Where's the Money Gone?

Changes in the Level and Composition of Education Spending

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EXECUTIVE SUMMARY

There is a widespread perception among the general public, policy makers, and even education professionals of a "school productivity collapse." It is based on the belief that real elementary and secondary education spending per pupil has doubled in the last quarter century, and that school outcomes have not improved to justify these new investments.

This commonplace view is flawed. First, it is based on inappropriate conversions of nominal spending growth to real, inflation-adjusted growth of school spending. With appropriate inflation adjustment, it appears that total real education spending per pupil increased by 61% from 1967 to 1991. Admittedly, this is a substantial increase, but it is much less than the "doubled" spending commonly assumed to have occurred.

Second, this view assumes that all school spending aims for a single outcome—improved academic achievement of regular students. But schools actually seek a variety of additional outcomes as well: training of the disabled, student health and nutrition, vocational education, assimilation of the non-English speaking, etc. Rather than looking only at test scores, evaluation of the effectiveness of schools should match the growth of spending "inputs" in clearly distinguished school programs to the outcomes each of these programs is attempting to improve.

A detailed examination of expenditures in nine typical U.S. school districts shows that the share of expenditures going to regular education dropped from 80% to 59% between 1967 and 1991, while the share going to special education climbed from 4% to 17%. Of the net new money spent on education in 1991, only 26% went to improve regular education, while about 38% went to special education for severely handicapped and learning-disabled children. Per pupil expenditures for regular education grew by only 28% during this quarter century—an average annual rate of about 1%.

In regular education, per pupil spending on teacher compensation grew by 23% over the 25-year period. Average salaries rose because, by 1991, teachers had greater experience (age) and credentials than in 1967 and thus had higher average placements on salary schedules. The salary schedules themselves, however, did not generally require higher pay for the same levels of experience and credentials. Per pupil spending on teacher compensation also grew as a result of more intensive staffing—in particular, the hiring of more resource- and subject-specialist teachers.

Recent research on academic achievement suggests that outcomes in regular education programs have been stable or have grown modestly, and that outcomes for minority students have improved over the last quarter century. This report does not address the validity of that conclusion, but rather shows that regular education spending also has increased modestly. We do not claim that further spending increases will generate outcome improvements, nor do we argue that school reform is not important. Our findings suggest only that reforms are not likely to be well designed if reformers, failing to examine the varied rates of spending growth in education's many programs, assume an unproven collapse in school productivity.

INTRODUCTION

When Benno Schmidt resigned Yale's presidency to head a private school network, he explained why he had given up on public schools: "We have roughly doubled per-pupil spending (after inflation) in public schools since 1965," but the "nation's investment in educational improvement has produced very little return" (Schmidt 1992).

This is a conventional claim of public school supporters and critics alike. School finance expert Allan Odden notes that "real" education expenditures increased by 58% in the 1960s, 27% in the 1970s, and 30% in the 1980s, "but student performance—and thus education productivity—have not improved that much" (Odden 1992, 10-11). According to a Brookings Institution report by John Chubb and Eric Hanushek, "since the Soviets launched ...Sputnik...real expenditures per student rose at an annual rate of three and three-fourths percent, nearly tripling between 1960 and 1988....Spending has nearly tripled and performance has dropped" (Chubb and Hanushek 1990). "Look at spending on public schools," advises Republican political strategist Irving Kristol. "It goes up and up and up and the results go down and down and down" (DeParle 1993).

This declining "productivity" claim is so well established that few analysts have sought empirical verification for it.

This declining "productivity" claim is so well established that few analysts have sought empirical verification for it. Rather, the notion is but prelude to reform prescriptions; if, after all, everyone knows that growth in public education spending has outpaced any rise in school achievement, the challenge must be to design systems that use money more effectively, and there is no need to consider proposals for additional funds. Even many of those committed to public education assume that public education funds are not being used effectively and that reform is urgently required to halt a scandalous waste.

This study re-examines the apparent consensus that real school spending has roughly doubled in the last quarter century. It finds that, while spending *has* risen substantially, the increase is both smaller and more complex than most assume:

- Real school spending increased by 61% from 1967 to 1991, 40% less than the real growth conventionally assumed.[1]
- Only about one-fourth of this increase was directed at "regular education," the traditional school activities whose outcomes can be measured in test scores, graduation rates, etc.

This report concerns "inputs" only—expenditures for education—and makes no contribution to literature on school outcomes or productivity. However, the prevailing view among education researchers seems to be that academic outcomes have been mostly stable or have grown modestly, particularly because minority student outcomes have improved, closing some of the gaps with whites (see, for example, Koretz 1986 and 1987; Grissmer et al. 1994). If claims of modest improvement are accurate, then it may be that both regular education inputs and outcomes have grown modestly.

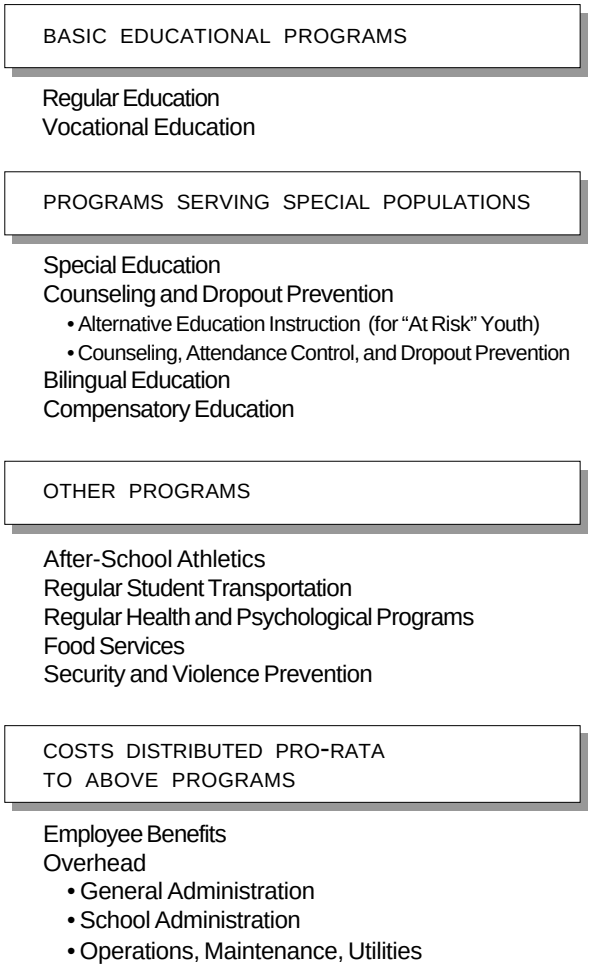
Despite public fascination with test scores, education researchers and policy professionals lack agreement about appropriate definitions of outcomes.

Productivity measures are based on two components—what inputs are utilized, and what outcomes result. Inputs are often measured as dollars spent per pupil. Measuring outputs is more complex, since schools perform a variety of functions. Despite public fascination with test scores, education researchers and policy professionals lack agreement about appropriate definitions of outcomes and how well test scores or other indices measure them. How should we measure children's health to ask whether school breakfast and lunch funds are well spent? What outcomes do we seek for severely mentally retarded or for trainable mentally handicapped children to evaluate the effectiveness of spending growth in special education? Do low-income students' graduation rates respond sufficiently to investments in compensatory education or dropout prevention programs? What academic progress do we expect, and after how long, for immigrant children whose families arrive with varied levels of literacy? How do we judge the goals of vocational education?

To understand school spending and to determine whether school program productivity is truly declining (i.e., whether additional dollars have been well used), expenditures must be linked to the program and to the specific outcomes the spending was designed to enhance. If, for example, schools have used much of their new money to improve training of mentally handicapped youngsters, it would make no sense to judge the effectiveness of this spending by whether SAT scores improved for the college bound.

This report differs from conventional analyses of changes in school spending in two ways. First, it uses a more appropriate method to adjust for inflation. Second, because public education consists of many programs with a variety of goals, this report examines changes in school expenditure by program (e.g., regular education, special education, transportation, school lunches, etc.), not by function (instruction, support services, etc.) or by "object" (salaries, supplies, etc.), as is commonly done. A list of programs examined in this report is shown in **Figure 1**.

FIGURE 1
Major Expenditure Programs of Elementary and Secondary Education



Expenditures are examined for nine school districts in 1967 and 1991. The districts were chosen to be illustrative of U.S. districts in size, expenditure growth over the period, geographic location, urbanicity, minority enrollment, and relative affluence (see Appendix 2). Because neither school districts, states, nor the federal government tracks expenditures by program, this study required a research team to examine expenditure records for each of the nine districts. Every expenditure was categorized by the program it was designed to support.

Over any period, expenditures may rise solely because of inflation, or they may rise because more goods and services are purchased (or because of a combination of both factors). When, for example, Benno Schmidt claimed

that "real" per pupil spending doubled from 1967 to 1991, he meant that schools now utilize twice the inputs they utilized a quarter-century earlier. To say this, however, requires a calculation of what it would have cost, in 1991, to purchase exactly those inputs (teachers, textbooks, administrators, etc.) that schools purchased in 1967. Only if this cost of 1967 resources (in "1991 dollars") was less than half of actual 1991 spending can we say that per pupil expenditures did indeed double.

This report analyzes the portion of new spending from 1967 to 1991 that was due to inflation, the portion that was used to purchase additional resources, and the amount of additional resources received by each school program.

The consumer price index for all items understates inflation of school costs because prices grow faster in sectors like education where cost efficiencies are harder to achieve.

It is commonplace to use the consumer price index (CPI) to adjust expenditures for inflation. Yet as shown in the first section of this report, the CPI for all items understates inflation of school costs because prices grow faster in sectors like education where cost efficiencies are harder to achieve. To adjust expenditures more accurately for the inflation experienced by schools, we develop an adjustment measure based on inflation in service industries like education. We call this new index the "net services" index (NSI). Real school spending growth is the amount of new money spent in excess of inflationary changes measured by the NSI.

Throughout this study we focus on three measures of spending:

- *Shares of total expenditures.* This is the percentage of all spending devoted to a particular program.
- *Shares of net new spending in 1991*. This is calculated by subtracting each program's spending in 1967 from its spending in 1991, and then determining what share of the change in total spending from 1967 to 1991 is attributable to that program's growth.
- *Real growth.* This is the change in per pupil spending over the period.

Each of these statistical types has uses and limitations. For example, while it makes sense to speak of regular education's 28% real per pupil spending growth, it makes no sense to say that real per pupil spending on bilingual education grew by nearly 1,000%, since real spending on this program in 1967 was so insignificant. It does make sense, however, to say that bilingual education received 4% of net new funds spent by districts in 1991 compared to 1967. Each statistic in this report is clearly labeled so that readers can understand which type is being used.

All expenditure figures are calculated per pupils enrolled in all district programs. For example, per pupil spending for special education is calculated by dividing special education expenditures by total enrollment in the district in both special and regular education programs. Thus, when it is reported here that a district spent about $1,000 per pupil on special education in 1991, it does not mean that services for the average special education student cost only $1,000; in reality, spending on the average special education student was much greater. And when this report shows that the district spent about $3,800 per pupil on regular education, it does not mean that each regular education student cost $3,800; in reality, spending on the average regular student was less.

This convention enables a clear view of how district priorities have changed, exclusive of changes caused by rising or falling total enrollment. But the convention does not permit an understanding of how much is spent on each student in any particular program. For example, a rising per pupil cost of school lunches is calculated as total school lunch expenditures divided by all students, whether they receive subsidized lunches or not. The increase may reflect more expensive meals or more students in need of subsidized food, or a combination of both. Rising per pupil cost of special education also may reflect more resource-intensive instruction or the classification of more students in the special education program. Per pupil spending for any program can go up either because the client base of that program has expanded or because more real resources were devoted to a constant number of clients.

Real per pupil spending, appropriately adjusted for inflation, grew by 61% between 1967 and 1991, a growth rate 40% less than conventionally reported.

More sophisticated analyses of school program productivity would have to distinguish more intensive use of resources in each program from more students receiving these resources. This report, however, is but a first step and (except for some aspects of its analysis of regular education instruction) does not make those distinctions.[2]

An examination of expenditure changes in the nine districts shows that:

- As noted above, real per pupil spending, appropriately adjusted for inflation, grew by 61% between 1967 and 1991, a growth rate 40% less than conventionally reported;
- The share of all spending received by regular education (what most people think of as a school's normal academic function) declined from 80% in 1967 to 59% in 1991; nonetheless, per pupil expenditures grew 28% over the period; regular education received 26% of the net new money spent in 1991;

- Special education's share of all expenditures rose from 4% in 1967 to 17% in 1991; special education received 38% of the net new money spent in 1991;
- About 8% of net new money went to expansion of the school lunch and breakfast programs. Another 7% went to attendance, dropout prevention, alternative instruction, and counseling.
- In both 1967 and 1991, about two-thirds of regular education funds were spent on teachers' compensation;
- In regular education, higher average teacher salaries were mainly due to teachers' greater experience (age) and credentials (e.g., master's degrees) in 1991 compared to 1967. Real salaries for teachers of similar experience and training did not significantly increase during this period and declined in many cases.
- Growth in regular education staffing intensity was more marked at the elementary than at the secondary level. Elementary class sizes declined, but about half the reduction in pupil-teacher ratios was caused by more subject specialists and resource teachers, supporting more planning time for regular classroom teachers.
- The growth of regular education spending was more marked in suburban than in urban districts. In the urban districts studied, per pupil regular education spending grew hardly at all, and might have declined in real terms if the districts had not cut back on operations, maintenance, and general administration spending. But in some suburban districts, regular education resources grew substantially.

Special education's share of all expenditures rose from 4% in 1967 to 17% in 1991; special education received 38% of the net new money spent in 1991.

The rest of this report is organized as follows. The first section describes the net services inflation index, how it was created, and why it is preferred over the CPI. The empirical methodology for both selection of sample districts and the categorization of expenditures is outlined in the second and third sections. The findings—how real spending for districts' various programs has changed during the last quarter century—are found in the final sections.

INFLATION AND THE MEASUREMENT OF SCHOOL SPENDING

In 1967, public elementary and secondary schools spent $29.6 billion, or $687 per pupil enrolled in grades K-12. By 1991, spending jumped to $229.4 billion, or $5,566 per enrolled pupil. However, the fact that per pupil spending grew by 710% over this quarter century does not tell us the degree to which we have devoted more real resources to education. Much of this increase has been caused by inflation: the prices of most goods and services purchased by schools have gone up each year.

The fact that nominal per pupil spending grew by 710% over this quarter century does not tell us the degree to which we have devoted more real resources to education.

For instance, if food prices rise by 5%, families must increase their food budgets and expenditures by 5% just to maintain their food consumption. Similarly, schools faced with a 10% rise in the price of textbooks must increase textbook spending by 10% to provide students with the same number of textbooks. To measure historical growth of real per pupil resources requires knowledge of the inflation, or price increases, in goods and services purchased by schools. What we want to understand is the degree to which more real resources are now used by schools and, if so, whether greater resource intensity generates better outcomes.

Examinations of changes in school spending over time must use some measure of inflation to convert 1967 spending to its equivalent in 1991 dollars. We can then speak of "real" (or "inflation-adjusted") as opposed to "nominal" ("unadjusted") school spending growth. Most analysts make this conversion by use of the "consumer price index for all urban consumers" (CPI-U), the conventional measure of inflation provided by the Bureau of Labor Statistics.[3] Using the CPI-U, $687 in 1967 dollars becomes $2,794 in 1991 dollars. In real terms, therefore, per pupil expenditures went from $2,794 to $5,566, or a quarter-century jump of 99%. As Benno Schmidt claimed, we "roughly doubled" real school spending.

It is probable, however, that use of the CPI-U for this purpose causes an overstatement of school spending growth. The inflation rate for school purchases is likely to be greater, and will continue to be greater, than the average urban consumer's price inflation that the CPI-U is intended to measure. **Table 1** reviews inflation rates for a range of goods and services. These data show that price increases for particular items can be different from price increases for the "average" items included in the market basket of goods and services used to calculate the CPI-U. For instance, inflation in medical care (681%) from 1967 to 1991 was much greater than the average for all items,

TABLE 1
Selected Inflation Rates, 1967-91

	Inflation Index (1982-84=100)		Inflation,
	1967	1991	1967-91
All Items (CPI-U)	33.4	136.2	408%
All Commodities	36.8	126.6	344
Food	34.1	136.3	400
Other Commodities	38.6	121.3	314
All Services	28.8	146.3	508
Medical Care	26.0	177.1	681
Other Services	29.3	143.3	489

Source: Indices from Bureau of Labor Statistics as presented in *Economic Report of the President* (February 1995), Table B-61, p. 344.

while inflation in commodities like food and manufactured products (344%) was less than the average. Because inflation rates vary widely among particular items, it is important to determine carefully the appropriate inflation index to use for converting nominal spending into real changes.

If a family bought the average market basket of goods and services in 1967, and then spent 408% more in 1991, it could still buy similar goods and services in 1991 because "all items" inflation was 408%. But consider a family that purchased an above-average amount of medical care in 1967 and whose total spending also increased by 408% by 1991 (i.e., less than the medical inflation of 681%). In order to maintain its standard of living in other respects, this family would have been forced to reduce the amount of medical care services (or an equivalent amount of other spending) it purchased by about a third, because medical care prices rose faster than average prices. In contrast, consider a family that purchased an above-average amount of commodities in 1967 and whose spending also increased by 408% by 1991. This family could improve its living standards, purchasing significantly more commodities (or other items), because commodity inflation (344%) was relatively low.

Table 1 also shows that prices for commodities have grown more slowly than prices for all services (344% vs. 508%). A similar contrast is evident when food and medical care are removed from their respective groups: nonfood commodity (primarily manufactured goods) inflation was 314%, roughly

two-thirds the 489% inflation in "services other than medical care."

Inflation in services exceeds inflation in goods or commodities because productivity (the increase in output per employee-hour worked) has grown more slowly in services. Productivity growth in manufacturing, for instance, has allowed industrial firms to reduce their costs (or at least slow the growth in costs) and therefore increase the prices of manufactured products more slowly or not at all. In contrast, many service-sector firms cannot automate their production as manufacturers do; these service firms, for whom it is more difficult to achieve productivity growth, have had to increase prices faster than average. Oft-cited examples include barbers and orchestras: barbers cannot greatly increase the number of haircuts they perform per hour, and orchestras cannot perform music with fewer musicians each year. These insights—that disparities in inflation mirror differences in productivity growth, and that industries (i.e., services, barbers, orchestras) in which it is hard to achieve productivity growth will have higher-than-average inflation—are associated with the work of William Baumol (Baumol 1967; Baumol, Blackman, and Wolff 1989). Baumol refers to low productivity sectors as having a "cost disease," and the faster inflation in sectors with relatively slow productivity is generally referred to as the "Baumol effect." **Box A** elaborates how differences in productivity between industries will, in the context of a national labor market, generate differences in inflation rates.

Inflation in services exceeds inflation in goods or commodities because productivity (the increase in output per employee-hour worked) has grown more slowly in services.

Education is subject to the Baumol effect because productivity improvements from cost reductions are difficult to achieve in education. In contrast, manufacturing and telecommunications industries are able to automate work and find efficiencies in use of materials; they thereby reduce the resources needed in production and realize productivity gains. From 1967 to 1991, the private sector achieved productivity growth of 1.1% per year, or 30% overall. This means that the number of workers necessary to produce an average product fell roughly a third from the beginning to the end of this period. What would a comparable growth in labor productivity look like in schools? Assume that schools use only one resource, teachers, and the pupil-teacher ratio was 20:1 in 1967. Then, if 30 teachers were necessary to educate 600 students in 1967, and if schools could have increased productivity the way the private sector did (by reducing labor inputs and using remaining inputs more efficiently), a 30% productivity growth would imply that only 23 teachers were necessary in 1991; in other words, the pupil-teacher ratio would have to *rise* from 20:1 to 26:1. With only 23 teachers, school cost increases would be in line with the national economy.[4]

BOX A

The Relationship Between Industry Prices and Productivity in a National Labor Market

	Industry A "Fast Productivity"			Industry B "Slow Productivity"		
	Year One	Year Two	Percent Change	Year One	Year Two	Percent Change
1. Employment	100	100	0%	100	100	0%
2. Output (units)	1,000	1,100	10	1,000	1,000	0
3. Productivity (2)/(1)	10	11	10	10	10	0
4. Annual Pay	$20,000	$22,000	10	$20,000	$22,000	10
5. Price*	$2,000	$2,000		$2,000	$2,200	10

* (annual pay x employment)/output units

The table illustrates how differences in the price changes (i.e., inflation) of individual industries are driven by differences in productivity growth when all industries increase wages at the same pace (as would be expected in a national labor market, assuming each industry's workforce has the same skills and education). Table A present examples of two industries, each of which has 100 workers producing 1,000 units in year one. That is, the examples are constructed so that both industries have the same productivity level of 10 in year one. Because each industry also pays its workers the same (i.e., $20,000), they also have the same price level in the first year of $2,000 per unit.

What happens to the prices of the goods produced in these industries when one (Industry A) experiences a 10% growth in productivity but the other (Industry B) has no productivity growth? We assume that wages rise by 10% (reflecting the 5% average productivity growth in the economy — the average of 10% and 0% — and 5% inflation). In Industry A, the productivity growth of 10% offsets the 10% wage hike so that prices do not go up in year two. Industry B, however, enjoyed no productivity growth but did face 10% higher wages, the same as Industry A. The result is that the price of Industry B's goods rose by 10%. Thus, an industry that pays comparable wages (for comparable workers) but has low productivity will experience faster inflation.

While education reform should certainly be on the public agenda, continuous industrial-like realization of cost efficiencies are probably not what the public has in mind. Education costs will rise faster than economy-wide inflation, so real spending per pupil as measured with an average inflation index will rise even though per pupil resources are not growing.[5] This is illustrated in **Box B**.

A related insight of William Baumol is that because productivity improvements are spread unevenly throughout the economy, changes in prices over time will also vary across products. Consumers, therefore, will spend a greater share of incomes to purchase a constant level of products or services in some sectors and a smaller share to purchase a constant level in others. That is, we must increasingly spend a larger share of our incomes on low

B O X B

The Relationship Between Spending Per Pupil and Productivity

		Year Two	
	Year One	No Productivity	Productivity Growth
1. Pupils	1,000	1,000	1,000
2. Teachers	50	50	45
3. Pupil/Teacher	20	20	22.2
4. Total Annual Pay	$20,000	$22,000	$22,000
5. Salaries*	$1,000,000	$1,100,000	$990,000
6. Spending/Pupil	$1,000	$1,100	$990

* Annual pay of $20,000 times number of teachers.

The table illustrates how spending per pupil will necessarily rise if there is not any productivity growth or increase in cost efficiencies. For instance, a school with a pupil/teacher ratio of 20 to 1 that pays teachers $20,000 annually will be spending $1,000 per pupil (assuming, of course, there are no expenses other than teachers). If wages in the economy, and for teachers, grow 10%, then spending per pupil will also rise 10%, to $1,100. The cost efficiencies necessary to offset higher wages require that the numbers of pupils per teacher rise to 22.2. Schools then are faced with a continuous rise in the number of pupils per teacher or steadily rising spending per pupil (a measure of school costs, or inflation), at least when compared to other sectors that can achieve greater cost efficiencies over time.

productivity goods and services that have more rapid price increases (like education) just to maintain the same level of consumption.

It is thus inevitable that inflation in a low-productivity industry like education will be higher than inflation in an average industry experiencing average productivity gains. For this reason, use of the average inflation rate for consumer goods and services (the CPI-U) systematically understates the inflation facing school districts. Put another way, a measure of average inflation to deflate school spending trends will systematically mislead by overstating how much “real school spending” has grown. It will give the impression that more of the nominal spending growth represents real new resources provided to school districts for educating students, and that less of the nominal spending growth represents inflation, than was in fact the case. The issue, then, is whether we can select a more appropriate index to use for analysis of school spending.

Despite problems with use of the consumer price index to interpret historical changes in school spending, few researchers have attempted to create an inflation index specifically tailored to education (although the education research community is increasingly sophisticated about regional differences

in the cost of living, a conceptually similar issue).[6] D. Kent Halstead constructed one index that extends back to 1975 (Halstead 1983 and Research Associates 1993), but no others have attempted to replicate Halstead's work, so its accuracy lacks independent verification. And Halstead's index has a theoretical drawback that further militates against its use in the present study.

Halstead constructed his school price index (SPI) by examining price changes for a "market basket" of 42 items typically purchased by elementary and secondary schools in 1975 (Halstead 1983, 138). In 1975, elementary and secondary schools spent 47.68% of their budgets on teacher salaries, 3.75% on student transportation, 0.7% on textbooks, 1.1% on electric power, etc.[7] By assembling a price series for each of these items, making estimates where necessary, Halstead calculated what it would cost public schools to buy an identical (ignoring most quality improvements) collection of goods and services in each subsequent year. He identified this growth as the school inflation rate, so spending above this rate represented real spending increases.

The Halstead index is not used in this report because it is not available for the entire 1967 to 1991 period, and its treatment of teacher salaries is questionable.

The Halstead index is not used in this report for two reasons. First, it is not available for the entire 1967 to 1991 period, and second, its treatment of teacher salaries is questionable. Halstead's SPI includes a price series for elementary and secondary teachers based on their actual salary changes. However, what schools pay teachers reflects districts' choices about whether to pay teachers more or less than comparable workers. (These choices may be influenced not only by district officials but by legislators and teacher unions as well.) When teacher salaries rise relative to salaries of workers with comparable education and experience in other fields, we can presume that schools are upgrading the skill levels of their workforce (in other words, providing additional inputs, more "real" resources to students). But if teachers' salaries fall relative to those of similarly educated professionals, then school districts will have a harder time attracting the best qualified teachers, and there will be an erosion in the teacher skill base. Variance from market norms can be considered either an effort to attract a better- (or worse-) than-average quality workforce, or the provision of a "rent" (positive or negative) to teachers by either overpaying or underpaying them.

It would have perhaps been more appropriate for Halstead to base his index on all college-educated or professional workers, a group "comparable" to teachers. Then, the degree to which schools pay teachers or other school employees more than the market rate would not be obscured by a school price index that ignores the salaries of comparable workers. Conversely, a fall in teacher pay relative to "comparables" would result in a

measured decline in real resources provided for students. In the absence of a conceptually correct index, an assessment of real school spending must rely upon some combination of available indices for particular items developed for the CPI-U. One reasonable choice is to use the inflation measure for "services," because schools are a service-type industry with "cost disease"/ slow productivity characteristics. The actual service index of the CPI-U, however, includes two heavily weighted items that strongly affect the measured inflation rate but that are not relevant to education. Shelter rent (housing) inflation makes up a large part of the service CPI-U and should be excluded. Medical care also has an exceptionally high inflation rate caused by unique characteristics of the health care sector that are not applicable to education. For this reason, the index developed for this report—the "net services index" (NSI)—reflects price increases of services provided to consumers exclusive of shelter and medical care. "Net services" includes items such as entertainment services, personal care services, personal and educational services, public transportation, auto repair, private transportation (other than cars), housekeeping services, and utilities and public services. These tend to be labor-intensive services with low productivity growth (relative to goods or to the average) and therefore are items where increased cost efficiencies are hard to achieve. If schools rely on professional, college-educated workers more than do the sectors in "net services" (as is reasonable to believe), then "net services" will still understate school inflation (because wages for educated workers have risen faster than average over the 1967-91 period). Appendix 1 provides technical detail on how the NSI was constructed, nationally and for each region and local area.[8]

In the absence of a conceptually correct index, an assessment of real school spending must rely upon some combination of available indices for particular items developed for the CPI-U.

Application of the national net services index to education spending is shown in **Table 2**. These data show that the $687 spent per pupil in 1967 was equivalent to $3,456 in 1991 dollars. Since 1991 per pupil spending averaged $5,566, we conclude that real school spending—real per pupil resources provided to schools—increased by about 61%.[9] Table 2 also shows measured growth in real school spending using the "all items" CPI-U to be 99.2%—the much discussed "doubling" of school spending. Selection of the net services index suggests a nearly 40% slower growth in school resources than conventional accounts based on the conceptually inaccurate (for this purpose) "all items" CPI-U.

In sum, choice of an inflation measure dramatically affects the portrait of school spending growth. The magnitude of the measurement error from applying the "all items" index cannot be precisely determined because an appro-

TABLE 2
Growth in Per Pupil Spending Using Different Inflation Measures, 1967-91

	Per Pupil Spending		
	Current Dollars	1991 Dollars Using Net Services Index	1991 Dollars Using CPI-U
Year			
1966-67	$687	$3,456	$2,794
1990-91	5,566	5,566	5,566
Change, 1967-91			
Dollars	$4,879	$2,110	$2,772
Percent	710%	61.1%	99.2%
Inflation			
Total		403.7%	306.7%
Annual		7.0	6.0

priate school index is not available, but construction of an index from the CPI-U services component, with medical care and housing excluded, seems to be the best alternative. So while it seems certain that conventional estimates have vastly overstated the growth in school resources, the 61% growth presented in Table 2 is an estimate that, while more accurate than conventional estimates, might still be too high or too low. Development of an improved inflation index for school spending should be a research priority.

THE NINE-DISTRICT SAMPLE

This report analyzes school program expenditure changes from 1967 to 1991 in nine school districts chosen to mirror the experiences of districts across the nation during that period.[10] The nine districts were selected from the 2,500 largest districts in the nation (each with at least 3,485 students), a group that jointly enrolls 71% of all U.S. students.

The nine were chosen to include three large (more than 38,466 students enrolled), three medium-sized (enrollment from 10,267 to 37,978), and three small (enrollment from 3,486 to 10,199) districts. Each size-group includes one district where nominal per pupil expenditure growth from 1967 to 1991 was relatively great for districts that size, one from the middle range, and one where spending growth was relatively modest. The sample districts have diverse demographic and geographic characteristics, as shown in **Table 3**. Selection procedures are described in Appendix 2.

Nine school districts were chosen to mirror the experiences of districts across the nation during that period.

The nine districts are:

(1) ***Anne Arundel County, Md.*** A county-wide district headquartered in the state capital of Annapolis, site of the Naval Academy, Anne Arundel was racially segregated in 1967. Farmers and sharecroppers, dependent on tobacco and soybean crops, lived in dirt-floor shacks. Nearly half the district's teachers lacked college degrees, these mostly teaching in the black schools. During the next decade, Anne Arundel built new integrated schools and paid tuition for teachers to attend college. Tobacco and grain prices fell, farming lands were sold to developers, and corporate and professional commuters from Washington and Baltimore established suburban communities. By 1991, Anne Arundel was relatively affluent.

(2) ***Bettendorf, Iowa.*** One of the Quad Cities straddling the Mississippi River, Bettendorf is partly a bedroom community for Moline, Davenport, and Rock Island; it experienced few economic or demographic changes from 1967 to 1991. Midwestern deindustrialization caused losses of enrollment and property tax revenue in the 1970s, but the community has recovered, stimulated by waterfront development and the growth of tourism (including riverboat gambling). In 1991 Bettendorf had few minority or poor children, and its family incomes and parental education levels were considerably above national averages.

TABLE 3
Sample District Characteristics

District Size	Nominal Expenditure Growth Rate: Slow	Moderate	Rapid	Average
Large Districts	East Baton Rouge, La.	Los Angeles Calif.	Anne Arundel, Md.	Large Districts
a. Fall 1990 Enrollment	61,699	625,073	65,011	250,584
b. Nominal Per Pupil Expenditure Growth, 1967-91	632%	746%	920%	766%
c. Urban/Suburban/Rural	Urban	Urban	Suburban	
d. Minority Students, 1991	58%	87%	19%	55%
Community Characteristics, 1991				
e. Children Below Poverty	25%	28%	6%	20%
f. Non-English-Speaking Children	1	13	1	5
g. Median Income, Households With Children	$33,372	$30,696	$50,048	$38,039
h. Householders With College Degrees	29%	25%	29%	28%
Medium-Sized Districts	Fall River, Mass.	Boulder, Colo.	Spring Branch, Texas	Medium Districts
a. Fall 1990 Enrollment	12,494	21,502	26,495	20,164
b. Nominal Per Pupil Expenditure Growth, 1967-91	595%	659%	878%	711%
c. Urban/Suburban/Rural	Urban	Suburban	Urban	
d. Minority Students, 1991	8%	15%	52%	25%
Community Characteristics, 1991				
e. Children Below Poverty	21%	10%	21%	17%
f. Non-English-Speaking Children	2	2	8	4
g. Median Income, Households With Children	$30,154	$45,680	$36,776	$37,537
h. Householders With College Degrees	8%	51%	41%	33%
Small Districts	Bettendorf, Iowa	Middletown, N.Y.	Claiborne County, Tenn.	Small Districts
a. Fall 1990 Enrollment	4,370	5,266	4,618	4,751
b. Nominal Per Pupil Expenditure Growth, 1967-91	604%	735%	930%	756%
c. Urban/Suburban/Rural	Suburban	Suburban	Rural	
d. Minority Students, 1991	7%	35%	2%	15%
Community Characteristics, 1991				
e. Children Below Poverty	5%	15%	32%	17%
f. Non-English-Speaking Children	1	2	1	1
g. Median Income, Households With Children	$45,889	$38,551	$20,543	$34,994
h. Householders With College Degrees	38%	18%	8%	21%

Sources:
Rows a & c: U.S. Department of Education, National Center for Education Statistics, *Common Core of Data*, 1991. **Row b**: U.S. Department of Education, National Center for Education Statistics, *Common Core of Data*, 1991 & U.S. Department of Commerce, Bureau of the Census, *Finances of School Districts*, 1967. **Row d**: National Center for Education Statistics unpublished data. **Rows e-h**: U.S. Department of Education, National Center for Education Statistics, *Common Core of Data*, 1992.

(3) ***Boulder, Colo.*** Home to the University of Colorado, this suburb attracts professional and technical employment in computer, medical supply, and aerospace industries. Tourism and recreation is also important, stimulating in the 1960s and 1970s firms manufacturing outdoor products. These since declined; Boulder is now almost entirely white-collar and service-oriented. By 1991, over half of Boulder's household heads had college degrees. In the 1980s, the county's minority population grew, mostly from Indochinese refugee resettlement; the district's bilingual program now teaches many primary languages.

(4) ***Claiborne County, Tenn.*** This Appalachian mountain community is the poorest of the sample districts. Parental education levels are the lowest. In 1960, Claiborne's 4,500 students attended 90 schools, many of which were one-room, ungraded. During the next decade, coal mining dwindled and rural areas were depopulated. By 1978, students were consolidated into 11 buildings. The Middle East oil embargo temporarily revived Claiborne's mines, providing some support for school construction and teacher salaries. The boom, however, was short-lived, and Claiborne today has a weak economic base. Some school supplies other school districts routinely purchase are, in Claiborne, furnished by community bake sales and other fund raising.

(5) ***East Baton Rouge, La***. A few large employers dominate this community; assets of Exxon alone represent 7% of the district's tax base. Though the district officially desegregated with "freedom of choice" in 1963, it still operated a dual system in 1967, with separate staffs and expenditure records for black and white schools. In 1975, federal courts began to issue desegregation orders, including intradistrict busing starting in 1982. During the quarter century under study, the district became "majority minority," with enrollment going from 40% to nearly 60% African American.

(6) ***Fall River, Mass.*** A low-income town whose economy is integrated with that of neighboring New Bedford, Fall River has high unemployment (it still partly depends on fishing fleets, textile, and garment industry jobs), and has changed relatively little during the years of this study. In 1967 the district rented church space to operate a bilingual education program in the Portuguese community. Today, bilingual education continues in Portuguese, Khmer, and Spanish.

(7) ***Los Angeles, Calif.*** The second-largest district in the nation, Los Angeles' 1967 enrollment was 56% white, with African Americans the largest minority (21%). By 1991, only 14% were white; the largest minority was

Hispanic (63%). Since 1978, Los Angeles has operated pursuant to federal desegregation orders mandating intradistrict busing, magnet schools, smaller classes in racially isolated schools, and incentives to voluntarily transfer. In 1967, the district offered no bilingual education. By 1991, 37% of district students were limited-English proficient. The district is now committed to primary language instruction, although qualified teachers are not always available.

(8) ***Middletown, N.Y.*** A Hudson River community at the outermost fringes of New York City suburbia, Middletown's economic base is primarily retail, with the prior railroad and industrial base now in decline. Its 35% minority student population is about evenly divided between African American and Hispanic children, for most of whom English is the primary language. In both 1967 and 1991, Middletown spent more per pupil than any other sample district, providing extensive pupil support services for regular students as well as instruction. In cases (like special education, vocational education, staff training) where the district is too small to offer specialized programs, Middletown (like Bettendorf) joins nearby districts to offer services cooperatively.

(9) ***Spring Branch, Texas.*** A Houston suburb, Spring Branch history reflects national racial and demographic patterns of the last quarter century.[11] In the 1960s and 1970s, Houston desegregated, and Spring Branch was a "white flight" community of owner-occupied single-family homes. Only 5% of enrollment was minority, virtually all Hispanic. By 1980, family income was twice the national median, helped in part by an oil boom. In the next decade, however, Houston minorities suburbanized; by 1991, 53% of enrollment was minority, including 8% black and 36% Hispanic. Forty percent lived in apartments; student mobility was so high that community leaders organized a program (without school funds) to offer rent reductions to families who remained in one apartment for the entire school year.

CATEGORIZING EXPENDITURES

Rather than considering public education an undifferentiated enterprise, this report analyzes how the financial resources of distinctly different educational programs changed from 1967 to 1991. States and districts do not normally report school spending data by program type, although education researchers increasingly call on them to do so (Kirst 1988; Barro 1989; Odden and Picus 1992; Berne and Stiefel 1995). Thus, to understand which programs received which funds, we first defined the programs (see Figure 1) and then categorized each expenditure of the nine sample districts by program and by employee type (teachers, aides, other professionals, other employees).[12]

States and districts do not normally report school spending data by program type, although education researchers increasingly call on them to do so.

Each school expenditure (except for new school construction) was classified by the program it supported; spending for all listed programs is the sum of all school spending. Discussed below are some of the assumptions implicit in these classifications, how distortions are inevitably implied by any taxonomy of school programs, and what the possible distortions suggested by these particular classifications might be.

So that the programmatic uses of all public funds in education could be assessed, state education department and regional government spending were also included. These funds were converted to district per pupil expenditures by using a ratio of district to all state or regional K-12 enrollment.

Categorizing expenditures by program creates results that will be unfamiliar. First, even those who specialize in school finance will be unaccustomed to seeing programmatic expenditures. Second, because pro-rata shares of state government expenditures (like textbook selection, testing, special schools, teacher certification, retirement fund contributions) are included, the total expenditure figures seen here will differ even from districts' own reports. This lack of easy verifiability placed special burdens on the field team to assure data were accurate and balanced.

Because schools do not normally categorize expenditures by program, the categorization scheme used here is necessarily unique, requiring thousands of allocation decisions about individual expenditure items.[13] This section discusses the most important of the decision rules used to make these assignments. Further detail on these, as well as discussion of other categorization issues, can be found in Appendix 3.

Defining Special Programs

Before we can justify assigning expenditures to a special program, we must first address whether the special program reflects a new or broadened school goal or whether changes have simply occurred in how similar students are categorized. In other words, do special student populations (e.g., students in special, bilingual, or compensatory education programs) consist mostly of children whom, in 1967, were considered "regular" students but who in 1991 have been reclassified, or do special student populations mostly represent a new challenge not confronted by American public schools in 1967?

Before we can justify assigning expenditures to a special program, we must first address whether the special program reflects a new or broadened school goal or whether changes have simply occurred in how similar students are categorized.

The expectation that all elementary and secondary education spending should affect the outcomes (e.g., test scores) of regular education students rests on the former assumption. The implicit claim is that students in today's special education, bilingual, or compensatory education programs were, in 1967, mostly instructed as part of schools' regular programs, and that the 1967 regular education outcomes from which we now expect improvements then included the outcomes of students similar to those who, in 1991, were in special programs. If this were the case, then any new resources given to these special programs represent only the reclassification of resources previously given to regular education. Changes in regular education outcomes, therefore, could be expected to measure the usefulness of these new resources.

This assumption may be true in some cases. There were some students in regular education programs in 1967 challenged by learning disabilities that today earn special education classifications; there were some students in regular education programs in 1967 who came from immigrant families not speaking English; and there were many students from poor minority families who struggled to graduate without compensatory assistance. If these descriptions truly characterize most students now in special programs, readers may fairly conclude that this report gives a false picture of changes in the programmatic divisions of education spending.

But we argue that this is generally not the case. Most students served by special programs in 1991 would not have been in regular education in 1967 or, if they were, would not have remained in school for long. Some students enrolled in special programs in 1991 would not have been in school at all in 1967.

The claim that special programs represent simply a reclassification of regular students is most often made with respect to special education, and particularly with respect to children classified as "learning disabled." Yet while some learning-disabled children might be in regular classes were it

not for the special education program, severely handicapped children would not be in schools at all, and would instead be cared for at home or in other institutions (as was the case in 1967). Some sample districts have higher ratios of learning-disabled to severely handicapped children. For such districts, this study's method may understate regular education spending growth. For others, with relatively fewer learning-disabled classifications but more severely handicapped or mentally retarded children, a decision to include in regular education the costs of educating the latter would inappropriately exaggerate the growth of regular education funds. Some special education cost increases result from opportunities to educate children who, without modern medical technology, would not have survived to school age in 1967. In some cases, these children survive with severe handicaps, but in other cases there is simply a higher incidence of learning disability. Considering these children, it is apparent that even all learning-disabled classifications cannot be thought simply to be reclassifications of regular students, but instead are partly the net addition of a special population to school enrollment.

Some special education cost increases result from opportunities to educate children who, without modern medical technology, would not have survived to school age in 1967.

In deciding whether to create other special program categories to which 1991 expenditures should be assigned, we had to make similar decisions about whether, on balance, students similar to those served would have been in regular education in 1967 or whether such students were simply unlikely to have been part of elementary and secondary public institutions in 1967. In cases where we thought the former was more likely (for example, "gifted and talented" education), we included 1991 expenditures in regular education. In cases where we thought the latter more likely, we distinguished expenditures as part of a special program.

Thus, there were more first-generation immigrant children in 1991 schools than there were in 1967, and, with the abolition of "national origin" immigration quotas in 1965, a greater proportion of immigrant children came from semi-literate families in 1991 than in 1967. The rise of undocumented immigration from Mexico and the Caribbean, the surge of Indochinese refugees in the 1970s and 1980s, and recent growth of undocumented Asian immigration accentuate this trend. Immigrant children, in the absence of bilingual programs, might sit in regular classes unable to benefit, so it would be inaccurate to consider expenditures these children require as replacing regular education.

A contrary decision—to include bilingual education program spending as part of regular education in 1991—would imply that, in 1967, schools educated similar children as part of regular education programs without spe-

cial help. Certainly, some immigrant children were successful in schools' regular programs in 1967. But the larger share of 1991's non-English-speaking schoolchildren had few counterparts in 1967 schools. The resources devoted to these students in 1991, and their outcomes, should therefore be accounted for separately.

In the case of some other special populations ("at risk," or compensatory education students, or students who benefit from desegregation expenditures), some students may have been in regular classes if not for special programs, but other students might have dropped out. This report defines "at risk" education to include: actual instructional expenditures for teachers and aides in alternative schools for students who would otherwise drop out, evening schools for secondary students who work or care for siblings during regular school hours, and disciplinary schools for students who voluntarily or involuntarily separate from regular schools. These instructional expenditures are not included in regular education. We make this distinction because costs of alternative secondary schools would mostly not revert to regular education were these schools not in existence. Instead, these students would likely drop out of school and be unserved by any educational program.

In the case of some other special populations, some students may have been in regular classes if not for special programs, but other students might have dropped out.

Dropout rates were probably much higher in 1967 for the minority and low-income children whom these programs now target (although dropout data are the most unreliable of education statistics). For example, many at-risk students now live in communities that had few such students before the great northern migration of rural Southern blacks, a migration still in process during the early years of this study. Many of these students in 1967 attended small rural schools in districts too small to be included in the sample from which districts in this study were drawn. Others, if they attended large districts, were often segregated and did not receive the same academic resources as white students. As noted above, college degrees were not required of teachers in segregated schools in Anne Arundel in 1967. Our data for East Baton Rouge in 1967 are the compilation of separate data for "Negro Schools" and "White Schools." Per pupil spending was much higher in the latter. Thus, to say that in the absence of compensatory or desegregation programs these students "would have" been in regular education, and that regular student average outcomes should improve from 1967 to 1991 as a result of spending on minority and impoverished students, is a further stretch than the facts justify. However, we recognize that our taxonomy creates a less serious distortion in the opposite direction.

There is no perfect way to resolve this conflict. In a district where mag-

net schools were established pursuant to a desegregation lawsuit, we categorize as an instructional expense of desegregation the additional, but not the base, expenditures of these schools. Because the court ordered smaller classes in magnet than in regular schools (to make magnets more attractive to an integrated student body), additional costs of lower class sizes are categorized as an expense of desegregation, not of regular education. (Basic instructional costs are considered regular education expenditures.) If these monies now spent in magnets would, in the absence of a court order, otherwise be spent on the same students but in regular education programs, our methodology overstates the extent to which desegregation programs compete with regular education for funding. If, however, in the absence of magnet schools, white students would leave the affected district (either for private schools or suburban communities), and if minority students in racially isolated schools would then receive inferior educational services, our methodology is more appropriate.

Regular education teachers often insist that they spend more time today on special programs and less on regular education than they did 25 years ago.

No classification rules can accommodate the many circumstances involved. We have attempted to categorize spending in ways that do not understate regular education's share of school spending in 1991. Some overstatement is likely, since many district finance records do not identify special program costs unless federal or state eligibility exists for reimbursement. Therefore, we likely have categorized some expenditures as regular education when better knowledge of their uses might have suggested a different program.

Our methodology also overstates the share of resources for regular education because it cannot account for the time of regular teachers devoted to special programs. When special education students are mainstreamed in regular classes for part of the school day, some portion of teachers' time for regular academic tasks is redirected. All compensation of these teachers, however, is still recorded as a regular education expense. While we conducted interviews to understand teachers' time allocations, we regarded the interview data as too subjective to form a basis for decisions about spending allocation. But regular education teachers often insist that they spend more time today on special programs and less on regular education than they did 25 years ago.

Readers of this report who disagree with this methodology may still find our data useful. For example, readers who believe that "compensatory education" should not be distinguished from regular education can sum the rows for these programs in Table 5. They will find that regular education (com-

pensatory education included) had an 85% share of all spending in 1967 but only a 62.1% share in 1991. In this case, regular education's drop in share was more precipitous than we report (because federal Chapter 1 funds were a smaller share of district spending in 1991 than in 1967). With other combinations of data from the table, on the other hand, regular education's drop in share could seem slightly less precipitous, but the broad picture would remain.

Administrative, Operations, and Maintenance Costs

We distinguish administrators readily identifiable with a particular program from those who are charged with the overall direction of the school enterprise. We assign the former exclusively to the program with which they are identified.

Former education secretary William Bennett's accusation that schools waste funds in an "administrative blob" has led many researchers to focus on distinguishing administrative from classroom costs. They generally find administrative costs (central and school-level) of 8% to 17% (Cooper and Sarrel 1993). We make no attempt to verify this. We assign many expenditures often termed "administrative" to programs. We ask what is spent on each program, including administration.

Implicit in the conventional approach is a model that likens classrooms to factory floors where "direct" teaching labor carries out production and other functions provide indirect support. But, as in manufacturing, schools do not succeed only as "direct to indirect" ratios grow. Success also depends on the intelligence with which the enterprise is planned and coordinated, as well as on the product mix created. The implicit notion in educational debate that classrooms are "profit centers" while curriculum libraries or school buses are "cost centers" prevents thoughtful analysis of programmatic productivity. Central office development of curriculum guides, for example, and teachers' transmission of this curriculum are equally necessary to instruction. Either may be conducted effectively or wastefully. By calculating total costs for each program, including its administrative costs, we do not suggest that leadership funds are well spent, any more than identification of classroom expenditures suggests the most effective teaching techniques. This cannot be determined by finance analyses alone and must be addressed in separate inquiries.

Our approach creates categories not comparable to those of studies specifically segregating administrative costs because we distinguish administrators readily identifiable with a particular program from those who are charged with the overall direction of the school enterprise. We assign the former exclusively to the program with which they are identified; only the

latter do we include in a general administrative "overhead" or indirect category, ultimately allocated to programs in proportion to each program's "direct" expenditures.

For example, we consider salaries of student transportation directors (and of their secretaries), or of programmers planning bus routes, as part of a student transportation program. Conventional analysis treats this staff as general "administration," while bus drivers' salaries are "direct" transportation expenditures. We consider directors of special education as part of the special education program and district curriculum writers as part of the regular education program. Safety directors are considered part of security programs and directors of food services part of food services programs.

Because this report calls "general administration" only those administrators with overall responsibility (like the superintendent or finance and personnel staff), "administration" is a smaller part of our totals than the "central administration" category with which education analysts are familiar. Our focus on program asks different questions.

Because this report calls "general administration" only those administrators with overall responsibility, "administration" is a smaller part of our totals than the "central administration" category with which education analysts are familiar.

In our programmatic spending calculations, general administrative costs, along with site administration (like principals and school clericals), maintenance, and operations are allocated to programs in proportion to distinguishable "direct" expenditures of each program (including program-specific administrative salaries). We considered, but rejected, alternative methods. We considered whether, for example, to allocate maintenance spending in proportion to a program's capital equipment, special janitorial needs, or square footage (resulting, for example, in more assigned to vocational education, school lunch, or special education—where class sizes are lower). We knew of no practical way to do so. Some districts now charge maintenance and repair expenditures to particular programs. Where sample districts do so, we ignore such charges for sake of comparability and because districts may compute such charges using obscure methods required mainly for compliance with state or federal reimbursement rules for special programs.

School officials claim that general and site administrators spend disproportionate time on special populations and problems. If so, allocating indirect administrative costs based on identifiable program expenditures overstates rising costs of regular education and understates the growth of special populations' costs. We interviewed administrators to understand their time allocations, but concluded that we could not make adjustments for this without unacceptable subjectivity.

We also considered arguments that, in the absence of special programs,

overhead expenditures would still exist but be assigned to the regular program. If, for example, learning-disabled children were not identified for instruction with special education funds, janitors and school principals' numbers would be unchanged. Therefore, assigning overhead shares to special programs rather than to regular education tends to understate regular education spending growth.

This claim raises issues similar to those discussed above regarding the definitions of special programs. As noted, we acknowledge that some overhead expenditures we allocate to special programs would nonetheless continue to exist without those programs, but others would not. On balance, we believe our approach, distributing overhead in proportion to identifiable spending for each special program, is a reasonable way to categorize resources, but we recognize that unspecified distortions may result.

This report distributes employee benefit costs to employees of whose compensation package they were a part.

Employee Benefits

It was also necessary to assign employee benefits to particular programs. Few districts record benefit payments as part of distinct employee categories' compensation, and none did so in 1967. Rather, most districts count all benefit payments as "fixed charges" and record them in a central office account. Thus, expenditure reports normally enable readers to identify monies spent for teacher salaries but not total costs of teacher compensation.

Different employee categories receive different benefit packages (paraprofessionals in some districts, for example, receive no benefits other than Social Security and Medicare payroll taxes paid on their behalf); some benefits (health insurance, for example) are calculated on a per capita basis and others (pension contributions) as percentage-of-payroll. Detailed investigation required to assign salary-to-benefit ratios to each employee-type and salary level was beyond the capacity of this study. (Some districts in the sample calculate such ratios for their own budgeting purposes, but we found these calculations to be inaccurate.) Further, some benefits (like teacher retirement) may be paid not by districts but by state government.

This report distributes employee benefit costs to employees of whose compensation package they were a part. There is no entirely satisfactory way to do this. As the best available estimate, we calculated an annual district-wide benefit ratio of all benefits (including those paid by state government) to all salaries. Compensation costs for each program were calculated by increasing salaries recorded for that program by this ratio. We did

this as well for a few districts that now report benefits for each salary expenditure, both because we found the district calculations to be inaccurate and because we wanted to maintain interdistrict comparability.

This method may understate costs of regular education growth, because we distribute pension benefits, received disproportionately by teachers, to all employees. On the other hand, it may overstate regular education growth where per capita benefits, like health insurance, are a smaller share of teacher compensation than they are for cafeteria workers or bus drivers. District-wide benefit ratios are poor surrogates for ratios by specific employee-type, but preferable to other available alternatives.

Capital Expenditures

Another difficult item to allocate was capital expenditures. Most school spending records distinguish "current" from total expenditures, excluding capital costs from the former. But school districts' definitions of capital costs vary significantly, and districts' own definitions are applied inconsistently. In the private sector, tax and depreciation rules enforce limited consistency in this area, but no such constraints apply to school districts.

As a result, we were forced to ignore districts' own definitions of what was a "capital" and what was a "current" expense. Because the purpose of this study is to understand changing priorities in school spending, our principle was to exclude only expenditures for construction of new facilities, because these expenditures were most likely driven by rising enrollment, not by changes in program priorities or by decisions to intensify resource use. We therefore include equipment and other spending normally found in capital accounts. For example, we attempt to include major but routine maintenance projects (like re-roofing), although district record keeping may, in some cases, obscure the distinction between new construction and major maintenance. Since the smallest district we studied in this report had 1991 enrollment of more than 4,000 students, such expenditures should mostly be rotated among school buildings and not create year-to-year distortions in expenditure totals. This decision rule was necessary because, faced with fiscal crisis, districts may shift funds from routine major maintenance to educational programs. Had we excluded maintenance funds by calling them "capital expenditures," such districts would seem to increase spending when, in fact, the opposite was the case. Note that while this report's decision rules about general administration yield an indirect administrative category that is

Our principle was to exclude only expenditures for construction of new facilities, because these expenditures were most likely driven by rising enrollment, not by changes in program priorities or by decisions to intensify resource use.

smaller than conventionally reported, our decision rules about maintenance yield a larger indirect category.

Finally, district allocations of major maintenance or equipment expenditures to either “current” or “capital” accounts sometimes hinge on whether the project was funded by tax or bond revenues. Our decision rules eliminate this inconsistency. Appendix 3 discusses this and other allocation decisions in more detail.

FINDINGS

From examination of the expenditure records of nine school districts, we find that K-12 education spending increased by about 73% in real terms from 1967 to 1991 (**Table 4**).[14] Two districts had very substantial growth: Spring Branch, where real per pupil expenditures grew by 146%, and Anne Arundel, with growth of 102%. The other seven districts increased real spending by an average of only 45%, ranging from 37% in Boulder to 82% in Middletown.

In nine school districts, K-12 education spending increased by about 73% in real terms from 1967 to 1991.

Spring Branch and Anne Arundel experienced great demographic change during this quarter century (Los Angeles also changed markedly). When Spring Branch transformed from a suburban Houston "white-flight" community to one where minority students predominate, the property tax base for school support remained high because many affluent whites did not leave but rather had fewer children in public schools. The district, therefore, had resources with which to improve education. Anne Arundel gained real resources when its impoverished rural areas evolved into affluent suburbs.

Boulder, where real spending grew the least, is located in a community that had more rapid inflation than any other in the sample from 1967 to 1991. Thus, the below-average nominal spending growth of this district (659%) permitted the purchase of even fewer additional real inputs than nominal figures suggest. While Boulder decreased its pupil-teacher ratios in line

TABLE 4
Real Per Pupil Spending Growth in Nine Elementary and Secondary School Districts, 1967-91
(Listed in Order of 1967 to 1991 Real Per Pupil Spending Increase)

District	Per Pupil Spending ($1991) 1967	1991	Percent Change
Spring Branch	$2,194	$5,402	146%
Anne Arundel	3,029	6,112	102
Middletown	4,387	7,989	82
Los Angeles	3,581	5,923	65
Claiborne	1,790	2,880	61
Bettendorf	2,900	4,459	54
Fall River	3,000	4,601	53
East Baton Rouge	2,771	4,240	53
Boulder	3,780	5,184	37
Average			73%

with national patterns, its entry teacher salary level failed to keep up with inflation. This is in contrast to other districts, which attempted to increase real entry teacher salaries even when real salaries were reduced for more experienced teachers (see Table 14).

But Boulder, located at the base of the Rocky Mountains, became unusually attractive to mobile professionals during the period under study. Higher quality teacher recruits may have been more willing to accept lower monetary compensation, offset by greater "amenities." Were it practical to give a money value to these amenities, a more sophisticated inflation analysis might suggest that real inputs in Boulder actually grew more than 37% and that real increases we report for other districts ought likewise be adjusted. Some theorists urge that education research take greater account of relative amenities when comparing regional teacher salary differences (Parrish, Matsumoto, and Fowler 1995; Chambers 1995). The case for doing so is persuasive, but beyond the scope of this report.

In 1967, regular education consumed 80% all elementary and secondary education dollars—but its share of elementary and secondary spending fell to 59% in 1991.

Shares of Total Spending, by Programs

Table 5 describes, for the nine districts as a whole, the changes in the shares of total spending for each program. The table shows that special education's share increased the most, from less than 4% of all spending in 1967 to 17% in 1991. In contrast, the share of funds going to regular education declined. In 1967, regular education consumed almost all elementary and secondary education dollars—80% went to regular classroom teaching, school libraries, textbooks, curriculum development and teacher training, and the associated share of maintenance and administrative costs. Regular education saw its share of elementary and secondary spending fall to 59% in 1991.

The link between the growth in share of special education and decline in share of regular education cannot be determined from these data. Special education spending may have grown at the expense of regular education, or it may be that regular education spending would have grown at a relatively slow rate even if special education expenditures had grown much more slowly. The data presented here do not resolve this issue.

Shares of Net New Money, by Programs

Table 6 describes the distribution of net new money in 1991 in the nine districts.[15] Special education took the largest share of net new money: 38%. Regular education received only 26% of net new money.

TABLE 5
Shares of Total Per Pupil Spending for Each Program, Average of Nine Districts, 1967 and 1991
(Programs Listed in Order of 1991 Share of Total Per Pupil Spending)

Program	Share of Total Per Pupil Spending 1967	1991	Change in Share, 1967-91
Regular Education	79.6%	58.8%	-20.9
Special Education	3.7	17.0	13.3
Compensatory Education	5.4	4.3	-1.1
Attendance, Counseling, Dropout Prevention, Alternative Education	2.1	4.1	2.0
Food Services	2.0	4.1	2.1
Regular Student Transportation	3.9	3.4	-0.5
Vocational Education	1.4	3.0	1.6
Bilingual Education	0.3	1.8	1.5
Desegregation	0.0	1.6	1.6
Regular Health & Psychological Services	1.3	0.9	-0.3
After-School Athletics	0.4	0.7	0.3
Security and Violence Prevention	0.1	0.4	0.3
All Programs	100.0	100.0	
Overhead Allocated to Above Programs:			
General and School Administration	9.4	9.7	0.2
Operations and Maintenance	15.7	14.3	-1.4

Other programs saw much smaller increases. Food services, with the next largest gains following regular education, received 7.5% of net new dollars. The program that includes attendance, counseling, dropout prevention, and alternative education received 7.4% of net new dollars.The smaller programs in combination received some 36.2% of net new dollars.

Tables 7 and **8** compare changing shares of total spending and the amounts of net new money going to regular and special education, the two largest spending categories for each district. They show that each district in the sample decreased its share of money spent on regular education and increased the share spent on special education. In only Claiborne was the reduction in regular education's share of spending small,[16] but even here the increase in special education's share was significant. Appendix 5 contains separate tables for each of the nine districts, showing changes in program shares of total funds, each program's share of net new funds, and the real growth of per pupil regular education spending.

TABLE 6
Shares of Net New Per Pupil Spending by Program, 1967-91
(Programs Listed in Order of Share of Net New Per Pupil Spending)

Program	Share of Net New Per Pupil Spending, 1991 Nine District Average
Special Education	38.0%
Regular Education	25.9
Food Services	7.5
Attendance, Counseling, Dropout Prevention, and Alternative Education	7.4
Vocational Education	5.2
Desegregation	4.1
Bilingual Education	3.9
Compensatory Education	2.9
Regular Student Transportation	2.8
After-School Athletics	1.1
Security and Violence Prevention	0.9
Regular Health & Psychological Services	0.5
All Programs	100.0
Overhead Allocated to Above Programs:	
General and School Administration	9.8
Operations and Maintenance	12.3

TABLE 7
Changes in Regular Education Share of Per Pupil Spending, 1967-91
(Listed in Order of 1991 Share for Regular Education)

District	Regular Education Share of Per Pupil Spending 1967	1991	Change 1967-91	Regular Education Share of Net New Per Pupil Spending, 1967-91
Bettendorf	92%	72%	-20%	36%
Boulder	84	64	-20	9
Anne Arundel	83	62	-21	41
Spring Branch	83	60	-23	44
Middletown	78	59	-19	35
East Baton Rouge	76	57	-18	22
Claiborne	57	53	-4	46
Fall River	76	51	-25	4
Los Angeles	87	51	-36	-5
Average	80	59	-21	26

TABLE 8
Changes in Special Education Share of Per Pupil Spending, 1967-91
(Listed in Order of 1991 Share for Special Education)

District	Special Education Share of Per Pupil Spending 1967	1991	Change 1967-91	Share of Net New Per Pupil Spending, 1967-91
Fall River	8%	22%	14%	49%
Middletown	2	22	20	46
Los Angeles	2	18	16	42
Anne Arundel	3	18	15	33
Boulder	4	16	12	47
East Baton Rouge	4	16	12	40
Bettendorf	3	16	12	39
Spring Branch	3	13	10	19
Clairborne	4	12	9	26
Average	4	17	13	38

REGULAR EDUCATION SPENDING

The decline in the share of total spending for regular education does not mean that real per pupil spending for regular education fell. A smaller share of a larger whole can still provide increases per pupil. Because total per pupil spending grew by 73% in these nine districts, it was possible for them to increase their real regular education spending per pupil despite regular education's reduced relative priority.

Real per pupil regular education spending in the nine districts rose 28%.

Table 9 shows the real per pupil growth of regular education spending in the nine districts.[17] The range is broad, from a high of 77.9% in Spring Branch to a decline of 3.5% in Los Angeles. The average was a 28% increase. **Table 10** distinguishes direct from indirect (general administration, operation, and maintenance) expenses in regular education. It reveals that the 3.5% decline in Los Angeles' per pupil spending on regular education (an average annual decline of 0.1%) partly reflects a much larger decline (an annual average of 2.7%) in indirect operations and maintenance expenditures. However, even without this indirect overhead allocation, the direct per pupil expenditures for regular education in Los Angeles increased only by an annual rate of 0.3% a year from 1967 to 1991. This is significantly less than the average for the nine districts (where direct per pupil expenditures for regular education,

TABLE 9
Growth in Real Regular Education Per Pupil Spending

	Regular Education Spending Per Pupil ($1991)		Total Percent Change	Average Annual Percent Change
	1967	1991		
Spring Branch	1,825	3,247	77.9%	2.4%
Anne Arundel	2,513	3,780	50.4	1.7
Claiborne	1,027	1,524	48.4	1.7
Middletown	3,424	4,691	37.0	1.3
Bettendorf	2,674	3,229	20.8	0.8
East Baton Rouge	2,096	2,424	15.7	0.6
Boulder	3,189	3,317	4.0	0.2
Fall River	2,279	2,345	2.9	0.1
Los Angeles	3,118	3,010	-3.5	-0.1
Average Change			28.2	1.0

TABLE 10
Growth in Real Regular Education Per Pupil Spending, 1967-91, by Type of Spending
(Average Annual Percent Change)

		Indirect		
	Direct	General Administration	Operations and Maintenance	Total
Spring Branch	2.4%	3.6%	2.1%	2.4%
Anne Arundel	1.7	1.8	1.8	1.7
Clairborne	1.4	4.7	2.4	1.7
Middletown	1.4	0.7	1.2	1.3
Bettendorf	0.9	0.8	0.3	0.8
East Baton Rouge	0.8	0.8	-0.4	0.6
Boulder	0.0	0.2	0.7	0.2
Fall River	0.4	-1.2	-0.5	0.1
Los Angeles	0.3	-0.4	-2.7	-0.1
Average	1.1	1.6	0.8	1.0

Real per pupil regular education spending declined by 3.5% in Los Angeles. If this is typical of other urban megadistricts, it might help explain why there is such great concern about academic outcomes of these districts.

exclusive of administrative, operations, and maintenance overhead, grew by an annual average of 1.1%).

If this is typical of other urban megadistricts, it might help explain why there is such great concern about academic outcomes of these districts. The other urban districts in the sample, Fall River and East Baton Rouge, also saw their real direct per pupil spending on regular education grow by less than the sample average, and this slow growth was also in part the result of drastic reductions in maintenance expenses (and, in Fall River, administrative expenditures as well) attributed to regular education.

In themselves, these data cannot prove that urban districts' maintenance spending was cut back and reallocated for the purpose of avoiding more drastic cuts in classroom expenditures. It may be the case that maintenance would have been reduced even if other regular education expenditures had grown more rapidly. In contrast, suburban districts like Spring Branch, Anne Arundel, and Middletown saw direct regular education spending grow at an average annual rate of 2.4%, 1.7%, and 1.4%, respectively. (Over the 1967 to 1991 period, this substantial growth rate generated overall direct regular education growth of 75%, 49%, and 41%.)

Another suburban community, Boulder, had slower real growth of direct spending on regular education than any of the other sample districts. We

attribute this to the unusually rapid inflation experienced by the Denver-Boulder region. The challenge of having to raise revenues to keep up with this inflation made it difficult to increase real spending for any program.

The Components of Regular Education Spending and Sources of Change.[18] The 28% real growth of regular education spending raises three issues:

- Have the components of regular education spending changed over time?
- How much growth in average teacher salaries can be attributed to higher salary scales, and how much resulted from teachers ascending the pay scales by gaining experience and education?
- Have staffing patterns changed? Have regular pupil-teacher ratios changed and, if so, have they changed uniformly at all grade levels?

Dollar allocations between teaching, administration, instructional materials, and other regular education functions changed little from 1967 to 1991.

To answer these questions we analyzed staffing and enrollment detail for three districts of different sizes: Middletown (small), Boulder (medium-sized) and East Baton Rouge (large). While in the nine-district sample regular education costs grew by 28%, in this subsample they were up 19%. We use the subsample in combination with expenditure data from the nine districts to assess basic patterns, understand variation, and highlight important questions for further investigation.[19]

Our analysis suggests that:

- Dollar allocations between teaching, administration, instructional materials, and other regular education functions changed little from 1967 to 1991. But this continuity masks important trends.
- In the three districts we examined in greater detail, per pupil spending on compensation for regular education teachers grew by 23%.
- Salary scales barely kept pace with inflation: average teacher compensation rose mainly due to an increase in the age and education of teachers.
- Spending on instructional aides grew, but still accounts for a relatively small portion of instructional spending.

Mostly Stable Shares of Regular Education Spending. As **Table 11** shows, instructional staff (teachers and aides) consumed about two-thirds of regular education spending in both 1967 and 1991, though there was a slight shift from teachers to aides (the magnitude of this shift varying greatly by district). Despite availability of instructional technology, it appears that districts did not invest a greater share of their budgets in instructional materials

TABLE 11
Changes in Share of Regular Education Per Pupil Spending by Category

Category	Share of Total Regular Education Per Pupil Spending 1967	1991	Change	Real Growth in Per Pupil Spending,* 1967-91 (Percent Change)
Teachers *(Including Substitutes)*	67.5%	65.1%	-2.3	23.3%
Aides	0.1	1.6	1.6	
Summer School	0.3	0.5	0.2	
Tuition and Contracted Services	0.1	0.2	0.2	
Staff Development and Curriculum Planning	1.9	3.2	1.2	
Library	1.4	2.8	1.4	
Textbooks and Instructional Equipment	3.6	2.6	-1.0	11.2
Overhead (General Admin., Operations, Maintenance	25.1	24.0	-1.2	27.9
Total	100.0	100.0		

*Real changes are not meaningful where 1967 amounts in some districts are zero or close to zero.

and equipment. (As a share of regular education spending, this category appears to have declined slightly.) Library and instructional media's expenditure share grew slightly.

Staff development and curriculum planning grew from 2% to 3% of regular education budgets. This total includes identifiable expenditures for in-service and curriculum development as well as teacher course-taking tuition (where districts distinctly reported such funds). But it does not include less easily calculated curriculum and professional development costs. For example, subsample districts each added more than two paid "professional days" to yearly calendars. All nine sample districts added teacher planning time that may be used for staff or curriculum development. We did not attempt to assign a portion of teacher salaries to this category, but these investments suggest increased emphases on staff and curriculum development. Districts' spending on substitutes may also reflect some staff training, where substitute time is used for releasing regular teachers to attend workshops. Finally, we did not count as a "staff development" expense the salary supplements paid to teachers for taking postgraduate courses. These supplements are built into most teacher salary schedules, but districts rarely supervise or evaluate the contribution of these course credits to instructional goals.

Compensation: Salary vs. Benefits. We next examine the contribution of salaries and benefits to the change in average teacher compensation.[20] **Table 12** shows that in the three subsample districts, average salary growth accounts for about half of the growth in teacher compensation from 1967 to 1991. The other half results from higher average spending for benefits.[21] The 5% average annual increase in teacher benefits was larger than the 4% annual rise in benefits economy-wide.[22] However, since some benefits such as health insurance are more commonly received by college graduates than by those with less education, we cannot conclude that teachers' benefits grew more rapidly than those for other workers with similar education and experience. Moreover, some portion of the increased benefit costs may be attributable to an older (and thus better paid) teaching force, since state or district pension payments calculated as a percentage of salary would tend to rise as teachers moved up the salary scale. However, district policies varied widely in this area; some districts may have created an advantage with superior benefit packages.

In the three subsample districts, average salary growth accounts for about half of the growth in teacher compensation from 1967 to 1991. The other half results from higher average spending for benefits.

TABLE 12
Shares of Net New Compensation for Teachers, Benefits and Salaries, 1967-91

	District			
Category	Middletown	Boulder	East Baton Rouge	Average
Benefits	47%	46%	63%	52%
Salaries	53	54	37	48
Total	100	100	100	100

Compensation: Mix vs. Scale. Teachers as well as other workers often receive pay increases as their tenure on the job lengthens. In addition, teachers can often raise their pay by completing additional schooling beyond a college degree. Most teacher salary scales provide automatic increases for additional years of teaching experience and more postcollege credits. This salary structure is designed to attract teachers who value a career path with a predictable increase in future earnings. It also reflects the expectation that experience and education lead to better teaching. The automatic rewards for tenure may also result from the bargaining power (expressed through politics or collective

bargaining) of senior teachers. Regardless of the reason for these stepped schedules, the result is that a district's average compensation might rise because the mix of higher- and lower-paid teachers changed. For example, a district's teaching force may have aged and the average seniority and credentials of teachers may have been greater in later compared to earlier years.

We next examine the factors responsible for the change in average compensation per teacher in the three subsample districts. Average teacher pay could change for two reasons. First, compensation for teachers at various points on the pay scale (e.g., entry level) may have changed. Second, the mix of teachers may have shifted toward more teachers with greater education credentials (MAs, Ph.D.s) and experience. The effect of such a change in mix is to raise average teacher compensation. We do not have data on teacher compensation (salaries and benefits combined) at different levels of the salary scale, and we also lack data on the number of teachers at each level of the pay scale. But since we do have data on changes in average salaries, and since the change in salaries is responsible for half of the change in total compensation, examining salaries will provide insights into changes in compensation as well.

A change in the mix of teachers, with an increase in the portion of teachers at the higher levels of the pay scale, was the major cause of the increase in average teacher pay.

Table 13 shows the percent change in average salaries for teachers at five levels of the salary scale, as well as the change in average teacher salary in the three subsample districts.[23] The increase in average salaries was substantially larger than the increase in salary at any particular education/experience level, indicating that a change in the mix of teachers, with an increase in the portion of teachers at the higher levels of the pay scale, was the major cause of the increase in average teacher pay.

The growth in average salaries, therefore, came primarily from increases in the age and education of the teaching force, not from salary scale improvements. While this increased investment in average salaries represents an input from which the public has a right to expect better outcomes, we note that leading education theorists argue that the strength of links between teacher quality and years of teaching or university credits has not been demonstrated empirically.[24]

Some analysts suggest that school districts must improve entry-level salaries to attract better candidates (Lankford and Wyckoff 1995a). But our sample districts may have done so at the expense of more-educated teachers in the midranks with five and 10 years' experience. Whether for political or strategic reasons, these districts also appear to have invested a larger portion of their salary dollars in teachers with the greatest seniority. If these sample

TABLE 13
Changes in Salary Schedules* by Degree and Experience in Three Districts, 1967-91

Education/Experience Level	Percent Change in Salary, 1967-91 Middletown	Boulder	East Baton Rouge	Average
Entry-Level Bachelors	18%	-0%	9%	9%
Masters 5 Years	7	-4	-8	-2
Masters 10 Years	7	-2	-13	-3
Masters Max or 40 Years	11	8	-2	5
Doctorate Max or 40 Years	5	12	-8	3
Average of All Categories**	9.5	2.8	-4.4	2.6
Percent Change in Average Salary Per Teacher	24.2%	30.1%	13.4%	22.7%

* CPI-U-X1 adjusted.
**This is a simple average of all categories, unweighted by the number of teachers in each category.

CPI-adjusted teachers' salaries at most levels of experience and education barely kept pace with inflation.

districts are indicative, however, schools could not rely on these modest increases at the bottom and the top of the scale to improve teacher quality because, on the whole, salary-scale changes from 1967 to 1991 were either negative or minimal.

Our findings are consistent with claims by the American Federation of Teachers (AFT) that average salaries would have declined from 1967 to 1991 if teaching experience had remained at 1967 levels (Nelson 1993). Our findings also suggest that in the future, as new hires replace aging teachers, average salaries may decline without corresponding reductions in salary scales.

Teachers' Standard of Living. A separate question is whether the increase in teachers' nominal compensation has enabled them to raise their standard of living. In other words, have teachers' nominal pay increases exceeded the CPI?[25] As shown in **Table 14**, CPI-adjusted teachers' salaries at most levels of experience and education barely kept pace with inflation, falling markedly in the 1970s and beginning to increase again in the late 1980s. As was seen in Table 13, average beginning salaries for teachers with bachelor's degrees increased 9%, on average, but salaries for those with master's degrees and/or doctorates declined in two of the three districts. Salaries at the highest levels of seniority outpaced inflation and rose significantly faster than those of teachers with five or 10 years of teaching experience.

TABLE 14
Percent Change in Real Average Teacher Salaries*
by Degree and Experience in Three Districts, 1967-91

Degree/Experience Level**	1967-73	1973-79	1979-85	1985-91	1967-91
Entry Level With Bachelor's	12%	-11%	3%	7%	9%
Five Years With Master's	1	-12	2	9	-2
Ten Years With Master's	1	-13	4	6	-3
Masters Maximum or 40 Years	-1	-11	11	8	5
Doctorate Maximum or 40 Years	-2	-13	11	8	3

*CPI-U-X1 adjusted.
**This table displays simple changes in published salary schedules only. There is no weighting for the number of teachers at any level. This is for a subsample of each district.

For teachers nationwide, in both 1967 and 1991 entry-level salaries were less than 85% of those for males in comparable professions.

Comparing Salaries for Teachers and Comparable Workers. We also examined how pay for teachers changed in comparison to similarly educated workers in other occupations. New college graduates and more-experienced teachers can choose to enter or remain in teaching or can work in other fields. If compensation rose more rapidly in comparable fields outside of elementary and secondary education, then the quality of the teaching staff could decline. Alternatively, if pay in education rose relatively rapidly compared to occupations requiring comparable skills, more qualified people would be attracted to education. By comparing changes in pay for teachers with changes in pay for comparably skilled workers, we can determine whether the pay structure could have been expected to attract a higher or lower quality staff.

Table 15 shows entry-level pay for teaching and a variety of other occupations held by male college graduates. Entry-level pay for a national sample of teachers increased by a total of 9.6% from 1967 to 1991 (an average annual increase of only 0.4% a year). These data are similar to those from our three-district subsample, where entry-level salaries increased by 8.9% in this period.

For teachers nationwide, in both 1967 and 1991 entry-level salaries were less than 85% of those for males in comparable professions. Pay for teachers rose slightly more rapidly than for college graduates in some other professions, and the gap between teachers and other professional beginning salaries slightly narrowed. However, were we able to include comparable salary data for females (such data were unavailable), Table 15 may have shown that the attractiveness of entry-level teaching salaries has actually dimin-

TABLE 15
Comparison of Entry-Level Salaries in Teaching
With Beginning Salaries of Males in Other Occupations
(1991 Dollars)

	Teacher Average Salary		Comparable Average Entry-Level Professional Salaries*					
	Subsample	National**	Liberal Arts	Accounting	Sales/Mktg.	Business	Chemistry	Engineering
Real Beginning Salaries* **								
1967	$19,855	$19,836	$24,584	$26,292	$24,674	$25,663	$29,843	$30,517
1991	21,632	21,743	26,244	27,408	27,828	26,496	29,088	32,304
Percent Increase, 1967-91	8.9%	9.6%	6.8%	4.2%	12.8%	3.2%	-2.5%	5.9%
Ratio of National Teacher Average to Other Professions								
1967		1.00	0.81	0.75	0.80	0.77	0.66	0.65
1991		1.00	0.83	0.79	0.78	0.82	0.75	0.67

* 1967 data from NEA (1968, 8). 1991 from Nelson (1993, 48).
** 1967 data from NEA (1967, 17). 1991 from ERS (1993).
*** CPI-U-X1 adjusted.

ished. Because entry-level salaries in other professions for women with a college education have increased more rapidly than those for men since 1967, a more appropriate comparison of teacher pay to that of other comparably educated women would probably show that relative beginning salaries for teachers fell.

Pupil-Teacher Ratios. Greater staffing intensity (more teachers per pupil) was one cause of the increase in regular education expenditures per pupil. In the three-district sample the average number of teachers per pupil rose by an average of 12.4% (**Table 16**). More intensive elementary staffing (fewer elementary pupils per teacher) accounted for 77% of the greater staffing intensity in the three districts. The ratio of regular elementary students to teachers dropped an average of 22%, from 24.7 in 1967 to 19.3 in 1991 (**Table 17**). Greater staffing intensity, however, does not necessarily translate exclusively into smaller classes. About half of new elementary teachers were regular classroom teachers, generating smaller classes. Other new elementary staff were subject specialists, such as art, physical education, and music teachers. While these specialists enrich curriculum, they are also a

TABLE 16
Percentage of Net New Regular Teachers by Level and Type, 1991

Staff Category	District: Middletown	East Baton Rouge	Boulder	Average
Kindergarten	1%	1%	15%	6%
Elementary	56%	62%	112%	77%
Regular Classroom	27	24	55	35
Resource Teacher	5	16	5	9
Specialists for Planning	24	21	53	33
Secondary	42%	37%	-28%	17%
Regular Classroom	42	-5	-28	3
To Cover Planning	0	42	0	14
Total	100	100	100	100
Percent Change, All Regular Education Teachers, 1967-91	17.9%	7.2%	12.0%	12.4%

common way for schools to free classroom teachers for planning time. Minimum guaranteed planning time for elementary teachers grew from zero to 30 minutes a day in East Baton Rouge and from 30 to 45 minutes a day in Boulder and Middletown. These districts added subject specialists in response to contractual or regulatory requirements for increased planning time.

More regular education "resource teachers" also contributed to growth in staffing intensity. Resource teachers work with individuals or groups in support of regular classroom teachers on remedial or enrichment subjects not covered by compensatory funding.

Regular secondary pupil-teacher ratios dropped by a subsample average of 7%, less than the drop in elementary schools. Some districts increased secondary planning time, guaranteeing one or two periods free from classroom instruction. East Baton Rouge, for example, went from no duty-free guarantees to one full period a day. Our data suggest that, when increased planning time is accounted for, regular secondary class sizes may have increased even while pupil-teacher ratios were falling.

Teacher planning time and lower class sizes have potential to improve teaching and learning, but existing research has yet to confirm the link (Hanushek 1989). It may be that increases were too modest to expect dramatic improvement, or that more intensive elementary staffing will show its impact in years to come.[26]

Teacher Aides. **Table 18**, based on an examination of personnel directories, shows that the proportion of teacher aides in the regular education teaching staff grew from 1.9% to 11.5% in the subsample from 1967 to 1991. However, because aides' salaries are less than half those of teachers', growth was less significant in dollar terms. As Table 11 indicated, spending for instructional aides grew from a negligible amount to 1.6% of all regular education spending. It represents 8% of all net new money spent on regular education.

Table 18 also shows that aide utilization varied widely by district. In one case, Boulder, each school in 1991 received a money allocation for aides based on school size and student composition. Each school's staff decided how to use these funds. Some schools used "instructional" aides for as little as one half-hour per day to cover recess or bus duty; others used aides in more instructional roles.[27] Because instructional aides can be used in different roles, their impact on student achievement is difficult to measure.

TABLE 17
Changes in Regular Education Pupil/Teacher Ratios

	Middletown			East Baton Rouge			Boulder			Subsample Average		
	1967	1991	% Decline	1967	1991	% Decline	1967	1991	% Decline	1967	1991	% Decline
Elementary												
Pupils/Teacher	23.8	15.7	34%	26.6	23.5	12%	23.6	18.8	20%	24.7	19.3	22%
Class Size*	28.6	21.1	26	28.7	26.9	6	27.7	24.6	11	28.4	24.2	15
Secondary												
Pupils/Teacher	17.5	13.9	21%	22.5	21.0	7%	18.3	19.3	-5%	18.8	15.3	7%
Class Size*	24.6	19.6	21	27.0	27.5	-2	25.8	27.2	-5	25.8	24.8	4

*These class-size calculations do not include Chapter 1 teachers who may be used in some cases as regular classroom teachers.

TABLE 18
Changes in Composition of Regular Education Instructional Staffing

	Middletown			East Baton Rouge			Boulder			Subsample Average		
	1967	1991	Change	1967	1991	Change	1967	1991	Change	1967	1991	Change
Regular Education Teachers	94.4%	85.9%	-8.4%	100.0%	95.3%	-4.7%	100.0%	84.6%	-15.4%	98.1%	88.5%	-9.7%
Regular Education Teaching Assistants	5.6	14.1		0.0	4.7		0.0	15.4		1.9	11.5	
Total	100.0	100.0		100.0	100.0		100.0	100.0		100.0	100.0	

Summary. A 28% real increase in regular education spending from 1967 to 1991 represented about a quarter of net new money for all school programs. The share of funds spent for instruction was unchanged over the period, approximately 67%. Teacher compensation changes were probably not significant enough to improve most districts' ability to attract higher quality college graduates to teaching. The increase in average teacher salary was mainly due to teachers' greater experience and education in 1991 compared to 1967.

Analyses of regular education productivity should attempt to match improvements in student outcomes (if any) with these specific new inputs. Only then can we know if these investments, though modest, were worth the price.

SPECIAL EDUCATION SPENDING

The biggest share of new K-12 money has gone for special education. In 1967, the nine sample districts spent less than 4% of total resources on special education; in 1991, they spent 18%. Special education growth consumed 38% of net new funds in 1991.[28] Every category of per pupil special education spending grew substantially, but some categories grew faster than others as the structure of special education spending changed.

The biggest share of new K-12 money has gone for special education.

Table 19 shows that, in 1967, 44% of special education costs went for classroom teachers; about 8% to other professionals (like psychologists, therapists, or speech and hearing specialists); 21% of special education support (administration, contracted services, supplies and equipment, and state schools for the deaf, blind, or "crippled"); and less than 1% to special home-to-school transportation.

By 1991, classroom teachers' share of special education costs declined to 37% while the share of special education paraprofessionals (including classroom aides as well as escorts who accompany disabled children to and from school) grew to nearly 8%. Transportation costs grew to account for % of all special education costs in 1991. Within the special education "support" category, administration took a smaller share, private school tuitions (for students with disabilities too severe for local districts to accommodate) took a larger share, and state schools (for blind and deaf children) declined in relative importance.

Most accounts of special education growth focus on passage of the 1975

TABLE 19
Changes in Shares of Per Pupil Special Education Spending

	Share of Total Per Pupil Special Education Spending		
Spending Category	1967	1991	Change
Teachers (Including Substitutes)	44.4%	37.0%	-7.5
Paraprofessional Aides	1.3	7.5	6.2
Other Professionals	7.6	6.0	-1.6
Transportation (Home to School)	0.9	5.7	4.8
Support (Program Admin., Tuitions, Supplies, etc.)	20.6	19.9	-0.7
Overhead (General Admin., Operations, Maintenance)	25.1	24.0	-1.2
Total	100.0%	100.0%	

Education for All Handicapped Children Act (EHA) and subsequent legislation that made this program an "entitlement"—unlike regular education. Once a child is diagnosed as having a mental, emotional, or physical disability, he or she is legally entitled to a "free appropriate public education." School districts must devote whatever resources are needed to provide support indicated in each student's individualized education plan (IEP). Lack of funds does not release districts from this obligation. Parents (sometimes assisted by advocacy groups) may sue districts for needed resources; districts may be ordered to provide them, sometimes resulting in the redirection of scarce funds from regular programs.[29] Courts have ordered school districts to provide medical care (such as catheterization) at a school site or to pay private tuitions if in-school care is not feasible (Singer and Butler 1987).

While legislation may have prodded special education expansion, our examination of district records shows that special education was growing as a share of total expenditures before EHA went into effect.

Yet, while legislation may have prodded special education expansion, our examination of district records shows that special education was growing as a share of total expenditures before EHA went into effect. The law regulated an emerging trend, but did not create it.

Spending growth of special education masks complex changes in educational practice, medical technology, and social structure. In some cases, these changes reduced special education spending. Eradication of rubella reduced costs of special state schools for deaf children. By 1967, the number of children with severe orthopedic handicaps had been much reduced by polio vaccines, and polio was disappearing as a cause of special education enrollments.

In other cases, apparent growth of special education funds represents shifting public and private social resources, not net increases. Public schools now handle severely handicapped cases that previously were treated in non-educational public or private institutions. State schools for "palsied children" in 1967 were part of state hospital systems and would not normally be included in education expenditure data for that year. Public schools now accommodate students of chronological school age who are so developmentally retarded that they are not toilet-trained. In 1967, such children were often housed in private charitable institutions without benefit of school reimbursements. Children with less severe mental retardation were also cared for privately and did not attend public schools.

In most cases, however, special education growth reflects real new spending, not shifts from other agencies. Partly this growth represents new sophistication in diagnosis of children with, say, mild autism, severe dyslexia, or attention deficit disorders who, in 1967, would have been deemed "slow" or

unsuitable for academic education.

New disabilities spur some growth in spending. Children born to mothers on drugs may have a higher incidence of learning disability. Children born prematurely with severe birth defects or very low birth weights were, with modern medical technology, more likely in 1991 than in 1967 to survive to school age, and also more likely to need special education services (Hack et al. 1994).

The number of special education classifications of children with severe emotional and behavioral disorders has also grown. These children may be products of family and community structures more dysfunctional than those from which 1967 children came. Growing special education expenditures may be due in part to a greater determination to prevent such children from dropping out of school.

Growth in special education spending may mask a shift in regular education funds resulting from a willingness by some districts to classify as "special" children whom, in 1967, were considered within the normal span of learning styles teachers confront.

Growth in special education spending may mask a shift in regular education funds resulting from a willingness by some districts to classify as "special" children whom, in 1967, were considered within the normal span of learning styles teachers confront. New classifications may result from greater sensitivity to causes of learning difficulties, a desire to relieve regular teachers of disciplinary problems or the burden of special attention some children require, or an attempt to take advantage of state reimbursement formulae that allot more dollars per pupil for special education students. Reimbursements may be a means of effectively increasing compensatory education spending, if common academic disadvantages of low socioeconomic status are the real bases for special education classification. Lines between special and regular education placements are indistinct; wide variations in district practices are evident. It is widely believed that Northeastern districts are more prone to claim that children with learning problems need "special education." Our data may support this: in 1991, Fall River and Middletown each spent 22% of all funds on special education, more than other sample districts.[30] Claiborne and Spring Branch spent 12% and 13%, respectively; remaining districts spent 16% to 18%.

It will be difficult for education researchers to evaluate whether this substantial new investment in special education has been an effective means to improve outcomes, because outcomes in special education are especially difficult to measure. "Special education" really comprises many programs, each with different outcome goals. Since each special student must have an IEP that specifies outcomes sought and resources and strategies to achieve them, outcome targets vary greatly by the nature of a child's disability.

OTHER SPENDING AREAS

Compensatory Education

Supplementary instructional support for pupils whose academic progress is slowed by socioeconomic disadvantage is funded by federal Chapter I (now Title I) programs and by parallel programs funded by state government. The first year of federal funding was 1967, the base year of this study, and from 1967 to 1991 the share of total district spending consumed by these programs declined in the nine-district sample from 5% to 4%. New compensatory education program funding has consumed little—only 3%—of net new education money.

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Still, the level of real per pupil spending in compensatory programs grew in the sample districts by about 48%.[31] Some of this increase was funded by state categorical programs that came into being after 1967; the balance may result from sample districts' national Chapter I funding growing more than national averages.[32]

Because 1967 was Chapter I's first year, districts spent cautiously. Uncertain of future funding, some treated grants as "one-time money," hesitating to hire staff who might have to be dismissed if funding declined. Thus, in 1967 only about a third of compensatory money was spent in sample districts on instructional staff (teachers and aides); most went for supplies and equipment for schools serving underprivileged children. By 1991, however, 62% of compensatory funds were spent on teachers and another 14% on aides. Social workers, nurses, and other professionals consumed 7%, and the remainder went to program administration and supplies. Compensatory money mostly went for teacher specialists (especially reading and math teachers) to provide extra help for students pulled from regular classes, with aides effectively lowering class sizes in schools with disadvantaged students. Other compensatory education money was for staff to organize parental and community involvement. One sample district used Chapter I funds to organize and train community mentors to support minority students preparing to take college entrance exams. Another district organized parental education classes, teaching parents to assist with homework.

Productivity growth in activities to improve disadvantaged students' achievement depends on the level of funding for regular education as well as for compensatory instruction. Thus, evidence of narrowed academic gaps

between minority and white students since 1967 does not necessarily confirm that compensatory funds have been well utilized. Research to isolate effects of Chapter I programs on test scores are inconclusive (Heid 1994).

Counseling, Attendance, Dropout Prevention, and Alternative Instruction

Counseling, attendance control, dropout prevention, and alternative instruction consumed 7.4% of schools' net new money in 1991.

In 1967, the nine sample districts spent about 2.1% of total funds on counseling, attendance control, dropout prevention, and alternative instruction. By 1991, the share of total spending on these activities doubled to 4.1%, including new alternative education programs for students at risk of dropping out, students who had dropped out but could be lured back to less traditional school settings, or students who were suspended for disciplinary reasons from regular classes or schools. These activities consumed 7.4% of schools' net new money in 1991.

Within this broad category, the importance of curricular and career guidance declined relative to attendance control and dropout prevention. Secondary counselors spent more time on discipline and less on guidance.

In 1967, school dropouts had greater options; some could obtain desirable jobs. Other nonacademic students stayed in school to graduate from "general" high school tracks with less rigorous academic standards. Class schedules might have included heavy doses of industrial arts or homemaking classes, but were not vocational education. "General" diplomas could not confer college eligibility, but were acceptable proof of self-discipline for blue-collar or retail service employment.

By 1991, the utility of general diplomas had declined. In several sample districts, general tracks had been eliminated and students could enroll only in regular academic or vocational programs. And the regular academic program itself demanded more Carnegie units for graduation and more rigorous curricular standards in most disciplines.

Along with these changes, by 1991 school districts had implemented, often with special state funding, programs to prevent students "at risk" of dropping out from doing so. These included special counseling programs, "life skills" curricula, teen parenting programs, suicide prevention, attendance monitoring, and special instructional programs for students who either cannot or do not succeed in regular classrooms or for students who would otherwise drop out because of work, pregnancy, or parenting obligations. These alternatives to regular classes enroll students who most likely

would not have remained in school in 1967 or, if they did remain, most likely would have enrolled in "general" and not academic programs.[33]

In 1967, sample districts spent virtually no funds (only 0.07% of total funds) on alternative instructional programs; most of this spending was for schools for juvenile inmates. By 1991, this category had grown to account for 0.6% of total per pupil spending. Nearly 1.5% of all net new money in 1991, compared to 1967, was devoted to this alternative instruction. It consumed 2% to 3% of all net new money in Bettendorf, East Baton Rouge, Los Angeles, and Spring Branch, and very little in other sample districts. A brief description of the range of these programs can be found in Appendix 4.

In 1967, the nine sample districts spent 2.1% of their funds on counseling and attendance programs. By 1991, spending had grown to 3.5% of all funds.

In 1967, the nine sample districts spent 2.1% of their funds on counseling and attendance programs (as noted above, there was no significant dropout prevention or alternative education in 1967). By 1991, spending on these two components of the program alone had grown to 3.5% of all funds. Growth consumed about 6% of all net new funds in 1991, compared to 1967. In Boulder, growth in these programs consumed 11% of all net new dollars, though in 1967 Boulder already spent a larger share of funds (3%) on counseling than any other district save Middletown. Middletown, which in 1967 spent 4% of its resources on counseling and attendance services, devoted only 1.5% of net new money to these programs, but it shifted how monies were spent. In 1991, Middletown had fewer regular counselors than it had in 1967 but more dropout prevention staff.

In other suburban districts with fewer disadvantaged students, regular counseling programs grew during the 25-year period. In Anne Arundel and Bettendorf, which did not consume as much net new money as did Boulder, counseling growth accounted for over 7% of net new funds; it was used to increase the number of middle and secondary school counselors to provide greater curricular planning and college selection guidance. In several districts, consistent with a 1980s focus (after publication of the National Commission on Excellence in Education's *A Nation at Risk*) on core academics in the secondary curriculum, state legislative appropriations spurred growth in secondary counseling programs.

In East Baton Rouge this category also took more than 7% of net new funds, but they went mostly for "child welfare and attendance" officers, not guidance.

Evaluation of the effectiveness of these investments is an especially provocative subject for future research. There is great national attention focused on these programs' outcomes, especially the effort to reduce dropout rates.

Despite tougher diploma requirements, national dropout rates apparently fell somewhat in the quarter century from 1967 to 1991, especially for minority students. Dropout statistics are unreliable, but status rates may reflect progress. In 1972 (when 1967 graduates were about to enter the 24-25-year-old age group), 82% of American young people, aged 24-25, had completed four years of high school; by 1991, 85% had done so (NCES 1993, 252). Completion rates for minority youth rose more rapidly, and racial gaps narrowed. While the completion status of 24-25-year-old white youths grew from 85% to 89%, black youths' grew from 73% to 85%.

Of schools' net new money in 1991, 7.5% was devoted to student meals.

Whether specifically targeted expenditure programs may have contributed to an apparent modest improvement in outcomes will be difficult to address, because socioeconomic factors (like availability of employment opportunities for graduates) also affect completion rates. But without further refinement of the kind of input data we assemble here, meaningful discussion of productivity in this school program will be difficult.

School Lunch Programs

School lunch programs consumed 2% of all school resources in 1967 and 4.1% in 1991. Of schools' net new money in 1991, 7.5% was devoted to student meals.

In Claiborne, where household income was 30% below the next poorest sample district, 17% of all net new money in 1991 went for school lunches. In the urban districts (East Baton Rouge, Fall River, Los Angeles), school lunch spending also consumed more than 10% of net new funds. At the other extreme, Anne Arundel, most food service expenditures continued to be offset by cash sales to children and teachers; the system spent less than 1% of net new money on lunches. In 1967, most cafeteria costs in all districts were paid from food sales; we did not consider this portion to be a school expense.[34] By 1991, as federal subsidies expanded, sales were a smaller proportion of revenues. Federal aid fully subsidized lunches for students whose family incomes were below 130% of poverty and partially subsidized lunches for those with incomes up to 185%. Federal aid covered some overhead costs, so nonpoor children effectively received small subsidies.

Some growth resulted from subsidized breakfast and summer lunch programs, added after 1967 in sample districts, but most new spending was on school-year lunches. This study did not collect data that would enable us to determine the extent to which costs rose because of higher per-meal costs or because of more meals (i.e., more students) served. But it may be that costs

rose because poverty among students became more pervasive in some sample districts and because some districts more aggressively encouraged students to participate. (Secondary students in particular often decline to participate even if eligible.)

Poverty rates steadily declined in the 1960s, from 22% to 12% of the national population, but in 1970 they began to rise. By 1991, 14% of Americans had below-poverty incomes, about the same as in 1967. But a slow growth in poverty from 1970 to 1991 masks shifts in the age distribution of the poor: Great Society programs reduced poverty among the elderly while poverty of families with children grew. In 1970, 15% of American children came from poor families; by 1991, 21% did so. Increased expenditures for school lunches, therefore, may not have produced better nourished students, better prepared for academic challenge. Instead, they may have only offset deteriorating home nutrition. This possibility complicates productivity analyses of the lunch program.

Nearly 4% of all net new spending by the nine districts in 1991 went to bilingual education.

Better nourished children should have better academic achievement, but even if children came to school as well nourished in 1991 as in 1967, productivity of school lunch inputs cannot be assessed by test scores. Not only are test scores affected by a variety of school inputs, lunch programs among the least important, but lunch programs have social purposes broader than academic outcomes alone. School lunches were initially funded, not for academic reasons, but for national security: malnutrition of World War II draftees was believed to have reduced military effectiveness, and so Congress passed the National School Lunch Act immediately after the war. Today, few argue that the sole purpose of school lunches is to improve academic achievement. Current debates about whether to terminate the program (converting it to block grants without individual entitlements) have focused on whether food aid effectively combats poverty, not on whether it boosts academic outcomes. Thus, discussion of school productivity (with outcomes measured by academic achievement) needs to be tempered by consideration of cost increases in the school lunch program associated with different outcome goals and measures.

Bilingual Education

In 1967, bilingual education consumed only 0.3% of total school resources in the nine sample districts. By 1991, its share had grown to 1.8%. Nearly 4% of all net new spending by these districts in 1991 went to bilingual education.

In 1967, the only sample district with a bilingual education program was

Fall River, which rented a vacant church building in the center of Fall River's Portuguese community and operated a Portuguese-language instruction program for non-English-speaking children.

By 1991, several districts had bilingual education programs. Funds were spent mostly for bilingual teachers and aides, and expenditures for aides were nearly 19% of total instructional salaries. Considering aides' relatively low pay compared to teachers', this percentage probably means that there were almost as many bilingual aides as teachers in the nine sample districts. This was partly the result of a bilingual teacher shortage. To attract bilingual teachers, Los Angeles paid a $5,000 differential over the regular salary schedule to teachers certified in bilingual education. (Though not reflected in this study's 1991 data, in 1992 Spring Branch adopted a similar program with a $2,200 differential.) Texas law requires lower class sizes for bilingual students; Los Angeles is effectively subject to a similar requirement because its desegregation court order requires smaller classes in segregated schools, many of which have large numbers of limited English proficient children. Fall River's collective bargaining agreement with its teachers' union specified for 1991 a class size of 27 for regular education and 18 for bilingual education. If sufficient bilingual teachers are not available, the district may increase bilingual class size to 25 if a paraprofessional aide is also assigned. Spring Branch and Los Angeles had such difficulties in the recruitment of certified bilingual teachers that, in 1991, each district petitioned state government for legal waivers that would permit aides to be assigned to assist regular teachers.

Bilingual education funds were spent mostly for bilingual teachers and aides.

Fall River now educates children not only in Portuguese but in Spanish and Khmer as well. Spanish is the predominant language of other bilingual programs in our sample, although several districts in the sample were challenged in 1991 by the presence of Southeast Asian children, many of them refugees, speaking a variety of languages.

Bilingual education is controversial, and this report has no evidence to contribute to the debate about whether primary language instruction, sheltered English, or immersion is a preferable method. We note, however, that the debate is so fierce because empirical evidence is contradictory about which methods are effective. Tests of methods are difficult because so much depends on the starting point of students in any bilingual program. Methods effective for students who are literate (or whose parents are literate) in a primary language may be ineffective for students who come to school with little preparation in any language. Unless valid instruments are developed

for evaluating outcomes in bilingual education, it will be impossible to make judgments about whether the 4% of net new money devoted to this program has been well or poorly spent.

Security, Violence Prevention, and Discipline

Public concern about school security and violence has heightened, but identifiable costs of security, violence prevention, and discipline grew relatively little in the nine districts—from only 0.08% of all school spending in 1967 (most of which was a cost of lunchtime supervisors) to 0.4% in 1991. The growth in security spending consumed less than 1% of net new money in 1991. As a percent of total spending, security expenditures were 0.9%, 0.8%, 0.7%, and 0.5% in Los Angeles, Spring Branch, East Baton Rouge, and Fall River, respectively, and less in other districts.

Public concern about school security and violence has heightened, but identifiable costs of security, violence prevention, and discipline grew relatively little in the nine districts—from only 0.08% of all school spending in 1967 to 0.4% in 1991.

These totals only approximate the use of regular educational resources for violence prevention. For example, 1991 spending in Middletown and East Baton Rouge includes teacher payments for after-school detention supervision. (Regular school day instruction for "in-school suspension" students is considered an alternative education program expense, not a disciplinary expense.) And security costs include identifiable supplementary pay to teachers or aides for lunchroom or playground supervision. But in most cases such costs may not be identifiable because they are undifferentiated in broader accounts of regular teacher salary payments. On the other hand, 1967 teachers may have performed similar duties without supplementary pay.

Resource shifts from regular education may be understated because this study did not allocate school administrators' salaries by actual time devoted to specified programs. Instead, administrators' salaries, as a component of overhead, were assigned to programs in proportion to direct spending on those programs. However, interviewees in several districts claimed that school administrators spent more time on discipline in 1991 than in 1967. In particular, increased numbers of secondary school assistant principals may result, at least in part, from increased time spent on disciplinary relative to curricular duties.

Peer mediation and conflict resolution programs are another hidden school security cost. These expenses are included in regular salaries of teachers who sponsor such programs, which have become more common and compete with academic subjects for instructional time. In Anne Arundel, counselors conduct conflict resolution training, so costs of this violence pre-

vention are subsumed in counseling program accounts.

To the extent vandalism increased from 1967 to 1991, increased costs are reflected not as a school security expense but rather in spending for replacement equipment, higher maintenance and repair expenditures, or in higher premiums paid by districts for property insurance—although when districts choose to self-fund property losses or simply pay for replacement out of current revenues, these costs are obscured. Casualty and liability insurance premiums in the nine sample districts more than doubled in real terms, but we cannot say how much of this increase was for property rather than liability nor how much of the property increase was attributable to greater vandalism.

To the extent vandalism increased from 1967 to 1991, increased costs are reflected not as a school security expense but rather in spending for replacement equipment, higher maintenance and repair expenditures, or in higher premiums paid by districts for property insurance.

Costs of school vandalism were not only a problem for urban districts. Anne Arundel's vandalism-related insurance rates escalated so that the district began to self-insure the first $500,000 of loss. One of Claiborne's elementary schools was burned by arsonists during the span of this study, and weekend breakins by vandals were a not-infrequent occurrence. Claiborne schools installed alarm systems to deter such breakins, but costs are not reflected in expenditure reports: funds for alarms were raised by parents at bake sales and never passed through district financial records.

The increase in spending for security identified in this report is primarily attributable to the addition of full-time school police forces in Los Angeles, Spring Branch, and East Baton Rouge. The creation of these departments reflects not only greater problems of security and school-related violence but also cost-shifting from city to school district budgets. In Spring Branch, for example, all school criminal activity in 1967 was reported to the Spring Branch city police department. Beginning in 1983, the district established its own police force, "renting" constable time from town police. In 1987 a formal school police department was given responsibility for patrol at elementary and middle schools, full-time onsite patrols at the high schools, and night/weekend patrols. While this change was stimulated by a perception of growing violence, it is an exaggeration to attribute, as we do, no city police expenditures to the district in 1967.

Los Angeles' minimal security expenditures in 1967 mainly included lunchtime recreation supervisors. Here, too, the city police department was relied upon to police schools, at no cost to the district. The only security-related hardware expense for 1967 was purchase of a base-to-school bus radio communication system, purchased with federal civil defense funds. By 1991, however, the district had a full police department with 339 armed uniformed officers on campuses and in marked vehicles on patrol. Compen-

sation for school police alone in 1991 was $19.4 million, with another $5.5 million for campus security aides and monitors.

Likewise, East Baton Rouge reported no 1967 spending for police officers or security aides. By 1991, the district spent $1 million for off-duty sheriff's deputies, and the district assigned two full-time hearing officers to process disciplinary suspension cases.

Less urban districts also showed new security-related expenditures. Bettendorf hired its first part-time police officer in 1991. Anne Arundel had no security personnel, but each school had a full-time substitute assigned to its staff to fill in for absent teachers when needed and to sometimes assist in classrooms when no teachers were absent. But Anne Arundel's full time substitutes also devoted time to security patrols. Calculations in this report include a 1991 estimate that approximately 10% of full-time substitute time was devoted to security duties.

School districts that track incident reports show the number increasing rapidly. From 1987, when Spring Branch school police began keeping formal records, to 1990, reported incidents grew from 318 to 2,190. Trends in other districts are similar. As with any crime data, it is difficult to know how much these reports reflect more incidents or greater tendency to report incidents.

The nine districts show insignificant expenditures for security-related technology and equipment (except for police vehicles) in 1991. In Los Angeles the school board explicitly rejected proposals to purchase metal detectors, believing such devices to be incompatible with an educational atmosphere. Subsequent to 1991, however, these expenditures grew in several districts. East Baton Rouge purchased a dozen hand-held metal detectors. Los Angeles also now has over 300 of them and randomly screens 25 students a day at each middle and high school. Los Angeles has also installed a weapons prevention telephone "hotline."

Vocational education, regular student transportation, desegregation, regular student health services, and after-school athletics accounted for 13% of net new money in 1991.

Other Spending Programs

Other smaller changes in school programs contributed to rising costs of K-12 schools. While vocational education, regular student transportation, desegregation, regular student health services, and after-school athletics accounted for nearly 7% of all school spending in 1967, by 1991 these programs consumed 9.6% of all spending. Combined, these programs accounted for 13% of net new money in 1991.

Vocational education grew from 1.4% to 3% of all education spending. Because many district and state programs consolidate adult and secondary students, further research is needed to fully confirm this finding.[35] But K-12 districts clearly made new investments in vocational education during the study period. Anne Arundel, Claiborne, Spring Branch, and Los Angeles each built new vocational high schools. District officials estimate that, like special education, per pupil costs of vocational instruction is two to three times the cost of regular instruction. Recent changes in federal law require districts to integrate academic with vocational instruction in order to qualify for federal funds. Because secondary students were sometimes bused from regular high schools to vocational centers during the school day, several districts spent more in 1991 on vocational education transportation.

Although only Los Angeles and East Baton Rouge incurred desegregation expenses, their spending was sufficiently large to raise average desegregation spending for the nine districts to 1.6%. Los Angeles' costs were substantial, 13% of total spending in 1991 and 33% of its net new money.

Regular student transportation declined from 3.9% of all education spending in 1967 to 3% in 1991. Only 3% of schools' net new money in 1991 went to this category. District experiences varied. Los Angeles eliminated all regular education home-to-school busing unless a safety hazard (e.g., the need to cross dangerous intersections) was demonstrated. This provision, not surprisingly, is subject to considerable manipulation. Regular school busing was also reduced in Bettendorf, where walk zones (distances within which no free busing is provided) were expanded in 1989. Middletown reduced its walk zones, increasing its bus costs.

Desegregation activities consumed no funds in the nine sample districts in 1967. In 1991, desegregation expenses were incurred by Los Angeles and East Baton Rouge, both of which operated under federal court supervision. Although only these two districts incurred desegregation expenses, their spending was sufficiently large to raise average desegregation spending for the nine districts to 1.6%. Los Angeles' costs were substantial, 13% of total spending in 1991 and 33% of its net new money.

Both Los Angeles and East Baton Rouge court orders require intradistrict busing for racial balance. In Los Angeles, this busing consumed over 3% of total spending in 1991 and 7% of net new money for all programs. In East Baton Rouge, desegregation busing was over 1% of all 1991 spending and 3% of all net new money. The other major desegregation expense in Los Angeles, where 87% of students were minority in 1991, was additional teachers and aides assigned to segregated schools where busing could not reduce minority enrollment. These schools, pursuant to court order, received addi-

tional teachers for class-size reduction to compensate for the effects of racial isolation. The differential alone represented 6.6% of all 1991 spending and 14% of all net new Los Angeles spending in 1991.

Health and psychological services for regular students consumed 1.3% of all elementary and secondary funds in 1967 but only 0.9% of funds in 1991. In Fall River and Los Angeles, real per pupil health funds declined, as school nursing or physical exams were cut to free funds for other programs. In other districts spending rose, and in Bettendorf new money for student health consumed over 2% of net new school spending in 1991. Drug education costs are included in this category, and they contributed to the rise of spending in districts that had such programs.

Health and psychological services for regular students consumed 1.3% of all elementary and secondary funds in 1967 but only 0.9% of funds in 1991.

After-school athletics consumed about 0.4% of all funds in 1967 and about 0.7% in 1991. No new funds were spent on after-school athletic programs in Claiborne and in East Baton Rouge, but in Bettendorf after-school athletics consumed nearly 5% of net new money in 1991. However, this expenditure increase may not reflect real new resources if teachers in 1991 were paid designated stipends for coaching duties performed without extra pay in 1967.

APPENDIX 1
CONSTRUCTION OF THE NET SERVICES INDEX

by Lawrence Mishel, Research Director, Economic Policy Institute

This appendix presents technical information on how the "net services" index was computed at the national and subnational levels.

The National Level

The "net services" index represents inflation in services other than rent/shelter or medical care. The Bureau of Labor Statistics (BLS) does not publish such an index—there is one for "services," for "services less medical care" and for "services less shelter" but not for "services less shelter less medical care." It was necessary, therefore, to derive a net services index (NSI); we appreciate the assistance we received in this regard from BLS economist Patrick Jackman, who computed the national NSI for this project. He did so by combining the "relative importance" and price changes in particular periods for "services less shelter" and "medical care" to derive "services less shelter less medical care."

For instance, using the "relative importance" for December 1977 and the inflation rates between December 1966 and December 1977, one can derive the "relative importance" for December 1966. This calculation was made for "services less rent" and "medical care," which allows a computation of the "relative importance" for their difference, net services. The growth in relative importance of net services provides the measure of net service inflation for the period December 1966 to December 1977. The same process was repeated for the 1977-82, 1982-86, and 1986-90 periods. The inflation rates of each period were chained together to obtain an index value for December 1966 and December 1990—the net services index rises from 100 to 503. This inflation rate is almost identical to that of services as a whole, whose equivalent value in 1991 (with December 1966=100) is 508.

Subnational Indices

Inflation rates can differ substantially across regions. Consequently, it was necessary to construct a net services index for each of the localities in which the study examined a school district. Regional indices were also constructed for use in the data analysis presented in Appendix 2. BLS, however, provides indices only for major urban areas and for size categories of cities within each region. The indices that correspond to the nine cities are: Baltimore for Anne Arundel; North Central C-size for Bettendorf; Denver for Boulder; South D-size for Clairborne; South C-size for East Baton Rouge; Boston for Fall River; Los Angeles for Los Angeles; New York City for Middletown; and Houston for Spring Branch.

There were several other constraints faced when constructing subnational indices. First, there are no indices for medical services and shelter for the period before 1977 for the areas outside of the large urban areas (including Denver). The indices for these areas are constructed using national trends for the pre-1977 period. Second, the only "relative importances" or "weights" available at the local level for 1977 were those from the CPI-U. In contrast, the national net services index used the CPI-W weights for the 1966-77 period (it was the only national index in existence during that time) and the CPI-U weights for the 1977-82 period. The local indices were constructed using the 1977 CPI-W weights for the 1967-77 and 1977-82 periods and the 1982 CPI-U weights for the 1982-91 period. Third, the indices were constructed for the full years 1967 and 1991. Fourth, the most disaggregated level for which "relative importances" were available is region. Consequently, each locality's index is constructed using the relative importance of the appropriate region.

The weighting method used for the local indices was applied to the national data as a check. It showed that the national net services index grew 5.33% more (when more appropriate weights were used and midpoints in the school year—December—were used). To correct for this bias, all of the local indices for 1991 were increased by 5.33%. This step increased their (log) annual inflation rate by 0.2%.

The resulting local and regional net services indices were also compared to the local service indi-

ces. In all cases (except Denver and South C-Size) the service index rose faster than the net service index, and most were within about 2% of each other (except the Northeast, New York, Boston, South D-Size, and Denver, which differed from 4% to 8%). These are not large differences over a 24-year period. Given the parallel trends of services and net services at the national and local levels, it might be easier for future research to simply rely on the service index.

APPENDIX 2
SELECTION OF SAMPLE DISTRICTS

To select nine districts for intensive study, we utilized the 1991 "Common Core of Data, Public Elementary and Secondary Education Agency Universes" of the National Center for Education Statistics. It included over 15,000 school districts in the United States, most of which are small districts with only one or a few schools in rural areas. Though large in number, these districts enroll few total students. Determining that the very smallest districts were of less policy interest to the education research community, and that the task of gathering 1967 data for all 15,000 districts would be beyond the capacity of this project, we restricted our initial survey to the 2,500 largest districts. From these, we eliminated territorial districts outside the 50 states as well as those not serving both elementary and secondary students. Remaining were 2,269 K-12 districts, enrolling 27,508,433 students, 65% of all U.S. students.

Expenditure data for the 1960s were more difficult to assemble. We would have preferred to base this study on a year prior to infusion of federal compensatory education funds through the Elementary and Secondary Education Act of 1965. But the very existence of federal aid inspired improved record keeping in local districts. Chances of locating needed data diminished as we looked further back.

The only national report of district enrollment and expenditures in the 1960s was the Census Bureau's "Census of Governments, Finances of School Districts," conducted twice during the decade and covering 1962 and 1967. We adopted 1967, 24 years prior to 1991, as the study's base. Consequently, first-year compensatory education grants are included in base calculations.

We attempted to match districts in the 1967 Census report with those from 1991 NCES data. Some district names were not comparable (districts may have changed names, names may have been reported or abbreviated differently by the 1967 Census and 1991 NCES, or districts may have consolidated in intervening years). Other matches were impossible because the Census reported only "independent" school districts—excluding those (like New York City's) fiscally dependent on municipalities. The Census also included only districts with enrollment greater than 3,000. Since the 2,500 largest districts in 1991 had enrollment greater than 3,485, we would not have been able to match any districts that grew from less than 3,000 in 1967 to more than 3,485 in 1991.

We ultimately matched 1,368 districts. These enrolled 43% of all students and spent an average of $4,605 per pupil in 1991; they had average nominal per pupil expenditure growth of 732% from 1967 to 1991. The district with the median rate of nominal expenditure growth was Ritenour, Missouri,[36] with 1991 enrollment of 6,552, per pupil spending of $4,138, and nominal expenditure growth of 727%.[37]

We divided the 1991 group (including both matched and unmatched districts) into total-enrollment thirds, by district size. Each third includes districts enrolling a total of about 9 million students in 1991. The first includes the 101 largest, from Washoe County, Nev. (1990-91 enrollment 38,466) to New York City (943,969). The second includes the 518 next largest, from Garland, Texas (37,978) to Lompoc, Calif. (10,267). The remaining 1,645 districts range from Idaho Falls, Idaho (10,249), to Wissahickon, Pa. (3,487).

From each of these thirds grouped by size, the unmatched districts were dropped and the matched districts divided again in thirds: those whose nomi-

nal 1967-91 per pupil expenditure growth was fast, average, or slow for that size-group.

For smaller districts, 1967-91 matches were identified for 936. Growth-groups were districts whose nominal per pupil expenditure growth was fast: 808% to 1,616%; average: 666% to 807%; and slow: 237% to 665%.

For middle-size districts, 353 matches were identified. Growth-groups were districts whose nominal per pupil expenditure growth was fast: 788% to 1,357%; average: 643% to 788%; and slow: 260% to 643%.

For the 101 largest districts, matches were identified for 77, but we divided the districts differently. Because of widespread public policy interest in urban megadistricts (New York City, Broward, Dade, Chicago, Houston, Los Angeles, Philadelphia, and Detroit), we chose to assure that one such district be included in the sample.[38] This decision did not do violence to sample selection procedures, because these eight districts enroll almost exactly one-ninth of students in the database. For these eight, matches were identified for six. Growth ranged from 678% (Detroit) to 926% (Dade). We divided the 71 remaining large districts into slow-growing (405% to 758%) and fast-growing (763% to 1,211%) groups.

This process identified nine-district subgroups, each drawn from a group of districts enrolling approximately one-ninth of total 1991 enrollment in the 2,500 largest school districts: small districts with relatively fast, moderate, and slow nominal expenditure growth; medium-size districts with relatively fast, moderate, and slow nominal expenditure growth; large urban megadistricts; and other large districts with relatively fast and relatively slow nominal expenditure growth.[39]

Because some states (mostly in the Northeast and Mid-Atlantic) had many dependent districts in 1967, they were, to this point, underrepresented in the subgroups. Prior to final sample selection, we supplemented the subgroups with 1967 and 1991 state government data from Connecticut, Maryland, Massachusetts, New Hampshire, New York, North Carolina, Rhode Island, and Tennessee. Sample districts were then chosen from those whose nominal expenditure growth was close to the midpoint of each subgroup. The subgroups are represented as cells in **Table 20**.

The precise midpoint district was not necessarily selected for study. From those districts close to midpoints of subgroups, districts were selected that were geographically diverse and illustrative of national minority, poverty, and urbanicity patterns. Districts were avoided if 1991 and 1967 enrollments were grossly dissimilar. The average enrollment change of the nine sample districts is +4% growth, while total U.S. K-12 enrollment declined by 4%. This 8% difference is unsurprising, as the smallest rural districts, where enrollment was more likely to have declined since 1967, were excluded. Avoidance of districts with large net 1967-91 enrollment changes, however, could not assure sample districts that did not have offsetting gains and declines during intervening years; this, it turned out, characterized several districts in the study, as it characterized national enrollment trends. This control minimized, if it did not eliminate, distortion of data-representativeness from staffing, operations, or maintenance patterns unduly influenced by extreme enrollment changes.

Two selected districts declined to cooperate with the study and were replaced by others, chosen similarly. The nine districts on which the study is based are described in Table 3 of this report. **Table 21** illustrates that demographic characteristics of the sample are reasonably close to national averages. We do not claim a statistically representative sample, but believe it to reflect the range of experiences in districts (except small rural districts) across the nation. Trends we identify in the sample can indicate national expenditure trends in elementary and secondary education.

Future research will fully analyze the national database created for selection of the sample. But preliminary examination reveals great variety in school districts' nominal expenditure growth. Some had growth less than inflation, suffering loss of purchasing power. Others added many more new real school inputs.

Further research, including multivariate statistical analysis, will be needed to analyze this database. However, a superficial look suggests that the wide range of districts' nominal expenditure growth rates did not seem to result from differences in district size, urbanicity, or minority enrollment. The database of matched districts had average nominal expenditure growth of 732%. Large, medium-sized, and small districts had average nominal growth of

TABLE 20
District Groups From Which Sample Districts Were Selected Based on Matched (1967 and 1991) Group of 1,366 U.S. School Districts Enrolling 18,053,789 Students (55% of All Students), Supplemented by State-Provided Data for Unmatched Districts

I. Large District Group: Total 1991 Enrollment of 9,059,726 K-12 Students

	8 Megadistricts	Other Large Districts With Rapid Nominal Expenditure Growth	Other Large Districts With Slower Nominal Expenditure Growth
Number of Districts (Matched Database Only)	6	35	36
Enrollment Range	161,100 to 943,969	39,896 to 135,000	38,466 to 121,984
Total 1991 Enrollment in Group (Matched Database Only)	1,879,838	2,297,419	2,124,830
Range of Expenditure Growth, 1967-91	678% to 926%	763% to 1,211%	405% to 758%

II. Medium-Sized District Group: Total 1991 Enrollment of 9,151,827 K-12 Students

	Rapid Nominal Expenditure Growth	Moderate Nominal Expenditure Growth	Slower Nominal Expenditure Growth
Number of Districts (Matched Database Only)	117	118	119
Enrollment Range	10,286 to 37,969	10,267 to 37,978	10,292 to 36,286
Total 1991 Enrollment in Group (Matched Database Only)	2,042,760	2,202,829	2,091,782
Range of Expenditure Growth, 1967-91	788% to 1,357%	643% to 788%	260% to 643%

III. Small District Group: Total 1991 Enrollment of 9,296,880 K-12 Students

	Rapid Nominal Expenditure Growth	Moderate Nominal Expenditure Growth	Slower Nominal Expenditure Growth
Number of Districts (Matched Database Only)	312	313	313
Enrollment Range	3,487 to 10,234	3,488 to 10,199	3,490 to 10,249
Total 1991 Enrollment in Group (Matched Database Only)	1,800,540	1,806,937	1,819,351
Range of Expenditure Growth, 1967-91	808% to 1,616%	666% to 807%	237% to 665%

TABLE 21
Characteristics of the Nine-District Sample Compared With National Averages

	Nine-District Sample	National Averages
a. Rate of Nominal Per Pupil Expenditure Growth, 1967-91	744%	710%
b. Minority Students, 1991	31%	32%*
Community Characteristics, 1991		
c. Children Below Poverty	18%	22%
d. Non-English-Speaking Children	3%	5%**
e. Median Income, Households w/ Children	$36,857	$42,514
f. Householders With College Degrees	27%	23%

* 1990.
**1990. "Speak English with difficulty."

Sources: For nine-district sample, Table 3. For national averages: **Row a**: Table 2, see text. Note the average for the full database from which the nine-district sample was selected was 732%. **Row b**: National Center for Education Statistics, 1994, *The Condition of Education, 1994*, Washington, D.C.: GPO, p. 299. **Row c**: Bureau of the Census, 1992, *Poverty in the United States: 1991* (Current Population Reports, Series P-60, No. 181), Washington, D.C.: GPO, p. 4. **Row d**: National Center for Education Statistics, 1994, *The Condition of Education, 1994*, Washington, D.C.: GPO, p. 308. **Row e**: Bureau of the Census, 1992, *Money Income of Households, Families, and Persons in the United States: 1991* (Current Population Reports, Series P-60, No. 180), Washington, D.C.: GPO, p. 77. **Row f**: Bureau of the Census, 1992, *Educational Attainment in the United States: March 1991 and 1990* (Current Population Reports, Series P-60, No. 462), Washington, D.C.: GPO, p. 36.

753%, 702%, and 741%, respectively. Urban, suburban, and rural districts had average nominal growth of 747, 741, and 701%. Districts with minority enrollments of more than 75%, from 50% to 75%, from 25% to 50%, and less than 25% in 1991 had average nominal growth rates of 744%, 731%, 721%, and 729%, respectively.

But nominal expenditure growth does vary by region (**Table 22**), with Western states significantly lagging districts elsewhere. When these data are adjusted for inflation (using methods described in the first section of this report), a different pattern emerges. Spending of all districts in the database increased by 63%. In real terms, districts in the North Central Census region increased spending by 76%. In the Northeast region, real per pupil spending grew by an even greater 84%. And in Southern states, real per pupil jumped by 88%. In the West, however, spending grew by barely half that rate (47%). Slow Western expenditure growth was not confined to California; Texas districts had real expenditure growth slightly less than the national average, and districts in other Western states had growth substantially below the national average.

Further investigation of these changes should be a research priority. If, for example, further investigation confirms these regional trends in spending growth, researchers might inquire whether program outcomes in the Northeast and South improved more rapidly, or in the West more slowly, than those in the North Central region.

TABLE 22
Summary of Districts' Real Per Pupil Expenditure Growth, by Census Region, Based on 1,368 U.S. School Districts Enrolling 18,053,789 Students (43% of All Students)

District Type (Median District*)	1991 Enrollment	1991 Per Pupil Expenditure	Per Pupil Expenditure Growth, 1967-91	
			Nominal	Real
All Districts in Database	18,053,789	$4,605	732%	63%
(Ritenour, Mo.)	6,552	4,183	727	64
Districts, by Geographic Region, Using Regional Price Indices (NSI):				
224 Districts in Census Region 1 (Northeast)		6,820	820	84
(Freeport, N.Y.)	6,176	8,863	794	81
399 Districts in Census Region 2 (North Central)		4,927	739	76
(Elgin, Ill. Dist. 46)	27,726	4,101	733	69
334 Districts in Census Region 3 (South)		4,162	783	88
(Highlands County, Fla.)	9,248	4,920	811	87
411 Districts in Region 4 (West)		4,245	630	47
(Pampa, Texas ISD)	4,150	3,687	643	47

*By rate of nominal per pupil expenditure growth.

APPENDIX 3
CATEGORIZATION DECISIONS FOR ASSIGNING EXPENDITURES TO PROGRAMS

This report requires category decisions that deviate from conventional school finance accounting. Treatment of overhead and benefits is discussed in the body of this report, where we note that district-wide benefit ratios may distort, in unspecified ways, program accounting because different employee types receive benefits in different ratios to their compensation. This is complicated by the fact that benefits became increasingly important from 1967 to 1991. Thus, to the extent that average benefit ratios actually differ for the mix of employees in different programs, 1991 program data are less accurate than 1967 program data.

Table 23 shows that employee compensation was a stable 78% of district expenditures in 1967 and 1991. **Table 24** indicates the increasing importance of benefits in this compensation.

The unusually low (as a share of total spending) compensation expenditure for Claiborne in 1967 is anomalous, attributable to the fact that Claiborne received an infusion of Title I money in 1967 (making up about 25% of the district's entire budget in that year), used almost entirely for supplies and equipment. In subsequent years, after this initial

TABLE 23
Employee Compensation as a Share of All District Expenditures

District	Compensation Share of Spending 1967	1991	Change
Anne Arundel	77%	79%	2
Bettendorf	79	75	-3
Boulder	81	76	-5
Claiborne	63	78	15
East Baton Rouge	74	81	7
Fall River	91	80	-11
Los Angeles	82	86	5
Middletown	82	72	-10
Spring Branch	72	75	2
Average	78	78	0

Note: Calculations include salaries paid directly by school district and benefits paid by district or by state government on behalf of district employees

TABLE 24
Benefits as a Share of Total Employee Compensation

District	Benefits Share of Compensation 1967	1991	Change
Anne Arundel	8%	24%	16
Bettendorf	6	18	12
Boulder	7	18	11
Claiborne	9	15	6
East Baton Rouge	9	20	11
Fall River	10	11	1
Los Angeles	7	25	18
Middletown	16	22	7
Spring Branch	5	16	10
Average	9	19	10

Note: Calculations include salaries paid directly by school district and benefits paid by district or by state government on behalf of district employees.

"catch-up" of equipment purchases, Claiborne (like other districts) used its federal compensatory education funds for teachers and aides.

Ratios of compensation to total district spending may be influenced by a district's particular mix of contracted and direct services. For example, a district that contracts for bus services may see its transportation costs rise as a result of the rising compensation costs of the contractor's employees. This study, however, would not identify these as compensation costs, since the transportation expense is recorded simply as a lump sum payment for contracted services. Similar considerations apply in the case of districts (especially smaller ones) that paid fees to regional collaboratives for special education, staff training, or vocational education services.

Other judgments about categorization include:

1. *Capital Expenditures*. School-spending research usually ignores capital costs, reporting only current spending. As explained in the third section of this study, we reject this approach because we have little faith in the principles many districts use to distinguish capital from current costs, or in the consistency with which many districts apply those distinctions. The goal of this study was to capture all legitimate per pupil school costs, except those specifically caused (like new school construction costs) by changes in total enrollment.

The following are some examples of problems encountered in district accounting of capital and current expenditures and how we resolved them.

We sought to measure the cost of transportation programs, but if, following some districts' practices, we excluded all capital spending, bus purchases would be ignored. This might have been acceptable if transportation practices were consistent across districts. But some districts purchase student transportation from bus contractors whose fees, considered current expenses, cover depreciation of buses. Comparability between districts that contract out transportation and those that do not requires including capital costs of bus purchases, unless there is reason to believe that buses are replaced on an irregular schedule.

Instructional equipment is part of regular education, but there is no interdistrict uniformity about whether this equipment is capital and, if so, what dollar value distinguishes such capital from supplies.

We included major maintenance expenditures not related to new construction, because we considered these costs as a regular and predictable cost of education. We found no interdistrict consistency (or consistent practice within districts in different years) with regard to treatment of major maintenance. In some cases, districts paid for major recurrent maintenance like reroofing, painting, or playground resurfacing out of current funds. (Sometimes called "deferred maintenance," these costs may be sufficiently infrequent to require advance savings of maintenance funds.) In other cases, particularly when districts had fiscal stress, these were deemed "capital" costs. In some cases, salaries of facilities planners were moved from current administrative accounts to capital funds, or back again, depending apparently on where funds were more easily accessible.

It makes little sense to capitalize regular maintenance, no matter how major. Ideally, districts should capitalize only new construction for expanding enrollment, especially in large districts where major maintenance is regular and significant "deferral" unnecessary, and where even school buildings are rehabilitated on a rotating schedule.

Although we excluded capital costs of new facilities, we were not always able to distinguish the capital costs of constructing replacement facilities which, according the principles described above, should have been included. Further, even had we been able to distinguish all such expenses, we presently have no acceptable convention for amortizing these one-time costs.

We did not exclude construction costs where we had information that these costs were motivated by pedagogy, not growing enrollment. One district concluded that a K-6 facility was too large and should be reconstructed into two schools, one for grades K-2, the other for 3-6. Remodeling was paid from capital building funds, normally used for new construction. We included these costs while excluding similar expenses from the same fund used to remodel a non-school building to a school. Another district experimented with "open classrooms." We included the capital funds used to construct walls when the experiment ended.

Because we attempted to exclude from "overhead" accounts only expenditures for new student housing (including school additions and purchases

of portable classrooms), for comparability we also excluded rental of classroom space during enrollment crunches, though such rentals are normally considered "current," like rentals of theaters for graduation exercises (not excluded). Bus purchases are counted as transportation equipment, instructional equipment along with textbooks as an educational expense, administrative office equipment as administrative costs, school planning costs as operations, and regular (even if major) maintenance as maintenance. We followed these rules irrespective of whether districts reported this spending as "current" or "capital" and whether costs were paid from tax revenues or bonded indebtedness.

If districts financed all construction with bond funds, we could then have included these costs without distorting annual spending. Actual expenditures could be excluded, with principal and interest payments to retire indebtedness included. This method amortizes construction costs over the life of the bond which paid for it and gives more realistic views of capital costs, undistorted by year-to-year swings. However, this method is unworkable because, in several sample districts, bond revenues and special construction parcel tax receipts were mixed together in building funds. In other cases, school construction was simply paid from current revenues. It was impossible to determine which projects were financed by bonds and which by taxes.

Where construction (or bus purchases) were financed by bonds (or "certificates of participation"), we recorded repayment of interest as costs of operations (or transportation) and ignored expenditures for principal repayments, since inclusion of the latter would represent double-counting of capital costs (in the case of bus purchases) or impermissible counting of excluded new construction costs.

There are pitfalls to our method. We may not always have distinguished repair and maintenance costs from structural alterations to existing buildings for expanding enrollment. Nonetheless, we regard our approach as the most accurate practical approximation.

Double counting of principal repayments and capital expenditures, confusion between capital and equipment, and absence of conventions to depreciate capital stock characterize many districts' fiscal reports. School accounting procedures should be reformed in this respect. The Department of Commerce's Bureau of Economic Analysis announced in 1995 that it will begin to depreciate government purchases of buildings, roads, and equipment to calculate gross domestic product. School districts might consider adopting BEA's schedules for calculating public capital value.

2. *Private funds*. This report concerns only public K-12 spending, not spending by parents, students, or private sources. Summer school costs or driver education were not counted if paid by student tuition. Cafeteria expenses (food, salaries, equipment) were divided in shares corresponding to public revenues and sales, counting only the former. Similarly, athletic costs were reduced by ticket-sale income.

We included some instruction paid by grants (corporate or foundation), when indistinguishable from regular academic programs and when funding passed through district accounts. These represented a tiny proportion of 1991 expenditures, but could grow. Private monies raised by parent-teacher associations or communities were not included if directly contributed to local schools and not recorded in district accounts.

3. *Preschool expenditures*. We excluded all prekindergarten expenditures, except for special education that districts are now required by federal law to provide. Thus, Head Start programs operated by school districts were not counted, nor were preschool programs, even if operated with federal compensatory education funds.

4. *Community services*. Many K-12 spending reports do not include "community services." We followed this convention, excluding after-school recreation programs, "Neighborhood Youth Corps," and community education. However, "census taking," normally deemed community service, was included because districts perform this project primarily for enrollment planning.

5. *"War on Poverty."* If a district was a "War on Poverty" grant recipient in 1967, only funds directly related to K-12 education were counted, such as "Community Action" grants for extended school day education or for "parent-school coordination."

6. *Adult and vocational education*. We excluded adult education, but included costs of high school students in adult courses who receive secondary

credit. We believe data enabled us to make this distinction accurately. However, with regard to vocational education, we are less confident we separated all secondary from adult expenses. This was a problem for district as well as for state vocational-technical schools open to both secondary and adult enrollment. Of all data reported, we have greatest concern about the accuracy of those describing vocational education costs. We may have unintentionally included spending for adults or omitted spending for secondary students. In some cases, we estimated that 25% of vocational-technical students (and costs) were secondary, based solely on the fact that this share prevailed in states and districts where we had accurate information. This had little effect on overall results, as vocational education represents but a small part of total K-12 spending. But without additional verification, this report's conclusions about vocational education are tentative.

7. *Gifted and talented*. Unlike some states and districts, we did not count "gifted and talented" instruction as part of "special education" or as a separate program. Rather, without judging the merits of academic tracking, we considered "gifted and talented" expenditures as part of regular education, reflecting educators' decisions about how to nurture high achievers. We considered students who benefit from these funds not a "special population," but rather those whom most citizens and policy makers agree regular education should serve.

8. *Special education*. We counted as "special education" expenditures for physically, mentally, or emotionally retarded students, even if not considered part of a district's special education program. We counted as special education, for example, vocational classes for handicapped secondary students. We treated regular program school psychologists as costs of special education if their duties mainly included the assessment of current and potential special education students.

9. *Immigrant education*. Special programs for immigrants, like "newcomer schools," were considered part of the bilingual education program even if not paid from specifically designated bilingual funds, because both immigrant and bilingual programs serve similar populations.

10. *Workers' compensation and other benefits*. We treated workers' compensation premiums as an employee benefit, not a casualty or liability expense (part of general administrative overhead), though some districts do. We also treated "employee assistance programs" (for counseling about personal problems, drug and alcohol abuse, etc.) as an employee benefit. Employee exams given by a district (like tuberculosis testing or physicals for drivers or maintenance employees) were deemed costs of personnel administration, not employee benefits. Administrative costs of operating district self-insurance benefit funds were also deemed general administration and not counted as expenditures for benefits, though these costs may be paid from special benefits funds.

11. *Sabbatical leaves*. Salaries of teachers on sabbatical leave and payments to teachers for workshop attendance were considered staff development costs, not benefits or salary expenses of classroom instruction. Such payments are not always identifiable in district accounts, however. If workshop attendance payments are not identified, a surrogate for these costs might be substitute salaries paid when regular teachers attend in-service training. District records, however, often do not distinguish these substitutes from those who cover for teacher absence.

12. *Public payments for private schools*. We did not count school district spending to subsidize private school programs. Though part of school district budgets, we excluded bus transportation, "Chapter I" compensatory programs, Chapter II library support, or health services (nurses) provided to private or parochial schools. However, we were not able to remove from our accounts state funds for purchase of textbooks for private schools. Tuition and transportation for district students who attend private or public schools outside the district, because the district is unable to provide appropriate services (like special or bilingual education), were included in appropriate categories of this report.

13. *Field trips*. Where it was possible to identify salaries of bus drivers and other costs of student field trips or other transportation within the school day, these were considered an expense of regular education, not a student transportation expense.

14. *Benefits of state department of education employees*. As noted in the text, we calculated funds spent by districts for compensation in each program as the sum of salaries and a pro-rata share of total benefit costs. State departments of education spending, part of programmatic totals, are treated as though state departments were providing contracted services to districts. State spending reports, from which these "contracts" were calculated, may not include benefits for state department of education employees. And salaries or benefits paid to state department of education employees (or, for example, to staffs of state special schools) were not included in salary, benefit, or total compensation numbers reported in Tables 23 and 24, though these amounts were included as contracted services in the main programs we tracked.

15. *District utilization of state or regional programs*. State and multidistrict regional expenditures were included by dividing total state or regional spending for a program by the sample district's share of state enrollment. This inaccurately implies that districts utilize state services at identical rates, the most practicable approximation. For example, one sample urban district is in a county with many other smaller districts. A county department operates both special education and disciplinary schools under supervision of juvenile courts. The sample district hardly uses county special education schools because the district operates its own full special education program. But district students (who come from the county's low-income and high-crime communities) are sent in disproportionate numbers to disciplinary schools. We could not account for these variations, so both county special education and disciplinary school expenditures were included on the basis of district enrollment as a share of enrollment in all county school districts.

16. *Job training funds*. Several sample districts administered funds under the Manpower Development and Training Act (MDTA), Comprehensive Employment and Training Act (CETA), or Job Training Partnership Act (JTPA). Districts generally used these funds to hire teenagers for summer janitorial or clerical tasks, though some districts made use of funds for similar purposes during the school year. In other cases, districts provided similar work for teenagers, though another agency (like city government) administered the funds.

When these teenagers performed useful work otherwise performed by regular school employees, true accounts of public elementary and secondary education funds should include this spending, whether channeled through school districts or other agencies. But if programs exist mainly to provide work experience, funds should not be included in K-12 accounting. Actual programs combine both purposes. We could not conduct investigations of these purposes for most programs, so these funds were generally not included in this report's calculations. In one case, however, we determined that JTPA funds were clearly spent primarily to advance an educational program, not to train students: a district used JTPA funds to hire college students to conduct routine interviews of high school freshmen, as part of a district's dropout prevention and counseling program. This expenditure was included.

17. *Other public agencies*. In some cases, state agencies other than a department of education spent funds for K-12 purposes. Where we encountered such expenditures we included them, though we were able to make no systematic search of all state, regional, or municipal budgets for such programs. This may create minor data distortions. For example, if a sample district maintains its own police force or pays city officers for overtime spent at a school site, this spending is recorded. But if a district arranges with municipal police to provide school security, but provides no payment for this service, costs to municipal police of providing security are not recorded.

We identified a "school for palsied children" in a 1967 state health department expenditure report. These costs, now borne by school districts as a special education expense, should properly be recorded in the base from which special education growth is measured. The costs are included, but we made no systematic effort to identify comparable expenditures in other states.

In several states, public universities provide services (academic or special education testing, for example) to local school districts. A full accounting would identify these costs in university budgets. We were not able to do so.

18. ***Administration***. As noted in the text, we distributed administrative costs with clearly identifiable purposes to programs they lead or support, not to general administration. This method avoids pitfalls of conventional quests to identify "central administrative" costs. In conventional education research, administrative costs are often distinguished by whether they are spent from central office or school-level accounts. This can be misleading. In some cases, for example, we identified special funds, paid from designated state appropriations, for salary supplements to teachers who took graduate courses. In districts with defined salary schedules (like those with collective bargaining agreements) such payments are reflected in schedules and reported as teacher salary expenses. But in other districts, summary reports of district expenditures show these not as salary payments but rather as an expense of central administration.

Similar problems often arise in accounts of central curriculum and instruction departments. Detailed records of these departments may include salaries of "systemwide" teachers (for example, instrumental or vocal music teachers who travel from school to school) who cannot be attributed to particular school sites. This spending is often difficult to distinguish from payments to teachers working at a district office writing curriculum. Conventional reports of "central administration" expenditures may include such payments to traveling teachers. This study, which treats curriculum writers, traveling teachers, and classroom teachers all as part of "regular education," avoids such difficulties.

19. ***Teacher retirement funding***. Included in these calculations are contributions by state governments to teacher retirement funds. For teachers in some districts, state contributions represent the bulk of pension funding. However, states may determine contribution amounts based on actuarial analysis of funding sufficiency or on temporary state budget exigencies. Analysis of benefit contributions made in 1967 or 1991 may not reflect typical contribution levels for the period in question. Greater accuracy could be obtained from analyses examining not a single year's expenditures but rather average costs for several consecutive years. Such analyses were beyond the scope of research on which this report was based.

20. ***Program reallocations***. In general, we reallocated costs when we believed district categories were misleading or when we wanted to preserve interdistrict consistency. For example, some districts hire lunchroom or playground supervisors from cafeteria funds and report these salaries as a school lunch expense. Instead, we assigned these to the program that includes security, because in some districts "campus security aides" perform similar duties. Some inconsistency, however, remains: in some districts, counselors are responsible for these campus supervisory activities, but we had inadequate data to justify reassigning some portion of counselors' compensation from the counseling to the security program.

21. ***"Pupil support."*** Most school finance accounts call "pupil support" a variety of non-classroom expenses like school nurses, attendance control, counseling, school libraries, and dropout prevention efforts. We find this category includes both too much and too little. On the one hand, we included school libraries as part of regular education. We distinguished school health and psychological services as a separate program. And we included, in a category of activities whose primary focus is to prevent dropouts, a group of instructional activities frequently called "alternative education"—classes for students either "at risk" of dropping out or whose discipline is unsuitable for regular classes. We included alternative education as part of a broader program, "Attendance, Counseling, Dropout Prevention, and Alternative Education." Ideally, we would have liked to separate out regular guidance counseling activities (curricular, college, and career counseling) and include these in regular education, leaving counselors who are secondary school disciplinarians in a category with dropout prevention. District data, which considers both guidance and disciplinary staff "counselors," does not permit us to do this. As a result, all counseling compensation appears in the program that includes counseling, attendance control, dropout prevention, and "at-risk" instruction. Had it been possible to separate the costs of curricular and college counseling and count these costs as part of regular education, this might have further diminished our account of the relative growth of regular education spending, because in most districts more counseling time in 1991 was spent on disci-

pline and less on curricular, college, and career guidance than in 1967, although some districts with more affluent student populations expanded guidance activities considerably.

22. *Compensatory education*. We categorized as "compensatory education," activities providing extra academic help to students whose academic progress was deemed slow because of socioeconomic disadvantage. This is the purpose of the federal Chapter I (now Title I) program. However, we evaluated each expenditure by its purpose and did not necessarily include every Chapter I expenditure in compensatory education. For example, some schools for "at-risk" students were funded with Chapter I, and these were categorized alternative, not compensatory, education and included in our broader "Attendance, Counseling, Dropout Prevention, and Alternative Education" category. Also, some bilingual education expenditures are paid out of Chapter I funds. We classified these expenditures as bilingual, not compensatory. On the other hand, our account of compensatory education also included spending from state or local sources if its purpose was compensatory. But regular education remedial teaching (like summer school), if available to all students and not only those with socioeconomic disadvantage, was considered part of regular education.

Some districts and education researchers call "at risk" many special populations, including special education, compensatory, and bilingual students (Anthony and Jacobson 1992). We, however, reserved the term "at risk" only for spending programs (instructional or other support) specifically aimed at potential dropouts.

APPENDIX 4
ALTERNATIVE EDUCATION AND DROPOUT PREVENTION: EXAMPLES OF DISTRICT ACTIVITIES

One program that illustrates how inaccurate it might be to consider traditional academic success as the sole measure of outcomes in contemporary American education is dropout prevention and alternative education aimed at keeping youth in school. This program was not a vehicle for expenditures in 1967. This appendix surveys some examples of these programs in the nine districts in 1991.

In districts as demographically diverse as Anne Arundel, Boulder, and Los Angeles, students who did not succeed in regular high schools or whose work schedules or family obligations interfered with regular school had options in 1991 to attend evening adult education schools. In these schools, students can take high school equivalent courses and earn diplomas. In Boulder, to be eligible, a student must have been recommended by the principal of the high school from which he or she dropped out and be "sincere in his intention to work toward a diploma."

In Los Angeles, 43 small "continuation schools," with three teachers each and small classes, attempted to retain students who otherwise might drop out. Also among Los Angeles' alternative schools were 10 "community-centered classrooms"—each with a teacher and aide in a storefront school for a small number of students who would not attend regular schools. Los Angeles also operated an independent study program (the Alternative Education and Work Centers) for returning dropouts, and "opportunity schools" for students who had been suspended for disciplinary reasons from their regular schools. Small class sizes characterized the effort.

Even the small Claiborne district in 1991 had an "in-school suspension" teacher to instruct students who, for disciplinary reasons, were not permitted to attend regular classes. Fall River had a similar high school program, and Anne Arundel's Learning Center was operated for students whose behavior made them candidates for suspension. These youths studied, for half- or full-year periods, under individual contracts with Learning Center teachers. Regular staff were trained to identify and refer students who

might be candidates for Learning Center instruction.

Bettendorf, in cooperation with three other Iowa districts, operated a school, Project Ready, in which returning dropouts or employed students could attend one day per week on flexible schedules. Their teachers supervised individualized learning programs. Project Ready also offered counseling and work supervision services.

Middletown is also too small a district to support its own alternative high school. Like Bettendorf, it joined with other nearby small districts and cooperatively operated an alternative school for students who could not succeed in regular high school; it also offered a program specifically attuned to needs of pregnant teens. Los Angeles also operated two schools specifically for pregnant minors.

Spring Branch likewise operated the Accelerated Learning Center. Students were permitted to enroll in the ALC if they were at least one and one-half years behind their cohort in academic subjects and would not be likely to graduate without intervention. Enrollees were tested to make sure they had no learning disabilities and were simply "at risk." ALC teachers tried to bring students up to grade level, at which point students were returned to home schools. Fall River operated a similar program at middle schools. Students who had reached 7th grade and were over age (usually from being retained in grade at an earlier point) were assigned to alternative classrooms where teachers attempted to qualify them for high school. Students removed from regular classes for disciplinary reasons were also included in alternative classrooms.

Returning dropouts over age 16 had a half-day program at Spring Branch's Special Assignment Center, combining remedial academic work with a vocational curriculum. Fall River also operated an evening school with a separate diploma program for dropouts. However, inasmuch as students were charged tuition and the Fall River program was self-sustaining, its expenditures were not included in our calculations.

East Baton Rouge operated similar programs. There were two middle school detention centers where instruction was given to students who had been suspended from regular schools but were too young (i.e., under age 16) to drop out lawfully. East Baton Rouge also conducted an "alternative academy" for students who, though not suspended, were considered "at risk" of dropping out. The academy had a faculty of 15 teaching an enrolled population of 129 students, a pupil/teacher ratio much lower than that of the regular program. In 1991, the district also operated, in about three-fourths of its middle and high schools, in-school suspension educational programs. Here, full-time certificated teacher "moderators" supervised instruction of students whose infractions were serious enough for suspension from regular classes but not to warrant suspension from school. (Subsequent to 1991, East Baton Rouge abandoned this program, substituting for it a centralized "alternative school" for students suspended from regular classes. The alternative school was established to save funds, as students are now consolidated in a central location with fewer teachers.) East Baton Rouge also operated three continuing education centers in which dropouts over age 16 could take courses leading to a high school diploma. In addition, the district employed certificated "visiting teachers" who made home visits to truant students to attempt to coax them back to school.

Boulder operated an "extended opportunity" night school program for students "at risk," as well as a special instructional program for teen parents, staffed by a teacher and instructional aide. The district provided child care for students' children and counseling to encourage the young mothers to remain in school.

In Fall River, the Futures program included a drop-in center, where counseling staff worked with high-absentee students to coax them back to school; a followup program for truants; and exit surveys for students who did drop out to attempt to determine what the causes might be. Fall River also hired college students to survey high school freshmen about goals and expectations; the objective was to identify likely future dropouts who could benefit from special counseling.

APPENDIX 5
DISTRICT DETAIL

The following tables describe changing expenditure patterns in each of the nine districts covered by this report.

TABLE 25
Expenditure Patterns, 1967-91, Anne Arundel County, Md.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending,	Real Growth of Per Pupil Spending,
	1967*	1991	1967	1991	Change	1967-91	1967-91
Regular Education	2,513	3,780	83%	62%	-21	41%	50%
Special Education	80	1,092	3	18	15	33	
Compensatory Education	71	101	2	2	-1	1	
Attendance, Counseling, Dropout Prevention, and Alternative Education	110	341	4	6	2	7	
Food Services	42	68	1	1	-0	1	
Transportation (Regular Ed)	179	316	6	5	-1	4	
Vocational Education	30	307	1	5	4	9	
Bilingual Education	0	15	0	0	0	0	
Desegregation	0	1	0	0	0	0	
Regular Health & Psychological Services	0	24	0	0	0	1	
After-School Athletics	3	63	0	1	1	2	
Security and Violence Prevention	0	4	0	0	0	0	
All Programs	3,029	6,112	100	100		100	102
Overhead Allocated to Above Programs:							
General and School Administration	311	633	10	10	0	10	
Operations and Maintenance	449	932	15	15	0	16	
Employee Compensation as Percent of District Spending			77	79	2		
Benefits as Percent of Employee Compensation			8	24	16		

*Note on the Net Services Index (NSI) for Baltimore MSA: 1967=100; 1991= 505.7

TABLE 26
Expenditure Patterns, 1967-91, Bettendorf, Iowa

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	2,674	3,229	92%	72%	-20	36%	21%
Special Education	88	693	3	16	12	39	
Attendance, Counseling, Dropout Prevention, and Alternative Education	0	82	0	2	2	5	
Counseling and Dropout Prevention	26	184	1	4	3	10	
Food Services	0	45	0	1	1	3	
Transportation (Regular Ed)	74	78	3	2	-1	0	
Vocational Education	9	1	0	0	-0	-0	
Bilingual Education	0	0	0	0	0	0	
Desegregation	0	1	0	0	0	0	
Regular Health & Psychological Services	30	66	1	1	0	2	
After-School Athletics	0	73	0	2	2	5	
Security and Violence Prevention	0	9	0	0	0	1	
All Programs	2,900	4,459	100	100		100	54
Overhead Allocated to Above Programs:							
General and School Administration	319	495	11	11	0	11	
Operations and Maintenance	517	714	18	16	-2	13	
Employee Compensation as Percent of District Spending			79	75	-3		
Benefits as Percent of Employee Compensation			6	18	12		

*Note on the Net Services Index (NSI), North Central Region, Cities from 50,000 to 500,000: 1967=100; 1991= 496.1

TABLE 27
Expenditure Patterns, 1967-91, Boulder, Colo.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending,	Real Growth of Per Pupil Spending,
	1967*	1991	1967	1991	Change	1967-91	1967-91
Regular Education	3,189	3,317	84%	64%	-20	9%	4%
Special Education	165	832	4	16	12	47	
Compensatory Education	1	132	0	3	3	9	
Attendance, Counseling, Dropout Prevention, and Alternative Education	112	276	3	5	2	12	
Food Services	12	49	0	1	1	3	
Transportation (Regular Ed)	100	150	3	3	0	4	
Vocational Education	123	247	3	5	2	9	
Bilingual Education	0	67	0	1	1	5	
Desegregation	0	1	0	0	0	0	
Regular Health & Psychological Services	30	44	1	1	0	1	
After-School Athletics	39	54	1	1	-0	1	
Security and Violence Prevention	7	15	0	0	0	1	
All Programs	3,780	5,184	100	100	100		37
Overhead Allocated to Above Programs:							
General and School Administration	434	596	11	11	0	12	
Operations and Maintenance	583	915	15	18	2	24	
Employee Compensation as Percent of District Spending			81	76	-5		
Benefits as Percent of Employee Compensation			7	18	11		

*Note on the Net Services Index (NSI) for Boulder-Denver: 1967=100; 1991= 599.4

TABLE 28
Expenditure Patterns, 1967-91, Claiborne County, Tenn.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	1,027	1,524	57%	53%	-4	46%	48%
Special Education	66	354	4	12	9	26	
Compensatory Education	442	239	25	8	-16	-19	
Attendance, Counseling, Dropout Prevention, and Alternative Education	15	71	1	2	2	5	
"At Risk" Youth Education	0	8	0	0	0	1	
Pupil Support (Attendance and Counseling)	15	63	1	2	1	4	
Food Services	60	249	3	9	5	17	
Transportation (Regular Ed)	157	207	9	7	-2	5	
Vocational Education	23	229	1	8	7	19	
Bilingual Education	0	0	0	0	0	0	
Desegregation	0	0	0	0	-0	-0	
Regular Health & Psychological Services	1	8	0	0	0	1	
After-School Athletics	0	0	0	0	0	0	
Security and Violence Prevention	0	0	0	0	0	0	
All Programs	1,790	2,880	100	100	100		61
Overhead Allocated to Above Programs:							
General and School Administration	63	206	3	7	4	13	
Operations and Maintenance	176	338	10	12	2	15	
Employee Compensation as Percent of District Spending			63	78	15		
Benefits as Percent of Employee Compensation			9	15	6		

*Note on the Net Services Index (NSI) for South Region Cities less than 50,000: 1967=100; 1991= 471.6

TABLE 29
Expenditure Patterns, 1967-91, East Baton Rouge Parish, La.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending,	Real Growth of Per Pupil Spending,
	1967*	1991	1967	1991	Change	1967-91	1967-91
Regular Education	2,096	2,424	76%	57%	-18	22%	16%
Special Education	109	691	4	16	12	40	
Compensatory Education	181	157	7	4	-3	-2	
Attendance, Counseling, Dropout Prevention, and Alternative Education	9	165	0	4	4	11	
"At Risk" Youth Education	0	47	0	1	1	3	
Pupil Support (Attendance and Counseling)	9	118	0	3	2	7	
Food Services	219	400	8	9	2	12	
Transportation (Regular Ed)	145	221	5	5	-0	5	
Vocational Education	11	70	0	2	1	4	
Bilingual Education	0	14	0	0	0	1	
Desegregation	0	56	0	1	1	4	
Regular Health & Psychological Services	2	14	0	0	0	1	
After-School Athletics	0	0	0	0	0	0	
Security and Violence Prevention	0	28	0	1	1	2	
All Programs	2,771	4,240	100	100		100	53
Overhead Allocated to Above Programs:							
General and School Administration	258	414	9	10	0	11	
Operations and Maintenance	415	497	15	12	-3	6	
Employee Compensation as Percent of District Spending			74	81	7		
Benefits as Percent of Employee Compensation			9	20	11		

*Note on the Net Services Index (NSI) for South Region Cities from 50,000 to 500,000: 1967=100; 1991= 493.8

TABLE 30
Expenditure Patterns, 1967-91, Fall River Schools, Mass.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	2,279	2,345	76%	51%	-25	4%	3%
Special Education	230	1,016	8	22	14	49	
Compensatory Education	3	314	0	7	7	19	
Attendance, Counseling, Dropout Prevention, and Alternative Education	65	159	2	3	1	6	
Food Services	35	267	1	6	5	15	
Transportation (Regular Ed)	17	12	1	0	-0	-0	
Vocational Education	183	146	6	3	-3	-2	
Bilingual Education	79	216	3	5	2	9	
Desegregation	0	0	0	0	0	0	
Regular Health & Psychological Services	86	71	3	2	-1	-1	
After-School Athletics	23	29	1	1	-0	0	
Security and Violence Prevention	0	24	0	1	1	1	
All Programs	3,000	4,601	100	100		100	53
Overhead Allocated to Above Programs:							
General and School Administration	312	345	10	7	-3	2	
Operations and Maintenance	352	468	12	10	-2	7	
Employee Compensation as Percent of District Spending			91	80	-11		
Benefits as Percent of Employee Compensation			10	11	1		

*Note on the Net Services Index (NSI) for Boston MSA: 1967=100; 1991= 495.9

TABLE 31
Expenditure Patterns, 1967-91, Los Angeles Unified School District, Calif.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	3,118	3,010	87%	51%	-36	-5%	-3%
Special Education	81	1,073	2	18	16	42	
Compensatory Education	161	203	4	3	-1	2	
Attendance, Counseling, Dropout Prevention, and Alternative Education	39	184	1	3	2	6	
Food Services	15	280	0	5	4	11	
Transportation (Regular Ed)	47	13	1	0	-1	-1	
Vocational Education	13	60	0	1	1	2	
Bilingual Education	0	231	0	4	4	10	
Desegregation	0	765	0	13	13	33	
Regular Health & Psychological Services	193	43	3	1	-2	-2	
After-School Athletics	0	6	0	0	0	0	
Security and Violence Prevention	14	55	0	1	1	2	
All Programs	3,581	5,923	100	100		100	65
Overhead Allocated to Above Programs:							
General and School Administration	346	543	10	9	-0	8	
Operations and Maintenance	663	592	19	10	-9	-3	
Employee Compensation as Percent of District Spending			82	86	5		
Benefits as Percent of Employee Compensation			7	25	18		

*Note on the Net Services Index (NSI) for Los Angeles MSA: 1967=100; 1991= 546.8

TABLE 32
Expenditure Patterns, 1967-91, Middletown, N.Y.

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	3,424	4,691	78%	59%	-19	35%	37%
Special Education	103	1,755	2	22	20	46	
Compensatory Education	338	417	8	5	-2	2	
Attendance, Counseling, Dropout Prevention, and Alternative Education	165	256	4	3	-1	3	
Food Services	75	131	2	2	-0	2	
Transportation (Regular Ed)	131	380	3	5	2	7	
Vocational Education	1	113	0	1	1	3	
Bilingual Education	0	44	0	1	1	1	
Desegregation	0	0	0	0	0	0	
Regular Health & Psychological Services	130	143	3	2	-1	0	
After-School Athletics	20	59	0	1	0	1	
Security and Violence Prevention	0	1	0	0	0	0	
All Programs	4,387	7,989	100	100		100	82
Overhead Allocated to Above Programs:							
General and School Administration	465	739	11	9	-1	8	
Operations and Maintenance	654	1,145	15	14	-1	14	
Employee Compensation as Percent of District Spending			82	72	-10		
Benefits as Percent of Employee Compensation			16	22	7		

*Note on the Net Services Index (NSI) for New York MSA: 1967=100; 1991= 477.5

TABLE 33
Expenditure Patterns, 1967-91, Spring Branch Independent School District, Texas

	Per Pupil Spending ($1991)		Share of Total Per Pupil Spending			Share of Net New Per Pupil Spending, 1967-91	Real Growth of Per Pupil Spending, 1967-91
	1967*	1991	1967	1991	Change		
Regular Education	1,825	3,247	83%	60%	-23	44%	78%
Special Education	65	685	3	13	10	19	
Compensatory Education	56	283	3	5	3	7	
Attendance, Counseling, Dropout Prevention, and Alternative Education	65	295	3	5	2	7	
Food Services	30	174	1	3	2	4	
Transportation (Regular Ed)	109	172	5	3	-2	2	
Vocational Education	1	112	0	2	2	3	
Bilingual Education	0	285	0	5	5	9	
Desegregation	0	0	0	0	0	0	
Regular Health & Psychological Services	20	63	1	1	0	1	
After-School Athletics	22	45	1	1	-0	1	
Security and Violence Prevention	0	41	0	1	1	1	
All Programs	2,194	5,402	100	100		100	146
Overhead Allocated to Above Programs:							
General and School Administration	187	605	9	11	3	13	
Operations and Maintenance	515	1,179	23	22	-2	21	
Employee Compensation as Percent of District Spending			72	75	2		
Benefits as Percent of Employee Compensation			5	16	10		

*Note on the Net Services Index (NSI) for Houston MSA: 1967=100; 1991= 478.4

THE PROJECT RESEARCH GROUP

The research for this project was conducted by a team composed of the following members:

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ENDNOTES

1. Most national, state, and district financial data on schools are calculated on a school-year basis. In this report, a reference to any year is generally a reference to the school year from July 1 of the previous year to June 30 of the year named, or in some cases to the school year from September 1 of the previous year to August 30 of the year named. Thus, "1967" and "1991" mean school years 1966-67 and 1990-91.

2. Hamilton Lankford and James Wyckoff at the University at Albany-SUNY have made an initial attempt at a covariance analysis of staff and enrollment in special education programs in New York State (Lankford and Wyckoff 1995b).

3. Eric Hanushek deflates school expenditures using the "GNP deflator," not the consumer price index (Hanushek et al. 1994; Chubb and Hanushek 1990). The gross national product deflator, however, suffers from drawbacks that are similar, though not identical, to those of the consumer price index. A GNP price index reflects the prices of all components of final demand (consumption, investment, government purchases, exports and imports) and is no more representative of school input prices than is a consumption index like the CPI-U. Schools are as unrepresentative of average users of final product as they are unrepresentative of urban consumers.

4. Not all productivity gains come from reducing employment. Some gains can be made through work reorganization.

5. School productivity, therefore, must be thought of as the achievement of higher test scores (and other improved outcomes) as real expenditures steadily increase (assuming the use of an average inflation rate).

6. School price adjustments are now used by education policy makers to evaluate geographic differences in education expenditures. Concerned with intrastate equalization of school spending, policy makers want to know whether the same dollars purchase similar collections of school inputs in different districts. As early as 1980, Jay Chambers proposed creation of a "cost of education index" to assist California officials in equalizing school funding after the state Supreme Court's *Serrano* decision mandated reform (Chambers 1980). Texas, Florida, Alaska, and Ohio now adjust aid to local school districts for intrastate regional differences in the cost of education inputs (McMahon 1995). The U.S. Department of Education has commissioned analyses of state and region differences in costs of education, calculated from differences in costs of living, amenities, and other factors, for the purpose of determining how school districts' federal aid might be adjusted so that federal dollars have equal purchasing power (Barro 1994; Parrish, Matsumoto, and Fowler 1995). Despite this sophistication regarding geographical differences in purchasing power of nominally equivalent dollars, little effort has been devoted to construction of a historical school price index to replace the CPI-U in school finance debates.

7. Halstead's weights were based on data collected by the National Center for Education Statistics, but NCES stopped collecting such data in 1976.

8. Inflation rates differ not only for different products or services; they also differ for the same products and services in different localities, because prices increase in different localities at different rates. Therefore, we have constructed a regionally appropriate NSI for each of the nine-sample districts in this study.

9. Coincidentally, national inflation in "net services" from 1967 to 1991 was almost identical to inflation in the broader services category, which includes shelter rent and medical care. We nonetheless removed rent and medical care in the construction of the NSI, believing this to be the most theoretically justifiable approach. This coincidence, however, means that our conclusion about the real national growth of school spending (61% from 1967 to 1991) is unaffected in practice by this decision to construct a net services index to replace the all-services index of the BLS. Note, however, that this coincidence may not be true for the regional NSIs we construct.

10. At the time this investigation began, 1991 was the most recent year for which complete data were available. As of this report's publication data (November 1995), it would be possible for most districts, with newly available data, to analyze expenditures through the 1994 school year.

11. Throughout this report, we refer to Spring Branch as a "suburban" school district. As the text describes, however, the community is in the process of transition from "suburban" to "urban." The Census now classifies Spring Branch as an urban community, as shown in Table 3.

12. Expenditure data were collected not only for 1967 and 1991 but for three intermediate years: 1973, 1979, and 1985. Intermediate year data has not yet been fully analyzed.

13. Because these thousands of separate category decisions may not easily be comparable to districts' own reports, we recognize that our data must be subject to verification by other researchers. Therefore, we did not offer anonymity to districts in the sample, and EPI will make arrangements for qualified researchers who wish to confirm these calculations.

14. Where we summarize experiences of several or all of the sample districts, we calculate the real increase for each of the nine districts, and report a simple average of the nine increases. We call this a "district-weighted" average. There are alternative methods: we could, for example, sum the separate per pupil spending totals for the nine districts in 1967 and 1991 and report the change in these sums. This result would tend to give greater weight to districts with higher nominal per pupil expenditures. We would call this a "spending-weighted" average. However, because our main focus is on the relative growth of each district's expenditures from 1967 to 1991, and because each district was selected to have equal importance in results designed to illustrate national experience, a district-weighted average is more appropriate for this report than a spending-weighted average.

While district-weighted average change in spending among the nine districts was 73%, a spending-weighted average shows growth of 71%.

The 61% increase we report on national growth of per pupil spending is neither district nor spending weighted. It was calculated by taking the change in national per pupil spending from 1967 to 1991 (calculated in each year by dividing total national K-12 spending by total national K-12 enrollment), after converting the 1967 national per pupil spending figure to 1991 dollars using the net services index. Thus, the 61% real change reported for national data, and the district-weighted 73% change we report for the nine-district sample, are not strictly comparable. A district-weighted average for the national sample would be misleading, because of the very large number of small school districts. It would also be beyond the scope of this report, since we did not individually adjust for inflation (using the NSI) the 1967 spending total for each U.S. district.

15. Calculations of the share of net new money going to particular programs are sensitive to the deflator used to convert 1967 to 1991 dollars. The sensitivity results from the fact that deflators vary in different ways by geographic regions (housing costs, for example, rise at different rates in different parts of the country), and these differences interact with differences in the changing shares of total expenditures for particular programs in the nine districts. For example, if the regular education share of "net new money" from 1967 to 1991 is 26% using our net services index (NSI) to convert 1967 dollars, it would be 38.8% using the CPI-U, 41.9% using the CPI-U-X1, and 40.7% using the GDP deflator. The numbers reported in Table 5, however, describing the changing shares of total spending for each program, do not change from inflation adjustments and can be calculated without any conversion of nominal to real 1967 dollars. The third type of number used in this report, real growth in total spending and in regular education spending is, as stated, calculated using the NSI, the most appropriate index for this purpose.

16. Claiborne's 1967 spending on regular education was relatively low as a share of total spending. This reflects the fact that in 1967 Claiborne, an Appalachian mountain community that was the focus of "War on Poverty" attention at the time, received an unusually large infusion of federal compensatory education funds. These funds, which the district treated as a one-time grant to purchase school equipment, made up 25% of Claiborne spending in 1967. After 1967, these compensatory education funds declined, and regular education rose as a share of total district spending. Then, regular education's share of spending declined again, bringing its share in 1991 back down to the approximate level it had in 1967. Without the distortions caused by the very high level of compensatory education money in 1967, the regular education share of spending would have been higher in 1967 and the decline greater.

17. This report discusses districts' relative rates of spending change and shares of that change devoted to distinct programs. The report does not focus on absolute spending levels, so caution about Table 9 is in order. Inflation adjustments help us understand how many real inputs a district purchased in 1967 relative to that district's purchases in 1991. In any year, however, there may be significant differences between geographic regions with respect to the real purchasing power of the dollar. This report does not attempt to assess regional differences in dollar purchasing power. Thus, while Spring Branch purchased 78% more regular education inputs in 1991 than it purchased in 1967, and Los Angeles purchased 4% fewer regular education inputs in 1991 than it purchased in 1967, this report expresses no judgment about whether, in 1991, the $3,247 per pupil that Spring Branch spent on regular education in 1991 purchased more or fewer inputs of similar quality than the $3,010 per pupil that Los Angeles spent on regular education

that year. Table 9 shows that Spring Branch's regular education effort was greater in 1991 than in 1967. It does not show that Spring Branch's regular education effort in 1991 was greater than Los Angeles' effort in 1991.

18. This section on the components of regular education instructional spending is based on analysis performed by Karen Hawley Miles.

19. In each district, we obtained data from staff directories or school-by-school staffing reports and compared these to staffing totals reported at the district level. A final check to these numbers was often found in state documents. To resolve discrepancies, we matched staffing to expenditure data to insure that numbers of teachers by program matched. We also analyzed trends of staffing data to check consistency and reliability, examining not only 1967 and 1991 reports but those for 1973, 1979, and 1985as well. For example, in one district we noted a dramatic drop in special education teachers from 1967 to 1973. Investigation showed that the district classified bilingual as "special education" teachers in 1967 but no longer did so by 1973. Thus, we adjusted the respective totals to reflect our consistent program definitions.

20. Most other analyses group teacher benefits with other employees' benefits, calling them "fixed costs." But excluding benefits from teaching costs obscures changes in total compensation. Most analyses also combine teacher and other instructional salaries (like aides), impeding analysis of changes in average teacher salaries alone. Finally, staff and expenditure reports often do not match, making calculation of average compensation difficult.

21. There are no "Baumol effects" to consider when an analysis focuses on pay rates. Therefore, we here adjust compensation, salary, and benefits with the CPI-U-X1. This index, reported by the Bureau of Labor Statistics, is preferred by most economic researchers as a measure of urban consumer inflation. The index was created from the consumer price index for all urban consumers (CPI-U) in 1983, when the BLS improved its methods for measuring housing inflation. The CPI-U-X1 treats housing consistently over the entire period.

22. Economywide benefit cost increases (including both the public and private sectors) are based on CPI-U-X1 deflated measures of real pay based on hours, compensation, and wage data from the Commerce Department's Bureau of Economic Analysis, National Income and Product Accounts, or GDP accounts.

23. In these tables, to evaluate the relative effects of changes in the mix of teachers and salary scale, we adjust changes in teacher's salaries with the CPI-U-X1.

24. There is ample evidence that both years of experience and postcollege course taking can improve teachers' capabilities, but some studies show that the connections weaken when experience exceeds three to five years, and that after this point student achievement shows little or no relationship to teacher experience. Some researchers also argue that the link between teacher education and achievement is even more tenuous (Murnane 1991 and Hanushek 1989).

25. In calculating whether teachers' nominal increases have improved their standard of living, we deflate nominal salary levels by the consumer price index (CPI-U-X1), not the net services index (NSI) used elsewhere in this report. This is because the CPI-U-X1 measures inflation in a typical market basket of consumer goods and services. Teachers are not concerned with the cost to school districts of their full market basket of inputs relative to the cost of these inputs in previous years, a concern for which the NSI would be more appropriate.

26. On the other hand, greater teacher planning time may not be a real resource addition that results in improved outcomes. If greater school-day planning time replaces planning that 1967 teachers were more likely to do at home, these increased costs may appropriately be considered due to inflation, not real increases. In other words, more paid planning time may have been necessary to keep pace with the improved working conditions of comparable professionals during this period.

27. Aides specifically hired for noninstructional purposes, like health aides, cafeteria aides, or bus aides, are not included in Table 18 calculations.

28. The finding that special education spending represents 38% of net new money in education in 1991 compared to 1967 appears to diverge from a lower estimate that has received wide attention. Hanushek and Rivlin suggest that growth in special education could "account for only a small part of the growth in per student expenditure in the 1980s" (Hanushek et al. 1994, 36). They approximate special education growth by multiplying the number of special education students by an estimated cost per special education pupil in the 1980s. To do this, they rely on other studies that

show the cost of a "typical" special education student to be two times that of a regular education student. Using this method, they conclude that special education costs could total only 5% of the total increase in the 1980s. The calculations of this report differ from this Hanushek-Rivlin method because we calculate changes over a much longer period, beginning in 1967, before the implementation of the Education for All Handicapped Children Act in 1975. Hanushek and Rivlin's base year, 1978, is subsequent to the passage of the Act. Also, we collect data on total spending for special education and calculate this as a share of total spending for all K-12 programs; we do not use an intermediate estimate of spending per special education pupil only.

In a second widely reported estimate, Hanushek and Rivlin state that even if the entire drop in pupil-teacher ratios since 1980 was due to the increase in special education costs, "less than one third of the recent fall in the pupil-teacher ratio could have come from special education" (Hanushek et al. 1994, 35). Their calculation, however, includes only teacher costs and not paraprofessionals, other professionals, transportation, and support. This report (Table 19) estimates that teachers represented only 37% of all special education spending per pupil in 1991. Applying this ratio to Hanushek and Rivlin's calculation would suggest that more than half of the net new money could have gone to special education.

29. One special education cost not generally included in our report of special education administration is the cost of legal services to conduct administrative hearings and defend special education lawsuits. A district's legal expenditures are, with rare exceptions, undifferentiated in our data collection and simply included as part of general district administration. The amount of money so spent, however, is a small share of total district and special education expenditures, so differentiation of this data would not noticeably affect the results.

30. This finding is consistent with newspaper reports that an independent panel recently analyzed New York City's special education expenditures and also found 22% of total funds going to special education (Richardson 1995).

31. In this case, 48% is a "spending-weighted" average, not a "district-weighted" average. We do not calculate a district-weighted average of the changes for the nine districts (our usual measure) because some sample districts spent no funds on compensatory education in 1967, making growth percentages meaningless.

32. This report is not concerned with distinguishing sources of funds, but only with the programs for which money was spent. Thus, when districts reported spending funds for compensatory education, we did not investigate whether the source of these funds was federal, state, or local. As a result, we cannot determine whether the sample districts' expenditure of federal Chapter 1 funds grew faster or slower than the national Chapter 1 program. When we deflate total federal Chapter 1 spending in 1967 by the NSI, we find that enrollment-adjusted real federal compensatory education money declined by about 2% from 1967 to 1991 (using data from Riddle 1992, Table 2.1).

33. In the third section we described the assumptions implicit in our taxonomy. We attempted to be conservative with allocation decisions, assigning expenditures to special programs based on the fact that special programs in 1991 more likely enrolled students unlike those who would have been in regular education in 1967. The decision about whether to assign alternative instructional expenditures to regular education or to this dropout prevention category was especially difficult. Are students enrolled in dropout prevention instructional programs more like students who did drop out in 1967, or are they more like students who remained in school and graduated with general diplomas? We make the judgment that the former is closer to true than the latter; hence, our assignment of these expenditures to this special program.

34. Because this report is concerned only with explaining the growth of public funds in public education, accounts of the school lunch program are accounts of net expenditures: districts' recorded expenditures have been reduced by the receipt of cafeteria sales income. The actual amounts shown in this report as expended on the school lunch program will be less than district expenditure reports normally show, since districts record revenues separately and do not treat sales income differently from federal or state aid. In contrast to standardized school district reporting, we treat sales income not as revenue but rather as a negative expenditure. We use a similar methodology in the case of schools' after-school athletic programs by treating revenue from ticket sales as negative expenditures.

35. Table 5 shows that spending on vocational education, as a share of total spending, went from 1.4% to 3.0%, a change in share of 1.6%. These figures may be inaccurate, but, they are small enough that any adjustments made subsequently will not affect the broad picture we paint about shifting priorities. For example, we show that regular education spending went from 79.6% to 58.8% of all spending from 1967 to 1991, a decline of 20.8 percentage points. If this calculation were made after removing all vocational education from Table 5, regular education spending would

have fallen from 80.8% to 60.6% of all spending, a decline of 20.2 percentage points, a small difference.

36. For Ritenour and the other median districts described in this section, the district has median nominal expenditure growth for its group; its per pupil spending level is not necessarily the median for that group.

37. The presence of large urban megadistricts (Chicago, Dade, Detroit, Houston, Los Angeles, and Philadelphia) in the database does not cause a large divergence of median from mean. While per pupil expenditure growth in four of these megadistricts was faster than the median, Detroit and Philadelphia were slower. Removal of these six megadistricts from the database does not change the average nominal expenditure growth rate of 732%.

38. Broward County (Ft. Lauderdale) is not, strictly speaking, an "urban" megadistrict, as that category is commonly understood. It is the nation's eighth-largest school district, however, nearly identical in size to Detroit Public Schools, and so is included in this group with other more urban megadistricts.

39. In saying that each subgroup was drawn from a group enrolling approximately one-ninth of total enrollment for the 2,500 largest districts, we assume that the range of nominal expenditure growth rates in unmatched districts was not different from the range of nominal expenditure growth rates in matched districts. This may not necessarily be the case, although we have no reason to believe otherwise.

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