walnut LSD	Delaware	12,901,129	2,675,016	893,133	0	2,365,559	18,834,837	7,352
Buckeye Valley LSD	Delaware	12,621,141	10,558,529	569,388	1,477,609	1,737,966	26,964,633	12,171
Delaware CSD	Delaware	23,189,650	15,527,956	1,634,539	0	3,614,079	43,966,223	10,908
Olentangy LSD	Delaware	21,667,920	12,920,276	3,193,958	0	6,701,410	44,483,565	11,619
Berlin-Milan LSD	Erie	9,832,608	644,904	52,500	1,223,355	449,417	12,202,784	7,094
Huron CSD	Erie	9,679,552	1,120,476	0	1,584,165	396,434	12,780,626	8,571
Kelleys Island LSD	Erie	361,162	83,146	0	106,925	25,356	576,589	23,401
Margaretta LSD	Erie	8,986,005	323,355	0	2,047,292	312,418	11,669,069	7,395
Perkins LSD	Erie	13,322,044	1,375,813	32,156	1,171,361	705,872	16,607,246	7,994
Sandusky CSD	Erie	27,016,390	1,754,264	175,433	5,119,140	1,122,979	35,188,205	8,001
Vermilion LSD	Erie	17,253,273	2,939,419	12,684	1,207,309	508,838	21,921,524	8,054
Amanda-Clearcreek LSD	Fairfield	7,359,187	534,276	11,700	2,466,955	297,739	10,669,856	7,129
Berne Union LSD	Fairfield	5,139,082	5,273,349	301,441	0	1,395,349	12,109,221	12,768
Bloom Carroll LSD	Fairfield	7,070,682	1,159,606	53,177	1,402,574	113,345	9,799,384	6,212
Fairfield Union LSD	Fairfield	9,049,266	1,600,368	71,660	238,662	612,446	11,572,402	6,258
Lancaster CSD	Fairfield	33,552,694	1,268,122	0	5,116,047	1,192,294	41,129,157	6,645
Liberty Union-Thurston LSD	Fairfield	6,984,270	970,353	148,875	0	150,158	8,253,656	6,282
Pickerington LSD	Fairfield	34,437,776	5,755,979	1,708,102	0	5,041,452	46,943,310	7,395
Walnut Township LSD	Fairfield	3,656,614	2,894,030	322,624	462,975	446,312	7,782,555	11,425
Miami Trace LSD	Fayette	15,064,219	1,341,963	1,849	3,081,640	666,978	20,156,649	6,892
Washington Court House LSD	Fayette	11,271,027	448,758	0	391,121	332,836	12,443,742	5,674
Bexley CSD	Franklin	16,344,824	2,072,901	498,606	0	1,957,716	20,874,047	9,243
Canal Winchester LSD	Franklin	7,437,797	2,769,212	283,435	0	1,451,645	11,942,089	8,491
Columbus CSD	Franklin	403,720,461	23,049,420	5,370,206	29,276,931	20,706,646	482,123,664	7,665
Dublin CSD	Franklin	68,889,727	72,719,963	6,546,123	0	9,606,229	157,762,043	15,917
Gahanna-Jefferson CSD	Franklin	40,588,292	5,760,884	0	0	4,337,838	50,687,014	7,011
Grandview Hghts CSD	Franklin	10,338,854	9,402,457	769,043	198,371	2,093,507	22,802,232	17,863

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Groveport Madison LSD	Franklin	34,179,591	5,802,393	26,306	2,634,087	630,304	43,272,682	7,882
Hamilton LSD	Franklin	13,917,880	2,547,180	72,753	1,319,821	670,228	18,527,862	7,483
Hilliard CSD	Franklin	53,977,693	42,282,140	5,669,960	0	13,744,361	115,674,154	11,469
Plain LSD	Franklin	7,766,484	756,717	57,038	83,108	473,100	9,136,446	8,555
Reynoldsburg CSD	Franklin	28,029,547	2,847,482	1,420,578	0	4,135,823	36,433,429	6,830
South-Western CSD	Franklin	96,693,647	15,625,911	2,339,661	1,260,962	6,991,317	122,911,497	7,219
Upper Arlington CSD	Franklin	43,438,837	24,969,527	2,818,824	3,927,905	4,286,726	79,441,818	14,852
Westerville CSD	Franklin	69,859,812	10,219,727	2,063,503	502,067	2,583,852	85,228,962	6,564
Whitehall CSD	Franklin	17,157,396	3,154,360	215,448	769,828	1,121,650	22,418,681	7,959
Worthington CSD	Franklin	71,165,415	13,584,384	4,597,524	0	10,745,589	100,092,912	9,692
Archbold-Area LSD	Fulton	7,885,768	6,269,579	910,398	19,494	1,706,663	16,791,902	11,646
Evergreen LSD	Fulton	7,880,711	292,370	38,604	1,086,257	202,407	9,500,350	7,428
Gorham Fayette LSD	Fulton	2,851,551	103,438	0	462,633	102,138	3,519,760	7,328
Pettisville LSD	Fulton	2,909,300	285,648	0	157,036	170,318	3,522,302	6,747
Pike-Delta-York LSD	Fulton	9,187,563	219,877	0	480,837	180,277	10,068,554	6,148
Swanton LSD	Fulton	10,298,936	870,081	0	1,402,077	493,844	13,064,937	7,862
Wauseon Ex Vill SD	Fulton	8,738,121	1,287,369	311,170	757,232	593,178	11,687,069	5,994
Gallia County LSD	Gallia	15,781,244	3,261,674	357,319	2,058,294	498,232	21,956,762	7,070
Gallipolis CSD	Gallia	13,284,976	1,258,624	0	3,766,818	504,577	18,814,995	7,730
Berkshire LSD	Geauga	7,780,985	173,027	23,869	1,208,566	134,196	9,320,643	7,370
Cardinal LSD	Geauga	9,047,612	789,656	54,064	1,103,525	287,060	11,281,917	7,794
Chardon LSD	Geauga	17,345,666	832,189	0	1,853,950	562,051	20,593,857	6,778
Kenston LSD	Geauga	16,859,920	2,402,133	752,945	146,309	1,590,706	21,752,012	7,525
Ledgemont LSD	Geauga	4,094,214	586,046	77,764	710,823	86,322	5,555,169	8,487
Newbury LSD	Geauga	5,834,845	440,515	4,550	1,665,323	166,720	8,111,952	10,669
West Geauga LSD	Geauga	15,136,398	13,676,099	1,168,590	10,732	3,130,779	33,122,598	14,421
Beavercreek CSD	Greene	37,718,004	52,989,188	2,409,726	463,044	2,209,713	95,789,675	14,684
Cedar Cliff LSD	Greene	3,679,532	400,286	22,750	181,111	125,509	4,409,188	6,650
Fairborn CSD	Greene	30,241,180	3,434,114	78,391	2,491,137	835,837	37,080,659	6,665
Greeneview LSD	Greene	8,127,238	741,563	18,233	397,003	193,166	9,477,202	5,642
Sugarcreek LSD	Greene	13,004,120	4,552,060	34,424	0	1,976,421	19,567,025	7,870
Xenia CSD	Greene	31,325,927	4,087,426	0	1,139,266	567,385	37,120,005	7,141
Yellow Springs Ex Vill SD	Greene	4,433,034	365,155	173	281,748	136,341	5,216,451	8,264
Cambridge CSD	Guernsey	14,696,470	1,508,708	0	919,672	736,957	17,861,806	6,372
East Guernsey LSD	Guernsey	5,862,145	878,307	119,250	949,913	177,743	7,987,358	6,808
Rolling Hills LSD	Guernsey	11,134,615	1,950,387	365,625	0	673,704	14,124,331	6,475
Cincinnati CSD	Hamilton	340,481,708	116,145,352	787,452	32,072,583	10,166,502	499,653,598	10,099
Deer Park Community CSD	Hamilton	9,461,778	771,760	0	926,635	270,348	11,430,520	7,548
Finneytown LSD	Hamilton	10,704,437	834,584	247,585	609,673	280,648	12,676,926	6,721
Forest Hills LSD	Hamilton	38,879,655	26,961,310	750,471	365,313	1,415,914	68,372,663	9,021
Indian Hill Ex Vill SD	Hamilton	16,036,269	2,563,438	0	0	1,787,921	20,387,628	10,411
Lockland CSD	Hamilton	5,943,187	2,284,137	578,175	0	1,055,084	9,860,582	12,443
Loveland CSD	Hamilton	18,148,840	2,634,493	939,719	0	2,525,450	24,248,503	6,840
Madeira CSD	Hamilton	8,466,219	407,799	171,063	1,103,061	217,768	10,365,909	7,661

District	County	Total Expense As Reported	Other Expense As Reported	Interest Expense	Depreciation	Capital Outlay (Revised)	Total Expense	GAAP Cost/Pupil [ADM adj.]
Mariemont CSD	Hamilton	11,319,611	844,163	0	1,168,635	314,282	13,646,690	8,764
Mount Healthy CSD	Hamilton	24,037,258	2,088,678	9,481	2,008,167	480,478	28,624,062	7,480
North College Hill CSD	Hamilton	8,061,820	693,869	0	897,710	280,797	9,934,197	6,655
Northwest LSD	Hamilton	52,721,693	2,735,769	4,313	2,044,060	1,500,728	59,006,561	5,808
Norwood CSD	Hamilton	19,064,243	2,114,785	0	2,630,714	400,680	24,210,422	7,577
Oak Hills LSD	Hamilton	37,564,934	1,068,289	0	2,132,988	628,296	41,394,507	5,257
Princeton CSD	Hamilton	57,665,001	4,900,590	165,966	1,238,728	2,339,006	66,309,290	10,269
Reading Community CSD	Hamilton	9,442,242	228,783	0	548,550	250,105	10,469,681	7,444
Southwest LSD	Hamilton	19,970,849	1,669,884	278,061	751,431	1,438,998	24,109,223	6,174
St Bernard-Elmwood Place CSD	Hamilton	8,694,245	941,223	64,287	134,575	289,267	10,123,596	8,260
Sycamore Community CSD	Hamilton	45,852,295	3,086,864	314,519	0	2,467,865	51,721,543	8,337
Three Rivers LSD	Hamilton	12,013,585	650,349	0	1,498,237	336,945	14,499,117	6,749
Winton Woods CSD	Hamilton	27,946,715	1,478,851	0	4,686,138	713,416	34,825,120	8,135
Wyoming CSD	Hamilton	11,273,290	594,908	0	668,562	385,103	12,921,864	7,416
Arcadia LSD	Hancock	3,198,087	157,921	2,531	439,392	116,720	3,914,651	6,106
Arlington LSD	Hancock	3,305,251	388,156	111,589	0	334,313	4,139,308	6,164
Cory-Rawson LSD	Hancock	4,067,487	490,414	24,456	665,159	104,094	5,351,610	6,782
Findlay CSD	Hancock	35,949,335	2,874,496	0	6,320,726	898,488	46,043,045	7,839
Liberty-Benton LSD	Hancock	5,303,012	2,352,572	337,040	0	1,392,935	9,385,560	8,755
McComb LSD	Hancock	4,176,331	344,466	0	400,259	158,931	5,079,986	6,069
Van Buren LSD	Hancock	4,615,770	365,035	2,756	317,817	220,637	5,522,015	6,577
Vanlue LSD	Hancock	1,661,522	160,654	0	138,766	72,238	2,033,181	6,287
Ada Ex Vill SD	Hardin	4,359,315	793,994	0	603,036	307,158	6,063,503	7,068
Hardin Northern LSD	Hardin	2,971,596	301,931	1,200	108,741	157,923	3,541,390	6,233
Kenton CSD	Hardin	11,311,402	1,057,048	672	1,409,225	329,451	14,107,797	6,665
Ridgemont LSD	Hardin	2,940,758	286,185	147,658	239,313	522,516	4,136,429	7,283
Riverdale LSD	Hardin	5,307,524	653,930	0	1,309,143	199,022	7,469,619	6,767
Upper Scioto Valley LSD	Hardin	3,885,544	216,902	0	494,754	90,305	4,687,505	6,215
Conotton Valley Union LSD	Harrison	2,990,774	162,853	0	633,077	89,714	3,876,418	7,116
Harrison Hills CSD	Harrison	12,306,459	1,103,664	0	2,349,017	671,654	16,430,794	6,631
Holgate LSD	Henry	3,478,383	204,226	0	138,869	99,129	3,920,607	6,424
Liberty Center LSD	Henry	6,065,723	985,041	218,093	0	737,935	8,006,792	7,132
Napoleon Area CSD	Henry	13,525,484	10,385,913	162,661	1,884,885	679,458	26,638,401	11,582
Patrick Henry LSD	Henry	6,968,923	453,757	0	1,274,872	205,214	8,902,767	7,531
Bright LSD	Highland	3,985,889	281,595	85,547	413,899	189,910	4,956,841	5,556
Fairfield LSD	Highland	3,687,343	234,352	44,438	889,562	145,158	5,000,853	6,386
Greenfield Ex Vill SD	Highland	10,324,000	802,040	46,313	1,870,995	370,613	13,413,959	5,931
Hillsboro CSD	Highland	13,489,083	466,273	0	1,075,743	398,685	15,429,784	5,563
Lynchburg-Clay LSD	Highland	5,390,771	557,305	0	498,648	204,588	6,651,311	5,510
Logan-Hocking LSD	Hocking	18,662,397	2,729,199	606,474	85,778	3,738,588	25,822,436	6,140
East Holmes LSD	Holmes	9,532,951	1,103,143	126,000	512,718	834,526	12,109,337	6,616
West Holmes LSD	Holmes	12,937,138	1,917,456	0	4,093,219	592,119	19,539,932	7,155
Bellevue CSD	Huron	13,332,456	589,997	0	2,198,379	357,982	16,478,813	7,134
Monroeville LSD	Huron	4,251,640	373,488	0	362,098	144,426	5,131,652	6,969

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New London LSD	Huron	6,709,715	343,657	0	703,852	177,938	7,935,163	6,430
Norwalk CSD	Huron	12,794,642	645,417	0	3,235,988	504,321	17,180,367	6,641
South Central LSD	Huron	5,034,405	6,271,417	117,015	1,622,585	885,325	13,930,747	15,523
Western Reserve LSD	Huron	6,949,416	676,083	30,628	965,862	156,676	8,778,665	6,655
Willard CSD	Huron	11,579,259	1,292,118	360,701	1,781,549	712,055	15,725,682	6,911
Jackson CSD	Jackson	12,994,715	1,608,073	0	1,509,108	419,338	16,531,233	6,002
Oak Hill Union LSD	Jackson	6,297,654	303,973	0	574,881	226,030	7,402,538	6,075
Wellston CSD	Jackson	8,713,121	529,255	0	1,991,679	336,370	11,570,424	6,324
Buckeye LSD	Jefferson	14,295,519	1,765,264	443,520	1,312,353	1,792,435	19,609,090	7,219
Edison LSD	Jefferson	15,621,976	1,243,905	0	2,765,219	401,103	20,032,203	7,334
Indian Creek LSD	Jefferson	12,144,400	1,783,306	0	0	225,574	14,153,281	6,510
Steubenville CSD	Jefferson	13,949,273	2,421,679	607,382	575,480	1,787,538	19,341,352	7,513
Toronto CSD	Jefferson	4,992,008	545,133	115,981	1,135,917	145,711	6,934,751	6,996
Centerburg LSD	Knox	5,041,209	342,906	22,730	44,001	197,580	5,648,426	6,009
Danville LSD	Knox	3,697,445	297,878	5,344	187,996	169,722	4,358,384	6,591
East Knox LSD	Knox	5,001,638	664,273	0	0	774,474	6,440,385	6,554
Fredericktown LSD	Knox	6,545,511	131,408	0	360,513	122,018	7,159,450	5,656
Mount Vernon CSD	Knox	20,729,659	2,982,619	673,575	41,221	2,191,631	26,618,705	6,507
Fairport Harbor Ex Vill SD	Lake	3,581,876	287,862	0	1,710,241	63,652	5,643,631	9,933
Kirtland LSD	Lake	7,451,386	790,998	197,496	58,345	655,735	9,153,959	10,861
Madison LSD	Lake	18,503,262	2,336,350	489,452	705,263	1,759,559	23,793,886	7,099
Mentor Ex Vill SD	Lake	60,268,939	6,380,711	724,030	4,385,997	3,802,978	75,562,656	6,858
Painesville City LSD	Lake	16,868,668	679,626	92,628	1,728,553	507,664	19,877,139	9,256
Painesville Township LSD	Lake	22,524,487	2,025,290	693,590	2,082,402	1,970,255	29,296,024	7,942
Perry LSD	Lake	19,870,602	6,192,652	407,246	0	14,806,543	41,277,043	20,971
Wickliffe CSD	Lake	11,569,722	1,084,649	49,536	1,851,743	346,416	14,902,066	9,821
Willoughby-Eastlake CSD	Lake	54,700,742	3,113,829	0	5,990,714	945,495	64,750,780	7,286
Chesapeake Union Ex Vill SD	Lawrence	6,814,125	597,644	143,863	676,175	234,510	8,466,317	6,273
Dawson-Bryant LSD	Lawrence	6,936,457	1,087,102	77,385	53,017	1,885,741	10,039,702	7,309
Fairland LSD	Lawrence	8,797,493	1,449,314	16,511	1,759,319	589,677	12,612,313	6,833
Ironton CSD	Lawrence	9,877,962	1,019,932	6,300	1,274,126	375,826	12,554,146	6,802
Rock Hill LSD	Lawrence	10,421,436	368,225	0	1,639,560	285,750	12,714,971	6,447
South Point LSD	Lawrence	10,843,639	873,083	180,781	843,135	174,006	12,914,645	6,196
Symmes Valley LSD	Lawrence	4,989,005	843,181	109,286	0	1,502,224	7,443,695	7,152
Granville Ex Vill SD	Licking	8,556,561	1,683,925	364,395	795,400	371,946	11,772,227	7,683
Heath CSD	Licking	7,727,096	835,019	0	323,653	210,873	9,096,642	6,462
Johnstown-Monroe LSD	Licking	5,882,245	1,370,755	94,183	1,148,535	272,441	8,768,158	6,912
Lakewood LSD	Licking	12,143,078	443,230	0	528,127	256,950	13,371,386	5,761
Licking Hghts LSD	Licking	5,595,524	386,313	24,123	136,943	134,384	6,277,287	6,326
Licking Valley LSD	Licking	9,543,385	2,244,150	0	227,147	710,087	12,724,769	6,351
Newark CSD	Licking	41,752,411	2,295,182	0	2,429,871	1,776,378	48,253,842	6,756
North Fork LSD	Licking	8,843,100	362,890	11,662	0	353,629	9,571,280	5,189
Northridge LSD	Licking	7,390,212	7,853,529	631,756	959,697	1,105,186	17,940,380	13,760
Southwest Licking LSD	Licking	14,465,274	3,607,529	471,723	343,016	1,199,073	20,086,614	6,841

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Bellefontaine CSD	Logan	13,952,324	1,629,979	197,548	2,787,110	1,030,483	19,597,443	7,001
Benjamin Logan LSD	Logan	10,000,763	4,146,559	672,454	1,194,525	3,169,678	19,183,979	9,941
Indian Lake LSD	Logan	10,821,644	11,120,620	605,886	3,980,602	851,383	27,380,134	13,482
Riverside LSD	Logan	4,119,392	356,074	0	1,367,464	119,300	5,962,230	7,324
Amherst Ex Vill SD	Lorain	18,881,048	562,279	0	1,892,443	468,783	21,804,552	6,205
Avon Lake CSD	Lorain	17,590,459	3,992,873	183,537	263,953	937,928	22,968,751	7,251
Avon LSD	Lorain	6,709,298	17,728,774	612,960	477,065	817,036	26,345,134	20,471
Clearview LSD	Lorain	7,625,496	266,151	0	1,388,577	147,297	9,427,520	7,088
Columbia LSD	Lorain	6,260,296	526,369	16,486	980,232	298,271	8,081,655	6,879
Elyria CSD	Lorain	52,884,618	3,502,508	0	8,167,388	1,757,779	66,312,293	7,507
Firelands LSD	Lorain	9,210,436	775,657	0	976,514	322,441	11,285,048	5,494
Keystone LSD	Lorain	9,574,289	591,296	63,563	1,038,239	212,072	11,479,459	6,537
Lorain CSD	Lorain	66,299,887	3,484,926	185,105	5,630,204	1,516,244	77,116,366	7,330
Midview LSD	Lorain	16,184,196	996,120	39,488	2,374,618	474,624	20,069,045	6,245
North Ridgeville CSD	Lorain	19,328,950	2,785,973	293,108	2,533,428	1,097,260	26,038,719	7,632
Oberlin CSD	Lorain	8,366,060	834,623	374,120	490,544	177,255	10,242,602	8,886
Sheffield-Sheffield Lake CSD	Lorain	12,168,184	1,872,899	0	2,535,434	192,208	16,768,725	8,288
Wellington Ex Vill SD	Lorain	7,441,935	680,212	0	1,104,900	148,205	9,375,252	6,181
Anthony Wayne LSD	Lucas	18,203,573	11,779,814	877,286	357,330	3,006,739	34,224,742	10,806
Maumee CSD	Lucas	19,943,102	927,535	4,363	1,663,852	718,143	23,256,995	7,792
Oregon CSD	Lucas	23,165,976	3,422,022	0	2,427,527	1,044,121	30,059,646	8,086
Ottawa Hills LSD	Lucas	7,640,118	591,935	50,184	312,898	421,445	9,016,580	9,644
Springfield LSD	Lucas	23,627,678	4,214,092	1,124,988	0	2,407,186	31,373,943	8,794
Sylvania CSD	Lucas	43,810,589	16,861,825	1,765,180	1,845,625	4,744,584	69,027,801	9,140
Toledo CSD	Lucas	240,540,085	12,565,392	212,100	26,208,455	7,070,289	286,596,321	7,366
Washington LSD	Lucas	45,869,647	1,680,038	2,491	3,818,671	1,302,352	52,673,198	7,148
Jefferson LSD	Madison	7,004,116	2,439,282	0	1,025,869	356,496	10,825,764	8,339
Jonathan Alder LSD	Madison	8,012,920	789,715	0	94,333	522,620	9,419,588	6,103
London CSD	Madison	11,457,810	834,754	621	1,585,095	188,108	14,066,389	6,815
Madison-Plains LSD	Madison	8,514,190	643,285	41,459	2,065,663	340,879	11,605,476	6,936
Austintown LSD	Mahoning	27,301,461	6,441,557	0	3,351,199	594,575	37,688,792	7,466
Boardman LSD	Mahoning	28,139,386	1,938,836	28,696	2,307,037	1,221,914	33,635,870	6,644
Campbell CSD	Mahoning	8,408,930	930,002	0	1,759,836	166,581	11,265,350	8,211
Canfield LSD	Mahoning	13,710,103	3,469,145	0	1,270,546	836,149	19,285,944	6,942
Jackson-Milton LSD	Mahoning	6,371,384	285,255	8,696	870,930	190,296	7,726,561	7,227
Lowellville LSD	Mahoning	3,164,868	803,052	14,448	61,303	186,795	4,230,466	6,543
Poland LSD	Mahoning	11,940,715	2,490,971	146,955	1,464,584	819,773	16,862,999	6,801
Sebring LSD	Mahoning	4,287,001	304,199	0	975,754	160,690	5,727,644	7,256
South Range LSD	Mahoning	6,047,803	1,683,068	225,161	437,240	590,154	8,983,426	7,617
Springfield LSD	Mahoning	6,940,868	630,747	264,570	0	761,427	8,597,613	6,574
Struthers CSD	Mahoning	11,552,806	1,641,923	145,463	407,213	801,993	14,549,396	7,259
West Branch LSD	Mahoning	12,675,803	1,181,280	0	1,250,536	491,309	15,598,929	6,156
Western Reserve LSD	Mahoning	4,048,415	219,629	39,000	445,972	101,296	4,854,312	6,004
Youngstown CSD	Mahoning	85,870,235	9,379,624	0	2,377,622	2,331,924	99,959,404	8,608

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Elgin LSD	Marion	7,945,126	211,859	0	1,633,049	177,691	9,967,725	**5,761**
Marion CSD	Marion	31,706,627	2,137,382	0	4,699,365	595,369	39,138,743	**6,746**
Pleasant LSD	Marion	5,783,432	1,388,287	0	475,736	746,091	8,393,546	**6,303**
Ridgedale LSD	Marion	5,600,404	353,359	5,246	908,199	124,872	6,992,079	**6,269**
River Valley LSD	Marion	9,026,925	691,157	0	918,824	351,230	10,988,136	**6,150**
Black River LSD	Medina	8,136,605	1,316,788	382,930	405,106	1,242,554	11,483,983	**8,531**
Brunswick CSD	Medina	34,568,573	4,087,013	469,649	1,075,625	1,528,707	41,749,566	**6,356**
Buckeye LSD	Medina	12,525,522	794,463	34,788	992,350	546,502	14,893,624	**6,605**
Cloverleaf LSD	Medina	19,097,553	2,876,013	0	3,455,928	717,461	26,146,955	**7,310**
Highland LSD	Medina	12,506,559	1,233,741	32,175	1,414,063	565,841	15,752,379	**6,992**
Medina CSD	Medina	37,260,180	3,784,997	1,020,118	321,399	3,414,701	45,801,395	**7,808**
Wadsworth CSD	Medina	21,252,013	1,528,127	0	1,555,349	1,137,545	25,473,034	**6,145**
Eastern LSD	Meigs	3,711,974	2,252,236	42,626	971,340	167,296	7,145,473	**9,002**
Meigs LSD	Meigs	12,254,510	1,219,780	0	2,917,512	384,321	16,776,122	**6,934**
Southern LSD	Meigs	4,218,933	482,837	688	1,423,442	128,592	6,254,491	**7,527**
Celina CSD	Mercer	16,503,473	4,774,712	965,542	3,505,367	1,154,129	26,903,224	**7,352**
Coldwater Ex Vill SD	Mercer	7,378,740	1,268,122	317,465	0	1,042,485	10,006,811	**6,276**
Fort Recovery LSD	Mercer	4,573,990	715,516	3,375	607,196	279,741	6,179,817	**6,607**
Marion LSD	Mercer	4,098,624	2,882,605	165,114	209,835	536,576	7,892,754	**8,546**
Parkway LSD	Mercer	6,070,267	380,368	4,888	1,795,742	178,285	8,429,549	**6,969**
St Henry Consolidated LSD	Mercer	5,073,713	941,144	133,449	0	605,360	6,753,666	**6,149**
Bethel LSD	Miami	4,871,239	273,463	0	633,136	209,983	5,987,820	**6,989**
Bradford Ex Vill SD	Miami	3,899,565	183,520	0	1,426,362	148,160	5,657,607	**9,411**
Covington Ex Vill SD	Miami	4,998,019	411,895	0	726,670	171,155	6,307,739	**6,623**
Miami East LSD	Miami	6,144,833	703,377	0	639,211	363,911	7,851,332	**5,615**
Milton-Union Ex Vill SD	Miami	8,995,784	876,177	29,227	2,219,986	620,605	12,741,779	**6,802**
Newton LSD	Miami	3,030,159	332,167	0	518,914	112,681	3,993,921	**6,532**
Piqua CSD	Miami	20,734,007	3,639,379	132,000	3,881,985	789,497	29,176,868	**7,512**
Tipp City Ex Vill SD	Miami	11,921,464	771,998	0	1,445,853	377,556	14,516,870	**5,865**
Troy CSD	Miami	27,293,218	1,522,869	0	2,300,111	1,014,220	32,130,417	**7,026**
Switzerland of Ohio LSD	Monroe	17,562,435	4,209,554	0	2,824,374	617,964	25,214,328	**8,564**
Brookville LSD	Montgomery	8,382,164	525,438	9,675	1,166,491	239,972	10,323,739	**6,707**
Centerville CSD	Montgomery	36,759,210	9,565,868	1,019,476	4,168,094	3,298,085	54,810,733	**7,909**
Dayton CSD	Montgomery	196,604,686	6,175,723	0	19,860,623	5,490,718	228,131,750	**8,788**
Huber Hghts CSD	Montgomery	37,642,046	1,687,481	18,241	13,639,507	1,340,384	54,327,660	**7,541**
Jefferson Township LSD	Montgomery	6,287,093	572,835	13,770	617,696	253,168	7,744,562	**9,328**
Kettering CSD	Montgomery	44,397,216	2,164,961	839,252	1,642,604	3,118,367	52,162,400	**6,919**
Mad River LSD	Montgomery	21,164,872	1,289,657	0	2,871,938	1,121,039	26,447,505	**7,235**
Miamisburg CSD	Montgomery	24,514,655	3,627,429	0	2,414,521	1,602,180	32,158,784	**7,378**
New Lebanon LSD	Montgomery	6,657,118	366,449	44,859	785,661	294,891	8,148,979	**5,803**
Northmont CSD	Montgomery	29,875,815	1,648,005	150,460	7,038,105	605,320	39,317,704	**6,982**
Northridge LSD	Montgomery	13,879,426	618,953	17,449	1,780,745	301,813	16,598,386	**7,978**
Oakwood CSD	Montgomery	10,745,272	888,838	0	690,363	484,705	12,809,178	**7,864**
Trotwood-Madison CSD	Montgomery	23,108,026	4,222,490	0	1,757,884	992,823	30,081,223	**7,492**

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Valley View LSD	Montgomery	9,420,816	1,092,696	63,654	1,990,947	277,227	12,845,339	6,866
Vandalia-Butler CSD	Montgomery	20,851,765	1,060,156	279,094	2,663,694	714,659	25,569,368	7,421
West Carrollton CSD	Montgomery	21,373,949	2,654,212	224,616	1,288,496	979,886	26,521,160	6,578
Morgan LSD	Morgan	13,103,880	768,137	0	4,368,200	439,155	18,679,372	8,692
Cardington-Lincoln LSD	Morrow	5,496,134	399,991	345,594	0	147,802	6,389,521	5,906
Highland LSD	Morrow	8,120,333	3,782,245	0	1,800,581	321,132	14,024,291	8,372
Mount Gilead Ex Vill SD	Morrow	6,609,735	559,101	0	758,115	190,657	8,117,608	5,916
Northmor LSD	Morrow	5,892,718	310,986	0	1,071,117	180,865	7,455,685	5,998
East Muskingum LSD	Muskingum	10,559,255	1,392,560	1,969	842,894	676,516	13,473,194	5,828
Franklin LSD	Muskingum	11,100,383	6,971,145	97,755	0	473,805	18,643,087	7,573
Maysville LSD	Muskingum	9,578,265	258,623	19,154	3,052,331	298,325	13,206,698	6,291
Tri-Valley LSD	Muskingum	13,024,750	1,162,350	0	5,343,201	763,259	20,293,560	6,998
West Muskingum LSD	Muskingum	8,380,847	414,967	0	2,143,990	310,012	11,249,815	6,291
Zanesville CSD	Muskingum	26,223,068	2,801,164	42,780	6,088,192	848,968	36,004,172	7,899
Caldwell Ex Vill SD	Noble	5,394,108	780,020	143,475	392,519	356,442	7,066,565	5,910
Noble LSD	Noble	6,083,664	704,473	47,450	445,049	171,958	7,452,594	5,815
Benton Carroll Salem LSD	Ottawa	15,825,455	4,499,731	0	69,269	1,657,977	22,052,432	11,006
Danbury LSD	Ottawa	4,608,397	623,176	387,882	758,279	720,257	7,097,991	11,314
Genoa Area LSD	Ottawa	8,001,206	741,897	0	1,617,188	356,966	10,717,256	6,779
Middle Bass LSD	Ottawa	60,067	0	0	0	0	60,067	N/A
North Bass LSD	Ottawa	115,583	21,690	0	4,930	3,742	145,945	28,617
Port Clinton CSD	Ottawa	13,671,595	1,666,273	360,910	673,799	1,331,137	17,703,714	8,171
Put-in-Bay LSD	Ottawa	827,313	173,034	0	0	150,700	1,151,047	13,261
Antwerp LSD	Paulding	4,071,374	236,794	0	213,650	187,378	4,709,196	5,754
Paulding Ex Vill SD	Paulding	10,442,845	1,018,394	45,000	780,728	224,692	12,511,659	6,212
Wayne Trace LSD	Paulding	6,365,418	607,392	165,550	147,780	215,405	7,501,546	6,088
Crooksville Ex Vill SD	Perry	5,619,898	407,421	85,391	292,029	177,202	6,581,941	6,175
New Lexington CSD	Perry	10,500,107	940,296	5,344	1,063,825	314,704	12,824,276	6,582
Northern LSD	Perry	10,551,035	942,183	0	1,418,460	365,897	13,277,574	5,652
Southern LSD	Perry	5,862,412	730,754	115,088	0	1,429,688	8,137,941	7,395
Circleville CSD	Pickaway	13,190,228	2,043,444	279,211	979,794	349,384	16,842,062	6,740
Logan Elm LSD	Pickaway	12,368,072	408,732	0	2,180,960	239,427	15,197,191	6,482
Teays Valley LSD	Pickaway	13,085,418	727,680	131,856	1,976,639	221,538	16,143,132	5,619
Westfall LSD	Pickaway	8,786,605	794,845	2,484	1,241,749	253,944	11,079,628	6,414
Eastern LSD	Pike	5,403,259	455,240	0	1,033,659	210,417	7,102,575	6,944
Scioto Valley LSD	Pike	8,587,834	547,441	5,484	1,780,139	473,214	11,394,112	7,196
Waverly CSD	Pike	10,140,042	952,700	0	1,140,963	383,071	12,616,776	6,029
Western LSD	Pike	5,068,163	5,504,831	55,509	859,114	906,059	12,393,675	12,858
Aurora CSD	Portage	11,759,460	11,601,259	676,086	884,980	1,924,364	26,846,149	13,917
Crestwood LSD	Portage	13,865,533	987,826	0	2,291,750	777,486	17,922,595	6,375
Field LSD	Portage	12,544,079	388,876	10,855	2,288,058	274,762	15,506,630	6,307
James A Garfield LSD	Portage	7,886,402	699,381	0	1,174,590	195,872	9,956,245	6,537
Kent CSD	Portage	27,944,941	1,935,238	623,147	2,051,232	849,296	33,403,855	8,308
Ravenna CSD	Portage	18,369,948	1,466,592	38,194	2,854,890	570,847	23,300,471	7,171

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Rootstown LSD	Portage	6,532,225	804,691	5,688	1,412,027	196,266	8,950,896	**7,140**
Southeast LSD	Portage	11,511,528	728,407	0	979,870	363,120	13,582,926	**5,680**
Streetsboro CSD	Portage	10,296,316	937,011	198,602	1,101,820	408,574	12,942,322	**6,955**
Waterloo LSD	Portage	7,149,795	576,446	10,718	965,734	292,891	8,995,585	**6,372**
Windham Ex Vill SD	Portage	6,526,332	222,368	0	1,845,084	122,711	8,716,495	**7,257**
C R Coblentz LSD	Preble	7,539,154	1,305,764	201,021	1,478,457	258,028	10,782,424	**8,128**
College Corner LSD	Preble	371,570	77,662	345	281,123	37,408	768,108	**7,222**
Eaton CSD	Preble	11,530,181	613,092	55,348	1,056,511	505,545	13,760,676	**6,152**
Preble-Shawnee LSD	Preble	9,417,410	1,302,164	198,606	71,178	308,199	11,297,557	**6,101**
Tri-County North LSD	Preble	5,430,629	637,689	136,316	0	1,126,496	7,331,130	**6,347**
Twin Valley Community LSD	Preble	6,014,485	630,723	262,612	0	2,193,728	9,101,548	**7,984**
Columbus Grove LSD	Putnam	4,042,424	496,350	116,188	353,885	134,590	5,143,436	**6,021**
Continental LSD	Putnam	4,247,222	323,040	0	743,061	229,288	5,542,610	**6,434**
Jennings LSD	Putnam	2,116,470	179,871	2,231	156,735	87,381	2,542,689	**5,277**
Kalida LSD	Putnam	3,488,736	294,507	0	128,779	123,428	4,035,451	**5,327**
Leipsic LSD	Putnam	3,924,848	350,234	0	483,490	283,498	5,042,070	**6,824**
Miller City-New Cle	Putnam	2,562,758	318,668	6,990	147,168	226,081	3,261,664	**6,841**
Ottawa-Glandorf LSD	Putnam	7,883,881	630,163	50,625	804,535	410,624	9,779,827	**5,632**
Ottoville LSD	Putnam	2,930,434	452,003	264,150	0	324,343	3,970,930	**6,433**
Pandora-Gilboa LSD	Putnam	3,509,291	412,738	0	13,923	306,452	4,242,405	**6,585**
Clear Fork Valley LSD	Richland	8,202,476	823,646	39,618	1,423,599	296,733	10,786,072	**6,440**
Crestview LSD	Richland	6,349,840	799,088	198,788	0	1,124,007	8,471,723	**6,808**
Lexington LSD	Richland	14,404,018	2,862,608	91,660	1,255,236	295,389	18,909,111	**6,736**
Lucas LSD	Richland	3,245,454	271,160	21,175	386,180	57,157	3,981,125	**6,460**
Madison LSD	Richland	21,309,729	4,003,672	0	2,616,856	316,355	28,246,611	**6,896**
Mansfield CSD	Richland	39,926,001	6,545,694	81,900	8,021,072	793,858	55,368,525	**8,903**
Ontario LSD	Richland	8,912,578	253,333	0	1,203,979	311,128	10,681,618	**6,454**
Plymouth LSD	Richland	5,265,640	690,574	15,125	759,279	186,575	6,917,192	**7,424**
Shelby CSD	Richland	13,322,156	942,153	0	1,082,498	356,506	15,703,313	**6,706**
Adena LSD	Ross	6,065,284	525,555	0	1,463,725	232,786	8,287,349	**6,729**
Chillicothe CSD	Ross	22,039,573	2,342,923	5,906	4,135,846	597,816	29,122,064	**7,886**
Huntington LSD	Ross	6,837,193	727,681	26,365	53,399	398,233	8,042,872	**5,827**
Paint Valley LSD	Ross	6,597,751	772,179	3,075	1,073,941	290,422	8,737,367	**7,232**
Scioto Valley LSD	Ross	6,058,049	205,112	13,530	944,779	129,884	7,351,355	**6,435**
Union-Scioto LSD	Ross	8,140,633	754,894	103,665	930,517	463,210	10,392,919	**6,079**
Zane Trace LSD	Ross	6,706,443	451,239	75,000	1,875,771	136,341	9,244,793	**6,525**
Clyde-Green Springs Ex Vill SD	Sandusky	12,455,472	1,783,739	211,183	2,285,813	920,996	17,657,203	**7,664**
Fremont CSD	Sandusky	27,051,579	1,243,145	0	4,130,842	889,137	33,314,702	**6,575**
Gibsonburg Ex Vill SD	Sandusky	5,114,527	374,181	0	265,417	253,021	6,007,146	**5,738**
Lakota LSD	Sandusky	7,896,282	244,933	0	1,088,962	229,220	9,459,396	**7,095**
Woodmore LSD	Sandusky	6,216,991	908,661	261,327	0	1,187,622	8,574,601	**7,219**
Bloom-Vernon LSD	Scioto	6,411,601	745,224	49,640	908,912	190,922	8,306,300	**7,089**
Clay LSD	Scioto	3,205,092	69,006	0	484,856	83,306	3,842,260	**6,433**
Green LSD	Scioto	3,841,290	218,572	0	535,082	73,471	4,668,414	**6,250**

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Minford LSD	Scioto	8,056,482	536,774	0	1,540,627	399,518	10,533,401	6,389
New Boston LSD	Scioto	3,125,919	66,699	0	629,447	131,629	3,953,694	8,435
Northwest LSD	Scioto	10,508,570	1,204,432	171,038	0	2,832,667	14,716,707	7,757
Portsmouth CSD	Scioto	20,545,105	981,634	0	5,317,976	290,829	27,135,543	8,903
Valley LSD	Scioto	6,689,258	1,047,368	148,149	0	2,101,976	9,986,751	7,872
Washington-Nile LSD	Scioto	9,047,055	10,289,537	122,503	1,578,732	1,911,186	22,949,013	13,990
Wheelersburg LSD	Scioto	7,450,675	681,955	0	485,107	262,963	8,880,699	5,797
Bettsville LSD	Seneca	1,797,897	303,623	22,791	292,426	44,364	2,461,101	6,679
Fostoria CSD	Seneca	14,807,240	2,834,500	653,088	1,620,677	1,870,767	21,786,273	8,848
Hopewell-Loudon LSD	Seneca	4,080,967	385,964	84,356	393,441	158,267	5,102,995	5,581
New Riegel LSD	Seneca	2,520,167	159,839	7,398	653,989	70,981	3,412,373	6,922
Old Fort LSD	Seneca	3,250,764	303,081	0	489,650	105,404	4,148,900	6,446
Seneca East LSD	Seneca	5,534,410	327,534	0	2,011,463	117,262	7,990,668	7,017
Tiffin CSD	Seneca	18,282,434	1,125,483	0	4,473,825	687,938	24,569,679	6,937
Anna LSD	Shelby	5,346,729	1,155,900	192,771	0	1,121,530	7,816,930	7,673
Botkins LSD	Shelby	2,851,284	1,315,731	161,690	0	757,248	5,085,953	7,915
Fairlawn LSD	Shelby	2,739,427	407,245	37,050	160,133	98,398	3,442,253	6,597
Fort Loramie LSD	Shelby	3,885,154	527,618	50,050	663,732	138,536	5,265,090	6,682
Hardin-Houston LSD	Shelby	4,613,898	497,961	31,072	2,555,770	104,906	7,803,606	8,727
Jackson Center LSD	Shelby	2,990,922	220,494	33,922	371,035	70,529	3,686,902	6,380
Russia LSD	Shelby	1,999,693	197,089	26,016	233,424	44,252	2,500,475	6,606
Sidney CSD	Shelby	19,874,792	982,105	0	1,983,406	540,563	23,380,865	6,173
Alliance CSD	Stark	21,187,888	1,789,977	154,751	654,625	1,212,033	24,999,274	6,661
Canton CSD	Stark	76,318,456	8,272,344	0	3,420,699	2,147,406	90,158,906	7,187
Canton LSD	Stark	14,345,768	5,653,737	0	1,841,015	570,499	22,411,018	8,961
Fairless LSD	Stark	9,034,362	563,990	0	1,978,671	323,592	11,900,615	6,153
Jackson LSD	Stark	25,693,436	7,540,680	943,525	0	3,285,683	37,463,325	7,269
Lake LSD	Stark	15,313,605	1,584,977	148,191	1,917,139	528,084	19,491,995	6,064
Louisville CSD	Stark	13,952,823	775,662	0	2,005,066	495,111	17,228,662	5,596
Marlington LSD	Stark	13,673,968	371,492	12,410	1,299,922	290,506	15,648,297	5,560
Massillon CSD	Stark	26,357,987	8,023,246	923,272	2,074,683	3,759,183	41,138,371	8,451
Minerva LSD	Stark	11,816,521	695,162	0	2,474,824	239,721	15,226,227	6,456
North Canton CSD	Stark	22,386,736	14,639,400	1,558,952	1,295,872	3,815,778	43,696,738	10,623
Northwest LSD	Stark	11,216,664	714,450	10,675	2,041,886	385,253	14,368,927	5,954
Osnaburg LSD	Stark	4,430,455	556,750	0	621,424	111,774	5,720,403	5,575
Perry LSD	Stark	25,534,652	7,214,093	0	2,924,755	627,540	36,301,040	7,343
Plain LSD	Stark	30,652,256	2,109,905	26,215	3,951,440	673,708	37,413,523	5,882
Sandy Valley LSD	Stark	7,380,220	574,836	13,130	1,305,482	326,181	9,599,849	6,078
Tuslaw LSD	Stark	7,008,361	391,422	0	1,199,965	222,460	8,822,208	6,146
Akron CSD	Summit	191,643,624	18,594,388	0	23,920,748	7,766,699	241,925,459	7,609
Barberton CSD	Summit	27,103,041	1,733,702	0	4,686,825	706,796	34,230,364	8,522
Copley-Fairlawn CSD	Summit	17,078,496	3,616,890	582,344	0	2,186,622	23,464,352	9,210
Coventry LSD	Summit	13,931,702	2,051,534	203,500	2,299,154	891,801	19,377,690	7,610
Cuyahoga Falls CSD	Summit	29,662,160	4,508,243	163,466	5,455,150	578,773	40,367,793	7,290

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Green LSD	Summit	19.164.015	8,003,515	1,158,274	0	3,172,154	31,497,958	8,723
Hudson LSD	Summit	30,508,331	4,483,706	1,596,171	0	5,038,846	41,627,053	8,075
Manchester LSD	Summit	8.561.054	554,445	0	780,088	321.632	10,217,219	6,927
Mogadore LSD	Summit	5,258,614	847,134	45,338	694,216	179,078	7,024,380	8,401
Nordonia Hills CSD	Summit	21.994.818	2,763,957	11,050	1,470,085	1,058,541	27,298,451	8,143
Norton CSD	Summit	12,494.074	1,221,473	0	1,536,957	534,552	15,787,056	6,345
Revere LSD	Summit	17.107,737	3,631,752	1,061,635	0	2,684,465	24,485,590	8,889
Springfield LSD	Summit	21,401,186	4,294,987	0	2,474,623	565,555	28,736,351	8,624
Stow CSD	Summit	31,697.896	11,012,386	592,642	2,922,230	1,035,788	47,260,942	7,939
Tallmadge CSD	Summit	14,993,621	1,176,258	23,480	1,329,827	677,116	18,200,301	6,698
Twinsburg CSD	Summit	19.377,488	8,066,473	1,909,548	94,746	2,622,461	32,070,716	10,838
Woodridge LSD	Summit	9,763,743	5,510,997	1,116,910	0	2,861,506	19,253,156	15,857
Bloomfield-Mespo LSD	Trumbull	2.587,590	85,797	0	1,226,889	36,895	3,937,170	9,512
Bristol LSD	Trumbull	4,805,188	359,453	323	636,383	188,306	5,989,652	6,515
Brookfield LSD	Trumbull	8.155.382	1,308,032	0	1,310,030	373,694	11,147,138	7,072
Champion LSD	Trumbull	9,305,628	630,538	0	1,638,433	358,571	11,933,170	6,767
Girard CSD	Trumbull	9.517.922	766,200	63,198	1,559,759	618.862	12,525,941	7,021
Howland LSD	Trumbull	18,543,254	1,288,676	8,646	2,991,679	585,487	23,417,743	6,714
Hubbard Ex Vill SD	Trumbull	12.846,488	1,038,986	942	1,831,849	591.019	16,309,283	6,860
Joseph Badger LSD	Trumbull	6,050,029	442,941	65	796,300	206,783	7,496,118	6,248
LaBrae LSD	Trumbull	8.715,495	802,846	0	2,290,239	463.444	12,272,024	7,433
Lakeview LSD	Trumbull	11,865,327	992,479	394,197	1,588,325	1,016,314	15,856,641	6,776
Liberty LSD	Trumbull	10.955.945	385,544	0	943,543	182.894	12,467,926	6,571
Lordstown LSD	Trumbull	5,312,386	498,089	0	497,056	107,208	6,414,740	7,163
Maplewood LSD	Trumbull	5.400.277	98,051	0	1,379,115	188.757	7,066,199	6,264
Mathews LSD	Trumbull	6,009,569	199,787	0	2,392,931	84,616	8,686,904	7,755
McDonald LSD	Trumbull	4.020,932	286,008	0	2,090,257	174,111	6,571,308	8,165
Newton Falls Ex Vil SD	Trumbull	8,071,321	1,025,311	370,682	0	160,388	9,627,702	6,125
Niles CSD	Trumbull	15.297.101	478,883	15,145	3,675,307	97,909	19,564,346	6,512
Southington LSD	Trumbull	3,700,530	130,041	0	490,356	74,297	4,395,225	6,734
Warren CSD	Trumbull	45,157,427	3,522,316	0	6,294,327	679,480	55,653,550	7,972
Weathersfield LSD	Trumbull	5,937,312	367,954	5,928	959,700	88,655	7,359,549	6,560
Claymont CSD	Tuscarawas	11,741,579	10,226,358	156,878	2,171,995	933.142	25,229,952	10,760
Dover CSD	Tuscarawas	13,676,854	1,348,861	1,223,645	0	1,661,656	17,911,016	6,414
Garaway LSD	Tuscarawas	6,019,964	584,999	148,494	305,994	456.031	7,515,482	5,760
Indian Valley LSD	Tuscarawas	8,690,971	1,164,312	446,274	1,033,900	1,177,126	12,512,582	7,169
New Philadelphia CSD	Tuscarawas	15,205,028	1,346,423	522,882	1,410,394	2,014.166	20,498,892	6,509
Newcomerstown Ex Vill SD	Tuscarawas	7,383,537	505,110	68,800	0	432,298	8,389,745	6,293
Strasburg-Franklin LSD	Tuscarawas	3.099,631	249,651	0	657,469	130,708	4,137,459	6,358
Tuscarawas Valley LSD	Tuscarawas	7,756,998	3,102,982	453,845	1,022,463	1,182,072	13,518,360	8,167
Fairbanks LSD	Union	5,118,608	573,424	316	496,896	214.390	6,403,635	7,254
Marysville Ex Vill SD	Union	18,079,287	8,094,666	1,057,779	0	2,470,168	29,701,901	8,786
North Union LSD	Union	7,009,006	267,910	0	1,014,994	219.073	8,510,982	6,441
Crestview LSD	Van Wert	5,023,849	797,773	146,278	0	1,477,870	7,445,770	6,729

District	County	Total Expense As Reported	Other Expense As Reported	Interest Expense	Depreciation	Capital Outlay (Revised)	Total Expense	GAAP Cost/Pupil [ADM adj.]
Lincolnview LSD	Van Wert	4,855,945	225,098	0	928,399	209,892	6,219,334	7,082
Van Wert CSD	Van Wert	12,612,898	1,243,853	8,414	2,440,822	524,969	16,830,956	6,952
Vinton County LSD	Vinton	11,887,508	1,738,169	32,949	1,834,044	457,566	15,950,236	6,823
Carlisle LSD	Warren	9,628,066	205,506	0	1,323,946	174,259	11,331,777	6,758
Franklin CSD	Warren	16,219,349	2,108,559	263,672	966,350	747,042	20,304,972	6,918
Kings LSD	Warren	17,663,055	12,580,207	1,243,054	0	2,548,981	34,035,297	10,554
Lebanon CSD	Warren	18,650,745	2,509,016	308,088	0	1,742,213	23,210,062	5,761
Little Miami LSD	Warren	12,068,074	589,993	7,475	777,339	344,580	13,787,460	5,998
Mason CSD	Warren	19,753,988	17,200,710	1,656,497	0	3,987,927	42,599,120	9,980
Springboro Community CSD	Warren	12,802,932	9,228,837	1,825,318	0	1,655,342	25,512,429	9,653
Wayne LSD	Warren	7,165,756	9,987,799	487,299	460,743	342,526	18,444,122	14,276
Belpre CSD	Washington	7,668,125	258,806	0	2,359,306	183,333	10,469,570	6,985
Fort Frye LSD	Washington	6,733,331	368,518	0	1,027,816	200,888	8,330,553	7,109
Frontier LSD	Washington	5,140,633	407,084	0	1,500,640	101,078	7,149,435	6,877
Marietta CSD	Washington	19,529,640	1,708,806	375,384	2,712,172	1,662,676	25,988,678	7,124
Warren LSD	Washington	13,334,835	1,732,945	0	1,963,646	235,391	17,266,818	6,422
Wolf Creek LSD	Washington	3,601,629	169,129	0	655,940	129,928	4,556,626	6,645
Chippewa LSD	Wayne	7,759,525	474,506	0	721,999	169,431	9,125,461	6,117
Dalton LSD	Wayne	5,234,843	278,006	0	1,126,302	124,478	6,763,629	6,511
Green LSD	Wayne	7,596,078	713,969	36,736	1,453,531	309,512	10,109,825	7,368
North Central LSD	Wayne	7,007,347	1,028,154	77,890	1,293,137	313,774	9,720,302	6,981
Northwestern LSD	Wayne	7,991,073	1,785,500	164,845	0	1,111,300	11,052,717	7,735
Orrville CSD	Wayne	11,843,063	756,883	0	2,486,307	439,398	15,525,651	7,448
Rittman Ex Vill SD	Wayne	7,062,983	1,499,002	0	921,510	368,698	9,852,192	7,299
Southeast LSD	Wayne	10,118,461	975,444	77,438	1,053,444	665,431	12,890,217	7,503
Triway LSD	Wayne	11,340,423	560,314	0	2,267,140	324,193	14,492,069	6,749
Wooster CSD	Wayne	29,966,235	5,738,003	1,919,342	3,320,243	5,925,435	46,869,258	10,819
Bryan CSD	Williams	12,243,236	1,224,716	259,181	1,221,291	371,971	15,320,395	6,826
Edgerton LSD	Williams	4,493,955	499,727	20,466	396,822	283,424	5,694,394	7,465
Edon-Northwest LSD	Williams	3,851,490	164,351	0	397,913	111,724	4,525,478	6,041
Millcreek-West Unity LSD	Williams	4,485,989	296,849	77,192	165,782	119,034	5,144,845	6,508
Montpelier Ex Vill SD	Williams	7,512,065	799,406	24,750	270,163	226,082	8,832,466	7,574
North Central LSD	Williams	4,384,941	318,962	206,863	512,423	504,411	5,927,599	8,182
Stryker LSD	Williams	3,425,318	329,250	27,500	510,206	92,082	4,384,355	7,609
Bowling Green CSD	Wood	18,956,550	2,193,191	217,196	1,750,182	865,802	23,982,921	6,876
Eastwood LSD	Wood	9,598,354	825,974	0	985,585	316,607	11,726,521	6,402
Elmwood LSD	Wood	6,595,130	427,874	112,210	265,065	190,470	7,590,748	6,047
Lake LSD	Wood	9,552,086	755,216	116,050	1,206,530	285,212	11,915,094	7,321
North Baltimore LSD	Wood	4,596,083	1,257,949	0	566,381	120,879	6,541,292	7,742
Northwood LSD	Wood	6,868,236	562,168	158,687	707,942	486,912	8,783,945	8,342
Otsego LSD	Wood	9,365,249	573,359	21,050	1,166,506	403,653	11,529,816	6,805
Perrysburg Ex Vill SD	Wood	22,899,874	1,888,390	431,014	256,195	1,764,970	27,240,442	6,812
Rossford Ex Vill SD	Wood	14,119,182	690,385	58,516	1,227,238	276,930	16,372,252	7,878
Carey Ex Vill SD	Wyandot	4,383,107	725,176	0	565,670	183,237	5,857,190	6,322

District	County	Total Expense As Reported	Other Expense As Reported	Interest Expense	Depreciation	Capital Outlay (Revised)	Total Expense	**GAAP Cost/Pupil [ADM adj.]**
Mohawk LSD	Wyandot	6,175,352	1,024,623	26,678	440,550	354,930	8,022,134	**6,956**
Upper Sandusky Ex Vill SD	Wyandot	8,356,333	662,260	11,905	0	465,718	9,496,217	**5,253**

Appendix 2: Problems with Proficiency Examinations

Of the 6,671 students who entered ninth grade in Cleveland public high schools in the fall of 1994, only 282 – about 4.2% – proved later that they could do math at a 12th grade

Any proficiency exam suffers from limitations. No proficiency exam can measure parental satisfaction, student satisfaction, discipline, and many other values in education. As a beginning, however, this study has used the commonly-administered proficiency exams in Ohio (specifically, the third, fourth and ninth-grade exams), together with reported spending and administrative data, to analyze public school performance.

The biggest difficulty with proficiency exams is obtaining a sufficiently large number of students, or at least a representative sample of students, to take the exam. Test results and statistics reported by the Cleveland public schools clearly show that many students are not showing up for the tests. Going back to 1995, no more than 60% of the ninth graders or twelfth graders showed up to take proficiency tests on the dates they were administered.[47]

Even with many of the presumably less-skilled students not attending, the 12th grade test scores in Cleveland are still very disappointing. Only 1,140 twelfth graders (or 53.3% of the class) took some portion of the test administered in February 1998, with only 1,072 twelfth graders (or 50.2% of the class) taking the math section of the exam. It should be noted that the 1998 graduating class entered ninth grade with 6,671 students. Of those, 282 passed the math section of the test.[48] In other words, of the 6,671 students who entered ninth grade in Cleveland public high schools in the fall of 1994, only 282 – about 4.2% – proved later that they could do math at a twelfth grade level.[49] Seen from another perspective, 95.8% of Cleveland City School District students who began high school failed to remain enrolled by their senior year, show up for the state senior exam, or pass the math section of the twelfth grade proficiency test.

As published, the proficiency test results disguise the number of dropouts. Cleveland public schools reported that 26.3% of twelfth graders tested in February 1998 passed the twelfth grade math proficiency test. But this figure is based only on the number who showed up to be tested. School officials do not state that only 13.2% of 12th graders counted in ADM passed it. Because of the numbers of dropouts, only 4.2% percent of 1994's ninth graders showed up for and passed the twelfth grade math test in 1998.[50]

Many educators worry that difficult state exams will encourage students to drop out. Stephen Anderson, the superintendent of the Dublin school district, worries that "[i]n some cases with the ninth grade test, it's setting

an impossible standard for success. High test scores may make the state look good in a competitive world, but what's our society going to do with the dropout situation that we're creating as a result of doing it?"[51] Between 1992 and 1996, the official reported drop-out rate has indeed increased, from 2.95 percent to 5.36 percent.[52]

Whether or not proficiency tests lead to more dropouts, state-administered tests (at least according to one group representing manufacturers) are less-worthy assessments of educational progress than the National Assessment of Educational Progress (NAEP), which is not administered in Ohio.

In a report published in early 1998, the National Manufacturing Institute wrote: "Proficiency standards in state tests are often lower than the proficiency standards set in our only nationwide assessment: the NAEP." The study pointed out that in many states, there is a wide discrepancy between the percentage of students who meet state standards and the percentage who meet federal NAEP standards.

Also, the NAEP test scores reveal that American students are doing worse in science and about the same in math in 1996 than in 1970.[53] This was at the same time that pupil-teacher ratios declined from 22.3 to 17.3 and current expenditure per pupil (in 1992-93 dollars and based on average daily attendance) increased from $3,269 in 1970-71 to $5,582 in 1990-91.[54] Neither class size reduction nor increased expenditure seems to have affected student performance.

A comparison of state testing passage rates with National Assessment of Educational Progress (NAEP) passage rates.

State	Percentage who meet state standards	Percentage who meet NAEP standards
Louisiana	88%	15%
Wisconsin	88%	35%
South Carolina	82%	20%
Georgia	67%	26%
North Carolina	65%	30%
Tennessee	62%	27%

Source: Anthony P. Carnevale, *Education and Training for America's Future* (Washington, D.C.: The Manufacturing Institute), p. 13.

Appendix 3:

Regression Results for 217 Elementary Schools in Cleveland, Columbus, and Cincinnati

	1	2	3	4	5	6	7	8	9	10	11	12
Mean	47.30	51.55	61.65	64.02	29.88	23.02	61.61	68.34	49.18	48.43	79.13	75.40
PPX	0.0001482	-0.0004876	-0.0001553	-0.0010785	0.0002436	0.0001130	0.0008285	0.0025073	0.0007480	0.000905	0.0005899	-0.0002736
	(-0.19)	(-0.71)	(-0.19)	(-1.43)	(0.33)	(0.17)	(1.22)	(2.84)	(0.86)	(0.90)	(0.77)	(-0.30)
TEACH	0.0013907	0.0014450	0.0008049	0.0016440	0.0010863	0.0010880	0.0012138	0.0006354	0.0007559	-0.0000649	-0.0003108	-0.0016304
	(2.57)	(3.06)	(1.46)	(3.16)	(2.10)	(2.38)	(2.66)	(1.07)	(1.30)	(-0.10)	(-0.60)	(-2.65)
STUDATT	4.9052	4.4237	3.6507	4.2530	4.3266	4.0624	4.8308	3.1502	5.3951	4.9002	2.1649	4.0386
	(8.39)	(8.67)	(6.11)	(7.56)	(7.44)	(8.20)	(9.37)	(4.69)	(8.18)	(6.57)	(3.81)	(5.96)
MINORITY	-0.29955	-0.16097	-0.07093	-0.21101	-0.28661	-0.24561	-0.15733	-0.02267	-0.27961	-0.15596	-0.04510	-0.18086
	(-6.63)	(-4.08)	(-1.54)	(-4.85)	(-6.64)	(-6.42)	(-4.14)	(-0.46)	(-5.74)	(-2.80)	(-1.06)	(-3.57)
MA	-0.04540	-0.00778	0.07337	-0.05258	0.08697	0.07988	0.06555	0.12160	0.00508	0.1306	0.06037	-0.00867
	(-0.53)	(-0.10)	(0.84)	(-0.64)	(1.06)	(1.10)	(0.91)	(1.29)	(0.05)	(1.23)	(0.75)	(-0.09)
EXPER	0.2170	-0.4213	-0.1333	-0.4650	-0.2017	-0.2042	-0.8240	-0.3347	-0.3192	0.6474	0.0489	1.9753
	(-0.50)	(-1.10)	(-0.30)	(-1.10)	(-0.48)	(-0.55)	(-2.26)	(-0.71)	(-0.68)	(1.22)	(0.12)	(4.10)
PCTINSTR	-0.2853	-0.3332	-0.2430	-0.3894	-0.4221	-0.3704	0.0657	0.0306	0.2067	0.2385	0.3759	-0.0412
	(-1.08)	(-1.45)	(-0.90)	(-1.53)	(-1.67)	(-1.66)	(0.29)	(0.10)	(0.71)	(0.72)	(1.49)	(-0.14)
PTRATIO	0.3096	-0.2610	0.1161	-0.3382	-0.2382	-0.3119	0.6173	1.0974	0.1547	0.1899	0.2683	-0.2104
	(0.59)	(-0.75)	(0.29)	(-0.88)	(-0.63)	(-0.93)	(1.44)	(1.97)	(0.28)	(0.29)	(0.54)	(-0.35)
Constant	-414.11	-364.85	-295.40	-314.78	-368.96	-355.04	-438.28	-283.35	-480.33	-427.16	-138.33	-229.86
Drb-Wtsn	**2.11**	**2.06**	**2.18**	**2.09**	**2.15**	**2.13**	**1.87**	**1.88**	**1.87**	**1.73**	**1.93**	**1.47**
Adj. R^2 (%)	47.5	43.6	37.4	40.8	48.0	48.9	51.5	25.0	47.2	40.6	11.4	61.1

Notes to Accompany Appendix 3

Variable	Variable Name	Variable Description
1	MATH4	4th grade proficiency exam score – math
2	READ4	4th grade proficiency exam score – reading
3	WRITE4	4th grade writing proficiency exam score – writing
4	CITI4	4th grade proficiency exam score – citizenship
5	SCIENCE4	4th grade proficiency exam score – science
6	ALL4	4th grade proficiency exam score – all five parts
7	CBE4READ	4th grade Competency-Based Examination score – reading
8	CBE4COMP	4th grade Competency-Based Examination score – composition
9	CBE4MATH	4th grade Competency-Based Examination score – math
10	CBE3READ	3rd grade Competency-Based Examination score – reading
11	CBE3COMP	3rd grade Competency-Based Examination score – composition
12	CBE3MATH	3rd grade Competency-Based Examination score – math

Cell data are arranged as follows:

Coefficient
(t-statistic)

Row Variable	Description
Mean	Arithmetic mean of column variable
PPX	Per-pupil expenditures
TEACH	Average teachers' salaries
STUDATT	Student attendance rate
MINORITY	Percentage of students who are African-American
MA	Percentage of teachers with masters degrees
EXPER	Average number of years experience
PCTINSTR	Percent of expenditures spent on classroom instruction
PTRATIO	Pupil-teacher ratio, used as a proxy for class size
Constant	Regression constant
Drb-Wtsn	Durbin-Watson statistic (used to measure serial correlation)
Adj.-R^2 (%)	Cofficient of variation, adjusted for degrees of freedom

An additional variable (INT) measuring the percent of students receiving examination "intervention" was also used. INT was adjusted by average daily membership (ADM, a weighted-average of attendance) to determine whether individualized attention to academically-challenged students affected their achievement.

References and Notes

[1] Quoted in "Reding, Wrighting & Erithmatic," *Wall Street Journal*, October 2, 1989.

[2] Ohio Department of Education, web site http://ode000.ode.ohio.gov/www/ims/costpp/ tablewww.lbo.oh.us.gov. This includes federal revenues and other funds.

[3] Expressed in 1997 dollars. Richard Vedder, Joshua Hall, and Michael Melander, "Determinants of Ohio Student Performance," working paper (Athens, Ohio: Department of Economics, Ohio University, January 15, 1998), pp. 5-6; and the Ohio Department of Education, http://ode000.ode.ohio.gov/www.ims/costpp/table7_97.txt.

[4] Cited in *Liberating Schools: Education in the Inner City*, ed. David Boaz (Washington, D.C.: Cato Institute, 1991), p. 11.

[5] John H. Bishop, "Is the Test Score Decline Responsible for the Productivity Growth Decline?" *American Economic Review* 79:1 (March 1989), pp. 178-197. Bishop estimates that the social cost of the test score decline totals $86 billion (1987 $) annually. "If the forecasted shortfalls in output up to the year 2010 are cumulated assuming a 3 percent rate of growth of GNP and discounted to 1987 at a real interest rate of 6 percent, the total present discounted costs of the test score decline is $3.2 trillion or roughly three-fourths the 1987 gross national product" (pp. 192-193).

[6] David Boaz, "The Public School Monopoly: America's Berlin Wall," *Liberating Schools: Education in the Inner City*, ed. David Boaz (Washington, D.C.: Cato Institute, 1991), p. 11.

[7] Alan B. Krueger, "Reassessing the View That American Schools Are Broken," *Economic Policy Review* 4:1 (New York: Federal Reserve Bank of New York, March 1998), p. 30. Paper presented at a conference, 'Excellence in Education: Views on Improving American Education', held at the Federal Reserve Bank of New York in November 1997.

[8] Eric A. Hanushek, "Conclusions and Controversies about the Effectiveness of School Resources," *Economic Policy Review* 4:1 (New York: Federal Reserve Bank of New York, March 1998), p. 21.

[9] Lewis J. Perelman, "Closing Education's Technology Gap," *Hudson Institute Briefing Paper* No. 111 (November 28, 1989).

[10] William A. Niskanen, "The Performance of America's Primary and Secondary Schools," *Liberating Schools: Education in the Inner City*, p. 57.

[11] Myron Lieberman, *Public Education: An Autopsy* (Cambridge, Mass.: Harvard University Press, 1993), p. 119.

[12] Ohio Department of Education (ODE), Information Management Services, *Vital Statistics for 1995-96*, http://www.ode.ohio.gov.

[13] Ideally, any policy discussion that involves comparing public and private schools should be done using available statistical methods to control for differences in socioeconomic and other factors between public school and private school students. However, a statistical analysis of that sort is beyond the scope of this report. State public school administrators simply do not make building-level data on such socioeconomic variables publicly available. As it will become clear, the performance gap between public and private schools is so large that it would be difficult to blame underlying differences in student quality and backgrounds as the driving force.

[14] Jay P. Greene, William G. Howell, and Paul E. Peterson, "Lessons from the Cleveland Scholarship Program," in Paul E. Peterson and Bryan C. Hassel, *Learning from School Choice* (Washington, D.C.: Brookings Institution Press, 1998), pp. 361-363. This article was originally presented at a conference at Harvard University in June 1997, "Rethinking School Governance," hosted by Harvard University's Program on Education Policy and Governance (PEPG), located within the John F. Kennedy School of Government's Alfred Taubman Center on State and Local Government and the Center for American Political Studies in the Department of Government, and sponsored by the John F. Kennedy School of Government's research program on Visions of Governance for the Twenty-First Century, the John M. Olin Foundation, and the Alfred Taubman Center on State and Local Government.

[15] Paul E. Peterson, Jay P. Green, William G. Howell. *An Evaluation of the Cleveland Scholarship Program* (Cambridge, Massachusetts: Program on Education Policy and Governance, Harvard University, September, 1997), p. vi.

[16] The Cleveland voucher has a maximum value of only $2,250. Schools can charge a maximum of $2,500, with the remaining $250 having to come from the parents, usually in the form of contributed labor. Ohio Revised Code, Section 3313.978(C)(1).

[17] For example, parish members pay between $900 and $1,700 at the elementary level and between $3,200 and $5,300 at the secondary level in the Cincinnati Archdiocese.

[18] Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov.

[19] Telephone interview with Susan Tavakolian, Director of School Finance, Ohio Department of Education, February 4, 1998.

[20] "Schools enter attendance sweeps week," Cleveland *Plain Dealer*, October 6, 1997, p. B5.

[21] Telephone interview with Sandra Beery, Internal Auditor, Cleveland Public Schools, February 3, 1998.

[22] "Truancy roundup nets 47 students," Cleveland *Plain Dealer*, September 3, 1997, p. B1.

[23] ClevCSD lists 80 elementary schools. Several schools were dropped from the analysis because they had limited data or did not teach a comparable number of grades.

[24] An important limitation of the analysis is the lack of reliable data on the socioeconomic background of students. This

omission is important since previous studies, including those performed by The Buckeye Institute, have found that the socioeconomic background of the students is an important predictor of student performance. Nevertheless, despite this data limitation, the results were still consistent with other studies of the relationship between schools' resources and student achievement. In this study racial background (i.e., variable 'MINORITY', which is the percentage of students within a school who are African-American) was used as proxy for socioeconomic background.

[25] Eric A. Hanushek, "The Economics of Schooling: Production and Efficiency in Public Schools," *Journal of Economic Literature* 24 (September 1986), p. 1142. Hanushek states that researchers have made these conclusions after examining differences both over time and across schools.

[26] Bishop, p. 179.

[27] Eric A. Hanushek (1986), p. 1166.

[28] Bonita Brodt, "Inside Chicago's Schools," in *Liberating Schools: Education in the Inner City*, p. 69.

[29] Vedder *et al*, p. 8.

[30] Vedder *et al*, pp. 21.

[31] Vedder *et al*, pp. 26-27.

[32] John E. Chubb and Terry M. Moe, *Politics, Markets, and America's Schools* (Washington: Brookings Institution, 1990).

[33] See, for instance, Hanushek (1986) and "School Resources and Student Performance," in Gary Burtless, ed., *Does Money Matter? The Effects on School Resources on Student Achievement and Adult Success* (Washington, D.C.: Brookings Institution, 1996), pp. 43-73.

[34] John E. Chubb and Terry M. Moe, "Letting Schools Work," *NY: The City Journal* (Autumn 1990).

[35] Hanushek (1998), p. 18.

[36] *Ibid*, p. 23.

[37] *Ibid*, p. 18.

[38] A separate analysis of spending in these Cleveland elementary schools found that the proportion of funding going to instruction, class size, and whether teachers have master's degrees was statistically significant determinants of per pupil spending. The model explained 74.5% of the differences in spending among these schools. **Spending was higher in districts that devoted larger portions of their budgets for non-classroom activities, had smaller class sizes, and more teachers with masters degrees.** The number of students identified for individual attention and the average years of experience were not statistically significant.

[39] See Eric A. Hanushek, "The Evidence of Class Size" (Rochester, New York: W. Allen Wallis Institute of Political Economy, University of Rochester, February 1998), pp. 19-36; and Vedder *et al*, pp. 26-27.

[40] Hanushek (1998), p. 33.

[41] Vedder, *et al*, p. 27.

[42] Richard J. Murnane and Barbara R. Phillips, "What Do Effective Teachers of Inner-City Children Have in Common?" *Social Science Research* 10 (1981), p. 98.

[43] *Ibid*, p. 99. Murnane and Phillips find, as other research has, that having earned a masters degree is not signifjcantly related to student achievement (p. 98).

[44] Hanushek (1986), p. 1142.

[45] Chubb and Moe, pp. 215-217.

[46] Walter E. Williams, "Tuition Tax Credits: Other Benefits," *Policy Review* (Spring 1978), p. 85.

[47] Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov.

[48] Cleveland CSD's passing rate, 26% (based on number tested), ranks Cleveland CSD in the bottom 20 (or, 3.3 percent) of Ohio's 611 school districts and as the lowest for the eight major urban school districts:

County	School district	Number tested	Number passed	% passed
Cuyahoga	**Cleveland CSD**	**1072**	**282**	**26**
Columbiana	East Liverpool CSD	169	43	25
Lawrence	South Point LSD	96	24	25
Scioto	Minford LSD	102	25	25
Shelby	Fairlawn LSD	40	10	25
Trumbull	Southington LSD	218	54	25
Cuyahoga	Waynesville Heights CSD	129	31	24
Lawrence	Dawson-Bryant LSD	80	19	24
Lawrence	Rock Hill LSD	96	23	24
Gallia	Gallia County LSD	179	41	23
Hardin	Upper Scioto Valley	48	11	23
Jackson	Oak Hill Union LSD	77	18	23
Highland	Bright LSD	41	8	20
Pike	Eastern LSD	60	12	20
Scioto	Green LSD	49	10	20
Scioto	Washington-Nile LSD	94	19	20
Cuyahoga	East Cleveland CSD	122	22	18
Logan	Riverside LSD	56	10	18
Pike	Western LSD	42	7	17
Ross	Huntington LSD	70	11	16

Note: "Number passed" and "Percentage passed" are based on the 1998 standard.

Source: Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov.

[49] Ohio Department of Education (ODE), Information Management Services, http://www.ode.ohio.gov.

[50] *Ibid.*

[51] Jeanne Ponessa, "Unfair to Middling," *Education Week*, January 22, 1997. Obtained from http://www.edweek.com.

[52] Ohio Department of Education (ODE), Information Management Services, *State Vital Statistics (Averages) FY 1992 - FY 1996*, http://www.ode.ohio.gov.

[53] Hanushek, p. 15.

[54] *Ibid.*

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